

# Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

Volume 55

New York, Saturday, January 3, 1920

Number 1

## More Cars Ordered but Less Track Built than Last Year

WE HAVE made a special effort this year, in our statistical tables, to expand the comparisons with the data for former years. In consequence, several new tables are included which should prove of value. The statistics of rolling stock purchased or built in company shops during 1919 show a considerable increase over the number reported during 1918, particularly in one-man cars, of which more than double the number were purchased in 1919 than during the previous year. In fact, approximately 75 per cent of all motor passenger cars ordered for city service in the United States, exclusive of those for use in subways or on elevated railways, were of the one-man safety type. The number of trailers ordered, while less than in 1918, accounted for approximately 25 per cent of all of the two-man passenger cars. The home-made cars, although less in number than during 1917, were nearly twice those of 1918, indicating easier conditions in the way of securing material and labor.

The car statistics show that the companies are putting forth every effort to carry the traffic presented for transportation and to carry it as economically as possible by a growing number of one-man cars. Similarly, the track statistics afford clear proof that the credit of the companies, or at least their incentive, for making extensions to their existing systems, has practically gone. The record of new track built is the lowest recorded since we commenced the compilation of figures on this subject in 1908. It is only half of that last year, and if the 34½ miles of rapid transit extensions in New York City are excluded, the longest line built was 5.38 miles, and this was by the Seattle municipal line. There were only three other extensions in the country of more than 4 miles. As the tabulation includes turnouts, sidings and connections, these figures mean that extensions have practically stopped.

## Evolution Still at Work in Franchise Making

TIME shows the wisdom or the folly of man's plans. As the years go by this is illustrated in the working out of the modern type of franchise for electric railways. Each new settlement between the public and the investors has been arrived at after long periods of thoughtful research and discussion, yet a short experience was generally sufficient to reveal defects not evident before. The very latest attempt at franchise drafting—the one just rejected by the people of Minneapolis—had many features to commend it, but the plan will have no opportunity to show whether it, after all, would not have developed some weakness in spite of the care put upon it.

In our Statistical Issue last year an expert discussion

of service-at-cost plans which had been adopted or considered up to that time was presented by L. R. Nash of Stone & Webster. In the present number of the JOURNAL franchise developments of the past year are reviewed, thus bringing up to date the summary of modern franchise experience.

Basis for improvement is still evident in franchise planning after all these years of experimentation. One city will guard against Judge Tayler's error in establishing a too limited schedule of variable fares for Cleveland. Another will avoid a second deficiency of the same grant—namely the fixing of a definite return on investment which may prove inadequate. Still another will place better safeguards around the company's investment at the end of the ordinance term. Taken all in all, however, the perfect franchise has not arrived. Indeed it may be true that if a model franchise were adopted to-day, keeping clear of all known defects of existing grants, it would still fail of its purpose under the unforeseen conditions of the future.

Special attention has been directed lately to provision for maintenance, renewal and depreciation allowances in ordinances of this character. This subject is set for discussion at the coming mid-year meeting. During recent years of financial trial the general practice of meeting such expenses from current revenues, without setting up an adequate fund to insure replacements in the future, has been recognized as economically unsound. While it may be impossible to fix a uniform standard, based on a certain percentage of gross receipts, for these funds, the industry would profit by studying results in such places as Chicago, where this idea has been carried out since 1907.

Too much consideration cannot be given to the question of rate of return. To restore the confidence of capital it is necessary that the experience under certain ordinances be avoided. Better results are promised under such grants as those for Youngstown and Cincinnati. Money has its price the same as labor and materials, and if the electric railways are to continue attracting investors they must offer an inducement comparing favorably with that of competitive bidders. To do this it will be essential at all times to offer a return equal to existing prices for money and to give some incentive to efficiency and economy of operation.

The most recent franchises have provided more sensibly for regulation of rates of fare, the all important feature of any ordinance. A service-at-cost grant is bound to fall short of its purpose if it does not establish a sufficiently elastic schedule of rates. It will also fail to protect the investor if changes in rates cannot be made promptly to meet emergencies. In this instance, the Youngstown ordinance would appear to have an advantage over its predecessors, while the Boston Elevated Act has been found too rigid.

The Youngstown measure presents another important

safeguard in the provision for taking care of investment at the end of the grant. Certain companies whose ordinances have not many years to run are facing serious embarrassment through lack of protection in this particular, and the industry would do well to study how the problems of financial readjustment can be solved when the day of reckoning comes.

Public authorities apparently have failed, except in a few instances, to recognize the injustice of burdening the cost of transportation with such charges as those for paving, cleaning and sprinkling of streets. Until the car rider is assured that the fare which he pays is devoted entirely to expenses connected with his transportation, he will have cause for complaint against increases in rates. Unbiased students of electric railway problems have reported time and again in favor of removing such charges, but the prejudice against such action has yet to be overcome.

Service-at-cost settlements are, in theory at least, essentially fair. They should meet with universal support on the part of the public, the employee and the investor, but this millennium will not be reached until it is recognized that under the franchise in question the car rider pays for what he gets and gets only what he pays for.

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### Progress of the Zone System During 1919

THE year 1919 was noteworthy in the history of zone fares in the United States. It witnessed the most ambitious experiments thus far undertaken, involving the greater portion of the electric railway lines in two states, Connecticut and New Jersey, and the results secured in the two cases were widely dissimilar. The zone system of the Public Service Railway in New Jersey was introduced on Sept. 14 and abandoned by permission of the Board of Public Utility Commissioners on Dec. 7. The Connecticut Company inaugurated a zone system of fares on Nov. 2, which is still in force.

The zone experiments in New Jersey met with a large measure of public opposition, leading to an active and widespread boycott of the cars on the so-called Southern Division, comprising the lines in and around Camden. In consequence the revenues of the company were much less than had been anticipated by the commission, and they were insufficient to enable the property to earn its fixed charges. The abandonment of the system was requested by the company and acquiesced in by the commission in order to avoid serious financial consequences.

On the other hand, the zone system of The Connecticut Company has been accepted in good part by the public, which has shown a willingness to co-operate in making the new system an operating success. The new system of fares has produced a most gratifying increase in operating revenue, that for November being at an annual rate of \$1,500,000, or 17 per cent, over the receipts from a 6-cent fare.

Electric railway operators can study with profit the widely varying experiences of these two companies. There has never been a more impressive demonstration of the importance which the public attitude plays in the success of any movement. In general outline the zone systems of these two companies were practically identical. Both were based upon traffic studies made by Dr. Thomas Conway, Jr., of the University of Pennsylvania. The traffic data collected were substantially

the same in both cases, and it is presumed that the methods used in estimating revenues were very similar. In general the operating methods originally employed in New Jersey were adopted with slight modifications in Connecticut. As the zone system in Connecticut is said to be producing almost exactly the revenue which was predicted, it seems clear that the failure of the zone system in New Jersey must be due to certain conditions and causes peculiar to the local situation and that this failure should in no wise deter other companies from seriously considering the zone system, particularly if the lessons to be drawn from the New Jersey experiment are taken to heart. In an article in this issue the New Jersey situation is summarized by a member of the staff of the commission, and the results of an inspection by this same authority of The Connecticut Company system were given in an article in the Dec. 27 issue. In view of the publication of these articles, it will not be necessary to refer to them in detail, particularly as an analysis of the situation in New Jersey was published in an editorial in the Oct. 18, 1919, issue, and one of that in Connecticut in the issues for Oct. 11 and Nov. 1 of this paper.

It would be difficult to find a more conclusive demonstration of the great value of freedom of initiative on the part of the utility in instituting changes in rates than is reported by a study of the comparative results in New Jersey and Connecticut. The wisdom of the provision of the public utilities statute of Connecticut, similar in nature to the provisions of the law in Pennsylvania and Maryland, allowing the company to initiate a new rate upon its own motion without power of suspension by the commission (but adequately safeguarding the rights of the public through the power of subsequent review and determination by the commission), again has been impressively shown.

The future of fares in New Jersey at this time is uncertain. The New Jersey commission is now completing a valuation of the railway property, pending which the 7-cent fare with 1 cent for a transfer has been restored. This rate will probably not yield a fair return upon the value of the property, and the solution which will be worked out eventually to insure a reasonable return, essential to the railway's ability to secure capital to meet the requirements of the people of the State, is one of the unsettled problems carried over into 1920.

While the New Jersey and Connecticut zone plans naturally attracted most of the attention during the past year, the zone systems heretofore existing in Springfield and Holyoke, Mass., on the suburban lines of the Milwaukee Electric Railway & Light Company, on the Rhode Island Company's property, and in Portland, Maine, continued in operation throughout 1919. Certain changes in zone rates were made in the effort to offset rising cost, involving in these cities an increase in the initial rate of fare.

While it is too early to appraise the progress which the zone system has made in America during 1919, yet it seems clear, on the whole, that the year marks a distinct advance in the application of this principle to American electric railways. The economic problems which have turned the minds of electric railway operators to the zone system still remain. Few properties are able to earn a fair return upon their fair value. The problem of an adequate rate remains unsolved on most of the electric railways of the country. The New Jersey and Connecticut experiments have

demonstrated the practicability of the zone system in urban communities, although the urgent need for better fare collection apparatus for zone system operation is clearly apparent. There is no doubt that the continued use of the zone system will stimulate manufacturers to produce devices for the more speedy collection and registration of the zone fares.

### What Was Accomplished Along Engineering Lines Last Year?

**I**N REVIEWING the electric railway engineering problems that have been actively discussed during the past year, it is reassuring to find that splendid work is being done to bring about much needed economies. In all of the departments into which we commonly divide such activities, the one outstanding feature is the desire to increase efficiency and so to effect substantial savings. A few examples will be cited to indicate the lines along which progress is being made.

At the Atlantic City convention the power generation committee of the American Electric Railway Engineering Association presented a notable report on the automatic substation and a form of power contract for electric railways, relating respectively to economical use and purchase of power. The extent to which the industry is dependent upon labor has been forcibly brought home in a number of instances and an extension of the use of automatic substations has helped to relieve this condition and at the same time has shown results in reducing costs that are a real encouragement in these times. The trials and troubles experienced with automatic apparatus have not been many and progress in overcoming them has been rapid. Another economy in power generation that has been referred to frequently is the use of special fuels for power plants. In the recent assignment of subjects to the Engineering Association committees this one has been included. If fuels cheaper than coal can be utilized a great boon will be conferred thereby on those responsible for supplying power to electric railways.

The tendency of those actively connected with power distribution has been toward the development of standards for transmission and contact systems. Specifications for overhead line material, wires and cables have been revised and the requirements for crossings of power lines with railroads have received increased attention. The value of a careful study of the losses connected with power distribution has been made apparent by the greater effort toward maximum use of existing equipment. Rapid advances in the cost of labor during the year have also brought labor-saving devices into special prominence. Engineers of way have collected convincing data on the savings which have resulted from the use of various types of tools. All are thoroughly alive to the necessity of utilizing labor-saving devices to the limit in order to keep maintenance costs within reason.

In rolling-stock construction and operation, the lightweight safety car has come into general use. Not only has it proved economical to operate, but increase in riding has been secured on many properties by the use of more frequent headway and quicker service. The limitation of car design for two-man operation to a few standard sizes has equally great possibilities in regard to weight reduction and improvement in construction. In car details the advent of helical gearing for railway

motors is an innovation that should reduce car maintenance cost by eliminating those shocks and vibrations which originate in the equipment itself.

Finally, in the repair shops, the necessity for increased facilities to carry on the maintenance of equipment economically has been given increased consideration by equipment engineers. They realize as never before that favorable conditions for inspection and convenient track layouts for the shifting of cars will produce far-reaching results.

Looking at their work as a whole our conviction is that the engineers have contributed no small share to the improvement in operating conditions on electric railways which was manifest during the past year.

### Is Maintenance Practice Keeping Up to the Scratch?

**D**URING the past year much has been said and printed concerning maintenance practice in all departments of electric railways. The subject was especially popular for dissertation and discussion at conventions. This leads one naturally to inquire as to whether maintenance conditions and methods have really shown marked improvement during, say, the past twelve months. Our observation leads us to conclude that they have done so.

To look backward a bit we must remember that even preceding the war net operating revenues had in many cases declined to such an extent that maintenance of equipment, track and lines had fallen behind. During the war, the combination of high prices, lack of money, and scarcity of materials and labor forced all but absolutely essential maintenance in all of the departments to be deferred indefinitely. Since the armistice was signed there has been some decrease in prices, notably in copper, while other commodities have maintained their previous level or, in some cases, prices have further increased. But in many places higher fares have been allowed and this has resulted in larger appropriations for maintenance. Materials have certainly been more plentiful, and as for labor, the higher wages and the release of men from military service have resulted in a change from the condition of trying to find men for the jobs to that of placing those who have returned to their former places of employment.

Thus the natural tendency has been to begin catching up on deferred maintenance, which in many cases had reached a critical point. As a result more necessary maintenance work has been done during the past year than has been performed for several years preceding, although as a rule equipment, track and line have not yet been brought back to a normal standard of maintenance. It is safe to say, however, that on most properties the maintenance program is now on a normal basis or better.

The effect of fare increases upon maintenance has been marked. It is to be hoped that the public realize that maintenance work is being given preference over dividends and interest, and that improved operating conditions have almost invariably followed an increase in revenue. Some properties that are seeking or expecting increases in fares have allotted larger amounts to maintenance in the conviction that business follows service.

In maintenance practice increased stress is being put upon a systematic, intelligent inspection. This is true

in all departments, but particularly in the shop. We may revamp the old adage, "a stitch in time saves nine" by saying that a dollar spent for intelligent inspection will save many which would otherwise be spent for service delays, total replacement and accident claims.

The methods by which maintenance work is actually accomplished show a steady improvement. Probably the most important single development has been in the use of gas and electric welding and cutting. This method of reclaiming worn and broken parts or making new ones, both in the track and shop departments, has already come to be recognized as a necessity. The scrap pile has been very largely reduced, and great savings have undoubtedly been made. In some cases enthusiasm has probably gone too far in this work, and parts have been repaired that could have been purchased new at a saving. The point of profitable reclamation must be clearly determined. This accomplished welding will produce marvelous results. The importance of the subject of welding can be realized by considering the fact that a national engineering society is devoting its entire energies to this specialized branch and it seems to find enough to do to keep itself busy. Its activities ought to be helpful to electric railway maintenance men. While the society started under the exigencies of war it can play a useful part in peacetime maintenance.

To sum up the situation as we see it, better maintenance is largely dependent upon sufficient revenue, for costs are not going to be greatly reduced soon. If present fare increases can be maintained and other necessary ones can be secured, the close of 1920 will see maintenance in all departments at a higher standard than ever before.

## Retrospect and Prospect—

### Large Traffic Gains in South

A PROMINENT railway manager, in commenting on the difficulties of the electric railways a year or two ago, said that they were suffering from no trouble which more money could not cure. The truth of this remark has been demonstrated during the past year. Where permission has been obtained by a railway to make reasonable advances in rates to accord with the advances in the costs of materials and labor, the condition seems bright. Where the rate advances have been refused or have been inadequate, the opposite condition prevails.

By and large, the situation as a whole is better than in January, 1919, for several reasons. In the first place there is no doubt a wider popular recognition of the direct relation between rate of fare and cost of service and a greater disposition on the part of the authorities to sanction necessary adjustments in fares. In the second place, patronage, especially on the city properties, is growing, often in spite of increased fares, and although the prices of labor and materials remains high it is easier to obtain both.

The most important event of the past year, from an electric railway standpoint, was the hearings conducted at Washington by the Federal Electric Railways Commission. The report and recommendations of this commission have not yet been made, but considerable benefit from its appointment is already apparent. It has come from the testimony presented which has helped to educate the public to an understanding of the true condition of the industry, to a realization of its essen-

tial character and to the injustice of an inflexible selling price for a commodity whose cost of manufacture varies with market conditions.

In some respects conditions in the South are better than those prevailing in other parts of the United States. As is well known, the section of the country south of Mason and Dixon's line is enjoying an unprecedented wave of prosperity. War activities and, more recently, the soaring prices of cotton and tobacco, and the extensive expansion of the oil fields, are responsible, in the main, for this fortunate business condition. Merchandise is moving with a wonderful rate of turnover. Homes are unavailable, hotels are full to overflowing all the time, and railroads are carrying record loads continually. Building projects and all forms of industry are being pushed to meet the great demand.

These conditions are of course directly reflected in the number of passengers carried by the interurbans and street railways, for what one agency is more vitally intermeshed with all local activity and industry than the transportation system? Consequently, aside from isolated cases, the electric railways of the South are in better condition generally than those in other parts of the country. Those companies which have been able to avert receiverships up to the present are now enjoying, almost without exception, such a good increase in traffic over last year that the higher operating expenses are being absorbed without difficulty. While many of them are still operating on a 5-cent fare, practically none is now in danger of insolvency, so long as present conditions continue. A few claim to be getting a return from the 5-cent fare adequate to meet operating expenses and all fixed charges and pay dividends on common stock. It is notable that these few are the companies which have been most alert to new economies and improvements in service, particularly the one-man safety car.

But the great majority of the companies of the South, while having almost more traffic than they can handle, are in need of an increase in the rate of fare. The 5-cent fare under particularly favorable business conditions is serving to keep heads above water, but is not producing a revenue which will provide a reasonable return on the value of the property in addition to proper allowances for maintenance and depreciation, and not sufficient, therefore, to attract new capital into the business.

Many of the Southern companies have been hesitant and perhaps backward about petitioning for increased fares, feeling that it was better not to start a controversy as long as the present rate of fare, coupled with excellent traffic, was providing enough to keep the company solvent, even though not enough to make possible any new financing. In such cases, new equipment has to be paid for out of operating earnings, and quite a little work of this kind is being done, pending the adoption of a permanent settlement of the situation which will permit the issue and sale of securities. Among those railway men who have been in close touch with the people of the South there is a belief that the attitude of the people toward the railways is undergoing a favorable change and that there is more and more evident a disposition to treat fairly their petitions. In the light of this knowledge, it appears that the year 1920 will bring a great many fare increases in Southern cities, and, having these, there will follow splendid progress and a sound financial condition.

## Is a Spirit of Optimism Justified at This Time?

ON THE SURFACE, and quite a little way below the surface, operating and financing conditions in the electric field are discouraging. The near-sighted individual who visualizes only 1919 or 1920 is certainly warranted in feeling a trifle blue. But how about the far-sighted man who thinks in decades rather than years, who considers improvement in service more important than immediate gain, whose brain is fertile in expedients for developing new business to take the place of that which is lost to competitors and for cutting down the unit cost of giving this service? Is he justified in looking forward to the future of electric transportation (supplemented by such other means as inventive talent may produce) with zest and hope? We believe he is. It's up to us to say why.

The present condition of the industry is due almost entirely to inability to adjust the price of our product to its cost. This in turn is due to several unfortunate conditions, largely outside of the control of the managers of the electric railways. First, there is the rapidity of the increases in costs of labor and materials.

These costs tend practically always to rise, but under normal conditions it would have been more nearly possible to secure corresponding increases in rates and in operating efficiency. Next is the reluctance of patrons to permit higher prices to be charged when they

exercise statutory control over the situation. There are many prices which they cannot readily control and they are apt to hold the controllable prices down, to offset the increases in the others. A third item is the effect of politics; it is obviously in the line of self-interest for the demagog to ingratiate himself with his constituency by playing public utility against public.

Of course we can see now some things that might have been done to offset rising costs. We realize at the same time the handicap of prescribed fares and largely prescribed service.

But enough of this dark side of the picture! The dawn of the day of higher fares and better feeling on the part of the public appears. Fertile brains are devising new means of giving improved service without increased cost, and of selling more transportation to the public by merchandizing methods. The public is beginning to realize its dependence upon the electric railway. It is well to note these hopeful signs and to recognize them as harbingers of that better status for the railway business toward which we are all earnestly striving. The present situation is well summed up in the accompanying "foreword" by Lucius S. Storrs. This the editors asked him to prepare because of his recent experience on the Electric Railway War Board, as chairman of the sub-committee on publicity of the Committee of One Hundred and as president of a company which has just put over a resultful publicity campaign for increased fares. His comment, may, therefore, be considered the conclusion of this article.

## Looking Toward 1920—and Beyond

THESE are times when the electric railway industry should put behind it the gloom of the past and look forward with anticipation toward the better times that seem to be at hand.

The period of the war brought many troubles to the electric railways, but the industry is emerging from them, and the future is brighter.

If our recent experiences have impressed any one fact upon our minds more deeply than others, it is the necessity of educating our own employees as to our condition and the need for them to cooperate in bringing about improvement. There is also a need for electric railway companies to put their stories fairly and squarely before the people.

The testimony presented by witnesses who appeared before the Federal Electric Railways Commission has had wide publicity, and all of us must appreciate what a marked effect this publicity has had on the public mind. I believe it has been very helpful in putting the case of the industry fairly before the people.

Too much emphasis can hardly be put upon the suggestion that the work begun by the Committee of One Hundred must be continued. Merely to tell

our story is not enough—it must be told over and over again with whatever modifications the future may bring and with due allowance for the varying conditions in different localities.

More important than anything else, it seems to me, is the maintenance of an optimistic state of mind. The industry has gone through a critical period, and that we have stood the test so well is cause for congratulation. Before us is the task of making up the losses of the trying times from which we are emerging and the restoration of the industry on a sound basis. There is nothing about the situation to cause pessimism. Opportunities for earnest, efficient and able service were never so great as they are today, and that there will be an adequate reward to the men in the industry and the public which has invested

its money in the electric railways, seems certain. We must all co-operate. We must continually strive for the intelligent co-operation of the employees and, most important of all, we must leave nothing undone to win the goodwill of the public.



L. S. STORRS

## Railroad Electrification In, Before and After 1919

STATISTICS as to new construction and rolling stock for heavy electric traction for 1919 relate largely to the Cascade electrification by the Chicago, Milwaukee & St. Paul Railroad. Although full electric operation has not yet begun on this section, delivery of the new electric locomotives for this division is under way. Five passenger locomotives, which were built by the General Electric Company, will shortly be in operation, as will also ten Westinghouse passenger locomotives for the Rocky Mountain division. The former locomotive was described in the issues of this paper for March 23, 1918, and Oct. 18, 1919; and the latter in the issue for March 23, 1918. The present issue contains another article on the Rocky Mountain passenger locomotive.

It is always interesting to note what the New York Railroad Club talks about on its "annual electrical night" because this is designed, among other things, to epitomize the electric traction progress of the year. At the 1919 meeting E. B. Katté, to whom was delegated this particular task, said that when he began to prepare his paper he thought that there had been very little progress made since the previous meeting, but as he reviewed the situation carefully he found that the year had been far from an "off" one. As evidence of this he directed attention to the new St. Paul, Pennsylvania and New Haven locomotives which show substantial progress.

The Rocky Mountain electrification of the St. Paul very forcibly impressed a commission of thirteen French engineers who came to this country last spring to study heavy traction with a view to finding, if possible, a superior method for general application in their own country. This commission had a definite task before it, because the general electrification of railroads in France is much more imminent than here due to the high price and scarcity of fuel. The commission returned home about the end of July, apparently convinced that the high-voltage direct-current system possessed advantages over others for their purposes. The ultimate results of its observations will undoubtedly be a modification of the tendency on the part of many French engineers to favor alternating current.

On the other hand, in the United States railroad men are not by any means unanimous as to one or another of the systems of electrification now available. On the Norfolk & Western Railway the single-phase three-phase locomotives are doing yeoman service. The work imposed upon them there is terrific, but they are getting away with it. The maintenance cost per locomotive-mile is high, as would be expected under the circumstances, but the cost per ton-mile is reasonable. This fact must be kept in mind when comparing maintenance costs with the remarkable records on the locomotive-mile basis which are being made elsewhere. The Pennsylvania Railroad showed at the Atlantic City convention of the mechanical section of the American Railroad Association the great single-phase three-phase locomotive which it had developed for use on its Allegheny Mountain division. This locomotive has been in freight service in the Philadelphia-Paoli electric zone, where it has given an excellent account of itself. One important reason why this type of locomotive is favored is that it gives a great haulage capacity in a given amount of space. In view of the interest that

the Pennsylvania engineers are taking in this type of locomotive, it is certainly still "on the map." And the single-phase system, with series compensated motors, is still being heard from. The New York Connecting Railroad, which operates over Hell Gate Bridge between sections of New York City, has put into commission a number of new locomotives of this type, having a weight of 180 tons and a motor capacity of 2,000 hp. on a one-hour rating.

As the St. Paul situation occupies the limelight for the moment, a few facts regarding it are in order. This road made a notable addition to its electrified track in 1919 by equipping 207 miles of main line and 73 miles in side tracks and yards between Othello, and Seattle and Tacoma, Wash. The passenger motive power of this section will consist of the five G. E. locomotives, which are of the gearless type equipped for regenerative control. These are 76 ft. long and weigh 265 tons. The freight locomotives will be transferred from the Rocky Mountain division, the geared locomotives now used there in passenger service being regearred for the purpose. A few freight locomotives are already in use and the passenger locomotives will be operating in a few weeks. Power for the new electrification will be purchased from the Washington Water Power Company.

The locomotives removed from passenger service on the Rocky Mountain division are to be replaced by the ten new Westinghouse geared machines. These are also provided with regenerative control. The railroad will therefore have available for comparison in performance two types of locomotives, radically different in design and appearance but meeting approximately the same service specifications. The conspicuous differences are in type of motor, method of drive, scheme for excitation of main motors during regeneration, arrangement of control equipment, cab design, etc. Other interesting features of this installation are in the distribution system, which is being equipped with a device for protecting the motor-generators in the substations from the effect of excessive overload, by automatic reduction of voltage. The substations are to be provided also with apparatus for safeguarding the motor-generator sets from the effect of short-circuits, for permitting the power conditions to be closely supervised, etc.

The completion of the electrifications in Montana and Washington leaves a steam-operated section isolated, and undoubtedly this will be electrified in due course for general operating economy, if for no other reason. From what has been said it is obvious that the St. Paul road is entitled to much appreciation from the steam railroad fraternity generally for pioneering on so large a scale. As to the future in heavy electric traction, there is a general feeling that important developments are pending. Several projects are ripe for electrification, but the uncertainty as to the way in which steam railroads are to be organized and administered produces a check on definite planning. The coal situation, however, is so critical that considerations formerly given as favoring electrification are now greatly magnified. The success of the present electrifications is also in favor of further application. In Europe we see the results of natural tendencies in this direction greatly accelerated by the war. The activity in railroad electrification now manifest there must be reflected on this side of the water in due time. And the time would seem to be soon.

## Deliveries to Be Important Market Issue During 1920

GENERALLY speaking, electric railway manufacturers are of two classes, those devoted entirely or in large part to the production of electric railway supplies and equipment and those manufacturing a line finding application in more than one field, including the electric railway.

The former class of manufacturers, as a rule, frankly had a rather unprofitable year. Some of these have had to engage in side lines to "keep the wolf from the door" until the electric railways shall again get on their feet. Those in the latter group have not felt our enfeebled condition so keenly because they have been able to concentrate on fields more fruitful in orders.

However, the past is a tale soon to be forgotten. Of real importance just now is the future. Will there be more business? We believe that there will be, particularly in the way of light-weight cars, which have shown such an increase in popularity during the past year, and in those devices which are designed primarily to reduce the cost of operation and are required in maintenance, in distinction from those used in new construction.

In this connection we have a word to say to the man who purchases materials. Prices may go slightly higher during the year, but not very much. Rails and sheets will probably command a premium for early delivery. Wire should be lower before it is higher. We can't tell anything about poles and ties just yet, except to say that there is little likelihood of any drop during 1920. Motors if they change at all will be higher in spite of lower copper costs. The same is true of transformers and substation equipment.

However, the most important factor in the market during the entire year is not going to be prices, but deliveries. Electric railways will feel this very keenly because they have to compete with the steam roads for so much of their material. The President has stated that the steam roads are to be returned to private operation in two months.

Within two months, then, the rail rolling mills of the United States, unless Washington changes its mind, will be booked up for their entire 1920 output and a good part of the 1921 capacity also.

The sheet mills and the girder mills will in all probability be in worse condition for deliveries, owing to the building and industrial demand.

In addition transportation facilities are so short that delays along the road are going to pile up, resulting in further delaying shipments.

The delivery situation during 1920 in the electric railway field, as things look now, will be worse than during 1917 and 1918. This is not said to frighten. These are the plain, cold facts.

If roads have any idea of buying rails, or plates, or wheels, or axles, or motors, or transformers, or line material, we believe therefore that they should order

now. If later they do not need the material it will probably be a simple matter to cancel the order. In fact, in most cases, we think that the manufacturer will be highly pleased.

## Value of Association Measured by Capacity of Individual

SOME purchasing agents are assuming a skeptical attitude as to the value to them of the organization which the purchasing agents formed at the October convention. They are wondering what good will be derived from such an association and whether they should take membership. According to some of them, it doesn't help to tell each other what prices are secured on various materials, as so much depends upon conditions of competition, quantity, delivery requirements, etc.

This contention is quite true. At the end of the year there will not be any such accomplishment to record to the credit of the Purchasing Agents' and Storekeepers' Association as the lowering of the price of steel, say, 2 cents a pound or of coal 20 cents a ton. The purpose of the association, as we understand it, is not to reduce prices or even primarily to discuss them. Instead, the real value of such an association, as is pointed out in an article by Mr. Stigall in this issue, comes from the interchange of ideas and experiences and the promulgation of new thoughts on making the purchasing department of greater service to other departments, for primarily the purchasing department is a service department. We believe it to be almost impossible for twenty-five live men in the same line of business to get together talking shop without there being expressed ideas of helpfulness to almost all present. Sometimes the value of a suggestion may not be apparent right then, but later it will be recalled that such an opinion was heard and the worth of it will "come home" with its application to the local problem.

This then leads to the conviction that the good to be derived from an association of purchasing agents and storekeepers depends on what the individual puts into it and on his capacity to comprehend and absorb new thoughts. In other words, as one progressive Mid-West P. A. put it, "you can't pour a barrel of water into a pail." The purchasing department representative who can derive no benefit from attendance at such association meetings should place the blame for this upon himself and not upon the association; and if he cannot get back in helpful thoughts several times the value of his expense account for making the trip to the meeting, then he needs to make way for a successor who has vision and initiative enough to move along with the art.

The thing to do is for each purchasing agent and storekeeper of an electric railway property to get behind this constructive effort of the newly organized association, thereby strengthening it by what he gives and by the larger good which he will derive from it.

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The Irving National Bank, in a circular issued on Jan. 1, sums up the economic situation as follows: "Out of a year of difficult readjustments to the tasks of peace has come the conviction that national aims must more surely serve all interests alike—that the measure of a country's greatness lies in its contribution to the welfare of its own people and the well-being of the world—and that the important instrument of this contribution is, not governments, but business."

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# The Federal Commission and Its Work

By *Charlton Ogburn*

*Executive Secretary Federal Electric Railways Commission*

## An Account of How the Report of the Federal Commission Is Being Drafted for Presentation to the President

**T**HE outstanding feature of the work of the Federal Electric Railways Commission, to my mind, is the fine public spirit it has elicited.

Here was a problem—the biggest domestic problem in the realm of finance, save that of the steam railroads, facing this country—and this problem must be solved by the co-operation of the three parties interested, the public, the owners and labor. In that spirit all must come together and give of their experience and their wisdom, pooling their ideas and their interests that there might be worked out a constructive program that will put this essential industry and its relations to the public on a better footing.

The Federal Electric Railways Commission appointed by the President offered the vehicle needed. Thus was the situation visualized by the commissioners themselves and by the public-spirited citizens who by their aid and co-operation made it possible for the commission to perform its task.

First of all, the officials of the electric railways throughout the country spared no pains to supply the commission with the facts it needed. The American Electric Railway Association and its Committee of One Hundred not only performed an enormous amount of work in presenting the case of the railways to the commission, but in doing that work they rose above the selfish interests of individual companies to a full recognition of the social and public nature of their industry. There was no effort to withhold or conceal facts unfavorable to their cause; most of the witnesses testifying on behalf of the railways realized that this was a time when all the cards must be laid on the table.

### HOW ALL ASSISTED

This help and co-operation on the part of the railways is shown in no better way than in their answers to the comprehensive questionnaire sent out by the commission. There were asked 174 questions dealing with every phase of the subject. Many of the questions sought information somewhat unfavorable to the cause of the railways. But the answers came back full and unevasive. The preparation of these answers involved an immense amount of work. Records voluminous enough to fill large libraries had to be consulted. Proceedings of public utility commissions and of state and federal courts had to be abstracted and briefed. Financial data for ten years back had to be analyzed and tabulated. Wages, fares, taxes, franchise conditions, traffic figures, details of operation, theories of regulation, history of public relationships—all were asked for with great particularity.

And the answers sent in were so complete that in



CHARLTON OGBURN

## Great Public Spirit Displayed by Commissioners and Witnesses—Cases of Railways and Labor Thoroughly Prepared

many instances it would be most unfortunate if they could not be preserved in permanent form.

If the thanks of the commission go to the electric railways for their aid in this work, then to an even greater degree is the commission indebted to the representatives of the public for their invaluable help. This aid was given disinterestedly and purely out of a sense of public service. And the spirit in which it was done is magnificent.

Mayors, chambers of commerce and boards of trade, central labor unions, and state public utility commissions, though lacking the complete records possessed by the railways, put such painstaking labor on their answers to our 174 questions that nothing else is needed to show the deep and widespread interest in this public question and a consciousness of the importance of its consideration by a federal commission. And no better way was afforded the members of the commission of obtaining the views of the country on the manifold phases of this problem than through the answers sent in by these public bodies.

The gratitude of the commission is extended especially to the forty-three busy men who came at their own expense to testify on behalf of the public at the hearings held by the commission. These witnesses traveled great distances, paying their own railroad fare and hotel bills, that the commission might have the public side of this big question as expressed in their testimony.

The witnesses were men whose time was valuable, but they gave of it freely. The list included such men as ex-President Taft, whose experience as joint chairman of the National War Labor Board in fixing wages on electric railways gave him an intimate knowledge of the problem; Secretary of War Baker, who came in close touch with the problem as Mayor of Cleveland, and before that as city attorney under Tom Johnson; Mayor Couzens of Detroit, and Mayor Babcock of Pittsburgh, both students of the traction problem; Commissioner Eastman of the Interstate Commerce Commission, and many leading state utility commissioners, such as Commissioners Ainey of Pennsylvania, Nixon of New York, McLeod of Massachusetts, Higgins of Connecticut, Bliss of Rhode Island, Hall of Nebraska, Corporation Counsel Burr of New York City, City Street Railway Commissioner Sanders of Cleveland and Commissioner Culkins of Cincinnati, State Senator Walsh of Massachusetts, President Ferguson of the United States Chamber of Commerce, and many other men of prominence, including mayors of cities where the problem is acute, all of the leading public utility experts, several specialists on taxation,



etc., eminent economists and college professors and private citizens like Messrs. Bauer of Lynn, MacFarland of Boston, Marion Jackson of Atlanta, ex-Governor Foss of Massachusetts, Mr. Ingram of Detroit—to all of whom the commission is especially indebted for their interesting discussions and data, the preparation of which undoubtedly represents years of study and thought.

There were other public officials and private citizens who could not attend in person the hearings before the commission, but who submitted their views, prepared with great care and thought. These papers, too, have been of help to the commission as, for instance, the ones from Thomas L. Sidlo of Cleveland, Thomas A. Edison and Edward N. Hurley.

And labor, too, showed its deep interest and did its part. There was no testimony given before the commission more carefully prepared and presented than that given by the representatives of labor, the Amalgamated Association of Street and Electric Railway Employees of America. The commission recognizes, I am sure, the preponderating importance of the labor phase of the traction problem, and it was indeed glad to have the full statements from the labor representatives.

I may be permitted, I hope, to speak of the patriotic work of the commissioners themselves. They are entitled to the thanks of the country for their self-sacrificing work on this commission, done without a dollar's remuneration and at considerable personal cost. These commissioners sat day after day through long hearings that consumed twenty-eight days, from 10 in the morning until 10 or 11 at night, with brief intervals for lunch and dinner, and listened with the closest concentration to more than 100 witnesses' discussion of every phase of this important subject. And how many more days they have spent in considering the evidence gathered and submitted to them it is impossible to estimate; but it is obvious that the time they have devoted to this work must have been considerable.

The task of gathering and submitting this evidence fell to my lot as the executive secretary. The request of the editor of the *ELECTRIC RAILWAY JOURNAL* was for an article showing how this work was done. This, I think, has been indicated above rather clearly.

#### MUCH WORK DONE WITH LITTLE EXPENDITURE

Any recountal of the facts of this investigation ought to make the reader grasp the importance of the two factors that guided every step taken in performing this work; first the enormous scope of the investigation, the magnitude of the industry, the manifold ramifications and phases of the problem; and secondly, that the entire cost of the investigation had to be kept within the small sum of \$10,000 allotted for the purpose. If space were permitted in this article I think I could show how this investigation was extended from city to city, from subject to subject, how facts about the industry were gleaned from every source, how the small appropriation was stretched and further stretched until by the practice of the strictest economy it was made to cover the whole scope of the work, until the reader would admit that here at least was one government agency that was not "honeycombed with extravagance."

The record of the hearings, which contained the principal evidence utilized by the commission, comprised

6195 typewritten pages and represents the testimony of 103 witnesses and a number of submitted statements. Seven of these witnesses testified in the presentation of the labor program. The remainder were about equally divided between the public and the railways. W. Jett Lauck acted as counsel for the Amalgamated Association of Street and Electric Railway Employees of America in the case submitted on behalf of labor, and Bentley W. Warren acted as counsel for the railways. The program for the public's side was arranged by me as executive secretary, with valuable suggestions from the chairman.

Since the hearings closed on Oct. 4 I have indexed and briefed all of the evidence—compressing the 6195 pages into 1250 pages; nothing has been omitted, but the testimony has merely been condensed. Copies of all of these abstracts were furnished to each commissioner.

I am now rearranging the entire body of testimony by subject matter into chapters relating under the proper heading the substance of each witness's testimony, utilizing where needed to round out the evidence the data obtained from the answers to the questionnaires.

The gathering of the evidence was greatly furthered by the use of the questionnaire. It saved the work of a corps of field investigators, the employment of which was made impossible by our limited funds. This questionnaire, made very comprehensive at the direction of the commission, was prepared by me with suggestions by the chairman. A second and much shorter questionnaire was sent out on Dec. 1 in order to obtain up-to-date traffic figures from all the electric railways.

#### SPECIAL STUDIES WERE MADE

I have also obtained special reports on special topics, such as one-man cars, zone-plan fare collections in Great Britain and in America, financial reports of all Canadian electric railways, brief summaries of general financial conditions of electric railways in other countries; a special comparative study of municipal operation of the electric lines of Seattle. We have received the benefit of the investigations and reports made by Stone & Webster and by Day & Zimmerman of the traction systems of New York City, the reports on electric railways by the Merchants' Association of New York, the reports of most of the state utility commissions, the reports of the hearings before the committee on public utilities of the United States Chamber of Commerce, the reports of the special committee on street railways in Massachusetts published on Nov. 15, 1919, and all available valuation reports on electric railways of state commissions and engineering firms.

In addition to the general investigation of all electric railways, there were some cities where I made a special study for the commission of the recent developments in the traction situation, notably New York, Boston, Philadelphia, Chicago, Cincinnati, Toledo, Washington, Denver, New Orleans, Louisville, Pittsburgh, St. Louis and East St. Louis, Cleveland, Detroit, Atlanta, Scranton, Kansas City, Memphis and Buffalo, as well as a number of smaller cities, and several Canadian cities.

The tabulation and analysis of all these data, especially that received in answer to our questionnaires, has been a very engrossing task. To accomplish it within the time required has necessitated a constant and daily violation of the eight-hour rule in our office—often working twice that number of hours—to an extent that would disqualify us for membership in the union, for we got no pay for "overtime."

A feature of the day's work was the acknowledgment of numerous letters of inquiry, requests for copies of our reports and especially the voluntary contribution of "solutions" of the traction problem that came in from all over the country with every mail. I wish that space permitted an account of some of the "brilliant suggestions" we received for saving the electric railway industry from "bankrupter"—as one Californian described it. On the other hand, many of these plans showed the results of thought and study—and I might say of every possible shade of thought—and indicated that from unexpected sources may come evidence of deep public interest in this big public problem and that the "man in the street"—the car rider himself—in whose interest this commission has been so laboriously engaged—may have a few ideas himself on the subject more pertinent and more practical than those of our greatest utility experts.

I was enabled to attend to the vast amount of detail work incident to this investigation only through the help of two extremely competent and faithful assistants, my secretary, Miss Crawley, and my statistician, Miss

Stone, and a small force of efficient stenographers, all of whom seemed to have caught the spirit of public service characterizing this task, and worked, not by the clock, but with a certain pride of achievement.

After the hearings, on the authorization of the commission, I engaged Dr. Delos F. Wilcox to aid in analyzing the evidence, and both Dr. Wilcox and Dr. Milo R. Maltbie to advise with the commission, making recommendations, etc. The way in which these men have undertaken this task has clearly shown that they, too, have seen that here was an opportunity to do a constructive work, which if done properly would be of lasting benefit to the whole country.

Just what the commission will finally agree upon in its report to the President remains as this is written to be seen, but from my intimate knowledge of the broad-minded viewpoint of the commissioners themselves I am certain that there will emerge from this investigation a program and a suggested policy which every community can accept as a guide in its consideration of this problem, with only the modifications needed to adapt it to different localities.

## The Municipality's Viewpoint in Electric Transportation

By *W. C. Culkins*

*Director Department of Street Railroads, Cincinnati, Ohio*

### While the Relation of City and Traction System Is Still Nebulous, the War Has Made an Improvement in Conditions

**A** NEW municipal viewpoint of street railway transportation is one of the by-products of the world war.

Rapid increases in the cost of materials and demand for higher wages has brought about a condition which is unprecedented and which was unthought of at the time when most of the franchises were adopted. In some places a falling off in traffic during the war period intensified the situation. In others the establishment of war industries caused such increases as to require heavy capital expenditures for extensions and equipment. Failure of companies to earn a fair return on capital already invested made it impossible to secure new capital, and the entire industry was threatened with collapse.

This situation, arriving at a time when the safety of the nation demanded the highest efficiency in production, suddenly focused attention on this vital subject. Startling questions such as these were presented: Under the existing circumstances would it be possible to require the maintenance of adequate service to meet the national emergency? What authority had the cities retained in the franchises to control such service and were the operators in a position to furnish it if they so desired? Indeed, was there not grave danger that the service would be discontinued entirely? Already



W. C. CULKINS

### There Is Evidence of Accelerated Progress in the Development of a Logical and an Equitable Type of Franchise

the government had found it necessary to take over the national transportation facilities because they were unable to meet the economic crisis.

For the first time municipalities generally were awakened to a realization that street railway transportation was so vitally interwoven in the economic and social life of the community that it was not only essential to the existence of all other industries but to the community itself. Just as the early cities

were built upon the waterways, so the cities had developed internally along the street railway routes, with neither advancing far beyond the other. The quick, convenient low-priced method of transportation furnished by the street railway had to be maintained or the employees could not be transported to the factories and stores, and the citizens would be broken into groups unable to maintain the interrelation so necessary to their social and commercial requirements.

Impending strikes and the drift of electric railway employees to more remunerative occupations caused the government to see the danger, and the War Labor Board created at Washington was prompt and unstinted in ordering increases that would keep the men on the cars. When asked by the electric railway companies where the money would come from to meet the increased payrolls, the board "passed the buck," saying that it

was a matter between the companies and their own city officials. It was much simpler and more popular to raise wages than to raise fares.

However, the board, the Secretary of the Treasury and the President of the United States did recommend that the municipal authorities take up the question of giving relief to the companies, not as a favor to the corporations but in order that each community might carry out efficiently its part of the program of national defense.

These local emergencies and the national insistency were pressing upon municipalities for a prompt solution of this problem. To find this solution presented extreme difficulties because of the necessity of getting a different perspective of a field in which past practice and tradition had largely crystallized into fixed policies.

Although in the earliest days of street railway franchises there appears to have been a recognition that these enterprises were charged with public service, that was afterward lost sight of, until even the reservation of the rights to purchase the properties by municipalities disappeared in new revisions or were specifically abrogated.

#### UNTIL RECENTLY FRANCHISE PROGRESS HAS BEEN SLOW

The characteristic of private monopoly became more pronounced, fostered by the companies, no doubt, with the same lack of prescience which was shown in their creation of the "nickel fare fetish."

A perusal of the first street railway franchise which was granted by the State of New York in 1831 to the New York & Harlem Railroad city lines, impresses one with the small advance made in the franchises granted since that time in most cities. The cardinal principal was a flat, fixed fare with the greatest possible financial contributions to the city in the way of franchise taxes, street paving, street cleaning or other municipal functions to the relief of the city.

In the flat-fare plan, the lead of civic welfare enthusiasts was followed without investigation on the theory that any other plan would tend to increase congestion of population in the downtown districts.

European cities have the zone system and also have densely populated districts, therefore, they agreed, a zone system produces congestion. In this they overlooked the small detail that the congestion in European cities antedated the street railway, and to-day these enthusiasts still overlook the fact that in flat-fare New York the density of population on the East Side is greater than that of European cities. The population, unmindful and perhaps ignorant of the pretty theories, still neglects the opportunity to seek the green fields and flowers beyond Harlem. The fixed, flat fare made an attractive appeal to the multitude, and in some states the law requires that new franchises shall be granted by competition to the company agreeing to carry passengers for the lowest rate of fare with no other requirement, as though a low fare alone determined the value of street car service.

With an inexcusable ignorance of their own cost accounting, some operators went further and offered as an inducement reduced rates during the rush hour when their own expenses were highest.

The franchise taxes and the assumption of other municipal burdens fitted in nicely with the period when the politicians had as a little fetish of their own the "low tax rate," which was just as illogical as a measure

of governmental service as is the low car fare of street car service. Nevertheless, whatever could be exacted from the street car company represented that much more money for municipal expenditures without affecting the tax rate. Meanwhile, the operator had his problem in meeting these requirements out of a fixed fare and of providing satisfactory dividends.

This was made more difficult since the consolidation of many small lines in the cities under unrestricted stock operations had attracted the speculative investor, and the quick supercession of the cable by the electric cars had piled up heavy capital charges. It is not difficult to see where the car rider, unorganized and unrepresented, came out.

The popular provision for a division of profits between the company and the city was a further invitation to exploit the patron. It is not surprising that he felt that there was an unholy alliance against his interests, and he turned readily to the demagogue who capitalized his situation for political advancement. When someone who sincerely desired to improve conditions in the interest of the car rider and the community was elected to office, he usually discovered that with an entire absence of understanding of the public character of the street railway industry the framers of the franchise had reserved no control over the service, or had couched the instrument in vague terms that would require a series of court decisions for interpretation.

#### A TENDENCY TOWARD COMPLICATION WAS MANIFESTED

Then came clumsy efforts to enforce the rendering of improved service, bringing about long and complex franchises which attempted detailed recitals of specific requirements coupled with stern provisions for the revocation of franchise rights. All of these were ineffectual, as is shown in cases like those of Detroit and Toledo, where the railways have been operating for years without any franchise.

Competition was invoked and laws were passed requiring companies to allow competitors joint use of their tracks to reach city terminals and thereby to break the monopolistic hold of the corporation. The farepayer as the ultimate consumer would have suffered from the increased expense of the two organizations, but the plan did little more than encourage "raids" on existing companies.

Short-term franchises, as an expedient to make companies behave, were vigorously advocated. Many states now have these limitations but not for such short periods as the enthusiasts demanded, which would have rendered financing impossible.

Constitutional, legislative and special charter provisions likewise added to complicate the situation.

The fundamental weakness of all of these efforts for a solution of the problem lay in the fact that they persisted in regarding the utility as something foreign and inimical to the public interest, something to be prodded and fought instead of tamed and broken to the track, then properly sustained to enable it to perform its duties. It was not until the last decade that marked advance was made in franchise policies.

The Kansas City "peace agreement" of 1903 seemed to recognize possible limitations on the earning power of the street railway in that, after imposing most all conceivable burdens from an 8 per cent tax to the lighting of street railway crossings and the furnishing of power for the fire department, it restricted the City

Council on at least one route from requiring schedules whose cost of operation would be greater than the amount of fares or other compensation received through operating them.

The Chicago settlement in 1907 and the Cleveland Talyer-plan franchise in 1910 established distinct advances in franchise making in that they recognized two important principles. These were the right of the public to retain control, and the obligation to allow to the investor a reasonable and moderate return on his investment, to be substantially guaranteed. The Chicago settlement, however, while controlling finances and extensions, is rather vague in the authority of the city to require definite standards of service. Its strong talking point apparently was the large income derived by the city from the division of profits, which, after all was a special tax levied on the car-riding public for the benefit of the tax-paying public.

The Cleveland plan was the development of a long political struggle in which the 3-cent fare had been the slogan and the principal objective. It, therefore, contained the basic principle that there should be no divisible surplus, and that any profits arising beyond the actual cost of service should be applied to the reduction of fares. Franchise taxes and similar charges were eliminated and complete control of service vested in the city. This provided, however, that an item of the cost of service is a 6 per cent return to the stockholders.

The Kansas City agreement of 1914 contained definite provisions for the control of the gross receipts of the company, and a 6 per cent allowance to the stockholders. Control of service was sought in a rather indirect way, by giving to the city the appointment of eleven directors of the company and by placing the supervision in a board of two, consisting of the president of the company and the city member of the Board of Control, appointed by the Mayor. The objection to this "50-50" division of authority should be fairly obvious.

The above illustrates the limited experience in the development in modernized franchise making from which the awakened municipalities had to draw in solving the transportation problem which had suddenly been presented to them in a new light. Public utility commissions and city governments everywhere were deluged with requests for relief for the electric railways that were threatened with receiverships or were actually placed in the hands of the receivers. Temporary fare increases, the zone system, municipal ownership, the elimination of special burdens and many purely local remedies were discussed in all quarters. Operators who, by reason of the fact that their companies had been financed by speculative rather than conservative investors, had not looked with great favor upon the limited return provided in the later ordinances, were now reduced to the "Oh, Lord, anything" class. Where rates of fare had been increased it was suddenly found that public opinion must be reckoned with. The profitable short-haul rider walked and the gross receipts did not reflect the increased percentage in fares.

#### "SERVICE-AT-COST" EMERGES FROM CHAOS

From this chaos there emerged, among those municipalities which elected to meet the problem in a broad, non-political and enlightened spirit, a tendency toward the service-at-cost plan. Its appeal was particularly strong since the facts were being demonstrated that street railroads could not continue on pre-war conditions

and that the duration of high, war prices was indefinite. It appeared to be a device that would meet a present emergency and automatically adapt itself to future readjustments as required. What is more important there came with this a new visualization of the municipal street railway franchise. Where it had been formerly looked upon as a special grant to a private monopoly, it was now regarded as the creation of an agency for the carrying out of a municipal function with which the community itself was definitely charged. If the city did not elect to adopt direct action by municipal ownership and operation, it must offer sufficient security and return to private enterprise to induce it to undertake the obligation for the city. As this obligation is primarily one of public service the community must reserve to itself complete control over its agent in these matters; and the agent must be permitted to exact for the commodity furnished not more than its cost plus such reasonable reward as will assure efficient and economical management and such expansion as the needs of the public may require.

#### FLEXIBILITY MUST BE A FACTOR IN FRANCHISES

With constantly changing economic conditions and the growth and shifting of population in cities, there must be included such degree of elasticity as will allow the arrangement to function smoothly and properly. While these fundamentals are being generally accepted by forward thinking public officials their expression and application in specific franchise contracts or their equivalents vary widely. Montreal has its three-way division of profits; to the city, to the company and to the car rider. Boston, through its State-appointed board, fixed the schedule of fares to be filed with the Public Service Commission. The Massachusetts theory of governmental subsidy has many strong supporters. Cleveland controls its service through the City Council, which appoints its commissioner, fixes car-mileage allowances, and retains a cumbersome schedule of cash, ticket and transfer charges, all of which has been substantially followed by Akron. Cincinnati has attempted to simplify and render more elastic the service-at-cost system by eliminating the schedules and providing a budget of financial control, and has invested plenary authority in a director appointed by the Mayor, reserving to the Council matters of new franchises and extensions only. The Cincinnati plan provides an incentive to economical management, and allows freedom in matters relating to new securities, subject to the approval of the city and the State.

The Chicago settlement, once the paragon, has failed to meet the conditions now affecting the utility generally. Kansas City, with its city directors, the divided responsibility of its Board of Control and its fixed fare, is now seeking through its Chamber of Commerce a revision of its contract. In Minneapolis the franchise recently rejected at a referendum closely followed the Cincinnati plan, but adopted the Cleveland method of supervision by the City Council and its appointed agent and provided penalties as well as rewards for the company. Dallas is not entirely happy with its revision downward and sliding-scale-of-return plan. The Pacific coast is trying out municipal ownership, and Eastern cities are struggling to make a fit of the zone system.

With this heterogeneity of theories and processes the composite municipal viewpoint presents a rather hazy picture, confusing rather than helpful to the other cities

still wrestling with the problem. While it is true that local conditions and expediency will affect or modify any general plan, the existence of such wide divergence in the application of underlying principles indicates very clearly that the processes of evolution are still at work and that the ideal franchise is yet to be produced. It is not putting it too strongly to say that there is not a street railway franchise in the United States that could not be improved by revision. Furthermore, such revisions if not essential are at least materially important to the communities involved that

they may realize upon their opportunities and achieve their proper destinies.

This nation has become a nation of cities. In many growing states the population outside of urban centers is actually decreasing. It follows, therefore, that the nation can only become great and powerful in proportion to the expansion and prosperity of its commercial and industrial centers. These processes are so intimately bound up with the problem of their transportation facilities that the question becomes one of paramount importance.

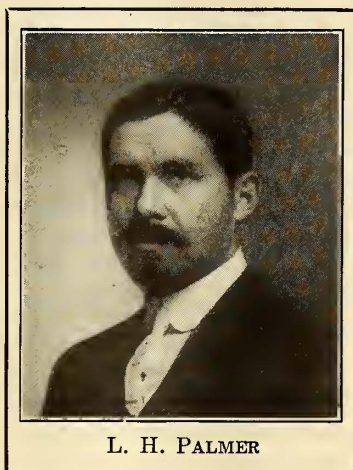
## How Buses Are Run in Baltimore

By *L. H. Palmer*

*Assistant to President United Railways & Electric Company of Baltimore*

### Facts Are Given About the Charles Street Line, an Auxiliary of the United Railways & Electric Company, Baltimore

**I**N COMMON with other cities in the country, Baltimore was infested with the jitney craze in the early part of 1915. From two machines, put in operation in February of that year, the number increased to a maximum of more than 300 licenses, with 105 machines actually operated, at the peak of the business in the beginning of that summer. The resulting loss to the United Railways & Electric Company of Baltimore was appreciable, amounting to more than \$500 per day. Of these machines, a few were motor buses seating from twelve to twenty passengers. Most of the service, however, was furnished by a modified express wagon body mounted on a Ford chassis, the driver's seat holding three, including himself, and the two longitudinal seats behind the driver's seat usually holding four persons each, but, in some cases, five or six. This made the average seated load carried by these Ford cars ten. Until overcrowding was prohibited by the Public Service Commission the actual loads carried ran up to twenty or twenty-five during the peak rush hour. In addition, several lines of motor buses were projected which had more ambitious plans and backing. It was shortly before this, also, that the question of competitive motor-



L. H. PALMER

### The Author Considers There Is a Limited Field for Buses in City Transportation at Fares Higher Than on Cars

bus operation in New York and in one or two other large cities had been taken up, so that there appeared to be serious possibilities of competition with the street railway company.

As a result of these developments, foreshadowing new and quantitatively unknown competition, the Baltimore Transit Company and the City Motor Company were organized. The latter operated the Baltimore type of Ford jitney in direct competition with the

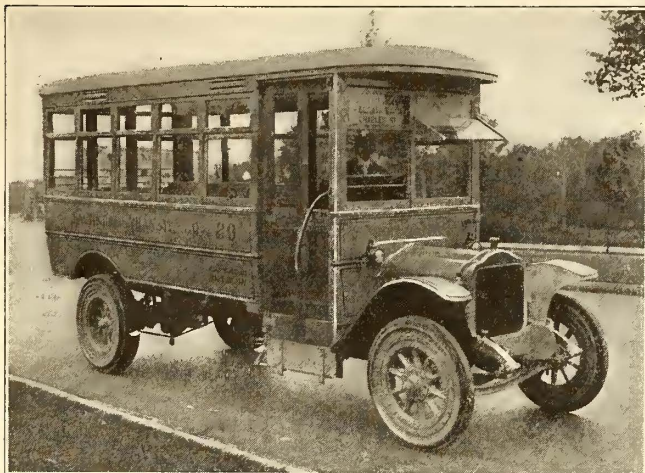
existing independent jitneys, and the former, a higher-class bus service operating on Charles Street.

The City Motor Company operating Ford jitneys started with twenty-seven of these cars and later purchased five Vim chassis to replace an equal number of Fords which had been retired. These cars were operated from July 25, 1915, until Sept. 28, 1916, and the total net cost of the experiment was upward of \$115,000, the deficit from operation being more than \$85,000.

The experience demonstrated conclusively what had been felt was the correct conclusion, viz.: that there was no money in the small-capacity Ford jitney. The constantly changing ownership of the jitneys operated in competition with us was the same as in other sections of the country, and the deduction that the unemploy-



FLEET OF BUSES USED IN AUXILIARY SERVICE IN BALTIMORE



CLOSE-UP VIEW OF BALTIMORE BUS



GARAGE ON NORTH CHARLES STREET

ment factor in the industrial situation was largely responsible for the number of these cars operated seemed to be proved. After the experiment of operating this service for fifteen months, as stated, the City Motor Company abandoned it entirely and disposed of its equipment. In the meantime the number of competitive vehicles had waned, and the independent competition diminished until, at present, there are some thirty-seven licenses and about thirty jitneys still operated. The railway company feels that the accomplishment of some rerouting plans now under consideration and the possible utilization of one-man cars on a frequent headway will mean a still further reduction in the number of these machines.

#### REAL BUSES ON CHARLES STREET LINE

About the same time that the Ford jitneys were put in service by the City Motor Company, a fleet of twenty buses was put in operation on Charles Street by the Baltimore Transit Company. Charles Street is one of the principal high-class business and exclusive residential streets of Baltimore and is a narrow thoroughfare with some rather severe grades, but paved its entire length. The worst grade is about 300 ft. long and the ruling grade is 8 per cent. The two views below, which are taken of Charles Street in the business district, give a good idea of the congested nature of this part of the route. Views of Charles Street farther north are given on page 15. A picture of the garage located about midway of and on the route is shown above. It houses the shop and operating headquarters, and provides housing facilities.

The bus service on Charles Street caters to high-class traffic. The character of the thoroughfare on both its

lower business end and the upper residential end is indicated by accompanying illustrations. The buses put in operation were of a larger type, seating twelve persons, with an allowable standing capacity of three.

On this route also there was competition in the form of a regularly operated bus service, which was begun on June 8, 1915, with four Buick chassis, on which were mounted bodies seating fifteen. This number of buses was afterward doubled, and they continued to operate in competition with the bus line of the Baltimore Transit Company until July, 1916, when application to withdraw was made to the Public Service Commission because of losses sustained. Rumor placed the total loss which was incurred by this operation in the neighborhood of \$50,000.

After operating the original buses for twenty-six months, the Baltimore Transit Company sold them and replaced them with twenty higher-priced chassis on which a Brill body seating sixteen persons was mounted, and they have now been in operation for twenty-eight months. These buses are operated by an independent company and do not exchange transfers with the street cars. The rate of fare has kept pace with that of the street car system and at present is 7 cents cash, or two metal tokens for 13 cents. The metal tokens used are the same as those used by the railway company, so they are interchangeable.

The buses are handled by one man and are equipped with a registering fare box. To facilitate making change, the chauffeur, each morning, is provided with \$13 in change and metal checks, put up in small envelopes arranged in a convenient-sized tin box. When a passenger presents money other than the exact fare, one of these envelopes is handed to him and he tears



VIEWS ON CHARLES STREET, LOOKING NORTH FROM LEXINGTON STREET, SHOWING THE TRAFFIC CONGESTION. THE BUSES RUN OVER THIS PART OF CHARLES STREET

it open and gets out the change to pay his fare. Since the metal 6½-cent tickets have been put in circulation in Baltimore, envelopes containing four tickets for 26 cents are also sold by the chauffeurs. These envelopes are put up by both the day and night dispatchers, and at present 1,500 envelopes containing metal tickets and 1,000 envelopes containing change are used daily.

The Public Service Commission has co-operated with the Baltimore Transit Company in limiting standing passengers, and at present a maximum of only six standees is permitted in the bus at one time. Although this rule is interpreted liberally where it would mean separating the members of a party of two or three persons traveling together, every effort is made to keep the number of standees down to the prescribed maximum.

The buses operate from 7 o'clock in the morning until after midnight and furnish an alternative service to that provided by street car lines. These surface cars parallel the route within the distance of a block or two and, for part of the distance, operate over the same street. Ten buses furnish the base headway and up to twenty are operated in the evening rush hour as a maximum. The route, from the center of the city up Charles Street to the residential section is 2.9 miles in length, with some of the service, during the rush hour particularly, turned short one-half mile south of the northern terminus. The motor buses, because of their direct route, are able to make somewhat better time than the street cars and are popular with the persons whom they can directly serve. They pass by the Union Station of the Pennsylvania and Western Maryland Railroads which at times is quite a traffic center. To improve the regularity and speed of operation, due to the congested condition of Charles Street



CHARLES STREET, LOOKING NORTH FROM CENTER.  
THERE IS AN 8 PER CENT GRADE HERE

which is increased by street cars, consideration is being given to the diversion of this line, for part of its distance, one block to the east. This, if done, will be an excellent illustration of the flexibility of bus service.

The great majority of the jitneys that have competed with this company, and those which still are left, operate between east Baltimore and the shopping district in the center of the city.

Originally, the jitneys were unregulated, but an ordinance was passed in July, 1915, which imposed a license fee of \$100 for four passengers and \$25 for each additional passenger. This was declared invalid by the court.

On June 9, 1915, the Public Service Commission assumed jurisdiction over jitneys and issued regulations covering their operation.

By an act of the Legislature, jitneys and motor buses are taxed as follows:

Class A—Weighing less than 3000 lb., 1/18 cent per seat-mile.

Class B—Over 3000 lb. and under 7000 lb., 1/15 cent per seat-mile.

Class C—Over 7000 lb., 1/6 cent per seat-mile.

Effective Jan. 1, 1919, the federal government imposed an additional tax, amounting per bus to \$20 per year.

Prospective jitney operators must apply to the State Automobile Commissioner for a license, giving the route to be followed, schedule to be maintained, number of buses, seating capacity and the weight, from which is computed the tax levied.

A permit to operate must be obtained from the Public Service Commission and, in addition to the things enumerated above, there are no other special regulations of the commission or the city, except that the operators have to obey the ordinary traffic regulations and are required to file their rate of fare. In recent



THE BOULEVARD SECTION OF CHARLES STREET, LOOKING NORTH FROM 29TH STREET, SHOWING RESIDENCES ON RIGHT AND WYMAN PARK AND JOHNS HOPKINS UNIVERSITY ON LEFT

months, the Public Service Commission has been checking them up to require them to operate the route specified and in other ways to obey the general regulations laid down. It is difficult to enforce regulations on the independent operators. Copies of the schedules to be operated are sent to the commission and are kept on file by that body.

On Oct. 1, 1918, the street railway company raised its fare from 5 cents to 6 cents, and about the same time the jitneys obtained permission from the Public Service Commission to charge 7 cents, and they have been charging that amount since then. According to our observations this has netted them a material increase in their revenue, because apparently they are carrying about as many people as before the increase went into effect.

#### SERVICE STATISTICS OF TRANSIT COMPANY'S BUSES

The present bus of the Baltimore Transit Company weighs 6970 lb., is mounted on a 1½ to 2-ton White chassis of the regular type—the length of chassis is 220 in., and the wheelbase 158 in. The width of the bus is 72 in., which permits cross seats holding two passengers each on one side of the aisle and seats holding one passenger each on the other side of the aisle. The height of the bus is 122 in. over all. In addition to this, an advertising rack, extending some 18 in. above the top of the roof, is attached all around the sides of the roof and carries outdoor advertising.

Fourteen men are employed in the shop organization, which also takes care of most of the maintenance of the chassis of the automobiles and motor trucks belonging to the United Railways Company. This is divided as follows: One shop foreman, one assistant foreman, nine mechanics, one helper, one washer and one car cleaner. Body repairs and painting are done at the shops of the United Railways & Electric Company, on a cost-plus basis. The transportation supervisory force consists of a superintendent, a day and night dispatcher and one stock clerk. They have a small Ford service car which is used for minor repairs and troubles.

The following general statistics show the results of operation for 1918 and for ten months of 1919, on the Charles Street route, during which time the present buses have been in operation:

	Year 1918	10 months 1919
Revenue from transportation.....	\$100,478	\$98,398
Other operating revenue.....	4,877	7,867
<b>Total operating revenue.....</b>	<b>\$105,355</b>	<b>\$106,265</b>
Maintenance of equipment, including depreciation....	\$34,066	\$43,186
Conducting transportation.....	52,298	52,427
General and miscellaneous.....	12,216	11,687
<b>Total operating expenses.....</b>	<b>\$98,580</b>	<b>\$107,300</b>
Net operating revenue.....	\$6,775	* \$1,035
Taxes and licenses.....	3,751	4,576
Operating income.....	\$3,024	* \$5,611
Non-operating income.....		1,793
Interest and discount.....	12,929	12,767
Deficit.....	\$9,905	\$16,584
Profit and loss adjustments.....	777	
<b>Total deficit.....</b>	<b>\$10,682</b>	
*Deficit		

#### OPERATING UNITS AND STATISTICS

	Year 1918	10 months 1919
Operating ratio, per cent.....	93.57	100.97
Revenue bus-miles.....	365,120	329,841
Operating revenue per bus-mile, cents.....	28.85	32.22
Operating expenses per bus-mile, cents.....	27.00	32.53
Tire repairs and renewals per mile, cents.....	.50	1.51
Miles per gallon of gasoline.....	4.58	4.62
Gasoline cost per mile, cents.....	4.88	5.09
Depreciation allowance per mile, cents.....	6.32	6.59
<b>Average fare per passenger, cents.....</b>	<b>5.15</b>	<b>6.07</b>

The operation of the Charles Street line has not been financially successful. The bus is of small capacity, limiting its earning power, but, as stated, it has filled a need for alternative or direct service.

The wages paid employees of the bus company have generally kept step with those paid by the United Railways Company to similar classes of employees and, at the present time, the bus company is able to get chauffeurs of a satisfactory character.

The bus company has been using a special high-grade motor fuel which has given approximately a 35 per cent increase in bus-miles at 25 per cent increase for cost of fuel.

Due to the limited size of the bus and the fact that it is an alternative service, no passes are given for riding free upon the bus. The only persons who are permitted to do this are instructors, inspectors and men engaged in the actual operation of the line.

When these new buses were purchased a depreciation reserve of 25 per cent per annum was set up. This was continued for a short time and then cut to 20 per cent. After an experience of ten months, however, the rate was again raised to 25 per cent, which is the present depreciation figure.

As a result of experience, it is believed that the 25 per cent depreciation, plus the residual value of the vehicle when retired, is sufficient to provide for renewals of the body and chassis. Adequate reserves also should be set up for accidents and tires, and experience shows that it is wise to purchase the higher grade chassis. The service to which these machines are subjected is necessarily very severe, and it is a case of the more expensive being the cheaper in the long run, because of the higher grades of materials and workmanship that go into the better class of trucks.

#### WHERE THE BUS IS USEFUL

From studies that have been made, it is felt that a properly designed motor bus, of reasonably large seating capacity and comfortable riding qualities, can be used to advantage to supplement city street car facilities, by furnishing a higher-class service in which standing passengers are not allowed, and for which a higher fare is charged; in other words, guaranteeing a seat for an increased fare over that charged by the street railways. Buses of such a type, or even of smaller size, are of value also as feeders for outlying territory, or could be used to maintain crosstown service through sections of the city where it would not pay to construct and operate street cars.

In two recent instances, where the demand for the construction of extensions to the present lines of the United Railways Company was insistent, motor buses were operated from the street car line to the district involved, and proved successful as a substituted service until the time when the street car lines could be extended. It is believed that there is a field for the operation and use of motor buses as feeders for or extensions of existing lines, and that, when properly handled, such vehicles should assist in developing the territory until traffic warrants construction of electric tracks.

In this climate, where the paving is reasonably good and with proper study given to spring suspension, satisfactory results from the standpoint of low cost and good riding qualities can be obtained with solid tire wheels. These are much better also from the standpoint of the passenger, because the vehicle does



not have to be delayed for blow-outs or deflated tires of any kind. In the original twenty buses purchased, 35-in. x 5-in. pneumatic tires were used. On the present buses, very good results, indeed, have been obtained from solid tires and Sewell cushion wheels, 36-in. x 4-in. front and 36-in. x 8-in. rear, equipped with giant Firestone tires. An average of 28,000 miles per tire is obtained, both front and rear, and under normal city operation it is believed these should be entirely satisfactory.

An accident reserve is desirable, and an ample reserve accrual should be instituted when the buses are first put in operation.

With a good, reliable type of vehicle and a shop organization properly co-ordinated so that the buses may be maintained efficiently, and where adequate supervision is given to the drivers of the buses, there is no reason, judging from present experience, why satis-

factory and dependable service cannot be rendered. In general, it is recommended that a motor bus line should not be started at the same rate of fare as that charged by the street railway; but, if the policy is adopted of permitting no standing passengers and of providing sufficient seats, under normal conditions, to meet the rush-hour load, then a higher fare should and must be charged if the service is going to remain on a solvent basis.

It is believed the motor bus is here to stay, that its use is going to increase largely and that the logical people to handle and develop it are those who have been trained and received their experience in street railway operation. It behooves the progressive street railway manager to study the motor bus situation and be prepared to meet it and to use it as an auxiliary to his other operations, rather than have to fight it as a competitor.

## The Investor and the Electric Railway

Capital Which Formerly Flowed Readily Into This Industry Is Now Diverted Into Other Channels on Account of the Radically Changed Conditions Under Which the Traction Business Must Now Be Conducted

By "Financier"\*

**A**N IDEAL street railway system may be described as one where the ordinary citizen can be carried swiftly, safely and reliably from a point very near his residence to his workshop or place of business at stated intervals not far apart, in a clean, comfortable car, not overcrowded. This car must be manned by a thoroughly trained motorman and a courteous conductor, and run upon rails of heavy caliber laid upon ties resting on a roadbed of broken stones or concrete with self-acting switches at all necessary points. It must be equipped with overhead or under-running construction that will convey the current generated in a central station by the most modern and reliable apparatus, and applied by car motors of power sufficient to move the heaviest car, overloaded in rush hours, at 30 or 40 m.p.h. in all kinds of weather. The service must begin at an early hour, at least partially increasing according to the needs of the population, with an extra supply of cars when the traffic is heaviest, and continue at longer intervals all through the night, Sunday and Saturday alike.

The average citizen has come to believe that this is the kind of service to which he is entitled, irrespective of distance or route and extending a long way into the suburbs, all for a 5-cent fare, including any necessary transfers, and that his children should be carried to and from school at reduced rates. He is also persuaded that the railway company should contribute to the revenue of the city an indefinite but substantial sum per annum for the privilege of serving the public in this way, and should be required to pave and maintain the street for several feet on each side of the tracks and keep the roadbed well sprinkled with water in summer and clear of snow in winter. Moreover, it should be required to carry firemen, police and postmen in uniform free.

Apart from the question of the fare, all of this is un-

questionably what every enterprising city ought to have, if its own credit is to be maintained, its healthful expansion insured. It is absolutely essential if the city is to attract the best kind of citizens, especially mechanics.

If in any particular this ideal rapid-transit system fails, certain consequences must inevitably follow. They will be made manifest in accidents, delays and loss of time to the patrons, excessive operating costs, congestion in population, tenements, slums and epidemics, and the loss of the best mechanics who will move to where these essentials to their comfort and convenience in traveling to and from their work can be found.

Anyone who visited Toledo, Ohio, during the recent cessation of street railway service could readily see that automobiles, jitneys, cabs, carts and drays can never serve the reasonable requirements of the average city and that an electric system of propulsion with its flexibility and economy is the best so far as known or demonstrated.

### TORONTO PRESENTS SOME INTERESTING SITUATIONS

Efforts have been made to attain something approaching the foregoing ideal system in a number of ways and notably through municipal ownership, as in Toronto, Canada. In that city the property was purchased from the original owners when a change from operation by horses was imminent, and it was then leased for thirty years to an operating corporation whose lease will expire in about a year. Then the property will revert to the city upon payment of the value of the physical assets to be ascertained by a reference to valuers, less the value thereof at the inception of the lease, without anything being added for good-will or established business. It is quite safe to predict that the city will find it impossible to lease its railway property again upon any such terms as it did in 1890 and it is probable that municipal operation of the city property will be at-

\*The author of this article is the treasurer of an important company closely allied with the electric railway industry. For reasons of policy he prefers not to sign the article.—Eds.

tempted in the hope that something nearer the ideal service hereinbefore described may be attained. There will undoubtedly be an advantage in securing the property to begin with at a fair valuation and in the ability of the city to borrow the money to pay therefor, together with what further funds may be necessary for extensive enlargements and replacements, on long terms and at a lower rate of interest probably than the ordinary joint stock company would have to pay. A careful computation will undoubtedly be made to ascertain what the rate of fare must be to give the service required and pay the interest upon the debt, and an attempt will be made to continue the 5-cent rate at least for the first year. If it is found insufficient, it will be an easy matter to absorb the deficit by carrying it forward as a liability to be added to the taxes for the following year, and thus take it out of the citizens generally irrespective of whether they have used or not used the services provided and to what extent.

#### NEW CAPITAL MUST BE OBTAINED

The establishment of municipal ownership, with operation by a corporation chartered for the purpose, under rigid restrictions and provisions as to the character of the service, would immediately bring up the question of what the fare would be and for how long. The city would be saddled with the burden of finding the money to acquire or establish the plant and such further funds as might be necessary to provide for extensions and replacement of worn-out equipment.

However just may have been the fixing of the 5-cent fare when the street railway was originally established or converted to electricity as the motive power, it is quite apparent to all who are now engaged in the industry and to those who have made a thoroughly impartial investigation into the cost of operation that it is no longer adequate. No one could foresee thirty, or even twenty years ago either the immensely improved quality of the service that would be demanded by the public or the tremendous increases in cost of operation through the enhanced cost of all the commodities necessary therefor, and the lessened efficiency and greater remuneration of labor. Such was the lessened cost and improvement in efficiency of the electric motive power when compared with the old horse and mule-driven vehicles that electrification practically cut the operating expenses in two. It was then very easy to attract capital for investment in the electric railway enterprises, but the situation is now entirely changed. Investors find their securities greatly impaired in value, in fact many are almost impossible of sale except at a great sacrifice and new money is unavailable.

Under these circumstances it is necessary to add to the description of the ideal street railway system a provision for a revision from time to time of the fare to be charged, so that it shall always be sufficient to pay not only the operating expenses but a fair return upon the money invested. Otherwise money will not flow in this channel of investment. It appears to be difficult to convince the average citizen or the average municipal council that this is the true and unvarnished state of affairs. Until they are educated and convinced that the situation is unquestionably as it is the loss to existing investors must go on and increase, making this class of security more and more unpopular and inevitably postponing its return to popularity.

Moreover, every day that the enterprise is losing money, the condition of the property which should be

operating in the interests of efficiency, economy and safety, is running down and the character of the service is being impaired through lack of timely expenditure on maintenance. Sooner or later this must be made up by the city in some way. When the unfortunate bondholder sees the money of the stockholder sunk in running an unprofitable enterprise he will naturally combine with his fellow bondholders to stop the leak by the appointment of a receiver. He will not take kindly to the issue of receivers' certificates as a prior lien on the property, but will have it brought to sale at the earliest day possible with all the loss and discredit to such securities as this implies. The main point to be emphasized here is that money must be attracted to the enterprise, for nothing can be done without it. To attract money the investment must be safe and remunerative.

The uniform system of accounting in almost universal use can be relied upon to demonstrate what the expenses of running any given road will be, and the fare must be fixed accordingly. Every banker, public and private, every investment banker and security salesman knows how futile it is to attempt to sell securities unless all the basic conditions of safety and the assurance of a reasonable return upon the money are present. The money already invested in electrical securities has come chiefly from the savings of the small investor, the man or the widow living next door or very near you. If the confidence of this class is destroyed it will be difficult to restore, and larger commissions and higher rates of interest will have to be paid to secure it.

Much of the foregoing is elementary and purposely so because it is intended to be addressed through the electric railway operator to the average citizen who makes use of the street cars. Make it clear to him that simply to stand fast and insist upon the ideal service, without proper remuneration for the railway, will soon make life a burden to him and a menace to his health and that of his family, and he will cheerfully consent to an appropriate increase in fare. This has actually been done in several places with the happiest results.

#### Canadian Association Elects Officers

THE Canadian Electric Railways Association held its annual convention on Dec. 3 and 4 at Hotel Windsor, Montreal, Que. Colonel J. E. Hutcheson, the retiring president, was elected honorary president, and Acton Burrows, managing director *Canadian Railway & Marine World*, was elected honorary vice-president.

The following active officers for the coming year were also elected; President, A. Gaboury, superintendent Montreal Tramways; vice-president, G. Gordon Gale, vice-president and general manager Hull Electric Company; honorary secretary-treasurer, A. Eastman, vice-president and general manager Windsor, Essex & Lake Shore Rapid Railway, Kingsvale, Ont.; members of executive committee, George Kidd, general manager British Columbia Electric Company, Vancouver, B. C.; A. W. McLimont, vice-president and general manager, Winnipeg Electric Railway, Winnipeg, Manitoba; M. W. Kirkwood, general manager Grand River Railway, Galt, Ont.; C. L. Wilson, assistant manager Toronto & York Radial Railway, Toronto, Ont.; F. D. Burpee, superintendent Ottawa Electric Railway, Ottawa, Que.; R. M. Reade, superintendent Quebec Light, Heat & Power Company; C. C. Curtis, manager, Cape Breton Electric Railway, Sydney, N. S.; and Colonel G. C. Royce, general manager, Toronto Suburban Railway.

# A Forward Look in Public Relations

By *John W. Colton*

*Executive Assistant The Connecticut Company, New Haven, Conn.*

**The Author, Who Was Until Recently a Newspaper Man, Gives Some Suggestive Rules for Practicing Publicity**

LET every man in the electric railway industry ask himself this question: "Why have we had such a heck of a time getting by in these times when every other industry has filled its cash box and yelled for the janitor to sweep up the yellow-backs that have overflowed and cluttered up the floor?"

Nine in every ten will answer, "We can't get a square deal from our masters and patrons, the public. We want 'a living wage'—income enough to enable us to pay our bills and return a fair dividend to the stockholders, but darned if we can get it."

And the nine who answer substantially as above go about with long faces, wrinkled brows and drooping nether lip, wishing "the good old days" were here again, and acting like jinxes out of a job.

But the tenth man will look at the situation a little differently.

"Sure, we've got all kinds of troubles," he will say, "but what of that? We're on our way out. We are showing the public that it needs us just as much as we need it. We are showing our employees that we can't pay them good wages if we do not take in enough money to meet our bills, and that they must help us. We are putting the situation up to the people—and the people as a whole are fair and will give us a square deal."

The tenth man gets busy, and when, in a short time, his troubles diminish, the morale of his organization improves and his company's financial condition becomes encouraging, the nine wonder "how he did it."

There is nothing mysterious about this. Methods of bringing improvement about must differ in different localities, but the principles always are the same.

## THE "PEPTIMIST" IS SURELY NEEDED THESE DAYS

Some one recently said that men may be classified as: the pessimist, who says, "It can't be done"; the optimist, who says, "It can be done," and the peptimist, who goes out and does it.

The electric railway industry seems to be in great need of men who combine optimism and peptimism. There has been too much croaking, too much gloom, and not nearly enough stimulating optimism and action.

Perhaps the Almighty knows why so many electric railway executives fear to adopt out-in-the-open, straightforward methods in their dealings with the public, and particularly with the press, but the ordinary citizen does not. There has been an unreasoning fear of publicity, a horror of innovations and a distrust of modern methods that have been successful in many other lines of business. "Conservatism," which too



JOHN W. COLTON

**He Summarizes the Plans of the Newly-Formed Committee of Publicity Men, Formed at Atlantic City**

often has been a synonym for unprogressiveness, has brought disaster to many a business that might have prospered if only those at the helm had steered a course that took advantage of favoring winds and currents instead of obstinately bucking the storms and hoping the craft might reach smoother waters before it was battered to pieces.

All this is preliminary to a short discourse on the relations existing between the public and the electric

railways, what has been done to bring about improvement in these relations and what may easily be done in the future. Whatever is said herein is not in the spirit of criticism, but with the hope that electric railways which have not yet studied the psychology of their situation may get busy and do something for their own good and incidentally for the good of the industry.

All will agree that the hearings held by the Federal Electric Railways Commission in Washington were of tremendous value in bringing before the people, in an official way, the present-day problems of the industry. One hundred and fourteen witnesses testified to the fact that the industry is essential, and various remedies for its ailments were suggested. These hearings were fine—of course. But—suppose that the public had known nothing about them; suppose that the testimony had not been printed in the newspapers; suppose that there had been no editorial comment—of what value would they have been? If all the important testimony was merely taken down by the stenographer, read by the commissioners and us who are directly interested, well, the hearings in that case might as well have been held in an igloo in northern Greenland, for all the effect they could have had on the public mind. Instead, however, the Committee of One Hundred saw to it that the public was given the facts brought out in the hearings, and it is doubtful if any movement for the improvement of public relations was executed more effectively than this one.

## THE TOLEDO AND LAWRENCE INCIDENTS HELPED THE INDUSTRY

Suppose that, when the electric cars were withdrawn from Toledo, no one knew anything about it except the people of that city, how much effect on the public mind as a whole would there have been? But instead the press of the entire country carried items every day describing the course of the dispute, and the editorial columns of the newspapers and magazines reflected very distinctly the great public interest that was taken in the foolishness of a city's action in barring an essential utility and then complaining because its orders were taken seriously.

Suppose that, when the street railway stopped in Lawrence because the jitneys were unregulated and were making it impossible for the railway to operate without loss, only the people of Lawrence knew about it—how widespread and salutary would the effect have been?

Say what one will, most people believe what they read, and therefore it is of the utmost importance that those who write what the people read shall be supplied with the facts.

The industry cannot excuse itself from blame for unjust, unfavorable and antagonistic newspaper criticism if it declines to give information when it is asked. The individual or the corporation whose stereotyped answer to a newspaper, when asked for information, is, "We have nothing to say," is not only leaving an opening for attack, but is cordially hated by the reporters who ask the question; and their dislike is reflected again in the editorial attitude of the newspaper.

Nothing arouses editorial ire more than aristocratic aloofness, for the newspaperman says to himself, "These railways run in the public streets, they are supported by the people, their managers are public servants—why should they seclude themselves and refuse to answer reasonable questions?" Of course he can find many to help him when he starts an attack. Furthermore, he can lay out a campaign against you that cannot be defeated except on the basis of fair, frank, direct statement by the corporation. It follows, automatically, that if the company's policy is fair, frank, direct statement, prejudice is removed in advance, suspicion is disarmed and good-will is created.

#### FACILITIES FOR MEETING THE REPORTER'S NEEDS MUST BE PROVIDED

Above all things, frankness, square dealing, accessibility, courage and common sense must dominate the policy of an electric railway executive in dealing with the press. A policy of seclusion, contempt for public opinion, side-stepping and berating the public can yield nothing but disaster and demoralization.

But perhaps the executive does not have time or opportunity to get in touch with the press. Perhaps a reporter has been warming his heels outside his office door, waiting for a chance to ask questions which no other officer can answer, and knowing what his city editor is thinking, finally gives up and returns to his office to write some surmise and "dope" when he couldn't get facts. What then? The answer is simple—let the railway engage a man whose duties shall be to provide the newspapers with information and start to build up public good-will.

"It can't be done?"

Of course it can be done. It can't be done in a week, or a month, or a year, perhaps, but it certainly can be done, and is being done, but as a requisite of success the spirit of public service must permeate the organization.

Of all electric railways in the country, serving billions of car riders per annum, only a score or so make any definite attempt to create a spirit of good-will on the part of the public.

Although they are merchandising transportation, the electric railways as a whole ignore the economic and psychologic laws that govern sales. They expect success, yet leave undone the very things which will bring it. If the average business man were as blind to

modern methods as some electric railway executives and boards of directors are, the lists of failures in Dun's and Bradstreet's would be appalling.

#### "PRESS AGENTS" NEED NOT APPLY

When a railway engages a man to handle engineering problems it makes sure it has an engineer who understands the work he is hired to do. The railway should follow the same course in engaging a man to do its public relations work. The man for the place should be interested in the work not merely for the salary, but because of its vital importance to such a tremendous number of people, and preference should be given a man who has shown an inclination to study the situation and ascertain facts, whether these be to the credit of the industry or not. Too often a railway may consider a publicity man a sort of cure-all who will put it in good standing with the public regardless of the quality of service rendered. Such an idea is extremely fallacious. The publicity man should be the medium through which the railway speaks, and the sentiments he expresses can be no nobler than the purpose of the corporation engaging him, for the days of "bunk" are gone forever, and words must be backed up by deeds—by improvements in service, by meeting public criticism when it is of sufficient importance and, in general, by being absolutely on the level.

Least of all does the industry need "press agents." The newspapers want news, not "bunk," and any city editor can instantly discern between news and that which is not news. A "press agent" of the old type may do as much harm as a man of sound principles may do good. And because newspapers are suspicious of propagandists, nothing but news ever should be offered them. The word "publicity" should be avoided, whenever possible, in dealings with the press. "Bureau of information" is more descriptive of the work such a man should do than "publicity department" is. However, opinions may differ as to the title for the job or its incumbent. The work certainly should be done, and done by a properly qualified person.

#### THE NEW PUBLICITY MEN'S COMMITTEE DESERVES SUPPORT

The men which far-seeing electric railways already have employed to help create better public relations are making an earnest effort to convince all electric railways that they should profit by the experiences of companies that have found their work very successful.

There has been recently created a committee of publicity men, members of the American Electric Railway Association, which is planning a very definite program to interest all companies in taking action to improve relations between the public and the railways. Leake Carraway, of the Virginia Railway & Power Company, is chairman of the committee, and associated with him on it are Luke Grant, Chicago Elevated Railways; W. Dwight Burroughs, United Railways & Electric Company, Baltimore; A. D. B. Van Zandt, Detroit United Railway; W. P. Strandborg, Portland (Ore.) Railway, Light & Power Company; E. R. Kelsey, Toledo Railway & Light Company, and the writer.

The publicity men of the different companies realize that the problem before them is to interest all companies in sensible publicity. Activity toward the co-operation of publicity efforts in the past have not been entirely successful, but it seems now that the great good which has come of the publicity efforts of the Commit-

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tee of One Hundred should have convinced every electric railway man in the country of the possibilities of properly conducted information services, so that the prospects are brighter than they have been in the past.

The American Electric Railway Association has begun the publication of a series of pamphlets on the publicity accomplishments of some of the companies that have found publicity effective in creating goodwill and improving morale. These pamphlets will be mailed to all executives who express the wish to receive them, and they should be well worth reading.

Samples of the leaflets, advertisements, announcements, company publications, in fact all publicity matter put out by all companies, can be obtained from the association. The Committee of Publicity Men has arranged for an exchange of the bulletins and publications the various companies issue from time to time, and surely among these there will be something that every company will find valuable, and which it is hoped every company will take advantage of.

Without doubt the publicity given the hearings of the Federal Electric Railways Commission was most helpful to the industry, and the Committee of One Hundred is to be congratulated on the widespread use which was made in the press of the matter the committee sent out. Every newspaper which has affiliations with the great press associations printed more or less of the testimony heard by the commission, and nothing could so impress upon the public mind the essential nature of the industry and its serious predicament as the testimony of men from so many walks of life.

Supporting the newspaper publicity was the publication of the daily bulletin during the progress of the hearings, giving the testimony in more or less detail. Many companies distributed hundreds of these daily bulletins through the mails to lists of citizens, and that these bulletins were very effective there can be no question. The Committee of One Hundred also published a booklet containing excerpts from testimony of the different witnesses and copies were in great demand.

At the same time thousands of leaflets for public distribution and posters to be placed in cars were distributed to electric railways, each containing terse statements of fact, and many railways used this service to their own marked advantage. Every man in the industry has been benefited by the work of the Committee of One Hundred, and there has been a very noticeable improvement in public relations in territory where this material was used.

This work makes a fine start for the industry, but now that a start has been made it is of the utmost importance that the work should be continued. It is now up to the railways which have been helped to do something to help themselves. If the work is to be successful there must be continual reiteration of the

facts which the railways must impress upon the public. To tell the story once is hardly sufficient—it must be told over and over until practically everybody understands the facts. To carry on such work need not be expensive. Small companies can do it as effectively as large ones. If there is any company in the country that does not know how to plan a program of publicity, the American Electric Railway Association will be very glad to tell it what has been done by other companies and obtain the assistance of other companies for those who wish to make a start in publicity.

It must be borne in mind that the publicity problem of one company may be very different from that of another. What has been satisfactory in Connecticut might not do at all in another state, and what might do in the

Middle West or in the South might not be effective in New England. But human nature is the same in all parts of the country and the principles of publicity can be applied generally, although the methods may have to vary and the appeal be put forth in varying forms.

All advertising has value, but some forms are more valuable than others. Where there is a distinctly antagonistic press it may be necessary to use billboards, to carry posters in cars, to use every available avenue of approach to the public mind. Many companies are now publishing weekly or monthly bulletins for free distribution among the car riders, and undoubtedly they have

proved successful or the companies would not continue to use them. On the other hand, there are many companies which as yet have not considered it necessary to distribute bulletins to the public. Other companies get out monthly publications for circulation among their employees, and so long as these are kept interesting they will be effective. A great many companies do not find them necessary, but they may be very necessary for other companies.

The proper education of a company's employees is very important. Too many companies have neglected to inform their employees of the difficulties that beset them. The platform men are primarily interested in how much pay they are going to get. Among them there may be some who are indifferent, who may be careless in their handling of company property and who may be unnecessarily curt or gruff in their conversation with passengers. The platform men come in direct contact with the public, and public opinion of the service may be formed by the impressions the employees make upon the car riders' minds.

Because these are facts it is very important that every company should inform its employees that unless the company obtains sufficient income it cannot continue to pay them good wages; that the electric railway has nothing to sell except the service it offers the public; that the quality of this service determines the amount of income the company shall receive; that the company cannot be successful without the good-will of

### Six Pertinent Points on Publicity

Point 1—Tell your own employees your story, and win their co-operation by getting them to give the best service of which they are capable.

Point 2—Be absolutely frank with the public.

Point 3—Answer every question asked by the public.

Point 4—Never side-step a problem.

Point 5—Use every medium of publicity that local conditions may warrant.

Point 6—Keep everlastingly at it.

J. W. COLTON.

the public; that the communities cannot expect good service and continual improvement unless the people co-operate; that the electric railway problem to-day is a problem for every community to take an interest in, and that the men on the cars have it in their power to make their companies more prosperous and thereby help to insure continued employment to themselves. Some companies have found campaigns along these lines very successful. Some conduct them through the monthly and weekly publications which have been mentioned, and others send bulletins to the homes of the employees, where not only the employees but their families also have an opportunity to see the employer's side of the problem.

#### ONE CASE WHERE NEWSPAPER ADVERTISING PAID

Paid newspaper advertising should be used whenever necessary. Opinions may differ as to whether such advertising should be continuous or sporadic. When radical changes in service are made, such as the introduction of safety cars, the introduction of a new system of fare collection, material changes in schedules, etc., newspaper advertising space most certainly should be used, because the majority of people depend on the newspapers for information on current affairs. All newspapers consider anything that has to do with the electric railways as legitimate news, and are usually glad to print any news statements given out by them, but these news statements should be backed up with paid advertising.

The Connecticut Company found paid advertising valuable in connection with the establishment of the zone system on its property. It used large space to instruct the public about the revolutionary changes in the car riders' customs which the new system made necessary. This advertising, together with news articles and the posters which it used in the cars and in factories, contributed greatly toward making it possible for the company to announce that the zone system was an "unqualified success" within ten days after it had been established.

The character of the population served also has an influence on the kind of publicity to be used. Sometimes there is a large foreign element using the cars whose knowledge of English is so scanty that ordinary publicity is not effective. In such instances it is necessary to put before the car riders, in their own language, the facts which the company wishes to set forth. In connection with its zone system the Connecticut Company was obliged to put its announcements in Swedish, Italian, Polish, Hungarian and Russian as well as in English, and to use the foreign-language press.

There is nothing mysterious about publicity and advertising in connection with electric railways. They are merely the application of a well-known business principle, that if a concern is to be successful it must tell the people what it has to sell and exploit the advantages of its goods. If competition becomes keen it must be met. If competition is unfair the electric railway must tell the public that burdensome conditions cannot continue indefinitely and that in time the public will face serious curtailment of service unless the unfair competition is removed. The crisis brought about in Massachusetts through unfair jitney competition is an illustration of the point. There the people were told by the railway that there was not room in the streets for the electric railway and the jitney, and when the city authorities of Lawrence realized

that the company meant what it said when it declared that service would stop if the City Council did not take action to curb the jitneys, prompt action was taken to preserve electric railway service to the people. There the company let the public know just what its predicament was, and its appeal to the common sense of the citizens was effective.

Where newspaper advertising may not be considered advantageous the electric railway usually has the opportunity of presenting its case to the people through meetings of Chambers of Commerce, Rotary Clubs, community forums and similar organizations, and whenever this is done the newspapers should be provided with abstracts or manuscript containing the facts presented by the company.

There is no branch of advertising that is not of some value to electric railway. How these branches shall be used depends entirely on the problems confronted by each railway. But if the companies are to win the public's good-will they must use some of these forms, and if they are to be effective they must be used intelligently. To use them intelligently makes necessary the employment of some one who knows how to use them. It is very easy to waste much money in publicity, and it is just as easy to make money through the creation of a favorable public spirit by the use of publicity. It all depends on the policy of the company and the manner in which the policy is carried out. In this phase of publicity as well as the others certain rules are practically inviolable if success is to be secured. These rules, set down in tabular form, appear on page 21.

#### SOME LESSONS FROM THE SUCCESSFUL MERCHANT

The electric railway industry might well bear in mind the salesmanship idea in planning its campaigns to win good-will. First of all, what have we to sell? In what kind of packages do we offer it to the public? How convenient are our schedules? How much effort do we make to meet the wishes of our patrons? What consideration do we give to their complaints? What competition must we meet? How have we been affected by the increased costs of labor, equipment and supplies? What must we have to give good service in the future? What are we doing, anyway?

The merchant, when he builds an addition to his store, advertises the fact. When we add new cars, increase our power capacity or otherwise improve our facilities, we should tell the public about it. When we put on better schedules, or adopt economies to improve service, we should by all means tell about the changes. The public is not unappreciative, if we meet it half way.

When demagogues tear the air, is it good policy to keep still? Does any individual or any corporation retain respect by submitting indefinitely to unjust attack? Many think not. When a defendant in a court action refuses to take the stand in his own behalf, usually there is a feeling that his cause is not a good one. Can the electric railway industry afford to encourage any such feeling toward itself?

"Learn the Truth" is a good slogan, and the electric railways owe it to themselves to see that the truth is spread broadcast.

One of the most unjust and most serious forms of attack is the comparison of conditions in one city to those in another, where franchise and other conditions are entirely different. Cleveland is pointed to by news-

papers in all parts of the country as the city where low fares are producing profits, but it is seldom that railways explain the features of the Tayler grant that make low fares possible. Philadelphia lately has been pointed to by many newspapers that have not been told about the 3-cent exchanges that prevail in the Quaker City. These and similar matters are proper for discussion at meetings of Boards of Trade and similar organizations, and the railways should see to it that the truth about them is reiterated. "You can't blame

a fellow for what he doesn't know if he has had no opportunity to get an education."

But, above all things, let's stop weeping. Everybody hates a cry-baby; sooner or later he wants to wring its neck to stop its noise. Fight, if we must, for all we are worth, but let's grin while we fight. We should and must be happy warriors, fighting only for our just due, and determined to win by fair, hard, vigorous, sensible, invincible campaigns of truth. We can find no weapon more effective than printers' ink.

## Franchise Developments in 1919

**Considerable Progress Was Made During the Past Year in Service-at-Cost Franchises, Although Two Plans of This Kind, at Denver and Minneapolis, Were Rejected at the Polls**

**T**HE serious financial crisis faced by electric railways during the past year brought the service-at-cost type of franchise to the fore as one means of escaping impending disaster. While it is true the results of operation under grants of this character were not entirely satisfactory, the fundamental justice of providing a basis for meeting unusual expenses appealed to students of the railway problems, and the utility management and public authorities in many cities gave thoughtful consideration to the merits of those ordinances which had been subjected to actual test.

Reporting at the mid-year meeting of the American Electric Railway Association, the committee on readjustment declared there were only two possible ways out of the present financial embarrassments for electric railways—one of these being some sort of service-at-cost plan and the other the adoption of municipal or government ownership. In line with the recommendations of that committee, papers were read at the Atlantic City convention of the Association showing the results of operation under service-at-cost in three cities.

Other developments in franchises during the year were the following:

New form of service-at-cost plan became effective in Youngstown, Ohio, Jan. 16, 1919.

Amendment to Cleveland Railway franchise passed April 7, 1919, extending the grant for an additional period of ten years.

Adoption of other settlements of this character under consideration in Detroit, Toledo and St. Paul, while two other types of grant were rejected by the voters of Denver and of Minneapolis.

The franchise situation is still unsettled in Chicago, Philadelphia and St. Louis. The Dallas, Texas, company has not had an entirely happy experience with its service-at-cost arrangement, a recent report having shown that the utility corporation failed to earn the 7 per cent return allowed under the ordinance. The Des Moines and Kansas City properties also have been beset with difficulties, although operating under modern types of ordinances. In Chicago, no progress has been made since a service-at-cost plan was rejected by the voters in 1918. The mayor of that city has offered a substitute plan, which he calls "people's ownership," based on a 5-cent fare, the details of which are now being worked out for submission to the city council, the state

legislature and the public. Since the failure of the Pennsylvania commission to approve the Philadelphia settlement plan no definite progress has been reported from that city. Another form of service-at-cost was put into effect during the year in Massachusetts, where the Bay State company, having been reorganized under the name of the Eastern Massachusetts Street Railway company, was placed under control of public trustees.

In the annual Statistical Number of the ELECTRIC RAILWAY JOURNAL for 1919 a scholarly analysis of developments under service-at-cost franchises up to that time was presented by L. R. Nash of Stone & Webster. A statement of advantages under service-at-cost was also set forth in a paper by H. C. Clark, abstracted in the issue of June 21, page 1219. The three papers presented at the Atlantic City Convention, telling of results under such franchises in Cincinnati, Youngstown and Montreal, were abstracted in the Report Number of Oct. 11, page 18.

### TERMS OF THE YOUNGSTOWN FRANCHISE

To bring the situation up to date, it should be of interest to consider developments in Youngstown, Ohio, where the company has been operating since last January under a franchise modeled largely after the so-called Tayler grant. The valuation of the property, for purposes of the ordinance, was fixed at \$4,000,000, on which the company was allowed a 7 per cent return, to be paid from the stabilizing fund. New capital expenditures are permitted a return based on the actual cost of obtaining the money. Had such provision been made in the Tayler plan there would have been no need for requesting a higher guaranteed rate in Cleveland, where the matter has been the subject of arbitration during recent months.

Under the Youngstown plan a street railroad commissioner has supervision over service, accounting, additions and betterments. A stabilizing fund was created by setting aside \$100,000 from the agreed capital, credited monthly with interest earnings and the net receipts of the company. The ordinance allows for operating costs 22 cents per car mile, with 60 per cent of this amount for trailer cars; and for maintenance, repair and renewal costs 8 cents per car mile, with a 40 per cent reduction for trailers. Either allowance may be increased or decreased by agreement or arbitration.

A sliding scale of fares was provided for, nine rates

in all, with more possible, and a 1 cent charge for transfers under each rate. The initial rate was 5 cents cash and 1 cent for a transfer. The barometer established through the stabilizing fund soon showed the necessity for higher revenues, and by the several stages the rate has now reached 7 cents plus a 1 cent transfer charge. As pointed out by the president of the company recently, another rate provision of importance is that the city and the company may at any time agree on any fare, regardless of the prescribed order in the schedule, thus permitting of the prompt meeting of an extraordinary situation.

Under another section of this ordinance either the company or the city may propose extensions or betterments, but the city loses this right when the unexpired term of the franchise is less than fifteen years. In that event also the company has the right to set up an amortization fund during the balance of the life of the grant for the entire value of the property. The importance of this as a safeguard may be appreciated by comparison with other types of franchises where, upon the expiration of the grant, the company's investment is left unprotected.

The city's right to purchase may be exercised at any time during the life of the franchise upon six months' written notice, or at the termination of the grant. In the former event a 10 per cent premium is to be paid.

#### CHANGES IN THE CLEVELAND FRANCHISE

Renewal of the Cleveland franchise last April was necessitated by the terms of the contract, which provided that whenever the grant or any extension thereof had less than fifteen years to run the company would have the right to collect the maximum rate of fare mentioned in Section 22 and to operate under its own policies for the remainder of the term. After the long negotiation, therefore, the revision was completed and the term has been extended to May 1, 1944. Among the important amendments were the following: Car mile allowance for interest fund was increased from 11½ to 19½ cents. Car mile allowance for maintenance fund was increased 1 cent per car mile. New schedule for sliding rates of fare was incorporated, raising the maximum to 6 cents cash, 9 tickets for 50 cents, 1 cent for transfer and no rebate. The rate in force at the time this article is being written is 5 cents cash, 11 tickets for 50 cents, 1 cent for transfer and no rebate.

#### TERMS OF THE REJECTED MINNEAPOLIS FRANCHISE

For completeness a reference will be made here to the Minneapolis service-at-cost ordinance, although it was rejected by the voters at a referendum taken on Dec. 9. The franchise permitted the Minneapolis Street Railway company to operate under a service-at-cost plan for a period of twenty-five years after Jan. 1, 1920. The agreed valuation of the property was fixed at \$24,000,000, upon which the company was to be allowed to earn a maximum of 7 per cent, if it could, after paying all expenses and public charges. New money was to receive a rate of interest to be fixed by the city council, but inasmuch as the company was to have increased responsibilities and the greatly increased hazard of the original investment, the plan provided that the company would receive 1 per cent upon the total of the new securities as compensation. Neither the 1 per cent nor the 7 per cent was guaranteed, and therein lay, it was thought, an incentive to efficiency and economy of management.

Under the franchise the city council would have retained control over the business, and the office of street railway supervisor was provided for. The company was not relieved of any of the usual public charges, such as paving, etc. The city was authorized to take over the property upon giving one year's notice or it might have designated a purchaser.

An unusual feature of the ordinance was that providing for collective bargaining, the best possible working conditions and a limitation upon the amount of time which employees could be required to work, and also providing for the submission of disputed questions to arbitration. Automatic adjustment of fares was assured. The initial rate for the first three months was to have been 5 cents. Any deficit was to have been drawn from the stabilizing fund of \$250,000 and successive increases or decreases at the rate of 1 cent were to have been determined every three months. If fares went above 5 cents, tickets or tokens were to have been sold at a discount of 10 per cent.

#### THE SITUATION AT DENVER

In Denver the car riders have had a series of up and down experiences with changing rates of fare. Hope of stabilizing conditions through a new fare settlement plan was frustrated by the vote of the people, who on Oct. 22 defeated a service-at-cost grant and a so-called elastic 6-cent fare measure. The service-at-cost plan would have created a board of tramway control, two members appointed by the city and one by the company, with wide powers over expenditures and service. This plan would have eliminated some expenditures which do not benefit the car riders. The proposed ordinance also provided for a "fare control fund" of \$300,000; a limit of returns on the fair value of the property ranging from 5½ to 7 per cent; depreciation and renewal funds. The initial rate of fare would have been 6 cents and by putting into effect a lower rate the company would have been allowed an additional earning of from ½ to 1 per cent.

The "elastic 6-cent fare plan" also offered an initial rate of 6 cents with free transfers. This rate was conditioned on the existing 48-cent maximum wage scale for trainmen, and fares would go up or down as the wage schedule varied. A board of control would have had charge of this arrangement, and the wage scale was to have been no greater than the average for St. Louis, Omaha, Kansas City, Minneapolis and St. Paul.

#### THE MAYOR'S PLAN FOR CHICAGO

A "cure for all traction difficulties" has been offered to the people of Chicago by Mayor Thompson, who insists that he can provide service at a rate of fare not exceeding 5 cents. He has been provided with a fund of \$250,000 by the city council to make a study of conditions and offer a completed plan within nine months. The mayor's plan would create with the help of State legislation, a district to be known as "The Transportation District of Chicago," whose bonds could be issued to take over the existing traction lines. Service would be regulated by five trustees who, according to the plan, will be elected by the people.

Franchise developments in Detroit, Toledo and St. Paul are so recent as to need no further discussion here. Politics seems to have been the stumbling block in the path of settlement in each of these cities, but negotiations are proceeding in spite of all opposition.



# Are Street Railways a Real Public Utility?\*

By General Guy E. Tripp

Chairman Board of Directors, Westinghouse Electric & Manufacturing Company

**The Efforts of the Committee of One Hundred to Present the Railways' Case at Washington Are Described and Several Local Situations Are Mentioned**

**T**HE subject upon which you have asked me to address you is, without doubt, a depressing one to a gathering of men with financial responsibilities, because such men can have no pleasure in contemplating the depreciation of property. That the values of electric railway securities have depreciated, and depreciated to a greater extent than any other public utility, is a matter of common knowledge. American life insurance companies have invested millions of their policyholders' money in these enterprises, and they undoubtedly find added to their natural regret for money losses a sense of their responsibilities as trustees.

A trustee's first thought, upon being confronted with such a situation, has to do with the degree of judgment exercised when the investment was made, both as to the soundness of it and the amount of it relative to his total capital.

In this case the amount is considerable. Twenty-six American life insurance companies with assets of \$5,262,818,894, equal to over 78 per cent of the assets of all American life insurance companies, have invested in public service securities \$237,346,223, of which \$116,592,670 represents street and interurban railroad investments. If it is assumed that the remaining 22 per cent of the assets of the companies carries the same proportion of investment, then the amount of policyholders' money invested in street and interurban railroad securities is \$160,000,000.

With respect to the judgment used in making this investment the facts are all favorable. From the beginning to the present time street railroads have had all the fundamentals of a sound investment. They furnish now and always have furnished an indispensable service to our urban population.

The very existence of modern community life depends upon this form of transportation and, after water and sewerage, it is the most important public utility. Without means of transportation there could be no great department stores, no great institutions of any character which require a daily concentration of a large number of employees and customers.

In short, if our urban communities have made for the wealth, comfort and culture of this country, then an investment in street railway transportation is in one of the cornerstones of the structure, and if the investment is in danger, it is not because of poor financial judgment.



GEN. GUY E. TRIPP

**The Interest of Life Insurance Companies Is Shown by the Fact That Twenty-Six Have Invested More Than \$116,592,000 in Electric Railway Properties**

When I say that the electric railways are indispensable, I have intimated that, such being the case, the investment in them should be regarded as one entitled to all the protection which the law gives to all property; but the question is nevertheless still open for the discussion of its relations to the public in all its phases, which furnishes a field for the exploitation of fanciful social theories and tainted politics, all of

which cannot fail to react upon values.

But this is not all nor perhaps the most important feature of the processes of readjustment which are now going on in the affairs of these transportation utilities. The capacity of the people of the United States to deal with the complex problems presented by our modern economic structure is being put to the test, and upon the way in which this particular question of electric railways is decided will depend, in a large measure, the treatment that will be accorded to all industry and to all business.

I am the chairman of a committee of one hundred representatives of electric railways, bankers, manufacturers and others interested in electric railways, appointed by the American Electric Railway Association to act as the spokesman of the industry in the investigation conducted by the Federal Electric Railways Commission.

This commission was appointed by the President to study the electric railway situation and to present to him its recommendations for the cure of a situation which he, on the advice of his Secretaries of Commerce and Labor, considers to be of national concern.

## THE SITUATION ANALYZED

To qualify itself to act for the industry, it became necessary for this committee to determine for itself the basic facts of the situation and to determine at the same time the principles which should govern in the correction of a condition that threatened disaster all round. We felt that we must first establish the essentiality of the industry—whether or not it had survived its usefulness, whether it was to be superseded by some other means of transportation, more efficient, cheaper and convenient. We decided on this point that the industry is essential—that there is not now nor can there be expected in the calculable future any form of local transportation which can furnish a complete system of transportation to urban communities that is not predicated upon the use of tracks in the public streets, on elevated structures or in subways. This belief has subsequently been borne out by the 114 different witnesses of all shades of opinion who testified

\*Abstract of an address delivered at the thirteenth annual meeting of the Association of Life Insurance Presidents, New York, Dec. 5, 1919.

before the Federal Commission, not one of whom (although they differed widely on other points) suggested that transportation on rails could be supplanted profitably.

It was our next business to determine—because we were in the case as representatives of private enterprise—whether or not private enterprise should be withdrawn from the business, and, in the interest of both efficiency and economy, the function of providing transportation be performed directly by the community. Our determination upon this point was, that however good or however bad the theory of public ownership might be, a consideration of it in connection with the present situation must be entirely academic, because in the vast majority of cases it is impossible, both because of legal and financial obstacles in the way of its application, and because the public mind has not yet been made up upon its merits and it is unlikely to be made up within any reasonable time.

It was, then, evident to our committee that to save it from collapse in which the public interest would also suffer, the use of private capital and private enterprise in this public utility industry must be continued. Our further duty then, was to determine upon what terms private capital and private enterprise could be attracted at the least cost to the public. I say "attracted" advisedly, because a continuous flow of new capital into public utilities is essential, if they are to perform their functions properly, provide service and care for the expansion, progress and growth of communities.

At the present time the credit of the electric railways is nonexistent. The reason is apparent. More than a sixth of the total electric railway mileage of the country is in the hands of receivers. A very large additional number of companies are on the verge of bankruptcy, some of them kept from this fate only by the financial strength of the much criticised "holding" companies. The prosperous electric railways of the United States, if there be such, are so few as to be negligible. Alone of the important industries of the nation, the electric railway industry nearly suffered annihilation through conditions caused by the war, and back of all these facts is the further and by all means the most important fact that the industry, by reason of restrictions in statute law, in ordinances and in franchises, is unable to take measures to save itself from the fate which events show to be imminent.

The restoration of credit is fundamental to the continuance of private capital and private enterprise in the public service, and the main task that confronts the country, in so far as electric railways are concerned, is the restoration and the future preservation of that credit.

#### DEVELOPMENT CAME FROM INDIVIDUAL INITIATIVE

Certainly it cannot be done upon any such basis of relationship between the public and utilities as has existed in the past. Under present conditions such a basis is no longer desirable or possible. That it ever existed is the fault of no one, and, in so far as it permitted that wide range of individual initiative, or individual enterprise and of individual genius, it is not to be deplored, since it gave to this country a system of local transportation, which in extent, in character, in the convenience afforded, and in the opportunity for community expansion and community progress presented, is equalled nowhere in the world. And in this connection it should not be forgotten that it is not to the exercise

of governmental foresight or governmental enterprise that we owe the present highly developed transportation system of this country. Much of the development has come in spite of public opposition; very little of it has come with governmental co-operation. It has sprung into existence because the individual has been given wide latitude in the exercise of those qualities in which the business men of America excel, and because the hope of substantial reward was possible under a system which provided that if the individual took the risk, he should also be permitted the profit.

That original conception has not, however, prevailed for a number of years. Through the operation of the theory of regulation as applied to public utilities, it has so changed that while the individual still took the risk, he was denied his profit, and it is this thing that has destroyed the credit of the railways.

#### HOW NEW CAPITAL CAN BE ATTRACTED

Now the question of whether new capital can be attracted to local transportation utilities is not to be solved by enactments of legislatures or the ordinances of city councils, or the pronouncements of commissions or committees. Its solution is in the hands of the man who has the capital to invest, and the risk that investors will take is in direct ratio to the profits which they hope to reap.

Consequently, the business of the public, seeking new capital at low cost, is to eliminate from the enterprise as many elements of risk as is possible. Now, we believe that the successful conduct of a public utility requires not only capital in continuing supply, but that it also requires the vigilance, foresight and initiative that accompany the investment of capital in strictly private enterprise; in other words, that the mere loaning of money to the communities for public utility purposes is not sufficient; that with the money must go the same business and executive and administrative attributes that bring success to private business. These are rare qualities, rarer than the average man realizes, and they are entitled to reward. The problem, therefore, is to attract into the public service not only private capital, but private enterprise, at the least cost and with the best results to the public.

We believe that there are certain well-defined principles that must underlie any detailed plan for accomplishing this purpose. The first of these is that integrity of investment must be protected; that the investor has the right to demand and will expect that the integrity of his investment shall be protected, by which we mean that at the expiration of the period of its use by the public, it shall be given back to him undiminished. This means that the legal authority under which the public utility shall operate shall so provide, and at once we reach the question of the franchise, permit, agreement, or statute law under which the operation of the utility is undertaken.

If such legal authority be for a fixed period, it is evident that the integrity of the property can be assured only if there be provision for the amortization during the life of the authority of the difference between the actual investment and the estimated scrap value of the property at the end of the term. For anything but a very long term authority, this means a rate of fare so high as to discourage riding, and by so doing operate against the interest of both the car rider and the company itself—in other words, more than the traffic will bear.

The other alternative is the so-called "indeterminate" permit, which provides authority to conduct business until such time as the community may decide to take over the property of the company at any agreed upon value, or grant to another company or to another individual the right so to take over the property. This fully protects the integrity of the investment and at the same time protects the interest of the community, since it makes provision for ousting a derelict performer in the only two ways which insure a continuance of the service.

The second of the principles is that there should be an assurance of return upon the investment. The basis of such assurance must be provision by which the price of the commodity furnished, *i.e.*, transportation, can be quickly and automatically adjusted to its cost, or the direct guarantee of the communities that the return will be forthcoming.

Upon the degree to which both the assurance of integrity and the assurance of return are provided in the relations between electric railway companies and the communities, will depend the cost of the capital required.

Moreover, there should be provided in the return, and regulated by the degree of efficiency and managerial ability shown, a reward for these qualities, in order that there may be present in the private conduct of a public enterprise, the initiative and economy which will always depend upon the hope of reward.

These we believe to be the basic principles involved in the restoration of credit. From them, we are convinced, may be built a practicable, workable plan for the government of relations between the utilities and the communities, which will inspire the best effort of the operators and enlist the co-operation of the communities in assisting in the work of providing good and adequate service.

The same principles we believe should govern the treatment of capital already invested in the public service. To bring it into step with the future capital investment it is necessary to ascertain, if that be possible, the money which private individuals have furnished for the enterprise; or if that, by reason of imperfect records, is impossible, to have fixed by courts, or commissions, or by agreement, the value of the property. When the investment or the value is so fixed, then the capital already invested should not be differentiated from that which it is expected to secure in the future.

#### NO NEW PRINCIPLES ARE INVOLVED

There is nothing new in the principles which I have here enunciated. They are merely those which underlie commerce and business in general, and the fact that it is necessary to impress their application to the electric railway industry upon the public, the operators and the regulating authorities, is an indication of the distance we have strayed from well known economic laws in the conduct of our public utilities. It is surprising the extent to which economic law has been disregarded and overlooked in the attempt to control and regulate public utilities. It is surprising that intelligent men should have been willing to enter into long term contracts to furnish a commodity at a fixed price, in disregard of future conditions as to cost and in disregard of future conditions as to the character of the commodity. It is surprising that lawmakers should have considered that it was possible to pass inflexible regulations governing the price of a commodity when the price plainly de-

pended upon the cost to produce it, or that they should have conceived it to be possible to regulate its cost or its price. And yet that was precisely what was done in the case of franchise agreements and grants, in the case of much street railway legislation, and in the laws creating many public service commissions.

It was primarily due to the belief on the part of railway men and the public alike that the local transportation business was a very profitable business and to the lack of exact knowledge as to the real cost of furnishing the commodity. From these two misconceptions have grown most of the troubles of the industry. They have led to the system of bargaining which has saddled the companies with burdens in the way of restrictions, taxes and imposts which they are today unable to bear, to the willingness of companies to accept franchises imposing fare limitations, to the power given to the commissions to compel the making of extensions and the expansion of service, and last but not most important, to the public attitude of distrust towards the companies.

The industry is now finding itself. It knows now, as it has never known before, the limitation of its resources. It is realizing that its ability to furnish service is limited by its ability to collect revenue therefor, and it is learning how to ascertain the true cost of the service when the cost of maintaining the integrity of the investment is included.

It is this relation of price to cost that is the most important consideration in the solution of the problem. It is a relation that must be understood by the public as well as the companies, and until it is understood, there can be no satisfactory settlement, no matter what laws may be passed or agreements entered into.

And so, having established the fundamentals upon which a settlement must be based, it is necessary that there should be agreement between the two parties at issue, as to the object towards which this partnership for common good should strive. I believe that it has been well stated in the so-called Talyer grant under which the Cleveland Railway is being operated. There it says that the object of the grant is to "secure the best possible service at the lowest possible cost."

If this be true, then having provided terms under which the necessary continuing supply of private capital may be attracted into the business and the private initiative and enterprise secured, the attention of every one concerned can be devoted without reserve to the agreed upon object. Immediately there arises the question affecting the basis upon which fares shall be charged, whether a flat rate shall be installed, or a zone or distance tariff system put into effect; the removal of the taxes and imposts which are a charge against the car rider and not against the private owners; the question of subsidizing the service in order to maintain low rates of fare; the employment of operating economies now so frequently prevented by the hostile attitude of communities; the restriction of the unfair competition of jitneys, which without the power to supply the entire service furnished by electric railways, exist on the cream of the business; the co-operation of public authorities in providing traffic regulations so that the progress of the cars through the streets shall be unimpeded; the use of new capital for the installation of improved apparatus and equipment which cut down cost, and many other methods of improving and cheapening the service and more equitably distributing its cost.

Many of these are not now possible, first, because the

credit of the companies being gone, it is impossible to secure the capital necessary to put them into effect; and second, because the spirit of antagonism against the companies is such that every move towards decreasing the cost of service is bitterly opposed.

#### INSTANCES OF SERVICE AT COST

I have given you in a very general way the principles which I believe should govern the readjustment of the relations between electric railways and communities. I shall not attempt to translate them into detailed plans of settlement. I believe that the intelligence and good sense of the owners of these properties and of the public authorities with whom they must negotiate is sufficient to enable them to get together in agreement upon a plan. The way has already been blazed. The street railway systems of Cleveland, of Cincinnati, of Youngstown, of Boston, of eastern Massachusetts in this country, and of Montreal in Canada, are now being operated under agreements which embody in general the principles to which we subscribe. None of these agreements is entirely perfect. None of them has been in effect for any considerable length of time. All of them have developed defects and it is interesting to note that these defects have come when there has been a departure from the principles noted. And in spite of the defects, the companies in the cities in which cost-of-service agreements obtain, are today being conducted with greater satisfaction to both the public and the investors than those in other cities. This is notably true in Cleveland, which because of its flexible fare was enabled to weather the storm caused by the war with less ill effect upon company and the riding public than almost any city in the United States.

Secretary of War Baker, who, as city attorney of Cleveland, and later as its Mayor, has a very thorough knowledge of traction conditions and a very complete understanding of the principles of service at cost, was one of the most interesting witnesses before the Federal Commission, and I was particularly struck with what he had to say as to the possibility of reconciling the apparently conflicting claims of the companies and of the car rider. Asked as to the method to be pursued in arriving at an agreement, he said:

Get the council and the board of directors in the same room with all the facts and all the figures, and let everybody in the community understand what they are. I believe that any community in America will pay cheerfully and willingly whatever rate of fare is necessary to maintain good service in their communities, if they are sure they are only paying proper operating expenses, proper maintenance and a proper return on capital.

#### QUESTION CONCERNS THE COMMUNITY

I agree with Mr. Baker, but I see difficulty in the way of letting "everybody in the community understand," unless the industry is able to secure the active participation of the better informed and more intelligent part of the community. I do not, for a moment, believe that the attempt now being made in this city of New York to wreck the system of local transportation appeals to any person of knowledge and intelligence. I will go further than that and say that I do not believe that it appeals to any but the very ignorant. I do not believe that an electorate that votes as the electorate of Toledo voted, to oust a street railway system from the streets, is an "informed" electorate. I believe that situations such as those in New York and Toledo, as well as in certain other places, are a reflection upon the better part

of the community which pays so little attention to civic affairs that it stands idly by while a service absolutely essential to the community is destroyed, because some men think more of votes than they do of the real interests of the people.

This street railway problem has passed the stage where it is simply a concern of the owners and operators of the properties. They have lost and are losing a great many millions of dollars, and for them the situation is deplorable enough; but the communities, and through the communities you men of business, the workmen, the ordinary every-day citizen, are today threatened with the loss or demoralization of a service that is absolutely necessary if business is to continue in our large urban centers, if the health and morals and comfort and convenience of our citizens are to be preserved.

We, of the Committee of One Hundred of the American Electric Railway Association and of the industry generally, believe that we have correctly stated the principles which should govern the relations of these companies with the public, but we are still willing to be convinced. From our side, we have made such a close and intimate study of the question as is possible. But it is the public's question as well as ours, and unless the public through its representatives gives it as close attention, devotes as much energy to its solution, and ultimately reaches conclusions upon which it is willing to attempt readjustment, we shall arrive nowhere.

#### THE SITUATION IN NEW YORK STATE

I desire particularly to call attention to this aspect of the matter because of conditions here in the State of New York. As early as June, 1917, the trend of events was apparent to the electric railway men of this state, who were thoroughly alarmed over what they saw was coming upon the industry. A committee was formed, consisting of five gentlemen representing companies located in New York City, and five gentlemen representing companies located in other cities in the State.

In behalf of some thirty-nine companies, this committee made application for a hearing before the two Public Service Commissions and upon the application being granted applied for relief in the shape of increased rates. A very exhaustive presentation of the situation was made to both commissions, in which attention was drawn to the vast increase in expenses and the precarious situation of most of the companies.

The First District Commission did nothing. The up-State Commission, deciding that it had power to exceed rates named in franchises, proceeded to hear individual cases and gave relief in several. They were halted, however, by a decision of the State Court of Appeals to the effect that they were without jurisdiction in the case of companies operating under franchises containing fare limitations. Now, we have it on the authority of Judge Hughes, who as Governor of the State was instrumental in securing the passage of the public service commission laws, that it was the intention of the framers to bestow complete jurisdiction upon the commission, and that the failure so to provide was an inadvertence. The obvious remedy was an amendment to the law which would give to the commissions the power which they were originally intended to have.

Two legislatures in succession have failed to make such amendments.

This would be entirely understandable if the legislatures had provided other means for relieving the situ-

ation; had subscribed to another policy in the regulation of public utilities, or had even investigated the possibility of some other policy. None of these things has been done. On the contrary, by amending the law as it applies to the First Public Service Commission District, there have been left all of the provisions for the exercise of complete and rigid control over service, but nothing has been done which permits the commission to allow adequate revenue to be provided in order to comply with such service requirements.

An appeal to the Governor of the State, that he appoint a commission to investigate and report upon the situation and to make recommendations for constructive legislation for the correction of the present intolerable conditions has been equally futile. The State of New York today is without any constructive policy as to the regulation of its electric railways, and nowhere is there evidence of concern on the part of any state officials to inaugurate such a policy, although there seems to be no lack of activity upon the part of those who are attempting to make a bad situation much worse.

The result of this failure on the part of the public officers to comprehend and to act upon the conditions confronting them is reflected in New York City in the breaking up into its component units of the New York Railways, and the Brooklyn Rapid Transit System, with its consequent very large increase in fare to many riders; in the abandonment of lines wherever possible, and throughout the State in the deterioration of service.

There is evidence that the people themselves are taking an interest in the situation. Numerous investigations are being conducted throughout the country by civic and business organizations. Very many constructive suggestions are being made. The day is dawning when the unscrupulous politician can no longer expect to ride into office on the back of a calamity which he himself has assisted in creating.

I have said to you that I believe that the treatment of this electric railway problem affords a test of the ability of the American people properly to serve the problems which are more and more common as our national life becomes more complicated and involved. Let me add that this test is as much a test of the better educated and more intelligent part of the public as it is of the more ignorant, because the duty devolves upon the former to lead the way in the solution of questions of this kind and to devote their higher intelligence to the information of the others.

I am optimistic as to the future. I believe that a way out of the difficulties can be found. I have hopes that the recommendations made to the President by the Federal Electric Railways Commission will be of such a nature as to afford a common meeting place for both the public and the utilities, and that with these recommendations as a guide, the business men of the nation will make this problem their own and that they will force a readjustment that will be entirely equitable to every one concerned.

## The Zone Plan in New Jersey

By *H. C. Eddy*

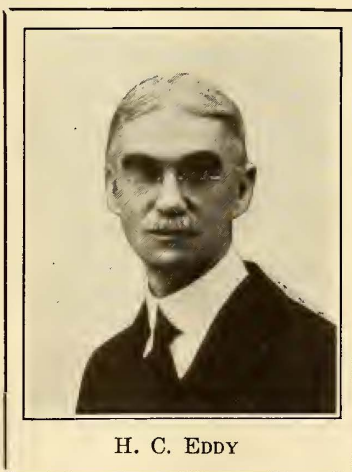
*Electric Railway Engineer, Board of Public Utility Commissioners of New Jersey, Newark, N. J.*

### Under Existing Conditions the Zone Plan Will Not Produce the Revenue Which Public Service Railway Must Have

THE Public Service Railway of New Jersey, having about 860 miles of track, operates through 146 municipalities in the State and ranks among the largest street railway systems in the country. By permission of the Board of Public Utility Commissioners, State of New Jersey, this company on Sept. 14, 1919, inaugurated a zone system of fare collection, following the general lines of a zone plan submitted to the board by its direction.

The proposed rate under the original plan submitted was 5 cents for the first zone or fraction thereof, and 1 cent for each zone or fraction thereof thereafter, with 1 cent for a transfer. The standard length of zones was 1 mile, variations from this distance being made in certain cases to meet traffic and other conditions where it was found advisable to do so.

This was the first attempt to establish a trolley fare on practically a mileage basis on any large scale, and, while the early history of the experiment is doubtless generally known to the industry, it is thought that a review of the matter will be of interest. It is the



H. C. EDDY

### Board of Public Utility Commissioners Regretfully Permitted the Company to Return to the Flat-Fare System

main purpose of this article, however, to give an account of the results of the operation of the system and the causes which led up to its final abandonment by the company.

Following the filing by the Public Service Railway on March 5, 1918, of a petition, amended March 19, 1918, for increased rates from 5 cents to 7 cents, with 2 cents for the initial transfer and 1 cent for a transfer on a transfer, the board, after hearing, by a report and order dated July 10, 1918, dismissed the petition but allowed a charge of 1 cent for each initial transfer, effective Aug. 1, 1918. Certain conditions were included in this order, among which was the following:

4. The company shall file or submit to the board before Jan. 1, 1919, a plan whereby the method of charging at present in force may be revised by an equitable zoning system over its entire territory, proper consideration being given to all of the elements to more properly relate the cost of service with the length of haul and value of service.

Subsequently, owing to additional wage awards by the National War Labor Board, under date of Sept. 25, 1918, the board granted the company, at the latter's

request, an increase to a rate of 7 cents, with 1 cent for a transfer, effective Oct. 15, 1918, and to continue until April 1, 1919, when the rate was to be 6 cents, the 1-cent transfer charge to be retained. However, by permission of the board the 7-cent fare was again restored on May 2, 1919, following a petition to that effect submitted by the company on March 11, 1919.

In the meantime, under date of March 11, 1919, the company submitted a comprehensive report providing for a zone plan of fare collection, an extension of the original time for submission of the report, Jan. 1, 1919, having been requested by the company and granted by the board. Hearings in regard to this matter, including also the valuation of the entire property, were begun on March 26, 1919, and continued through the spring, summer and fall, and in fact are in progress at the time of this writing, December, 1919, so far as the valuation of the property is concerned.

### THREE PLANS SUBMITTED BY THE RAILWAY COMPANY

Subsequently, the company submitted for the consideration of the board three alternative schedules of rates as follows:

1. A charge of 9 cents where 7 cents is now being charged, together with 1 cent for each initial transfer.
2. A system of charges based upon the zone plan as submitted modifying the charges therein proposed as follows: 5 cents for the first 2 zone-miles and 2 cents per zone-mile thereafter, together with 1 cent for each transfer.
3. A system of charges based upon the zone plan as submitted modifying the charges therein proposed as follows: 3 cents for the first zone-mile and 2 cents for each zone-mile thereafter without transfers.

After due consideration, under date of July 30, 1919, the board issued a report permitting a schedule of rates to take effect Sept. 14, 1919, based on a zone system of fares as provided for in the third scheme proposed by the company, as indicated above, and following in general the plan as submitted under the board's order of July 10, 1918.

Under date of Oct. 21, 1919, the company offered to the board for its consideration a schedule of rates to be charged under the zone plan in modification of the former rates and in substitution thereof if the board should continue the zone plan with a modified schedule of rates. If this alternative schedule was unacceptable the company proposed a return to the pre-existing flat fare of 7 cents, with 1 cent for a transfer.

After a hearing on this matter the board issued a report, on Oct. 23, 1919, recommending that the zone system be continued with a modification of the schedule of fares, providing for a charge of 5 cents for the first two zones and 1 cent a zone thereafter, with 1 cent for a transfer.

A few days later the company submitted a statement refusing to accept the board's recommendation and renewed its application for permission to return to the 7-cent flat fare with 1 cent for a transfer. This was refused by the board on Oct. 30, 1919, and the company finally agreed to accept the board's recommendation, the new rate of 5 cents for the first two zones or fraction thereof, 1 cent for each zone or fraction thereof thereafter and 1 cent for a transfer being put into effect on Nov. 16, 1919.

Again, under date of Nov. 24, 1919, the company made a further request for a return to the former flat-fare rate of 7 cents, with 1 cent for a transfer. This was granted by the board after hearing, and on Dec. 7,

1919, the zone system was abrogated. This last decision is not to be interpreted as the permanent rate to be allowed by the board. Such rate will not be determined until the valuation of the property now under investigation is determined by that body.

### REASONS FOR SUCCESSIVE FARE CHANGES

The numerous petitions submitted by the company during the past twenty-one months appear to have been necessitated by the rapidly changing conditions which developed. It was claimed at first that the company required greater revenue than it was receiving under the 5-cent flat fare to enable it to function properly. There followed, in rapid succession, two awards of the War Labor Board, each greatly increasing the company's annual wage expenditure. The introduction of the zone system under what was known as the "3-and-2" plan failed to bring in sufficient revenue. Resort was then made to the "5-and-1" zone rate in the hope that this would produce satisfactory results, but the returns under this rate were also not immediately sufficient, and the 7-cent flat fare with 1 cent for a transfer was again adopted. Whether this latter rate will prove satisfactory remains at this writing to be demonstrated.

The board, in an effort to meet the conditions as they developed, and in order to provide a revenue which would maintain the solvency of the company, coupled with a desire thoroughly to demonstrate the feasibility of carrying out the zone principle, made a most thorough investigation of each case presented and issued its various reports, recommendations and orders accordingly.

The following quotation from the board's report of July 10, 1918, appears to indicate its attitude in regard to the flat-rate charge:

Numerous witnesses produced by the petitioner clearly indicated as their opinion that the flat-rate fare system was an inheritance from horse-car days and was in no sense a scientific or proper charge for the service rendered. While the board's power to increase railway fares despite the existence of a municipal ordinance specifying the maximum fare to be charged has been sustained, an important question would arise as to whether we would countenance a horizontal raise of the uniform 5-cent rate without an investigation of the nature and extent of the service rendered for the fare charged and all the elements involved therein. The charge for the service does not bear any fixed relation to the service. Under the present existing 5-cent uniform rate, some passengers are permitted to be carried a considerably greater distance for the same rate than other passengers. This may unduly discriminate against the short-haul passenger or short rider, and any horizontal increase in the flat rate would further exaggerate this discrimination.

### LACK OF CO-OPERATION WAS DIFFICULT TO SUPPLY

From the very day the zone system was placed in operation there appears to have been a general lack of co-operation on the part of the public to make it a success, which obviously indicated unpopularity of the system. This was undoubtedly due to several causes, among which were the following:

1. The original rate adopted, particularly as applied to long-distance riders, was undoubtedly excessive.
2. The locations of several of the original zone points were not suitable. These, however, were capable of readjustment, as provided by the board's order permitting the zone system to be inaugurated.
3. The period in which the trial of the system was made was one of industrial unrest which resulted in unlawful tactics on the part of certain classes of patrons in certain localities.

4. Delays were occasioned by the method of fare collection adopted.

5. The system was inaugurated in the midst of a hotly contested political campaign in the State and was used as political capital by both parties.

The first of the objections could have been, and in fact was removed by the change in rate of fare which ultimately could have been further adjusted to meet the requirements of the company.

The second could have been entirely removed, and was in a large measure rectified by readjustment of certain zone points. In this connection it should be stated that, although the zone points were located with very great care and after much study, yet it was inevitable that actual operating conditions would develop the desirability of certain changes.

The third was difficult to meet but this was accomplished in considerable measure in most instances.

The fourth was gradually being minimized as the public and the employees of the company became more familiar with the system. This doubtless could have been reduced to an almost negligible quantity had there been full co-operation on the part of the public and the employees of the company, together with some modifications of the plan, particularly in connection with the method of the issuance of zone checks by the motorman.

Concerning the fifth objection, it was unfortunate that the system should have been inaugurated under these conditions.

#### CAMDEN WAS THE CENTER OF ANTI-ZONING DISTURBANCE

The lack of co-operation on the part of the employees of the company, at least after the first few weeks that the system was placed in operation, undoubtedly had much to do with its unsuccessful operation during the trial period. That the system was most unpopular with the platform men was demonstrated at a hearing granted the men by the board, at their request, relative to this matter. It is not to be expected that the men would use every effort tending to the success of a system toward which they themselves were very antagonistic. This feeling on the part of the men may have been produced partly by the fact that the plan was not "sold" to them by the company and the men in turn did not "sell" the plan to the public. This combination of circumstances could not be expected to be conducive to the success of any such undertaking.

Immediately following the inauguration of the system a unique situation developed in the City of Camden, where an organized boycott on the company was established and successfully maintained for a long period. This boycott was made possible largely for the reason that the lines of the Public Service Railway in the vicinity of Camden are for the most part paralleled by steam railroad lines, the latter furnishing good service. This, on the inauguration of the zone plan on the Public Service Railway lines, was considerably augmented. The commutation rates of fare on these lines to Camden and Philadelphia, the traffic on which constitutes a considerable proportion of the Public Service Railway's patronage in the general vicinity, was considerably lower in most cases than the rates charged by the Public Service Railway under the zone system.

Much opposition to the system was manifested also by the shipyard workers, particularly in the vicinity of Camden, culminating in rioting which resulted in not a little personal injury and much damage to property,

chiefly rolling stock of the company. The extra service previously maintained for the shipyard workers was discontinued by the company for a considerable period as a result of this lawlessness.

Some objection to the system was also made in other localities. The following quotation from the board's report of Oct. 23, 1919, in regard to this matter is of interest:

With few exceptions, the company's proposal to abrogate the zone plan and return to a flat fare of 7 cents, with 1 cent for a transfer, was unfavorably received. It was urged by some that the zone plan should be abrogated and the company be required to restore the flat fare of 5 cents in effect before the approval of the board of a higher charge. Many of those who urged this contended, and with evident sincerity, that, if this were done, riding would increase to such an extent that the company's revenues would be equal to those which would accrue under a 7-cent fare.

Other elements than the opposition of the platform men and a certain degree of unpopularity of the system among the traveling public were conducive to the conditions which resulted in its abandonment. Among these were the following:

1. The complete equipment for operating the zone system was never used by the company, doubtless because of the great investment involved and inability to secure the apparatus in the limited time allowed between the authorization and specified date of inauguration of the plan. Possibly a trial of the plan on a few lines of the property with the complete equipment would have been a fairer test of its feasibility.

2. The plan as devised by the company was not adapted for application in every detail to every part of so large a property having so many varying characteristics. Modifications in the plan to meet different conditions on different parts of the property would undoubtedly have brought about more satisfactory results.

3. Insufficient publicity was given the plan previous to its inauguration and during at least the early period of its operation.

4. Various detail obstacles were incidental to the method of introducing the system and in its operation, many of which probably could have not have been readily foreseen.

From the foregoing it will be noted that the practicability of the zone plan as applied to the system of the Public Service Railway did not have a fair trial during the recent experiment.

#### THE BOARD'S PRESENT ATTITUDE IN THE MATTER

The following quotation from the board's latest report on the matter appears to indicate its attitude relative to the flat-fare charge and its view of the experiment with the zone system:

To raise the additional revenue required, in localities where the flat-rate method of charging existed, the railways generally resorted to the plan most available of increasing the charge to the extent necessary to meet the requirements. This generally was resented by the patrons, particularly the most lucrative class thereof, viz., the short-haul riders. \* \* \* In many instances companies have sought successive increases in excess of the previously existing 5-cent rate, in some cases reaching the limit of 10 cents. The history of the experiences of the various street railways employing this method to meet the difficulty indicate clearly that it threatens catastrophe to street railway transportation. \* \* \* What such a catastrophe means to the public has not yet been appreciated by it. To avoid the possibility of it we have devoted our best thought and endeavors. To solve the problem required, however, co-operation not only of the company and its employees, but of all others interested in the public welfare and the welfare of the State and its industries. We believe that with co-operation the plan proposed would at least have had a

fair trial. It does not follow that the plan proposed would be adaptable in all its details or solve fully the problem satisfactorily either to the public or to the company. With a fair trial of the plan proposed, however, adjustments could be made, and the experience which could be obtained would furnish data which could be submitted to and studied by the experts engaged by the public and the company. Some plan acceptable to the public and the company might thus have been evolved. That the plan has not had a fair trial, however, must be conceded. \* \* \* The board does not have sufficient evidence to justify it in determining that the existing rate is one which can be ordered continued without regard to the imminent insolvency of the company. In view of all the facts and circumstances involved, the board regrets that for the time being at least the zone plan, the principle of which has commended itself to our judgment, must be discontinued and the rates of fare in effect before its adoption again charged.

The industry throughout the country had been watching with great interest the preparation, inaugu-

ration and, finally, the operation of the plan of the Public Service Railway in the hope that the solution of the trolley rate problem would be found thereby, and it is unfortunate that circumstances developed which prevented a thorough demonstration of the practical operation of the plan.

Advocates of the zone plan need not be discouraged, however, on account of the result of this experiment. On the contrary, they should be encouraged to apply the system with such modifications as have been shown to be necessary, bearing in mind, however, that the peculiar conditions existing on any and every property must receive due and very careful consideration in the adoption of a zone plan which will be satisfactory from an operating standpoint as well as a source of sufficient revenue.

## Fare Increases in New York\*

Statistics Are Given of Recent Electric Railway Fare Increases, Receiverships and Abandonments in New York State, as Well as the Effect of These Increases on the Traffic of the Individual Companies

By Harlow C. Clark

Editor of Aera

I HAVE prepared two statements in connection with the subject that has been assigned to me. One gives the rate of fare at present in effect, or authorized, in each incorporated city or village having a population of more than 8,800. The other gives the fare situation on each of the eighty-four operating railway systems in the State. Both statements are so long and complicated, that I shall not attempt to read them, contenting myself with a summary of their contents. I have had copies prepared for the use of Association members who may desire the information as a matter of record.

There are fifty-six incorporated cities and villages in New York State, having a population of more than 8800. Leaving out New York City, which is served by a number of companies, in thirty-one of these communities, the railway companies are either collecting or have been authorized to collect increased unit fares. In one, a 3-cent charge for transfer to lines outside the city limits is in force. In six, relief has been afforded the companies by creating new zones outside of city limits. In three, reduced rate tickets have been abolished, and in the remaining fourteen, no change in fares has been made.

In the city of New York, the Hudson & Manhattan Railroad began in 1911 the collection of an extra 2-cent charge for rides between up-town New York and points in New Jersey. In July of this year, the New York Railway Company and the Brooklyn Rapid Transit System began, with the permission of Public Service Commissioner Nixon, the collection of a 2-cent charge for transfers at certain transfer points where transfer charges were not forbidden by their franchises. In August of this year, the New York & North Shore Traction Company was permitted by Commissioner Nixon to extend its zone system, previously authorized as to the part of its road outside of New York City

by the Second District Commission, to its line within the city limits, bringing about an increase in the unit fare from 5 to 6 cents, and the creation of certain new zones. Aside from these, no increase in fares has been permitted railways operating in New York City.

Of the fourteen cities outside of New York in which no increase has been made in fares, nine have prevented such increase by refusing to waive franchise restrictions. In three, no application for increase has been made; in one, there is no local service, and in one, local service has been abandoned. In New York City, all companies have applied to the city for relief, asking that franchise provisions be waived, but in no case has the city given its assent.

An analysis of the statement shows the following situation:

*Seven-cent fares*—New York (on the Hudson & Manhattan Railroad for rides between up-town New York and points in New Jersey), Oswego (authorized, but not yet in effect), Olean and Port Jervis.

*Seven-cent cash, six tickets for 35 cents*—Ogdensburg.  
*Seven-cent cash, eight tickets for 50 cents*—Buffalo (authorized but not yet in effect), Ithaca and Ossining.

*Seven-cent cash, 10 tickets for 50 cents*—Jamestown.  
*Six-cent initial zone, one-cent extra for each additional zone*—New York (New York & North Shore Traction Co.).

*Six-cent cash, no tickets*—Syracuse, Albany, Schenectady, Utica, Troy, Amsterdam, Auburn, Newburgh, Kingston, Cohoes, Gloversville, Lockport, Peekskill, Glens Falls, Watervliet, Hornell, Geneva, Saratoga Springs, Hudson, Beacon, Rensselaer, Johnstown.

*Six-cent cash, 35 tickets for \$2*—Poughkeepsie.  
*Three-cent transfer charge for rides beyond city limits, and readjustment of outside zones*—Port Chester.

*Two-cent transfer charge*—New York (at certain transfer points on New York Railways and Brooklyn Rapid Transit System).

*Additional fare for rides beyond city limits*—Yonkers, New Rochelle, Elmira, Mt. Vernon, White Plains, Middletown.

*Reduced Rate Tickets abolished*—Watertown, Cortland and Plattsburg.

*No relief granted*—New York (except as noted), Rochester, Binghamton, Niagara Falls, Rome, Dunkirk, Lackawanna, Corning, North Tonawanda, Little Falls, Batavia, Fulton, Oneonta, Oneida and Tonawanda.

\*Abstract of paper presented at quarterly meeting of New York Electric Railway Association, New York, Dec. 10, 1919.



The cities which have refused to waive franchise provisions in order to grant relief to their traction systems are New York, Buffalo, Rochester, Binghamton, Niagara Falls, Elmira, Amsterdam, Rome, Dunkirk, Lackawanna, North Tonawanda, Plattsburgh, Oneida and Tonawanda.

The cities which have actually waived franchise provisions in order to afford relief are Syracuse, Schenectady, Utica, Troy, Auburn, Cohoes, Oswego, White Plains, Peekskill, Port Chester, Watervliet, Rensselaer, Port Jervis.

The second statement to which I have referred covers the eighty-four operating railway systems of the State. Of these forty-five furnish city and suburban service, seventeen furnish exclusive interurban service, twenty-one furnish both interurban, city and suburban service, and one does freight switching only. The following summary shows the relief that has been granted to these roads:

City and suburban fares increased.....	21 companies
Interurban fares increased.....	14 companies
City and interurban fares increased....	14 companies
Partial relief granted.....	3 companies
Service completely abandoned.....	3 companies
No increase asked.....	10 companies
Increase blocked by franchises.....	16 companies
Increase granted but nullified.....	1 company
Switching road .....	1 company

Of the eighty-four roads included in the list eleven are in the hands of receivers, as follows:

Buffalo Southern Railway Co.....	23.35 miles
Buffalo & Lake Erie Traction Co.....	168.00 miles
Buffalo & Depew Railway Co.....	14.00 miles
Buffalo & Lackawanna Traction Co.....	8.80 miles
Binghamton Railway Co.....	49.74 miles
Brooklyn Rapid Transit Co.....	690.89 miles
Hornell Traction Co.....	10.90 miles
Manhattan & Queens Traction Corporation	22.00 miles
New York Railways Co.....	153.60 miles
Penn Yan & Lake Shore Railway.....	10.00 miles
Second Avenue Railway Co.....	23.90 miles
Total .....	1174.28 miles

This 1174.28 miles of track in the hands of receivers, constitutes almost 24 per cent, or nearly one-quarter of the total of 4893.49 miles of track within the State.

Since Jan. 1, 1918, there has been a notable abandonment of track and service by New York State companies. The following roads have completely abandoned service:

Huntington Railroad Co.*.....	19.97 miles
Suffolk Traction Co.....	23.97 miles

In addition the following partial abandonments of service have occurred:

Buffalo & Lake Erie Traction Co. (Dunkirk city lines).....	9.1 miles
Third Avenue Railway Co.....	30.8 miles
New York Railways Co.....	8.71 miles
Yonkers Railroad Co.....	8.5 miles

This makes a total of 106.04 miles of track abandoned within a year, and indications point to further abandonment within a short time unless relief is afforded. Thus, preparations are now being made to abandon service on the 25.84 miles of track operated by the Long Island Electric Railway, within the limits of New York City.

EFFECT OF INCREASED FARES DESCRIBED

I have attempted to secure from as large a number of electric railway operators as possible opinions as

\*In December, 1919, efforts were being made to renew operation on this line.—[Eds.]

to the effect of increased fares both upon the revenues of the companies and the riding habits of their patrons. The impossibility of securing direct comparisons is apparent. Conditions vary so greatly between communities in the first instance and between those prevailing at various times in the same community that the mere setting forth of figures is of no assistance in arriving at a conclusion. In a questionnaire sent to the executives of all operating systems, to which replies were received from thirty-two railways, the following request was made:

It is desired to secure information as to the effect of increased fares both upon riding habit and revenue. Owing, however, to varying conditions caused by time and locality, it is not possible to provide a standard form of reply. Will you not, therefore give . . . . what you consider to be the fairest possible estimate of the effect of such increase or increases as you have received and, in addition, give your opinion as to the extent that riders lost through such increase or increases have been recovered, after the public became reconciled to the change?

Of the replies received, nineteen dealt with the effect of increased fares in city service. Two of these nineteen dealt with 7-cent fares, one with a 7 and 6-cent fare, nine with a 6-cent fare, one with a 2-cent transfer charge, five with increased rates outside the city limits, and one with the abolition of reduced rate tickets.

In relation to 7-cent fares, Charles C. Wagner, manager Port Jervis Traction Company, reports that the increase which has been in effect since Jan. 1 of this year has not caused a falling off in riding "to any extent." Paul S. Murphy, treasurer Ogdensburg Street Railway, which has been collecting a 7-cent fare, six tickets for 35 cents, since June 1, 1918, presents some interesting figures, which show that for the six months ending May 31, 1919, as compared with the six months ending May 31, 1918, there was a loss in passengers carried of 3.41 per cent and an increase in passenger revenue of 33.84 per cent; that the same six months in 1919 as compared with 1917, before the change was effective, showed a loss in passengers carried of 14.14 per cent and an increase in passenger revenue of 17.47 per cent. However, the first six months of 1918 as compared to the first six months of 1917, in neither of which periods was the increase effective, showed a decrease in passengers carried of 11.10 per cent and a decrease in passenger revenue of 12.23 per cent. The six months immediately following the increase showed, as compared to the corresponding six months of the year before, a loss in passengers carried of 27.60 per cent and an increase in revenue of 0.23 per cent. It may be assumed from these figures, first that while the loss in passengers carried was accelerated by the increase, it was not entirely caused by it, and that this loss is gradually being made up as the higher range of prices and of salaries and wages to meet them becomes recognized.

In Peekskill a 7-cent fare was put in effect by order of the Public Service Commission on Jan. 1, 1918. On the first of May it was taken out because of the Quimby decision. In December, 1918, the city consented to a 6-cent rate which has since been effective. H. D. Swain, assistant treasurer Peekskill Lighting & Railroad Company, says that the 7-cent fare caused "some loss of traffic," but that under a 6-cent fare "we carry as many passengers as if it were a 5-cent fare."

The largest city in the State in which a 6-cent fare is effective is Syracuse. Discussing the situation in

that city and in Utica, where a 6-cent fare is also effective, C. R. Gowen, general passenger agent New York State Railways, says: "From Jan. 1 to Nov. 30, 1919, the earnings of the Syracuse lines have increased 23.92 per cent, and for the Utica City lines up to Oct. 31, 12.76 per cent. We do not believe that the increased fare has affected the riding habit because in Syracuse the figures speak for themselves and in Utica, with the signing of the armistice, several large munitions plants practically closed down, which has materially affected the riding."

In Schenectady, where a 6-cent fare has been in effect since May 26, 1919, there was, for the three months ending Sept. 30, a decrease in number of passengers carried of 4.03 per cent, while the revenues for the same period increased 14.88 per cent. J. P. Barnes, general manager Schenectady Railway, says of this showing: "In our opinion, increases in rates on our lines have had little effect, if any, on riding habit. The decreases in passengers carried, as shown on the statement, are attributable to unfavorable changes in industrial conditions in this vicinity."

In Poughkeepsie, where a 6-cent fare has been in effect since Jan. 16, 1918, J. A. Nilan, auditor Poughkeepsie City & Wappinger's Falls Railway, says that there was a falling off in the number of passengers carried for three months after the fare became effective. After that, the traffic showed an increase.

The traffic of the Albany Southern Railroad in the city of Hudson showed an actual increase after the 6-cent fare became effective on Sept. 1, 1918. C. E. Holmes, the company's general freight and passenger agent, says: "The Hudson City line shows for the first year of operation after the 6-cent fare was in effect, 30 per cent increase in revenue and no decrease in the number of passengers. In fact, there was a small increase although there was no change in the service."

W. J. Harvie, general manager Auburn & Syracuse Electric Railroad, says that for about two months after the 6-cent fare became effective in the city of Auburn, there was a reduction in travel. After that it gradually increased and finally showed an increase of about 15 per cent over the previous year.

In the city of Lockport, where a 6-cent fare became effective March 1, 1919, returns for the month of September, 1919, as compared to September, 1918, furnished by E. J. Dickson, vice-president International Railway, show a decrease in revenue passengers of 9.99 per cent and an increase in revenue of 8.02 per cent.

In Kingston, according to G. B. teBow, superintendent Kingston Consolidated Railroad, the public has shown no resentment against the 6-cent fare which became effective April 15, 1919, passenger revenue has shown an increase of 25 per cent, as against a theoretical 20 per cent.

B. Bryant Odell, secretary Orange County Traction Company, reports that a 6-cent fare in the city of Newburgh, effective since Nov. 29, 1917, has resulted in no "apparent loss of riders."

In the cities of Amsterdam, Johnstown and Gloversville, a continuing loss of riders is reported by W. H. Collins, general manager Fonda, Johnstown & Gloversville Railroad. "On the company's three city lines," says Mr. Collins, "under the 6-cent fare, eleven months operation to Oct. 31, 1919, with fares aggregating \$173,788.39, an increase of \$7,374.78, or 4½ per cent, there is a continued falling off in number of passengers

carried, varying in different months, but to date, rides lost through increase in fares have not been recovered."

It is impossible at this time to secure any figures of value as to the effect upon riding of the 2-cent transfer charge which was made effective in New York City on Aug. 1 last. Frank Samuelson, auditor for the receiver New York Railways, says: "Owing to the brief experience under the 2-cent transfer arrangement we are not in a position at this time to furnish information that would be of value as to the extent of the loss, if any, in 5-cent fares by reason of the 2-cent charge for transfers. It is estimated that the additional gross receipts as the result of this 2-cent transfer charge will be around \$600,000 per annum."

In Yonkers, Elmira, Middletown, New Rochelle, Port Chester, Mount Vernon, White Plains and a number of other villages in Westchester County, relief has been given to companies by an increase in fares outside of city limits. E. A. Maher, Jr., for the Yonkers Railroad Company, F. H. Richtmeyer, general passenger agent for the Westchester Street Railroad and the New York & Stamford Street Railway, and Miss May L. Robinson, auditor Wallkill Transit Company, report that the additional fares have made no perceptible impression on the traffic. In the case of Elmira, Vice-President F. H. Hill of the Elmira Water, Light & Railroad Company, says: "The increase in fares on our city lines affected long-haul passengers only. There was, therefore, no appreciable effect on riding habit."

On March 7, 1919, the Black River Traction Company, of Watertown, stopped the sale of twenty-five tickets for one dollar; on Sept. 15 of the same year it stopped the sale of round-trip tickets at a reduced rate to surrounding territory. L. Schwerzman, the general manager of the company, says that at first the revenue of the company was increased about 60 per cent of the estimate, but at the present time the full 100 per cent is being received.

#### EFFECT OF INCREASES ON INTERURBANS

Of the interurban roads, whose executives replied to the questionnaire, one is collecting 4 cents a mile, three are collecting 3 cents a mile, one is collecting 2.77 cents a mile, three are collecting 2¾ cents a mile, one is collecting 3 cents on one line and 2½ cents on others, and two are collecting 6, instead of 5 cents per zone.

H. R. Skirving, auditor and treasurer Southern New York Power & Railway Corporation, the rates of which were raised from 3 to 4 cents a mile on Jan. 26, 1919, reports a 12 per cent increase in passenger revenue and a 10 per cent decrease in passengers carried for the first ten months of 1919. C. Loomis Allen, vice-president Syracuse & Suburban Railroad, reports that an increase in the cash fare of from 2 cents to 3 cents a mile made Oct. 11, 1918, has increased gross revenue 22 per cent, with no loss in passengers carried. Fares on the Rochester & Syracuse Railroad have been raised three times since May 5, 1918, from a charge of 1.77 cents per mile, to 3 cents a mile. W. D. Zinsmeister, treasurer of the company, says of the result: "On three increases in fares amounting to approximately 65 per cent, we are receiving 24 per cent increase in revenue. The number of passengers carried has decreased 16 per cent, but it is apparent that the passengers are becoming reconciled to the new rates, as the number of passengers carried has shown a small increase for the past two months."

An increase from a system of 5-cent zones to a flat rate of 3 cents a mile, made by the Fonda, Johnstown & Gloversville Railroad, Aug. 1, 1918, has resulted in a final increase in the number of passengers carried. General Manager W. H. Collins of the company says: "On the company's three interurban lines, fifteen months' operation to Oct. 31, 1919, with fares aggregating \$682,095.54, an increase of \$74,537.60, or 12 per cent, show a falling off in the first ten months in passengers carried, but an increase of 52,382 passengers for the five months ending Oct. 31, 1919."

The Empire State Railroad Corporation has increased its fares twice since Jan. 6, 1918, when the fare was 2 cents cash, 2 cents one-way ticket, and 1.8 cents round trip ticket, per mile. It is now 2.77 cents, cash and ticket. Vice-president J. C. Nelson says, "From a statistical analysis of our interurban situation, we do not believe that increase in fares has decreased traffic to any appreciable extent."

On April 27, 1918, the Rochester, Lockport & Buffalo Railroad raised fares from 2 cents, cash and ticket, to 2½ cents cash, 2½ cents ticket, per mile. On Aug. 2, 1918, it made a further increase to 3 cents cash and 2½ cents ticket. On July 10, 1919, it put in a flat rate of 2¾ cents cash and tickets. Passengers carried began to decline before fares were increased. There was a decrease of 44,149 as between 1916 and 1917, although passenger revenue increased \$23,484.75. Between 1917 and 1918 passengers carried decreased 374,180, and passenger revenue increased \$14,601.81. The first ten months of 1919 show practically no decrease in passengers carried and substantial increase in revenue as compared to 1918.

Fares on the Albany Southern Railroad were increased from 2.2 cents a mile to 2.75 cents, on Dec. 1, 1918. For the first eleven months under the new tariff, passenger revenues increased about 26 per cent and passengers carried about 3 per cent. "There was no decrease in number of passengers carried from the start," says C. E. Holmes, general freight and passenger agent, "although the public contested the increase before the Public Service Commission."

On May 28, 1917, fares on the interurban division of the Auburn & Syracuse Electric Railroad were changed from 5 cents a zone to 2 cents a mile. On Aug. 1, 1918, they were changed to 2½ cents a mile, cash and ticket and on Dec. 23, 1918, to 3 cents cash, 2¾ cents ticket. General Manager W. J. Harvie says: "Following the increase we had a falling off in travel. This we believe was largely on account of the closing of a munition plant located on our line. We are unable to state what effect the increase had on our interurban travel."

The September revenues of the interurban lines of the International Railway Company, 1919, as compared with 1918, showed an increase of 23.66 per cent, although the number of passengers carried fell off 3.07 per cent. Fares were increased on these interurban lines on May 1, 1919, from 2½ cents to 3 cents on the Olcott line and from 2 cents to 2½ cents on all others. E. J. Dickson, vice-president of the company, says of the result, "It is almost impossible to give any reliable information relative to our interurban lines, owing to the new high-speed line. There appears, however, to be a slight increase in revenue passengers."

The Penn Yan & Lake Shore Railway increased its zone fares from 5 cents to 6 cents in 1917, from 6 cents to 7 cents in October, 1918, and reduced them to 6

cents in April, 1919. William F. Tyler, receiver for the company, says: "The increase from 5 cents to 6 cents and later to 7 cents showed a continued decrease in business, but dropping back to 6 cent gave better results, showing increased business. The increase from 5 to 6 cents on up to 7 cents, then back again to 6, seems to give better results than a raise from 5 to 6 cents."

The zone fares on the Troy and Ballston divisions of the Schenectady Railway were increased from 5 to 6 cents, and the minimum from 5 to 7 cents on May 26, 1919. The fares on the Albany division were unchanged. Yet for the three months ending Sept. 30, 1919, passengers carried increased 7.46 per cent on the Ballston division, while they decreased 1.36 per cent on the Albany and 6.23 per cent on the Troy division. Passenger revenue increased for the same period 17.96 on the Ballston, 15.82 on the Troy and 2.78 on the Albany divisions. General Manager Barnes' comment has already been given in connection with city fares.

Increases amounting to practically 1 cent a mile from the former fare of 2 cents a mile were put into effect on the interurban lines of the Elmira Water, Light & Railroad Company, on July 20, 1919. Vice-President Hill says of the result: "The combined effect of this and previous fare increases has been a 25 per cent decrease in passengers. Our gross revenues, however, on the interurban lines, has been increased about 10 per cent."

#### DATES OF INCREASES

Increases in fares on New York State railroads, have, in point of date effective, been as follows:

*Before 1917*—On city lines, 1; on interurbans, none.

*During 1917*—City lines, 6; interurban lines, 1.

*During 1918*—City lines, 17; interurban lines, 21.

*During 1919*—City lines, 15; interurban lines, 9.

Attention is called to this matter of the date of increases, because it was in June, 1917, almost two and one-half years ago, that the Committee of Ten, representing your association, appeared before the Public Service Commissions of both districts and submitted proof of the desperate conditions of these utilities and the disaster that was bound to overtake them unless measures were taken for their relief. The fact that relief was so long in coming, when it did come, and that so many companies have not yet received relief, is an indication of the failure of the particular form of regulation which we have in New York State, and is justification for a change in the method of controlling these utilities.

It should be said, in justice to the Second District Commission, and to the present regulatory commissioner of the First District, Lewis Nixon, that they have, where it has been possible, authorized increases of rates to meet the crisis that has come upon the companies as a result of the high prices forced by the war, but there is a constantly growing feeling that is being manifested even among the commissions themselves, that the present method of rate adjustment is too slow and too cumbersome to be effective.

[In conclusion, the author described how a form of such automatic rate adjustment is secured under commission regulation through the act passed at the last session of the Wisconsin legislature and described on pages 891-895 of Vol. 54, No. 20 of this paper.]

# New Passenger Locomotives for St. Paul's Rocky Mountain Division

Some Details Are Given of the Ten Engines Now Being Delivered to Replace the Original Ones on This Division Now Being Regearred for Freight Service

**A**BOUT four years ago public interest centered on the initial 440-mile electrification of the Chicago, Milwaukee & St. Paul Railroad over the Rocky Mountains. This epoch-making installation included as motive power ten passenger and thirty-two heavy freight locomotives. When later the extension over the Cascade Mountains was decided upon, five new passenger locomotives were ordered from the General Electric Company for this division and ten new passenger locomotives were ordered from the Westinghouse Electric & Manufacturing Company to replace the passenger locomotives on the division farther east, which were to be regearred for freight service.

The passenger locomotives for both divisions are now being delivered by the manufacturers. Up-to-date information regarding those for the Cascade Division was given in the *ELECTRIC RAILWAY JOURNAL* for Nov. 1, 1919, page 827. In a paper delivered before the New York Railroad Club, and abstracted in the issue of this paper for March 23, 1918, page 559, F. H. Shepard, director of heavy traction Westinghouse Electric & Manufacturing Company, gave a preliminary account of the passenger locomotive for the Rocky Mountain Division. It is now possible to reproduce an actual picture of the locomotive and to give a few of the design considerations. A later article will go into the more technical features of the locomotive.

The Rocky Mountain passenger locomotive has a capacity to develop 4200 hp. for one hour without exceeding normal temperature of the motors, and the normal starting drawbar pull is 100,000 lb. The drawbar pull can, however, be increased without injury to the electrical apparatus up to the point of wheel slippage.

The locomotive consists of two duplicate running gears of the Pacific type placed back to back, supporting a single cab. The wheel arrangement of the locomotive is 4-6-2-2-6-4, the drivers are 68 in. in diameter, the rigid wheelbase is 16 ft. 9 in. and the total wheelbase is 79 ft. 10 in. Rigid and floating center pins have been provided to relieve the cab structure of any pulling or bumping strains, all such forces being transmitted directly through the running gear.

This locomotive has been designed to include the features which have proved to be of distinct advantage in steam locomotive design. Other features kept in mind by the designers were to limit the amount of high voltage auxiliary apparatus, to provide facility for inspection of the main motors, to furnish a wide range of operating speed, and to provide the best possible disposition of the apparatus as to grouping and mounting.

Particular attention was directed to the articulation of the several trucks. In their design it was the endeavor to have each truck laid down to take care of itself and not have to be led along by any of its companion trucks. During the tests at East Pittsburgh this feature of the mechanical operation of the locomotive was said to be most pronounced, and to quote one

authority, "the engine has the riding qualities of a Pullman car."

An effective study was also made of weight distribution and its equalization among trucks. With this latter end in view, comparatively long spring hangers were used so that any slight increase or decrease in their lengths, for the purpose of shifting the load, would not have any noticeable effect on the position of the locomotive springs.

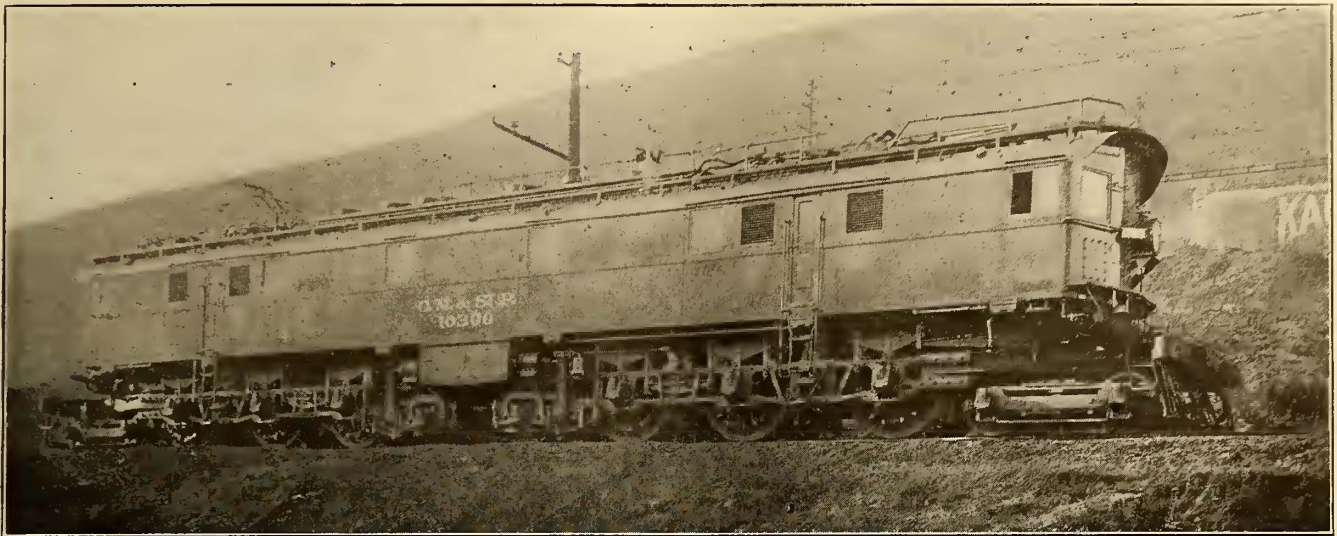
Power is supplied for the locomotive from six motors of the twin-armature type, mounted on the locomotive running gear. The two armatures of each motor are permanently connected in series and the control is so arranged that at least two motors are always in series. The result is that with the locomotive voltage of 3000 on the overhead contact wire, that across any one armature never exceeds 750 volts during motor operation. The control is further arranged so that all main motor fields are connected on the ground side of the circuit, thus maintaining most of the voltage stresses on the motors practically in line with commercial usage for the past fifteen or twenty years.

The motors are mounted, one over each driving axle, on the frame of the locomotive, transmitting their power by means of an 89 to 24 gear-and-pinion reduction to the locomotive drivers. The gears and pinions are kept in mesh by a quill shaft supported on the locomotive frame and surrounding the locomotive axle with a liberal clearance. The connection between the driving wheels and this quill shaft is made by means of springs, one end of each of which is connected to the quill shaft, while the other engages a bracket on the spokes of the drivers. This arrangement permits the drive wheels to follow the unevenness of the roadbed without affecting the gear mesh, and it also provides a cushioning effect for the torque of the motors.

In the design of this type of quill shaft, the details have been governed by the experience of the manufacturers obtained from the successful application of a similar class of drive on the New York, New Haven & Hartford locomotive. Due allowance, however, has had to be made for the increase in tractive effort.

The cab structure of the locomotive, which also partially incloses and protects the main motors, contains the auxiliary apparatus necessary for the proper functioning of the motors. Enginemen's operating compartments are located at the ends, connected by aisles extending along the side of the cab. All high-voltage apparatus is inclosed in compartments, so as to protect the engine crew while the locomotive is in operation. When the locomotive is "dead," however, easy access is afforded for the inspection and adjustment of all apparatus by removing the compartment sides and by passage through center aisles opening through expanded metal doors onto the cross aisles.

Regeneration of power on down grades and in braking on these locomotives is accomplished in the following



PASSENGER LOCOMOTIVE FOR USE ON THE ROCKY MOUNTAIN DIVISION OF THE CHICAGO, MILWAUKEE & ST. PAUL RAILROAD

manner: Control of the excitation of the main motors for regeneration is initiated manually by the operator from the master controller, the exciting current coming from two small generators geared to idle axles. The excitation of the exciters is secured from an independent source, a motor-generator set operating in parallel with a small storage battery. It is obviously necessary to have a separate source of excitation for the motors during regeneration because these must furnish characteristics similar to those of a shunt or separately-excited generator for this purpose. All of the main motors are used during regeneration. The exciters are automatically connected to the low-voltage auxiliary circuits during motoring, thus reducing the necessary size of the motor-generator set which is used in regenerating operation to supply these circuits. During motoring the motor-generator is called upon to furnish current for lighting the train, charging the train batteries, excitation to the axle generator fields, the control circuits and for charging the storage battery. One of the axle generators is mounted on the inside axle of each bogie truck. They are built like ordinary inter-urban railway motors, but are separately excited and are wound for 90 volts.

The control of the locomotive provides three motor combinations, giving full series and two series-parallel connections. In the latter two connections there are two

parallel circuits of three motors in series and three parallel circuits of two motors in series. In each of these motor combinations three running matches are provided, namely, full field, short shunt and long shunt. This gives a total of nine efficient speeds at the disposal of the engineman during motor running. While descending a grade, the excitation of the motor field is entirely under the control of the engineman, and may be increased or decreased as desired, causing corresponding increments and decrements in the regenerative effort of the locomotive. The speed of the train can thus be varied through any desired range. The full motor capacity of the locomotive is available for regeneration. The locomotive with a given current will develop 15 to 20 per cent more retarding effort during regeneration than tractive effort in motoring. On a 2 per cent grade it can hold about 60 per cent more load in descending than it can haul up the grade. On a 1 per cent grade it can hold more than double the load it can haul up.

Power for energizing the control circuit and the operation of the auxiliary apparatus, such as blower motors, the motor-driven air compressor, etc., when these are not being driven by the axle generators, is obtained from a small motor-generator set operated in parallel with a storage battery. The high-tension winding of this set is the only piece of revolving apparatus on the loco-

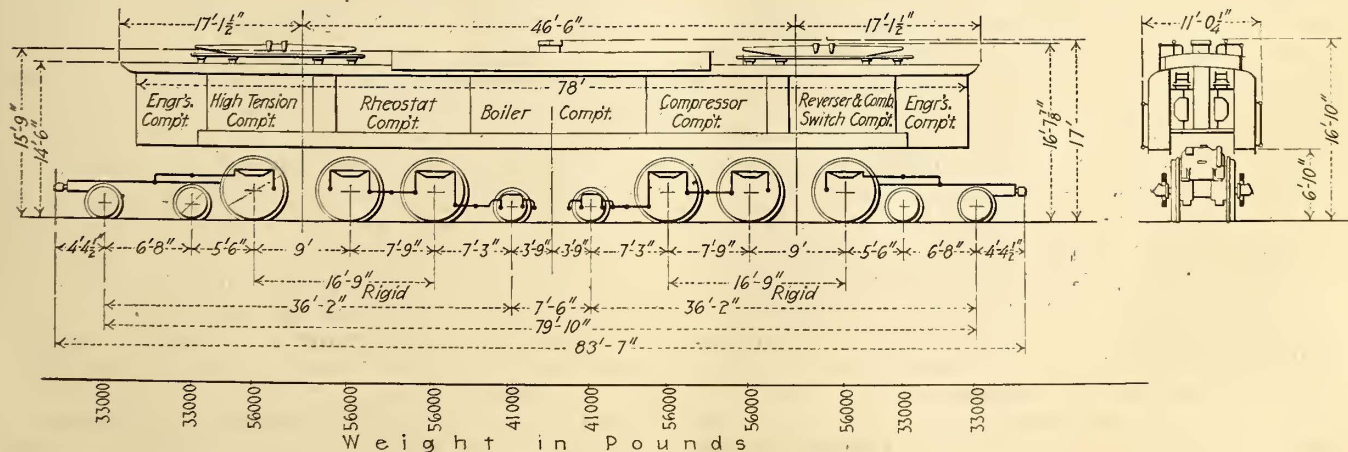


DIAGRAM SHOWING GENERAL ARRANGEMENT OF EQUIPMENT, DIMENSIONS, ETC., OF THE NEW PASSENGER LOCOMOTIVE FOR THE ST. PAUL ROCKY MOUNTAIN ELECTRIFICATION

motive, with the exception of the main motor, connected to the 3000-volt circuit. The low-tension side is also provided with slip rings for the collection of low-voltage alternating current for the headlights and certain of the interior cab lights.

All main motor and resistance circuits are opened by means of electropneumatic, 3000-volt switches, which are standard for the Westinghouse unit-switch control. These are provided with powerful blowout coils to extinguish the arc. Transfer of circuits where no high voltage current is to be broken is accomplished by means of cam-type contactor groups, adopted for the purpose of reducing space and weight by the elimination of the otherwise necessary unit switches. The control circuits of all unit switches and cam contactor groups are interlocked electrically to prevent false functioning of the apparatus. All unit switches, cam contactor groups, grid resistors, protective relays, etc., are mounted in the compartments as previously described.

The center compartment of the locomotive is given up entirely to an oil-fired steam boiler, its supply tanks and auxiliaries. This boiler, which is for the purpose of heating the passenger trains, is capable of evaporating 4000 lb. of water per hour. Two storage tanks for water are provided, having a combined capacity of 25,500 lb. There is also a tank for fuel oil with a capacity of 750 gal. This steam boiler also feeds radiators in the operating cab.

The data for the locomotive are summarized in the accompanying table.

DATA FOR ST. PAUL PASSENGER LOCOMOTIVE FOR  
ROCKY MOUNTAIN DIVISION

Normal trolley voltage.....	3,000
Total weight.....	275 tons
Weight on drivers.....	336,000 lb.
Weight on leading trucks.....	66,000 lb.
Weight on trailing trucks.....	41,000 lb.
Total wheelbase.....	79 ft. 10 in.
Driving wheelbase.....	16 ft. 9 in.
Maximum rigid wheelbase.....	16 ft. 9 in.
Diameter of drivers.....	68 in.
Diameter of leading truck wheels.....	36 in.
Diameter of trailing truck wheels.....	36 in.
Locomotive capacity at 23.8 m.h.p. (one hour rating).....	4,200 hp.
Locomotive capacity (continuous) at 80 per cent of above.....	3,360 hp.
Normal starting tractive effort.....	100,000 lb.
Normal speed on level track.....	55 m.p.h.
Capacity of steam boiler, per hour.....	4,000 lb.
Capacity of water tanks.....	25,500 lb.
Capacity of oil storage tank.....	750 gal.
Cab length.....	78 ft. 0 in.
Total over-all length.....	88 ft. 7 in.

## Fare Situation in Toronto

THE *National Municipal Review*, which is publishing a series of articles on the fare situation in different cities, covers in its issue for November, 1919, the situation at Toronto and San Francisco. The article on San Francisco is written by M. M. O'Shaughnessy, city engineer, and relates particularly to the history and present condition of the municipal railway. The article on the Toronto system is written by the municipal editor of the *Toronto Star*.

In Toronto the fares are still those provided in the agreement of 1891, namely: cash fare, 5 cents; tickets good at any time, six for 25 cents or twenty-five for \$1; tickets good between 5:30 and 8:30 a. m. or 5 and 6:30 p. m., eight for 25 cents. Since 1891, when these rates were agreed upon, all costs of operation have greatly increased. Wages alone have doubled since June, 1916.

The company stock, which sold at 148 in 1913, has fallen to 42. The city has agreed to buy the property when the franchise expires in 1921, the price to be the valuation of its physical assets.

## New York Electrical Society Has Historical Meeting

AT THE 377th meeting of the New York Electrical Society held on Nov. 25, last, Frank J. Sprague spoke on the development of electricity for railway transportation purposes. He spoke also of his own work at Richmond and on the Chicago South Side "L" and the New York Central electrification projects.

In speaking of the future of railway electrification he called attention to the attitude of the French commission recently in this country to study heavy electric traction. The commission after inspecting the Chicago, Milwaukee & St. Paul and other electrifications was enthusiastic over the use of high-voltage direct current and believed that this system was the only one for future electrification. Mr. Sprague himself believes that the economic performances developed by these locomotives will be even better than anticipated and predicts the use in the near future of a third-rail carrying 1500 to 1800 volts direct current, the use of regenerative control for braking purposes and the supply of power to the line when going down grade, the use of gearless motors and the interchange of passenger and freight locomotives.

In speaking of the urban electric railways, he pointed out that the government had, by price-fixing methods, doubled the railways' coal bills, raised the wages of their trainmen through a special war labor board, and their equipment cost more than in pre-war days; and yet this is the only industry, said Mr. Sprague, that does not have direct control over the selling price of its one product—service.

Referring to the New York situation, he said that while the subway system there is the most extensive in the world, it is now impossible to maintain the equipment in the safe operating condition demanded for the carriage of the ever-increasing hordes of people, and at the same time to carry them increasingly greater distances for the single fare adopted at the time the subway was opened.

The Public Service Commission, he stated, was playing a lone hand, but nevertheless was using commendable independent judgment against the city officials' dictum that, irrespective of existing conditions, no increase in fares shall be allowed because such would not be acceptable to the people. The average man, said Mr. Sprague, is disposed to deal fairly, and where differences concerning public welfare arise between a transportation company and a city, it is incumbent upon each to approach the situation in an open-minded manner and with absolute frankness, so that the public can see fairly and understand the merits of the case. It was useless, so far as the attitude of the public is concerned, for the railway or the Mayor to issue independent reports on conditions. What was needed was for the Mayor, the Public Service Commission and the company to agree upon some body, composed of technical and financial men, who will lay the facts of the case before the public. If the contentions of the railway are true, the public will accept this impartial body's solution.

Mr. Sprague said that personally he had no patience with the threat of receivership or municipal operation, for it is impossible for any political party to get the quality of men necessary at the price a municipality would pay. The men who run a railroad, he declared, must have an incentive for which to work and must take pride in their accomplishments.

# Some Thoughts From a Utility Leader of the South



THOS. S. WHEELWRIGHT HAS STOPPED FROM HIS WORK A MOMENT TO TALK TO THE READERS OF THE ELECTRIC RAILWAY JOURNAL

## An Interview with the President of the Virginia Railway & Power Company in Which He Discusses Franchise Relations, Labor Principles and One-Man Safety Cars

*By Harry L. Brown*

**A** MUNICIPALITY and a corporation bound together by a contract makes a most absurd partnership, doesn't it? Just like two cats tied together by their tails and thrown over a clothesline. They are partners all right, but their principal mutual concern is to get apart."

In this characteristically epigrammatic manner, Thos. S. Wheelwright plunged into the task immediately before him of answering my question about the relations of local governments with their utilities. His happy expression—"right away, please, sir"—used so frequently and yet so without irritation, in addressing his assistants, was now being applied to himself. His twinkling blue eyes and the smile-wrinkles around them, bespoke the generous sense of humor with which he is endowed and which has played a timely and important part in some of the tense, perplexing situations only recently confronting him.

"You know as well as I," he continued, "that a contract which places all the responsibility on one party is a very poor working arrangement. That is about the way the electric railways have been hooked up. They were born wrong, I reckon, and as was said to Nicodemus, the only way they can be fixed up is to be born over again. It has almost been just fool nigger luck that they have gotten on at all. I am not surprised that the industry is in the present predicament; it's a mar-

vel that it isn't worse off. This is the most respectable business on earth, and the most useful to the general public, yet it has been penalized on every hand all along the line. All the splendid economies that have been introduced were the outgrowth primarily of necessity—a question of life—and I reckon it will always be that way until the street railways can be extricated from the political atmosphere and history which has always enveloped them. That can only be hoped for when the people shall come to understand that their municipal government must be run as a business institution and not as a political plaything, and when such awakened government shall recognize its responsibility to the people and will co-operate with the utilities to work out what is best, realizing their inseparable and common interests. The present municipal government, with all its ramifications of councils and boards of aldermen, the numerous committees of each, and a politician for the business head instead of a business man, is just like a series of hurdles. You get over one and then there is another and another and another, and you never get anything done. Sometimes it is better likened to a series of toll gates."

This last reference reminds me of something Mr. Wheelwright told me as we chatted over a lunch at his club, a lunch about which I remember in particular the corn cakes and syrup. They were delicious. Their

like never grew in the North. He was telling me how he happened to become the president of the Virginia Railway & Power Company, which supplies the electrical energy and transportation to practically the whole of his native state.

He had been serving Frank Jay Gould for some years as general manager and then president of the Old Dominion Iron & Steel Company, also located in Richmond and of which he is still the active head. Mr. Gould is also largely interested in the Virginia Railway & Power Company, and when William Northrop, the former president of this company, was killed in an automobile accident in 1912, Mr. Gould wrote from Europe offering Mr. Wheelwright the place. He replied in a very appreciative manner but declined to take the offer seriously, saying that a politician was perhaps best suited for that position. But when Mr. Gould returned to the States, he called Mr. Wheelwright to New York and they reached an understanding whereby the latter assumed the task of directing the affairs of the utility as well as the iron and steel company. A part of this understanding had to do, in plain language, with the use of any graft or hush money—a thing which is absolutely foreign to and irreconcilable with Mr. Wheelwright's philosophy of life, as well as that of his predecessor, Mr. Northrop.

"Since 1912," he said, "I have several times been informed—but that knowledge has not been sought—what the price was at the various toll gates, and I was glad I had had so clear an understanding as to the fixed policy of this company. But it's easy," he hastened to add with a broad smile, "to ignore a little thing like that when the man having the largest stake in the game had decided positively the only policy—honesty."

Perhaps the above has some bearing on his ability to leave all his cares at the office whenever he leaves it, for the utility business, strenuous as it is, causes him no worry. His work is his play, and about the only play he indulges in. It is his hobby. When he gets tired at the utility office, he goes over to the steel plant and that rests him, he says.

#### LABOR PRINCIPLES PRACTICED BY MR. WHEELWRIGHT

Just a few weeks ago, Mr. Wheelwright entered into a new agreement with his employees. This was the outcome of an extended series of long-drawn-out conferences, the president having determined to hear the men to the last word. Two clauses of this agreement attracted my attention particularly, the first and seventh, as follows:

1. That the established policy of the company to maintain an open shop will be strictly adhered to. By the "open shop" is meant that each individual employee is left free to exercise his own discretion as to whether he will join a union or not; that those preferring to act as individuals may do so, and those who wish to affiliate with an organization have the same right; that the company will hear, in like manner and on the same basis, any grievances of any employee who presents his case alone, as well as of any group of employees who come together as employees to present their case. The parties of the second part (Amalgamated Association) agree that they will at all times render proper and due assistance in breaking in new men in any branch of the service, whether they have signified their intention to join a union or not.

17. All matters on which we cannot agree, except the matter of wages, hours and other questions affecting operating costs, are to be submitted to arbitration.

I was greatly interested to know some of the background for these clauses and Mr. Wheelwright answered my questions as follows a few lines below. His entire

attitude toward employees is liberal and considerate. He has held himself in readiness to hear any employee or group of employees at any time by appointment, and he says:

"Anyone who will not meet with his employees must have something to be afraid of."

In reference to the agreement, he said:

"There are three reasons for holding fast to the principles of this agreement. First, we cannot negotiate with any group except they be employees of the company. Second, so long as they are our employees, we do not care what they call themselves, whether it be Odd Fellows, Knights of Columbus, Amalgamated Association, or what not. Third, we cannot possibly agree to the arbitration of matters involving expenditures unless the same arbitration board has the power to fix both the revenue out of which the wages are to be paid, and the wages."

"Suppose you were up against the situation where the employees were strongly organized, where they were more influenced by radicals, perhaps, than they are here, and insisted on a closed shop?" I asked.

"Well, there is nothing to do but quit."

"But you can't quit for long and remain solvent," I persisted.

"In that case, we would just have to ask for the protection of the state and municipal authorities and ask for volunteers to run the service under that protection."

"In other words, you think there is no justification for anyone submitting to a closed shop?"

"I cannot see any reason for so doing. To do so would be not only surrendering your own independence, but would be encouraging employees with other companies to do the same thing. I think you will agree with me that the test of a proposition is whether it is right or wrong. Personally, I have not had a great deal of trouble in deciding what was right. My difficulty has been when I did something wrong to make myself believe it was right. That's where the problem comes in."

"I am still thinking of the man," I persisted, "who is up against a deadlock on the closed shop principle. That has happened, has it not?"

"Yes, that does happen. But in the first instance, we are working on a principle that is admittedly right. If somebody locks us out, we can very properly ask for the protection of our government. If our government falls down in protecting us in doing what is right, we have not a government that is worth a damn."

It was my understanding that the wage increase granted as part of the recent settlement had been made on the basis of a division of the surplus for three months, and assuming that the rate of surplus would be earned during the succeeding months of the agreement, I asked if that was true. Mr. Wheelwright said:

"Yes, but we did not make the profit-sharing plan a part of the agreement, because our company had not yet decided on that policy."

"Have you formulated any ideas on how a profit-sharing plan could be worked out in the electric railway industry?" I asked.

"Well, that is pretty well covered in Mr. Ashburner's plan," he replied. "There is no difficulty about it. You can make a showdown, say at the end of every six months, and then work the profit-sharing plan on a percentage basis. One, of course, has to start somewhere, and, having just given a raise of 5 per cent, that is my starting point. Now, when we make up our books on July



1, if we find we have made an amount over and above all charges for capital and depreciation that would give a distribution of 5 per cent, instead of making the distribution in a lump sum, we would increase the pay of each man 5 per cent for the next six months. If in the next six months we do not have an increase, why we would chop it off. Of course, my company has not yet given its approval to such a plan, but I think that is working in the right direction."

The plan of Charles E. Ashburner referred to above is one which he, as City Manager of Norfolk, Va., recently presented to the City Council. It provides that any excess revenue after depreciation and dividends on preferred and common stocks, shall be divided equally between the city, the common stockholders of the company, and the employees below and including the position of superintendent. The details of the application of this plan have not been worked out as yet, but the company is in accord with the general provisions.

#### SERVICE-AT-COST AND OTHER FEATURES

Discussion of this ordinance led to mention of the service-at-cost franchise and on that form of grant Mr. Wheelwright had this to say:

"There is no more reason why the principle of service-at-cost should be applied to street railways than to beefsteak, as the capital obligation of the company is probably represented by the bonds and stocks in the hands of the public. The only reason it is being done is because the railways were born in a political atmosphere. But I believe the public is going to look at this matter differently in time, especially with the coming of the commission form of municipal government."

"Do you believe the people would ever be willing to have a public utility earn more than what is considered a reasonable return on the investment?" I interposed.

"I believe that when a more compact city government, a real business administration, becomes thoroughly acquainted with its responsibilities it will realize that a reasonable return on such a hazardous business as we have should be more than that on a 6 per cent real estate mortgage. The hazardous nature of our business is generally overlooked. For example, what other business finds it necessary to set aside 5 per cent of its gross earnings for accidents and damages. What is reasonable is what will induce capital to invest in the business."

"Your situation here locally is probably better than that existing with a majority of companies, is it not?"

"Well, I don't know about that. In fact, I do not have much chance to see what the other fellow is doing and how he is fixed. My job keeps me so busy that I am like the rat about to drown in the milk can trying to keep his nose above the milk by churning enough butter to hold him up. He hasn't time to see what the other rat is doing."

"The only way in which to get the industry on a basis where it will earn a reasonable return on the capital invested is through a revamping of public opinion. People realize we must have a more efficient government. The present form of boards of aldermen and councilmen is archaic."

The nickel fare is still the rate in Richmond, so it is not surprising that the Virginia Railway & Power Company has been giving very broad attention to a system which has such marked effect upon operating costs and earnings as does the one-man safety car. Thinking of costs has been a habit with Mr. Wheelwright. Speaking of this trait of his, he said:

"There never has been a time when I did not know the cost of a barrel of flour. I was born here in Virginia just after the war when everything was high. Materials were very scarce, I reckon. Only weighed three pounds, myself."

The original installation of safety cars made by Mr. Wheelwright was in Norfolk where the natural course of events was complicated by the overwhelming growth of the community due to war activities and by the addition of another party, the United States Housing Corporation, to the city-public-labor trio which must ordinarily be dealt with in such an installation. The trial installation brought a host of troubles and the cars were taken off, though the reasons for the removal have been obscured. I sought light on the cause of this apparent failure and Mr. Wheelwright explained the circumstances, making clear that the failure was no fault of the cars. He began with the history of the case.

"Early in the fall of 1918, before the armistice was signed, we were up against it for equipment to furnish the necessary service for the government activities in Norfolk and Portsmouth. The authorities insisted that more equipment was necessary and we, of course, knew it. To help out in the situation, the government offered to advance us the money to purchase fifty one-man cars for Norfolk and Portsmouth. We agreed to accept the loan of the money—approximately \$300,000—which was to be paid back in installments, the first payment to be made one year after declaration of peace, which has not yet occurred. We stipulated in that contract, however, that we would agree to the arrangement provided the city authorities of Norfolk and Portsmouth would permit the use of this class of equipment, because we knew that our franchises required the employment of a motorman and a conductor on each car.

"Before the cars were delivered, the armistice was signed and the Housing Corporation undertook to get the city authorities to permit the use of these cars. The city then asked that the cars be given a trial. This raised a great issue in both communities, and there was some opposition because the city authorities did not feel like taking the initiative in putting on a car that they did not know for sure would be acceptable to the public—a rather reasonable position, it seemed to me. The Housing Corporation, on the other hand, said it could not put the cars out on trial, as this would make them second-hand.

"We then proposed to the Housing Corporation that if it would let us use the cars anywhere on our system, we would accept them. This it did. However, the question got to be such a hot issue, and sundry viewpoints were so vehemently expressed by representatives of labor, the public and others, that the Councils of both Norfolk and Portsmouth turned the cars down. We then brought them to Richmond and Petersburg where the people took to them and so far they have been very satisfactory and are highly indorsed, and we have purchased for early delivery thirty additional safety cars for Richmond."

"Was the consideration of the negro involved?"

"Yes, the car was said not to be a very satisfactory form of equipment for handling negroes, but to ease that point as much as possible we put the cars on the lines where we had a minimum of negro traffic."

"How did the people of Norfolk and Portsmouth express themselves about the cars?" I asked.

"The people liked the cars and expressed themselves freely as being greatly pleased with them and with the

service they afforded. They even circulated a petition in Portsmouth and secured 1200 signatures requesting the Council to continue the safety cars in service."

"Then the Councils took the action of removing them, you might say, in contradiction of the people's wishes?"

"Well, I would not like to say it as strong as that," Mr. Wheelwright answered, "for the Councils were seriously attacked by the labor organizations, and both cities have a recall system effective upon the petition of a surprisingly few people, and this action was openly threatened. By the labor opposition mentioned, I do not mean our own employees. They liked the cars."

"There has been lots of talk, but I do not really think the safety car has had any 'bump' because it was not adopted in those two cities. There were very difficult conditions at the time. I do not feel the least bit discouraged as to the future of the safety car. I believe it is the ultimate unit for handling passengers by trolley inside of cities. And I am not so sure that it would not be just as well on the outside."

"On interurban lines?" I queried.

"Yes. On our interurban we have our money in very good equipment, and, while we might save money by the operation of the safety cars, they cost as much now as the standard cars did a few years back."

"But they would soon pay for themselves from the saving."

"That is true, but we have got to get the money from somewhere with which to buy them."

#### SOME OTHER THINGS MR. WHEELWRIGHT HAS DONE

While Mr. Wheelwright is one of the younger officials (in years of service) with the Virginia Railway & Power Company, he jokingly claims to be the oldest in experience among them. In this connection, I remarked:

"You were associated with Frank J. Sprague when he built his first commercial electric line here in Richmond, were you not?"

His answer was typical:

"Oh, I was only a livery horse for Mr. Sprague—a tin can that you fill up and empty out again. But, of course, I could not help but absorb some of the fundamentals."

He had served as a stenographer during those trying development days of the electric railway, and he expressed great admiration for the work done by Mr. Sprague. He said that the venture cost Mr. Sprague a fortune, but his nerve to see the thing through put the industry ahead ten years. Mr. Wheelwright has great admiration for that attribute of some men which can only be described by the homely expression of having the "guts" to go ahead and do a thing, no matter how many unsuccessful attempts are made. He once spent ten years in Chicago with the Gray Telautograph Company trying to develop a commercial telautograph, meeting with one failure after another, but finally achieved his goal in the product now made by the American Telautograph Company.

His experience in Chicago was finally successful, but he could not remain longer away from his native soil and so determined to return to Virginia and "put a pin in the ground and vibrate around that." So he bought a small farm 12 miles out of the city which now bears the name of "Buckhead Springs," and settled down there with no job in sight. He has lived there ever since.

The interurban line to Petersburg runs past his farm and he always rides the cars back and forth. This is his contact with the actual operation of the cars, and he considers it invaluable to him.

Mr. Wheelwright began his career by spending five years at Randolph-Macon College at Ashland, Va., in learning stenography and French and German, preparing himself, as he thought, to take an active part in the export business and making Norfolk one of the great world seaports. This, it seemed to him, was the future of that city.

"Thus prepared," he said, "I went to Norfolk and, after long search, found that there was not a place in town for a man of my training, and I was finally forced to take a job as a bookkeeper at \$50 a month, something about which I knew nothing. But the joke was on Norfolk, not on me. My geography was all right but the town had not realized its opportunities, but what I foresaw for the city then is now actually coming true."

### True Mileage Fare Collection

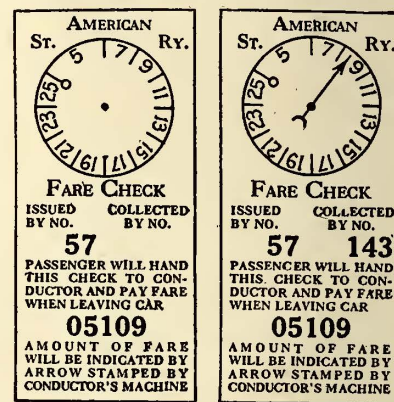
APPLICATION has been made by Albert S. Richey, of Worcester, Mass., for a patent covering a new form of ticket stamping machine that can be used in collecting zone fares based on distance traveled. The plan in general provides that two synchronously operated machines be used.

The first or issuing machine may be under the control of either the motorman or of the conductor and has a revolving dial which prints on the ticket as issued relatively the point at which the passenger boards the car. At the same time the machine stamps a serial number on the ticket as well as the motorman's number in the position shown. The second machine is in charge of the fare collector and has a rotating indicator arrow which revolves in synchronism with the rotating dial on the issuing machine. The ticket held by the passenger when inserted in this second machine is stamped with an arrow which shows either miles traveled by the car since the ticket was issued or how much fare is due to the conductor for the ride taken. The collector's number is also stamped on the ticket at the same time.

The illustration shows at the left the ticket as issued and, at the right, the appearance of the ticket if the passenger left the car after he had taken a ride worth 9 cents. In the case shown, the disk indicates the fare to be paid and not the distance traveled.

As will be seen, the design of the machine is such that fares may be in even amounts per mile or per fraction of a mile, or an initial charge may be made greater than the unit of subsequent increments. Changes in rates may be made by changing only the disk which prints the dial on the ticket when issued. The tickets as collected can readily be audited.

In contrast with systems having fixed zone points, this plan allows each passenger his full initial fare ride irrespective of his boarding point.



AT LEFT, TICKET AS ISSUED FROM MACHINE. AT RIGHT, TICKET AS STAMPED BY MACHINE IN CHARGE OF FARE COLLECTOR AT ALIGHTING POINT

# Unlimited-Ride, Transferable Weekly Pass at Racine

An Experiment in the Sale of Street Railway Transportation to Promote Frequent and Frictionless Riding  
—Why a Pass Is Being Tried in Preference to Other Special Rate Plans— How It Is  
Advertised and Used to Further Better Public Relations

Is it possible to restore the old-time zest and flavor? Other competitive businesses have done so. The old-fashioned drugstore, when the population became too disgustingly healthy to require patent medicines and a few prescriptions, blossomed forth with soda, candies, cigars and minor household furnishings. The Yankee notion corner was transformed into a 5 and 10-cent store; and the barber shop, threatened with rapid extinction by the safety razor, transformed itself into a beauty parlor and raised its prices besides. Is the industry lacking in constructive imagination, or is the trolley ride as prosaic as a postage stamp which it does not pay to flavor to induce use? The low number of rides per capita—less than one ride per day—indicates a minimum of patronage and absence of convenience or pleasure riding and a dearth of salesmanship. We call it "the riding habit"—a proper designation. Riding is habitual or forced rather than attracted. . . . There is some solution awaiting the genius of salesmanship.

THE foregoing quotation from the paper: "Can Service Costs Be Collected From the Traveling Public?" presented by J. D. Mortimer, president North American Company, before the 1919 convention of the American Electric Railway Association sounds the keynote of this article. This quotation is all the more appropriate as the Milwaukee Electric Railway & Light Company, of which Mr. Mortimer is also president, has pioneered in two important ways of selling transportation. It was Milwaukee which inaugurated a zone-fare system as early as January, 1914, and it is in successful use to-day as described in the *ELECTRIC RAILWAY JOURNAL* for Sept. 27, 1919. So, too, it is the Racine division of the Milwaukee company which is the first in this country to try the unlimited-ride pass hereinafter described, zone fares not being practicable at Racine because of the shortness of the routes and the character of the present headways.

## VARIOUS FARE SCHEMES WERE CONSIDERED

Before the pass idea was adopted in Racine consideration was given to the experience of foreign roads in successfully building up short rides and in improving their load factor. Due thought was also given to the several expedients that have been tried or suggested in the United States, such as wholesaling tickets, off-peak hour tickets, club membership tickets, limited-ride tickets, etc. The plan of a weekly pass finally approved for trial is a modification of the British season or contract ticket, and was suggested by Walter Jackson, who had been engaged by the company to devise a plan to increase the riding on the property. It is interesting to add that Bruce Cameron, former general superintendent United Railways of St. Louis, independently reached the same conclusion in working out a plan for the county lines of St. Louis.

In addition to the comparisons of fare schemes which follow, it should be stated that Racine is a city of about 50,000 population, of whom some 18,000 are in factory, office or store employment, and that a large proportion of this labor is well paid, as proved by the fact that Racine has 8000 telephone subscribers, of which

number about 7000 are residence subscribers. There are few large stores, owing, probably, to the nearness of Milwaukee and Chicago, but there are several excellent theatres to induce night travel. The shopping and pleasure district is roughly 2 miles from the outskirts. Hence a good deal of walking is to be expected unless the fare and service are held by the public to be satisfactory. At the present time, with two men per car, the shortest headway exclusive of rush-hour trippers is nine minutes. Other headways are ten, twelve, fifteen and twenty minutes. These headways should be borne in mind in the consideration of any scheme for inducing traffic. The shorter the headway the greater the proportion of population to which the railway can be of everyday utility. To-day, obviously, persons within one mile from the shopping and pleasure center, and that means more than half the population, are not good prospects for the street railway.

At the time the pass was installed the single-trip fare in Racine cost 6 cents cash, and a 6-cent metal ticket was sold at full price. There was also a workman's metal ticket sold at ten for 55 cents, or 5½ cents each, good between 6 and 8 a.m. and 5 and 7 p.m. Children between the ages of three and ten years rode at half price. Transfers were free. By a ruling of the Railroad Commission in the latter part of November, 1919, the company was authorized to increase its cash fare to 7 cents and to sell six tickets for 35 cents and to discontinue the sale of workmen's tickets. Up to that time, during 1919, about 5 per cent of the passengers rode on workmen's tickets and between 4 and 5 per cent presented metal tickets sold at full price. These facts were considered in the adoption of the final plan, in which one of the principles sought was to simplify rather than further to increase the work of the conductor. The principal schemes considered were as follows:

*Wholesaling Tickets:* An intensive selling campaign, including house-to-house canvassing, it was recognized, might have greatly increased the sale of metal tickets if some cut rate had been offered. This would have tended to encourage riding, since a ticket in the pocket is money already spent and would have relieved the conductor in making change. The objections to this plan, however, were considered to be as follows: First, since the principal buyers of tickets would be people with a fixed riding habit, the advantage of a reduced rate would be enjoyed chiefly by those who as long-ride, rush-hour, compulsory riders were already getting their money's worth and more; second, the company was already selling a 5½-cent ticket good during the chief peak hours; third, a variety of fares tends to confuse the conductor and his accounts.

*Cheaper Off-Hour Tickets:* Another way that was considered and has been tried to a lesser extent is that of selling so-called shopper's tickets good only between

the hours of say 10 a.m. to 4 p.m. The objections to this were: First, a further complication of tickets for conductor and auditor; second, any ticket with a time-limit feature would, like a transfer, be another source of friction between the rider and the conductor—as when a woman wanted to argue as to why she could not board at 9.55 a.m. or 4.10 p.m.; third, should safety car operation be introduced, it would be most undesirable to slow up the car through having a variety of fares.

**Street Railway Club Scheme:** Mr. Schaddelee of Grand Rapids, Mich., it will be recalled (ELECTRIC RAILWAY JOURNAL, April 5, 12 and 19, 1919), has suggested what

might be termed a membership plan. Those who pay a fixed sum per annum or per month would be entitled on presentation of a pass to pay a cash fare of, say, 5 cents, while all others would pay, say, 10 cents. This plan was also considered, but it was rejected because it was thought to dis-

c r i m i n a t e against the casual rider who may or may not be a frequent rider. As in the case of wholesale tickets, it was believed that the person who must ride twice a day will be the one most likely to go to the trouble of signing up monthly or annually. On the other hand, a woman who may be taking more trips (and shorter ones) during the week

casual riders are on shopping or pleasure bent. Even the woman who comes into the city but once a week to buy a bill of goods is so welcome to the merchant that he would rather pay her fare himself than have her sour on the town because of a discriminatory fare. It does not seem good public policy, therefore, to make the discrimination against the casual rider too glaring.

The club plan, it was thought, is also but slight relief to the regular rider in so far as his fare transactions are concerned. He may have less trouble about getting change, but he must still go through a cash transaction every time he boards the car, ask and perhaps pay for a transfer (unless he has a special pass) if needed and also have the bother of signing up or remitting monthly dues. Nothing is gained from the viewpoint of the conductor because he still has a transaction with each passenger and still has a variety of fares. From the financial viewpoint, there is the further difficulty to the company of distinguishing between the passenger who pays a reduced rate and one who pays the full rate. For these reasons, the club plan was not tried.

#### THE WEEKLY UNLIMITED RIDE PASS ADOPTED

Fundamentally, it did not seem wise to offer a reduced rate to unprofitable, compulsory riders or to do anything that would complicate the system of fare collection. The exigencies of the case seemed to be best answered by a modified form of season ticket or pass, the cost of which would be more instead of less than the regular cost of two rides a day. Thus it became possible to argue with the prospect in this wise: "We cannot afford to reduce the cost of your rush-hour riding, but we may be able to give you any additional, non-rush hour riding at a slight increase over what you are now spending. Today, you are paying 72 cents for twelve rides a week. We are going to offer you an unlimited number of extra rides for only another 28 cents. In this way we hope to make 'any car your car any time' for shopping, social and amusement travel, for as short a ride as you care to take in bad weather, etc. We are anxious to make our service of the greatest possible use to you, and you can help us by this plan of filling seats now empty."

The first idea with regard to the pass was to limit it to a fixed number of rides per week and to limit it to the original purchaser. But to have limited the number of rides would have compelled the car operator to punch the ticket, thereby losing time and bothering the passenger. A ride limitation, unless very high, would not have eliminated the transfer nor encouraged short rides to the same extent as an unlimited-ride pass. As for confining the ticket to the original purchaser: This would have done no good at best because it is practically impossible to identify the street car rider; nor was there any desire to limit the use of the pass in this way. The fact that the pass is transferable was considered the best argument that could be used with people who could not see how they could get \$1 value out of it. In other words, it was thought that they would be far more likely to buy a pass when told that they could go a-shopping or to the theater on it after the pass has been turned in by one of the school children of the family. This is but one of many possibilities. Practically, of course, most pass owners must keep it for their own use; else they would have to pay real cash on boarding the next car.

The unlimited-ride weekly pass now in use is good

## THE ONLY WAY To Reduce the Cost of Living Now

Some day the government may find a simple method of reducing the cost of living. It hasn't yet, however. The only way open to the average family is to buy economically. To buy economically, you must visit the store in person. In the past, that has meant added expense for street car fare. But since the establishment of the Weekly \$ Pass you

### Needn't Pay 6c Car Fare

Has it been explained to you? Every conductor and many merchants now have on sale the Weekly \$ Pass. It is an unlimited ride ticket, good from Monday morning until the next Sunday midnight on any street car. Any person can use one pass; one pass does for the whole family, provided they all don't want to ride at the same time. The pass costs \$1, and you can ride 100 times—or 1,000 times for that matter—on it if you do it during the seven days for which the Weekly \$ Pass is issued.

### 1.00 Used In Racine

More than a thousand Racine people buy these passes each week. The men go to work on them. They come home to lunch. The rest of the family use them in shopping hours, in the evening and on Sunday. Groups of clerks downtown have bought them for their joint use. They take turns riding.

### Good Street Car Service

The use of these passes is making for better street car service. The owner of one doesn't have to pay carfare, he doesn't need a transfer, he doesn't delay the people following him while he makes change at the car door. The result is that service is being speeded up. There is less delay at junction points. People use the cars to ride a block or two. When it is raining—oh, what a boon that Weekly \$ Pass is—then!

### Free Rides to the Movies

Your family will get more than the \$1 cost out of riding in the day-time. As a result, your evening rides and your Sunday trips are really free. This means a lot to people who have had to forego the pleasure of the movies, because car fare added too much to the cost of the entertainment.

### Go Home For Lunch

No need to tidy downtown at noon. With the Weekly \$ Pass in your possession it is cheaper to go home than to stay downtown. Hundreds of Racine people have learned the value of this pass. It has enabled school children to abandon the noon hour cold lunch, and go home instead.

### Try a Weekly \$ Pass Today

Try this Weekly \$ Pass now. Ask the conductor about it. No one who has bought one has failed to do so again. It looks now as though it is to solve the problem of cheap transportation by increasing traffic and efficiency.

THE WEEKLY \$ PASS FOR NEXT WEEK IS NOW ON SALE

T. M. E. R. & L. CO.

THIS IS AN ENTICING ADVERTISEMENT OF THE PASS

than rush-hour riders, but at irregular intervals, might be unwilling to go to this trouble. At the same time, she would resent paying a higher fare per trip and therefore would ride less and telephone more.

Theoretically, in the opinion of those who worked out the Racine plan, the casual rider costs the railway more than the regular rider; actually, he does not so long as the casual riders do not fill all the seats offered during the hours when a base schedule must be given in any case. There is also, in their opinion, a further disadvantage in charging the casual rider a higher rate, namely, in arousing the antagonism of the business and amusement interests of the community. Many

from Monday morning to Sunday midnight. Its holders merely flash it as they step aboard, the conductor readily recognizing it because of the color and number used for any given week. The numbers are more than 2 in. high. The only work the conductor has is to ring up each pass as presented.

The period of one week may seem unnecessarily short, but it was realized that Americans are not acquainted with the value of unlimited-ride passes. It hardly seemed likely, therefore, that people would be willing to put up, say, \$4 a month for something that they can take or leave at the rate of 6 cents a ride. A dollar a week might be expected more readily in view of the fact that even the workmen's limited-hour ticket called for an advance purchase of 55 cents. When greater familiarity with the uses of such a pass has been gained by the public, the company can consider selling it on a monthly basis. Indeed, it has been considered to be feasible, particularly when the same company handles lighting and power, to bill such transportation by the month. Then the patron would have to exert initiative to stop the pass, whereas now he exerts initiative every week to buy the pass. The psychology of this needs no explanation.

Almost all sales of the pass are made through the conductors, who receive a commission of 2 per cent. The merchants, with whom the passes were placed for sale on the same basis, did not manifest much interest until they were shown how increased sales of passes would stimulate riding and that this in turn would benefit them. The passes are placed on sale on the Thursday morning preceding the week (Monday a.m. to Saturday midnight), for which they are valid. None is sold for the current week after Wednesday.

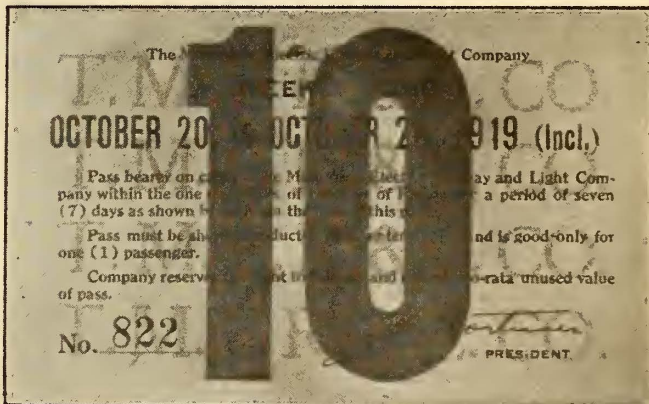
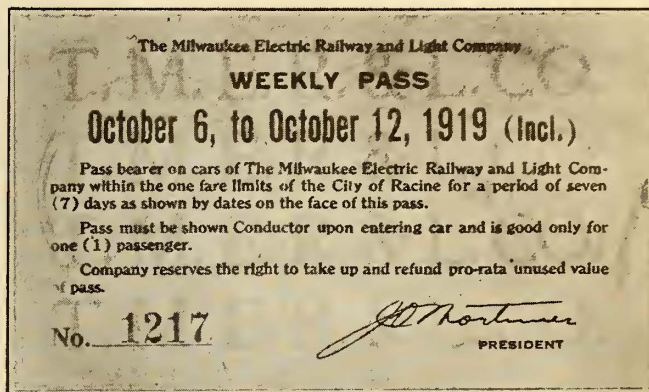
**SELLING THE PASS IDEA TO PLATFORM MEN, BUSINESS MEN AND PUBLIC**

In making so great a departure from current fare charging practice, it was necessary to see that everybody at interest understood the purpose of the pass as affecting him personally. Following a preliminary newspaper advertisement and a simple car card and store card, the pass was allowed to work out its own salvation for a few weeks to see whether any serious technical defects would develop in practice. Passes were first placed on sale during the week of Aug. 18. A number of talks, as outlined in the following paragraphs, were given one month later, and newspaper advertisements were begun the last week of September.

Of course, the first people to sell were the salesmen—the conductors. At smokers given to both the night and day men, they were advised concerning the advantages of the pass to them personally. They would have but one transaction a week instead of a dozen or more with each passenger. A pass holder would never bother them about change or about misuse of transfers. With the coming of bad weather, they would appreciate more and more this means of assuring the quicker closing of the doors and of minimizing unpleasant discussions with passengers. Compared with the work of conductors on zone systems they had had a fairly easy time, despite the 6-cent fare and the time-limit transfer. It was the endeavor of the company, however, to make matters still easier for them by means of the pass. Since they were to be the chief salesmen, it was desirable also to tell them of the advantages of the pass from the passenger's viewpoint. They were also advised of other special fare

schemes which had been considered but rejected as making more work for them. Under the new plan, metal tickets and cash would be registered through the fare box, while each presentation of a pass meant nothing more than a pull on the register cord.

Merchants were seen both individually in their stores and collectively before the Rotary Club and other business organizations. There were frank talks on the electric railway financial problem as a whole. It was pointed out that railways had to have more money. This might come either through higher unit fares or through more travel during the off-peak hours. Increased fares were injurious to their interests if they resulted in reducing riding. Contrariwise, more off-peak riding was of the greatest possible benefit to them. This company was



**SAMPLE PASSES—THE PASSES NOW HAVE THE RED SURCHARGE NUMBER, INDICATING THE WEEK FOR WHICH THE TICKET IS VALID**

anxious to get more revenue through increasing rather than decreasing the usefulness of the railway. The weekly unlimited-ride pass was an experiment along those lines. While the sale of the pass lay largely with the conductors, the merchants could help by permitting the display of advertising cards in their show windows and of advertising inserts, as in the case of the Liberty Loans, in their sales announcements.

As an example of what many pass holders meant to the cause of better local shopping, a parallel was drawn between telephone and personal buying. People who telephoned bought less because they did not see things to arouse their desires and because the merchant had no chance to use his salesmanship. A woman who telephoned naturally could not carry any of her purchases home; whereas she would surely carry some of them home if she came in person and could ride from store to store without extra carfare. Finally, a person who bought goods personally would return less goods as un-

suitable. The weekly pass would encourage riding also by making it frictionless, as through the elimination of the feeling that money was being spent and of arguments concerning transfers, etc. If a trolley ride had no unpleasant associations, it would be taken oftener. It was needless to tell them that the automobile could not replace the trolley car, for there wasn't room for the parking of even half a dozen cars before their stores. In every case, the merchants said they would be only too happy to cooperate in an enterprise that affected them so closely.

A similar line of argument was used with the moving picture men. They were advised in addition that the people hardest to sell were the workmen who did not have the opportunity at present to ride home to lunch. If they could be induced to do more riding to the movies, it would pay them to buy a weekly pass. For example, a person going to a 22-cent show might change his mind if he figured that there was another 12 cents to add just for carfare, and the going of a family would be influenced still more by a factor of this kind. All the movie people interviewed said they would gladly give the use of their screen for advertising slogans. In fact, one merchant who owns the largest theatre in Racine said that he would not advertise his own store on the screen, but he would advertise the pass because it meant more business for the theatre.

The advertising campaign with the general public is now getting under way. This is to comprise newspaper advertisements and a variety of car cards and dasher signs appropriate to the season. The man in the street will be urged to ride on a pass, and the man who is riding now will find a sign over the farebox concerning the futility of bothering about change and transfers when the pass would wipe out such annoyances!

#### POPULARITY OF THE PLAN

The sales of the pass during the week of Aug. 13 approximated 800 and for the week ended Dec. 20 they had risen to 2,024. For the week of Nov. 7, 19.7 per cent of the rides were taken on passes and 13.8 per cent of the revenue came from passes. The average revenue per ride from pass holders was 3.7 cents compared with 5.93 cents per revenue passenger and 5.17 cents per ride from all passengers. The 3.7 cents per ride on passes must be interpreted in the light of these facts: First, that as pass holders need no transfers they are always registered as revenue riders, so the 13 to 15 per cent dilution due to transfers does not show in this figure; second, when a child below twelve uses a pass the revenue per ride is greater than the single-trip fare of 3 cents; third, pass holders naturally want to get maximum returns, and therefore ride short distances that a unit-fare customer would walk.

The average number of rides taken daily per pass holder for the period named was 4.1 and for Sunday 2.4. Of course, the price of \$1 a week is purely experimental and might be increased if it was found to injure the earnings. However, gross earnings at Racine were climbing up for several months before the introduction of the pass, and as they are still rising one cannot say whether the pass is hurting or helping. In any case, the pass seems to be fulfilling at least part of its purpose in making street car riding more popular, although there has been no increase in service.

Although the idea of the pass has met the hearty approval of the newspapers, the business men and the

public, the number of pass holders is still far below the possible maximum. For this a number of reasons are apparent. The idea is new and has to work its way into the consciousness of the public as a whole; publicity must be continued by the railway over a period of months as persistently as by the tobacco manufacturer who can find sales arguments for mixing tobacco with chocolate or toasting it; shorter headways than nine or twenty minutes will make new street car riders or more frequent street car riders out of people who are now within a walking radius; lengthening of the luncheon period by manufacturers will also be a big factor, once the manufacturers and their employees understand that lunch-hour riding costs next to nothing and is coupled with short-headway service. It is also a fact that the pass has hardly had the advantage of being exploited in connection with winter weather, although pass holders have been seen to ride only two blocks on a rainy day.

#### PASS AN EXCELLENT PUBLICITY MEDIUM

Regardless of the sales, it must be obvious from what has been said that the pass offers an excellent opportunity for bringing the electric railway problem before employees and public in a new light.

It is difficult to analyze the classification of the pass holders. The first buyers, naturally, would be canvassers, house workmen and others who have occasion to ride or walk from block to block. Next in line are people who can ride home for lunch, and then come shoppers who may or may not get a full dollar's worth every week, but who appreciate the convenience. During the school season, high school pupils who average longer distances from home take advantage of the ticket for riding home to lunch. Many stories are told of the convenience of the pass, as of the man who got off en route to buy a forgotten loaf of bread and took the next car, happy that he did not have to pay a second fare! Conductors have observed that the pass holder soon acquires the same air of proprietorship that is associated with the free-pass rider of former days. The steady though slow increase in sales would indicate that those who buy the pass are satisfied that it is giving them a chance to make 100 per cent use of their street railway and they continue buying the pass week after week whether they save money regularly by it or not.

#### CHANGE IN RATES OF FARE

As already stated, beginning Monday, Nov. 24, the cash fare was raised to 7 cents and the company was permitted to discontinue the ten-for-55-cents workmen's ticket. However, the situation was complicated somewhat by the Commission's order that tickets must be sold at the rate of six for 35 cents. This order has probably prevented the maximum rate of change of cash riders into pass riders. Nevertheless, for the week ended Nov. 29, \$1 passes sold jumped from 1,499 to 1,678, although this included Thanksgiving Day; and for the week ended Dec. 20 the number sold jumped to 2,024. The number for the week ended Dec. 13 was 1,915, and that for the week ended Dec. 20, 2,024. The following week showed a decrease to 1,602, due in large part to the closing for the holidays of several large factories and the schools, important producers of traffic in Racine. As this issue of the paper goes to press, sales up to and including Thursday, Jan. 1, for the week ending Jan. 3 amounted to 1,407.

# How Purchasing Agents Can Help Each Other

By *E. E. Stigall*  
Purchasing Agent Kansas City Railways

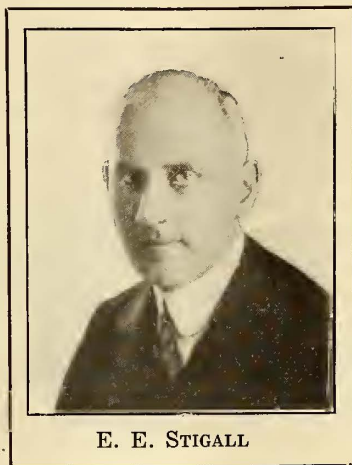
## Much Good Should Come to the Industry from the Recently Organized Purchasing Agents' and Storekeepers' Association

THE Purchasing Agents' and Storekeepers' Association, which was formed during the convention of the American Electric Railway Association at Atlantic City last October, faces two conditions often surrounding a new organization of this nature—the association should have been actively at work years before, and the attendance, interest and definite plan for action may appear somewhat disappointing at the outset.

At the first meeting of the organization, nearly thirty electric railway properties were represented by their purchasing agents or storekeepers. A second meeting was held during convention week. I feel sure those in attendance are convinced not only of the necessity of this association but are certain of its growth and increasing value if cooperation is given to the president, W. H. Staub of the United Railways & Electric Company, Baltimore, Md., and the secretary, P. F. McCall, Metropolitan West Side Elevated Railway Company, Chicago. There is scarcely a street railway so small that the time and expense required for the attendance of the purchasing agent or storekeeper would not be more than justified when one considers the benefits derived from the convention and the value of such an organization throughout the year.

It is generally conceded that the time-worn cry of local conditions and a disposition to ignore what others are doing in similar lines of work should be discarded. Where men in the same kind of occupation are brought together as they will be in this organization, they gain by each other's experience. In consequence, they not only run less chance of repeating mistakes that others have made but without further delay they can adopt the methods which are proving advantageous on other properties.

Every year we find both business and professional men associating together for mutual benefit to a greater extent than before. In fact, there is a strong tendency in our cities on the part of business men to group themselves geographically according to their respective lines of business. Thus, we find the lawyers, doctors, insurance and realty dealers taking offices in buildings occupied almost exclusively by themselves. Again, we find financial institutions, brokers and commission houses, as well as wholesalers and jobbers of the same goods, locating their establishments in the same sections of the city. This has resulted from a realization that friendly competition is preferable to the old method of fighting and that real advantages are to be gained by such a policy. In the same way, our association can be a material benefit not only to the individual members



E. E. STIGALL

## Present Critical Condition of Electric Railways Emphasizes Desirability of Employing Every Means to Reduce Costs

and the departments represented, but to the other departments of the company and to the railway industry as a whole.

The first benefit to be obtained is acquaintanceship. Without this there is always a disposition to reduce to a minimum the contact even by correspondence which is essential if the different companies in the railway industry are to receive from each other the assistance which is the most important

that they should have during the next few years.

Without this acquaintance and friendship among the men in this industry who have similar work to do there will be no team work, and many things of importance to all companies will be delayed or left undone.

The purchasing agents and storekeepers come in contact with every department in a company as well as with practically all the manufacturers who furnish equipment and materials to their respective railway systems. The conventions of the American Electric Railway Association furnish a splendid opportunity for these men to increase their value to the companies employing them not only in their specific work but in co-operating more efficiently with the other departments. In fact, these two departments are of value only as they support and are of service to the other departments of an electric railway company. On the other hand, they form the connecting link between these departments and the manufacturers who furnish millions of dollars worth of materials for the construction and operation of the electric railways. In this capacity they should take the initiative and obtain all information from the manufacturers which may tend to reduce costs or increase the efficiency of operation.

There is no need to refer to the abnormal market conditions nor the subnormal financial conditions of the industry during the past few years. The problem now is to exert the maximum effort without omitting any policy or action, no matter how relatively unimportant it may appear, which will contribute to the relief of the electric railway properties.

The chief problem before the industry now is to increase the difference between gross revenue and the operating expenses. There is a limit to what can be expected in gross, and there is undoubtedly also a minimum to which expenses can be reduced. But it is important to know if we are approaching that minimum. Further reductions may be possible. The purchasing agent and storekeeper can help in this matter. The extent to which they can be of such service depends upon the information which these officials have at their disposal and the judgment possessed by them. I be-

lieve that at this particular time every member company will make a good investment by instructing its purchasing agent and storekeeper to join this association and become at once active and aggressive in the working out of the question of cost reductions of the equipment and material used by our industry.

This is not the time to go into detail as to the plans of the association, but every purchasing agent will at once realize the possibilities of benefit which would arise from certain standardizations, the proper disposition of obsolete material and a careful review of the policies which are followed at different times by manufacturers.

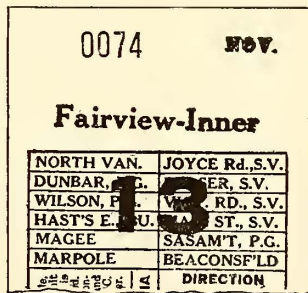
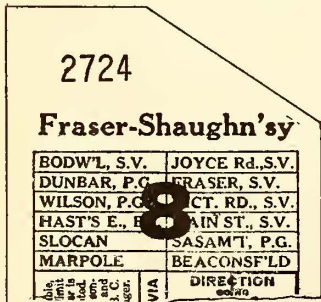
The sellers are more or less organized and at times take very uniform action regarding matters directly concerning the buyers. It is obvious that our interests compel us to organize in like manner. I feel sure that the association mentioned will benefit every member, and of particular importance will be the opportunity during convention week of meeting with the members of the Engineering Association, whose requirements form the basis of the work done in the purchasing and stores departments. Equally important is the opportunity of meeting the manufacturers' representatives and not only of obtaining much information from them but of inspecting the material and equipment which they place on exhibit.

But the convention week does not at all exhaust the possibilities for profit in the association; its advantages will continue throughout the entire year.

### Economy in Transfers

ON THE system of the British Columbia Electric Railway at Vancouver approximately 1,250,000 transfers are used per month. They are printed with the day of the month in heavy black red type on the face and the month is printed in red on the right-hand top corner of the transfer. The method is shown by the right-hand transfer reproduced.

The conductors of the company are instructed to turn in at the end of each day all unused transfers. In the



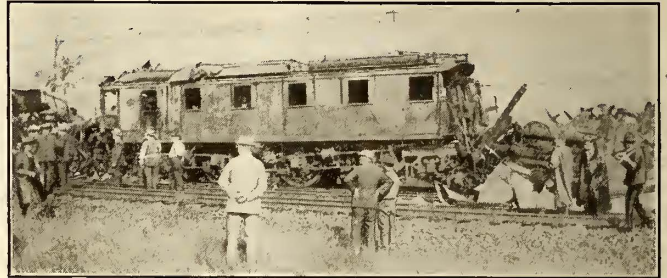
UPPER PART OF TRANSFERS WITH NAME OF MONTH CUT OFF

course of a month the total number so turned in is considerable. These transfers are placed in pigeon holes numbered from 1 to 31, and at the end of about eight months sufficient transfers are on hand to fill requirements for one whole month except for the month. This is corrected by cutting off the "month" from the right hand top corner, as shown by the left-hand transfer.

In this manner, if a surplus supply of transfers is printed for a particular month, such surplus is used, and absolutely no waste occurs.

### East Port Chester Wreck Due to Man Failure

THE chief of the Bureau of Safety of the Interstate Commerce Commission has reported on the causes of the rear-end collision which occurred between two west-bound freight trains on the New York, New Haven & Hartford Railroad near East Port Chester, Conn., on July 31, 1919. This is on the electrified division, which is equipped with modern type signals put in service on March 18, 1917. The signals are of the normal-clear left-hand upper-quadrant semaphore type, suspended from the catenary bridges. The aspects and indications



TWO VIEWS OF FREIGHT WRECK ON ELECTRIFIED ZONE OF NEW HAVEN RAILROAD

as displayed by the semaphore arms are horizontal for stop, diagonal for caution, and vertical for clear; the same indications being denoted by red, yellow and green intensified electric lights both day and night. As the accident occurred on the four-track electrified line between Devon, Conn., and Woodlawn, N. Y., it is of interest to readers of the ELECTRIC RAILWAY JOURNAL.

After reciting all of the details of the occurrence, the report states that the accident was caused by failure of the engineman on one of the trains to obey the stop indications of the automatic signal and of a flagman on the train ahead. A contributing cause was the failure of an instructor engineman who was in the electric locomotive cab to observe the signals and cause compliance with their indications. While the specific duty of the latter was to instruct the engineman in the operation of the "motor," it was inherently his duty also to observe and require proper performance of duty on the part of the engineman, whom he was required to accompany from New Haven, for the safe operation of the train.

The report states in conclusion that this accident is another reminder of the inherent weakness of the human element in train operation, against which the most modern system of automatic block signals does not guard, and again directs attention, as has been done in numerous previous investigations, to the necessity of the adoption and use of some automatic train control device which will assume control of the train on the failure of the engineman to obey signal indications.

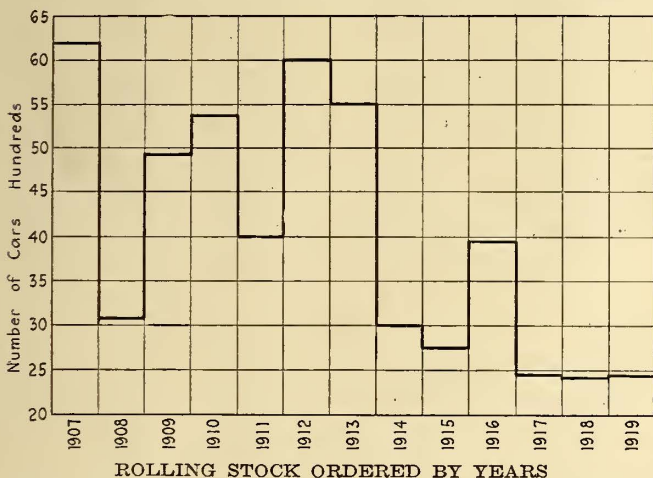


# 2,447 New Cars and Locomotives Ordered in 1919

The Numbers of Cars Ordered From Manufacturers and Built in the Shops of the Various Electric Railway Companies Are Approximately the Same as in the Last Two Years—Safety Cars Show More than 100 Per Cent Increase — Twenty More Companies Order or Build Equipment Than in 1918

THE accompanying tables giving statistics as to the rolling stock purchased or built by electric railways in their own shops indicate, to those who hold an optimistic view of the future, that the lowest level in the days of the industry has been reached, and that, if the railways are to continue from now on, there should be a considerable increase in rolling stock orders. This conclusion is based, first, on the increasing use of the smaller and lighter type of car for passenger service; second, on the realization that if electric railways are to continue to serve the interurban districts, more attention must be paid to the haulage of freight and express; and third, on the co-operation with motor truck express companies for the service of territories not reached by the electric railways.

The compilation of figures is considered as being representative of the industry, inasmuch as information was furnished by some 700 electric railway companies, which operate more than 95 per cent of all the electric



railway rolling stock in the country. The total number of new cars and electric locomotives so recorded for this year is 2,447, twenty-eight more than in 1918, but eighty less than in 1917, which is a very creditable showing considering the financial condition of the industry. The number of companies, however, reporting new equipment, shows an increase of twenty over the previous year. These totals include one company that, for local reasons, did not care to be identified, and which purchased forty-five cars, divided as follows: ten interurban motor passenger, five city trailers, and thirty city passenger motor cars.

Safety cars were purchased by ninety-three companies in the United States, by six in Canada, and by one in Cuba. The number of cars so bought was 1,321 in the United States, forty-seven in Canada, and fifteen in Cuba, a total of 1,383, as against 644 for 1918, an increase of 115 per cent. Attention is also called to the fact that of the 1,617 city motor passenger cars ordered for surface electric railways in the United States, 77.0 per cent, or 1,321, were safety cars. This tends to show

TABLE I—NEW ROLLING STOCK ORDERED SINCE 1907

Year	—Passenger Cars—		Freight and Misc. Cars	Elec. Locos.	Total
	City	Int.			
1907	3,483	1,327	1,406	(a)	6,216
1908	2,208	727	176	(a)	3,111
1909	2,537	1,245	1,175	(a)	4,957
1910	3,571	990	820	(a)	5,381
1911	2,884	626	605	(a)	4,015
1912	4,531	783	687	(a)	6,001
1913	3,820	547	1,147	(a)	5,514
1914	2,147	384	479	(a)	3,010
1915	2,072	336	374	(a)	2,782
1916	3,046	374	491	31	3,942
1917	1,998	185	223	49	2,455
1918	1,842	255	278	44	2,419
1919	2,129	128	172	18	2,447

(a) Included in "Freight and Miscellaneous Cars."

that henceforth the light-weight car is destined as the city service car.

Table I gives a comparison in condensed form of the rolling stock purchased since 1907. The cars are classified according to the service in which they are used, namely, city passenger service, interurban passenger service, freight and miscellaneous cars. In this table passenger cars for operation in subway and on elevated structures have been classed as "city passenger cars," and those for interurban or a combination of both interurban and city service have been placed in the column headed "Interurban Passenger Cars." Freight and express cars, snow plows and sweepers, and work cars have been placed in the "Freight and Miscellaneous" column. Electric locomotives, which heretofore have been classed in the miscellaneous column, are shown separately wherever possible.

The number of city cars, due to a 115 per cent increase in safety cars, shows an increase of 287 cars, or approximately 12 per cent. Other types of cars, however, decreased very materially.

Table II gives a detailed comparison of rolling stock ordered during the past four years. This table indicates an increase in the number of companies purchasing cars, due undoubtedly to the greater number of safety cars ordered. There were 1,383 cars of this type purchased during the past year as compared with 644 in 1918 and but 280 in 1917. The rolling stock built by electric railway companies in their own shops shows an increase over 1918, but is still less than in 1917. The companies in Detroit and Atlanta built the

TABLE II—SPECIAL COMPARISONS OF NEW ROLLING STOCK ORDERED

	1919	1918	1917	1916
Number of railways reporting new cars.....	160	140	182	250
Total number of cars.....	2429	2375	2406	3911
<b>City Service</b>				
Number of safety cars.....	1383	644	280	187
Number of two-man passenger motor cars*.	635	1068	1316	2731
Number of passenger trailers.....	111	130	402	128
Service cars.....	31	(a)	(a)	(a)
<b>Interurban Service</b>				
Number of two-man passenger motor cars.	96	200	158	303
Number of passenger trailers.....	32	55	27	71
Number of service cars.....	8	(a)	(a)	(a)
Number of freight and express cars.....	133	(a)	(a)	(a)
Number of electric locomotives.....	18	44	49	31
Number of cars and electric locomotives built in railway companies' shops.....	165	89	281	445

\* Includes motor and trailer cars for subway and elevated lines in N. Y. C.  
(a) Not available.

TABLE III—ROLLING STOCK ORDERED DURING 1919

New England District:					North of the Ohio and East of the Mississippi River—(Continued)				
Number	Type	Overall Length	City or Interurban	Motor or Trailer	Number	Type	Overall Length	City or Interurban	Motor or Trailer
<b>Connecticut:</b>					<b>Ohio:</b>				
The Bristol (Conn.) & Plainville Tramway Co. ....					Cincinnati (Ohio) Traction Co. ....				
2	Passenger	35' 0"	C	M	105	Passenger	44' 0"	C	M
1	Safety	26' 0"	C	M	Cincinnati (Ohio) Milford & Blanche-ster Trac. Co. ....				
The Connecticut Co. (New Haven) ...					Laker Shore Elec. Ry. Co. (Sandusky)				
12	Safety	28' 0"	C	M	16	Passenger	28' 0 1/2"	C	M
40	Safety	27' 10"	C	M	1	Safety	27' 9 1/2"	C	M
Danbury (Conn.) & Bethel St. Ry. ....					Mahoning & Shenango Ry. & Light Co. (Youngstown) ....				
1	Safety	28' 0"	C	M	25	Safety	28' 0 1/2"	C	M
3	Safety	27' 9 1/2"	C	M	6	Safety	28' 0"	C	M
<b>Maine:</b>					<b>Pennsylvania:</b>				
Androscoggin & Kennebec Ry. (Lewiston) ....					Butler (Penn.) Rys. Co. ....				
12	Safety	28' 0"	C	M	7	Safety	27' 9 1/2"	C	M
1	Exp. & Fght.	45' 0"	I	M	Chambersburg (Penn.) & Shippensburg Ry. Co. ....				
Bangor (Me.) Ry. Electrical Co. ....					Citizens Trac. Co. (Oil City) ....				
12	Safety	27' 9 1/2"	C	M	7	Safety	28' 0"	C	M
Biddeford (Me.) & Saco Ry. ....					Harrisburg (Pa.) Rys. Co. ....				
6	Safety	28' 0"	C	M	5	Passenger	43' 10"	I	M
Knox County Electric Co. (Rockland)					Lehigh Valley Transit Co. (Allentown) ....				
4	Safety	28' 0"	C	M	15	Passenger	48' 0"	C	M
Portland (Me.) R.R. ....					North Branch Transit Co. (Bloomsburg) ....				
15	Safety	27' 9 1/2"	C	M	*1	Gondola	24' 0"	I	M
<b>Massachusetts:</b>					Northwestern Pennsylvania Ry. Co. (Meadville) ....				
Berkshire St. Ry. (Pittsfield) ....					Philadelphia & Garretford St. Ry. (Upper Darby) ....				
5	Safety	28' 0"	C	M	10	Passenger	47' 3"	I	M
1	Work	42' 0"	C	M	Philadelphia & Western Ry. (Upper Darby) ....				
Boston (Mass.) Elevated Ry. ....					Schuylkill Rys. (Girardville) ....				
2	Snow Swpr.	39' 0"	C	M	3	Passenger	45' 6"	C	M
4	Dump	40' 7"	C	M	3	Passenger	45' 6"	C	M
Eastern Mass. St. Ry. (Boston) ....					Susquehanna Trac. Co. (Lock Haven)				
200	Safety	28' 0"	C	M	4	Safety	27' 9 1/2"	C	M
12	Snow Swpr.	35' 10"	C	M	3	Safety	27' 9 1/2"	C	M
Medway & Dedham St. Ry. (Milford)					Warren (Pa.) St. Ry. ....				
4	Safety	28' 0"	C	M	3	Safety	27' 9 1/2"	C	M
Springfield (Mass.) St. Ry. ....					West Penn. Rys. (Pittsburgh) ....				
10	Safety	28' 0"	C	M	*2	Exp. & Fght.	55' 0"	I	M
Worcester (Mass.) St. Ry. ....					Woodlawn & Southern St. Ry. ....				
10	Safety	27' 10"	C	M	4	Safety	28' 0 1/2"	C	M
<b>New Hampshire:</b>					<b>Wisconsin:</b>				
Nashua (N. H.) St. Ry. ....					Beloit (Wis.) Traction Co. ....				
8	Safety	28' 0"	C	M	1	Safety	28' 0 1/2"	C	M
<b>Vermont:</b>					Eastern Wisconsin Elec. Co. (Oshkosh)				
Rutland (Vt.) Ry. Lt. & Power Co. ....					Milwaukee (Wis.) Elect. Ry., Lt. Co.				
1	Safety	28' 0"	C	M	20	Safety	27' 9 1/2"	C	M
<b>North of the Ohio and East of the Mississippi River</b>					*3 Express				
<b>District of Columbia:</b>					Wisconsin Vy. Elec. Co. (Wausau) ...				
Capital Traction Co. ....					1 Passenger				
40	Passenger	41' 0"	C	M	South of the Ohio and East of the Mississippi River				
City & Suburban Ry. Co. ....					<b>Alabama:</b>				
5	Passenger	43' 11 1/2"	I	M	Alabama Power Co. Anniston ....				
Washington & Old Dominion Ry. ....					2 Safety				
2	Passenger	.....	I	M	Huntsville				
Washington Ry. & Electric Co. ....					2 Safety				
1	Sub. Sta. Car	41' 0"	C	M	Birmingham (Ala.) Ry., Lt. & Power Company. ....				
<b>Illinois:</b>					25 Safety				
Central Illinois Public Service Co. (Mattoon) ....					6 Passenger				
10	Safety	27' 9 1/2"	C	M	10 Safety				
Chicago (Ill.) & West Towns Ry. ....					Montgomery (Ala.) Lt. & Trac. Co.				
5	Passenger	45' 0"	C	M	10 Safety				
Chicago, No. Shore & Milwaukee Elec. R.R. (Highwood) ....					<b>Florida:</b>				
12	Express	50' 0"	I	M	Miami (Fla.) Beach Elec. Co. ....				
15	Passenger	55' 3 1/2"	I	T	10 Safety				
13	Passenger	55' 3 1/2"	I	M	3 Safety				
2	Dining	55' 3 1/2"	I	M	St. Petersburg (Fla.) Municipal Ry.				
10	Safety	27' 9 1/2"	C	M	10 Safety				
Chicago (Ill.) Surface Lines ....					Tampa (Fla.) Electric Co. ....				
*9	Passenger	48' 0"	C	M	<b>Georgia:</b>				
Decatur (Ill.) Ry. & Lt. Co. ....					Georgia Ry. & Power Co. (Atlanta)				
8	Safety	27' 9 1/2"	C	M	15 Passenger				
6	Safety	28' 0 1/2"	C	M	*30 Passenger				
Illinois Central Elec. Ry. (Canton)					<b>North Carolina:</b>				
*1	Express	40' 0"	I	M	Carolina Power & Lt. Co. (Raleigh) ..				
Illinois Northern Utilities Co. (Freeport) ....					Southern Public Utilities Co. (Charlotte) ..				
3	Safety	27' 9 1/2"	C	M	12 Safety				
Lincoln (Ill.) Muncie St. Ry. ....					6 Safety				
1	Passenger	30' 0"	C	M	2 Passenger				
Quincy (Ill.) Ry. Co. ....					2 Passenger				
25	Safety	28' 0 1/2"	C	M	2 Passenger				
1	Snow Swpr.	28' 0"	C	M	<b>South Carolina:</b>				
<b>Indiana:</b>					Charleston (S. C.) Consol. Ry. & Lighting Co. ....				
Beech Grove (Ind.) Traction Co. ....					7 Passenger				
3	Safety	27' 9 1/2"	C	M	<b>Tennessee:</b>				
Chicago, So. Bend (Ind.) & No. Indiana Traction Co. ....					Jackson (Tenn.) Ry. & Light Co. ....				
10	Safety	27' 9 1/2"	C	M	10 Safety				
1	Passenger	60' 0"	I	T	5 Passenger				
1	Snow Plow	40' 0"	C & I	M	1 Freight				
Ft. Wayne (Ind.) & No. Indiana Traction Co. ....					<b>Virginia:</b>				
35	Safety	30' 7"	C	M	Virginia Ry. & Power Co. (Richmond)				
*1	Snow Plow	24' 6"	C & I	M	30 Safety				
Indianapolis & Cincinnati Trac. Co					<b>West Virginia:</b>				
3	Express	.....	I	T	Charleston (W. Va.) Dunbar Trac. Co.				
25	Passenger	46' 11"	C	M	1 Passenger				
Indianapolis (Ind.) St. Ry. ....					<b>West of the Mississippi River</b>				
5	Freight	43' 0"	I	T	<b>Arkansas:</b>				
8	Comb. P & E	62' 0"	I	M	Ft. Smith (Ark.) Lt. & Trac. Co. ....				
Terre Haute, Indianapolis & Eastern Traction Co. ....					Southwestern Gas & Elec. Co. (Tex-arkana) ..				
5	Freight	27' 9 1/2"	C	M	4 Safety				
6	Flat	36' 0"	I	T	27' 9 1/2"				
Vincennes (Ind.) Traction Co. ....					<b>Arkansas:</b>				
7	Safety	28' 0 1/2"	C	M	Ft. Smith (Ark.) Lt. & Trac. Co. ....				
Washington (Ind.) St. Ry. ....					Southwestern Gas & Elec. Co. (Tex-arkana) ..				
3	Safety	27' 9 1/2"	C	M	4 Safety				
<b>Maryland:</b>					27' 9 1/2"				
Hagerstown (Ind.) & Frederick Ry. ....					<b>Virginia:</b>				
1	Comb. P & E	47' 0"	I	M	Virginia Ry. & Power Co. (Richmond)				
United Rys. & Elec. Co. of Baltimore					30 Safety				
10	Passenger	33' 6"	C	M	<b>West Virginia:</b>				
<b>Michigan:</b>					Charleston (W. Va.) Dunbar Trac. Co.				
Benton Harbor (Mich.) & St. Joe Ry. & Lt. Co. ....					1 Passenger				
2	Safety	28' 0 1/2"	C	M	45' 0"				
*50	Passenger	47' 1"	C	M	<b>West of the Mississippi River</b>				
Detroit (Mich.) United Ry. ....					<b>Arkansas:</b>				
10	Passenger	46' 9 1/2"	C	T	Ft. Smith (Ark.) Lt. & Trac. Co. ....				
6	Passenger	58' 3 1/2"	I	M	Southwestern Gas & Elec. Co. (Tex-arkana) ..				
3	Express	50' 4"	I	T	4 Safety				
25	Express	50' 0"	I	T	27' 9 1/2"				
10	Safety	27' 9 1/2"	C	M	<b>Virginia:</b>				
New Jersey:					Virginia Ry. & Power Co. (Richmond)				
Burlington County Traction Co. (Hampstead) ....					30 Safety				
1	Freight	26' 0"	I	T	<b>West Virginia:</b>				
Morris County Trac. Co. (Morristown)					Charleston (W. Va.) Dunbar Trac. Co.				
14	Safety	28' 0"	C	M	1 Passenger				
Pennsylvania & New Jersey R. Co. (Trenton) ....					45' 0"				
13	Safety	28' 0"	C & I	M	<b>West of the Mississippi River</b>				
Trenton (N. J.) & Mercer County Traction Co. ....					<b>Arkansas:</b>				
20	Safety	27' 9 1/2"	M		Ft. Smith (Ark.) Lt. & Trac. Co. ....				
<b>New York:</b>					Southwestern Gas & Elec. Co. (Tex-arkana) ..				
Brooklyn (N. Y.) City R. R. ....					4 Safety				
50	Passenger	45' 6"	C	T	27' 9 1/2"				
108	Safety	27' 9 1/2"	C	M	<b>Virginia:</b>				
Brooklyn (N. Y.) Rapid Transit Co.					Virginia Ry. & Power Co. (Richmond)				
92	Safety	27' 9 1/2"	C	M	30 Safety				
Elmira (N. Y.) Water, Lt. & R.R. Co.					<b>West Virginia:</b>				
7	Safety	27' 9 1/2"	C	M	Charleston (W. Va.) Dunbar Trac. Co.				
1	Snow Sweeper	24' 10"	C	M	1 Passenger				

\* Built in Company's Shops.

\* Built in Company's Shops.

TABLE III—ROLLING STOCK ORDERED DURING 1919—Continued

West of the Mississippi River—(Continued)					Canada				
Number	Type	Overall Length	City or Interurban	Motor or Trailer	Number	Type	Overall Length	City or Interurban	Motor or Trailer
<b>California:</b>					<b>Canada</b>				
Los Angeles (Cal.) Railway Co.....	23 Safety	27' 9 1/2"	C	M	Brantford (Ont.) Municipal Ry.....	2 Passenger	33' 4"	C	M
Municipal Ry. of San Francisco.....	1 Passenger	27' 9 1/2"	C	M	Hydro-Electric Power Co. (Ottawa, Ontario).....	2 Passenger	41' 6"	I	M
Ocean Shore R.R. (San Francisco).....	2 Gas-Elec.	42' 3 1/2"	I	M		2 Safety	27' 9 1/2"	C	M
Sacramento (Cal.) Northern R.R.....	47 Freight	.....	I	T	Kitchener (Ont.) Waterloo St. Ry...	3 Passenger	45' 0"	C	M
	2 Caboose	.....	I	T	Lewis (Que.) County Ry.....	12 Safety	28' 0 1/2"	C	M
<b>Colorado:</b>						1 Snow Swpr.	31' 0 1/2"	C	M
Denver (Colo.) & So. Platte Ry. Co...	2 Safety	27' 9 1/2"	C	M	Nipissing Central Ry. (No. Cobalt, Ontario).....	2 Passenger	52' 0"	I	M
	1 Work	.....	C	M		1 Snow Plow	35' 0"	I	M
Ft. Collins (Colo.) Municipal Ry. ....	4 Safety	27' 9 1/2"	C	M	<b>Cuba:</b>				
<b>Iowa:</b>						10 Passenger	47' 0"	I	M
Iowa County (Ia.) Elec. Ry. Co.....	1 Safety	28' 0"	C	M	3 Comb. Bag. and Passengr	47' 0"	I	M	
Ottumwa (Ia.) Ry. & Light Co.....	16 Safety	27' 9 1/2"	C	M	2 Comb. Bag. and Mail	51' 0"	I	M	
Sioux City (Ia.) Service Co.....	25 Safety	27' 9 1/2"	C	M	1 Freight	41' 0"	I	M	
<b>Kansas:</b>						15 Safety	28' 0"	C	M
Hutchinson (Kan.) Interurban Ry...	5 Safety	27' 9 1/2"	C	M	<i>* Built in Company's shops.</i>				
Wichita (Kan.) R.R. & Light Co....	17 Safety	28' 0 1/2"	C	M	<b>ELECTRIC LOCOMOTIVES</b>				
	1 Snow Swpr.	28' 0"	C	M	<b>Number</b> <b>Weight Tons</b> <b>Length Overall</b>				
<b>Louisiana:</b>					<b>New England District:</b>				
Municipal St. Ry. (Alexandria).....	3 Safety	28' 0 1/2"	C	M	New York, New Haven & Hartford Railroad.....				
<b>Minnesota:</b>					5                      173                      69' 0"				
Duluth (Minn.) St. Ry.....	6 Safety	28' 0 1/2"	C	M	<b>North of the Ohio and East of the Mississippi River:</b>				
St. Cloud (Minn.) Public Service Co.	2 Safety	27' 9 1/2"	C	M	Washington & Old Dominion Ry. ....				
<b>Missouri:</b>					1                      30				
Kansas City (Mo.) Clay County & St. Joe. Ry. Co.....	2 Passenger	51' 5"	I	M	Indiana Rys. & Lt. Co. (Kokomo, Ind.)				
	5 Safety	28' 0 1/2"	C	M	Terre Haute, Indianapolis (Ind.) & Eastern Trac. Co.....				
Kansas City (Mo.) Rys. Co.....	75 Safety	27' 9 1/2"	C	M	* 1                      40				
	2 Safety	27' 9 1/2"	C	M	Albany Southern R.R. (Hudson) N. Y.				
St. Louis, (Mo.) Water Works Ry...	2 Safety	27' 9 1/2"	C	M	<b>West of the Mississippi River:</b>				
Springfield (Mo.) Traction Co.....	8 Safety	27' 9 1/2"	C	M	Sand Springs Ry. Co. (Tusla, Okla.) ..				
United Depot, Bridge & Terminal Co.	3 Safety	28' 0 1/2"	C	M	1                      50				
Union Rys. Co. of St. Louis.....	1 Dump	40' 6"	C	M	Bamberger Elec. R.R. (Salt Lake City, Utah).....				
	1 Dump	40' 6"	C	M	* 2                      45				
<b>Nebraska:</b>					Sacramento (Cal.) Northern R.R.....				
Lincoln (Neb.) Trac. Co.....	10 Safety	28' 0 1/2"	C	M	2                      60				
	1 Safety	27' 9 1/2"	C	T	Salt Lake & Utah R.R. (Salt Lake City, Utah).....				
Omaha, Lincoln (Neb.) & Beatrice Ry	2 Comb. Pass. & Baggage	28' 0 1/2"	C	M	1                      50				
<b>Oklahoma:</b>					Utah-Idaho Central R.R. (Ogden, Utah).....				
Tulsa (Okla.) St. Ry. Co.....	2 Safety	28' 0 1/2"	C	M	2                      30				
<b>Oregon:</b>					<b>Canada:</b>				
Pacific Power & Lt. Co., (Astoria)...	1 Safety	28' 0"	C	M	Hydro-Electric Power Com. (Ottawa, Ont.).....				
<b>South Dakota:</b>					1                      50				
Sioux Falls (S. D.) Trac. Co.....	5 Safety	28' 0 1/2"	C	M	Oshawa (Ont.) Ry. Co. (The).....				
<b>Texas:</b>					<i>* Built in Company's shops.</i>				
Austin (Tex.) St. Ry.....	3 Safety	28' 0 1/2"	C	T					
Beaumont (Tex.) Trac. Co.....	5 Safety	27' 9 1/2"	C	M					
Dallas (Tex.) Ry. Co.....	1 Dump	40' 6"	C	M					
Eastern Texas Elec. Co. (Beaumont)	6 Safety	28' 0 1/2"	C	M					
Houston (Tex.) Electric Co.....	1 Safety	27' 9 1/2"	C	M					
Marshall (Tex.) Trac. Co.....	2 Safety	27' 9 1/2"	C	M					
Northern Texas Trac. Co. (Ft. Worth)	10 Safety	28' 0 1/2"	C	M					
	5 Passenger	53' 0"	I	T					
Texas Electric Co. (Dallas).....	8 Safety	27' 9 1/2"	C	M					
Wichita Falls (Tex.) Traction Co....	4 Safety	27' 9 1/2"	C	M					
<b>Utah:</b>									
Bamberger Electric R.F. (Salt Lake City).....	* 3 Passenger	60' 0"	I	M					
	* 3 Passenger	60' 0"	I	T					
Utah-Idaho & Central R.R. Co. (Ogden).....	11 Safety	28' 0 1/2"	C	M					
<b>Washington:</b>									
Aberdeen (Wash.) R.R. Co.....	4 Safety	28' 0"	C	M					

greater part of their own cars. This increase may be due to less stringency in the labor market, on account of demobilization. Cars of all classes purchased by interurban companies show a decrease over the records of past years.

Among the larger orders for cars placed this year are the two for 200 safety cars each by the Eastern Massachusetts Street Railway and the surface lines in Brooklyn. The Brooklyn Rapid Transit Company having conducted extended tests during the early part of the year, proved conclusively that the safety car was beneficial in many of the districts served, and at the time of going to press nearly fifty cars of this type were in operation in various parts of the Borough. With regard to the Eastern Massachusetts order, the cars as yet have not been placed in actual service.

The largest single order reported for two-man motor cars was for 105 cars by the Cincinnati Traction Company. The Detroit United also placed an order for fifty motor cars. Mention should also be made of the extended use of trail cars in city service, fifty being

ordered by both the Detroit United Railway and the Brooklyn Rapid Transit Company.

Table IV, which is divided into several districts, shows the rolling stock ordered by the individual railway companies, and also details the number and types purchased. Of the cars purchased, by far the greater porportion was by companies in the territory "North of the Ohio and East of the Mississippi River," this amounting to a total of 1,372 cars, or 56 per cent by sixty-seven companies, or 41.0 per cent of those that purchased rolling stock.

All cars are specified as to the service for which they were built. Electric locomotives are shown separately. No attempt was made to give details as to construction other than the over-all length. However, the majority of cars sold are either of semi-steel or all-steel construction.

Unfortunately reports from all companies were not received in time for inclusion in this compilation. Nevertheless the compilers believe that the table is representative of the present year's business. With a

TABLE IV—RECAPITULATION OF CARS AND LOCOMOTIVES ORDERED—1919

	New England	North of the Ohio and East of the Mississippi	South of the Ohio and East of the Mississippi	West of the Mississippi River	Total U. S.	Canada	Cuba	Total
Number of companies reporting.....	18	67	19	40	143	14	2	169
Total cars and electric locomotives ordered.....	371	1372	218	361	2319	94	31	2447
<b>City Service</b>								
Safety cars.....	344	550	143	284	1321	47	15	1383
Passenger cars—Motor.....	2	538	58	1	599	36	..	635
Trailer.....	..	105	6	..	111	..	..	111
Service cars.....	19	3	..	5	27	4	..	31
Total city cars.....	365	1196	207	290	2058	87	15	2160
<b>Interurban Service</b>								
Passenger cars—Motor.....	..	64	8	7	76	4	13	96
Trailer.....	..	22	2	8	32	..	..	32
Service Cars.....	..	5	..	2	7	1	..	8
Express and freight cars.....	1	81	1	47	130	..	3	133
Total interurban cars..	1	172	11	64	245	5	16	269
Electric locomotives.....	5	4	..	7	16	2	..	18
Number companies ordering safety cars.....	15	33	13	32	93	6	1	100

definite date for publication, the possibility of receiving advices from 100 per cent of the operating companies is necessarily precluded.

Through the courtesy and co-operation of several of the car builders, it has been possible, however, to check the figures furnished by the railway companies and thus in a number of cases, where the railway companies have not reported, the figures given by the manufacturers were used.

The thanks of the ELECTRIC RAILWAY JOURNAL are extended to all those co-operating to make the publication of this information possible.

## Keeping the Signals Up to the Mark

### An Illustration of the Principle that Signals Require Expert Attention if They Are to Give Continuing Protection

BY CARL P. NACHOD

President Nachod Signal Company, Inc., Louisville, Ky.

**S**UPPLEMENTING the article printed in a recent issue of the ELECTRIC RAILWAY JOURNAL on the importance of careful attention to signal maintenance I shall outline the experience of an important railway company by way of illustrating the points set forth therein. This railway has about 70 miles of track, mostly single, in narrow streets and on hilly country roads.

On the company's lines the single-track stretches between passing turnouts are protected by automatic signals of the trolley-contact type, about 100 of these signals of two types of manufacture being used on the system. Some of the signals have been in service since 1910, and others since 1913, but they were all in rather precarious condition. Previous to the war the headway required was not frequent, and motormen could disregard the signals without serious danger. If two cars met in the block the schedule was not greatly disarranged when one of them had to back out. With this light traffic the importance of signal maintenance was not recognized until a long and serious strike with violence and damage to the railway company's property occurred in 1917.

At the time of the strike the city was full to overflowing, about 50,000 men were in training at a national army camp near by. To this camp the railway had two

separate 6-mile lines, both single-track, with passing sidings. Meanwhile business conditions in the territory had developed so much due to war industries that the railway found itself unable to cope with the resulting traffic after the strike.

The importance of the signal system in facilitating traffic was now recognized. Previously the signals were under supervision of the line department, but as there was no signal specialist in the department the signal lines and general exterior wiring were in a deplorable condition and the signal apparatus suffered greatly. A complete rebuilding of the signal system was then determined upon. A signal department was organized, with a man in charge of the work of rebuilding who had the ability to get the signals ready for operation promptly, a few at a time. This simply had to be done although had the need for the signals been less pressing, all of the older ones might have been repaired more cheaply by shipping them back to the manufacturer, who is better equipped to handle this class of work than is an operating company.

As head of the signal department the railway selected an expert from the signal company who had had experience of maintaining signals on a railway as well as in the factory. The signal company was also called upon to send two experts to help do the rebuilding on the ground, and a quantity of miscellaneous spare parts was shipped from the factory on memorandum. A suitable shop was provided for rebuilding and testing, men were secured from other departments of the railway and the work started. A few signals were made operative by repairing line wires, but little work on the relays being necessary.

In the rehabilitation work, as soon as a block of signals had been fixed up it was installed at the most pressing point, close co-operation with the transportation department being maintained. The rebuilding was carried on with high speed for about three months. After that the force was reduced from six to two men with a corresponding reduction in output. During part of this time a representative of each signal company was present to assist and instruct in the work. The work, however, is still in progress.

The signal department first tried out an auto truck for maintenance work but the distances were too great for this. In addition some of the line was on private right-of-way with no near-by highways. A single truck car was finally adopted as most satisfactory in this work.

The operation of the signals is now first-class and they are much depended upon. They operate for weeks without failure, such failures as now occur being due to the old line wires which are gradually being replaced. Experience has taught the railway that periodical inspection is necessary; that the signals must not be neglected until reports of failure come in from the transportation departments, and that the maintainer who waits for trouble to appear before working on the signals or wiring is a costly luxury.

R. C. Richards, chief claim agent of the Chicago & Northwestern Railway, is credited with having organized the first safety-first committee on steam railroads. This was in May, 1910. At the present time there are on the railroads under federal management about 12,000 safety-first committees, composed of approximately 25,000 officers and other employees.

# Track Extensions and Reconstruction in 1919

Seventy-three Urban and Interurban Companies Report 140 Miles of Extensions and 148 Companies Reconstructed 390 Miles of Track During the Past Year—288 Miles of Steam Road Are Electrified—More Track Was Reconstructed But Less New Track Built Than in Previous Years

THE amount of track extensions built during the past year by urban and interurban electric railways in the United States and Canada is the smallest of any year since this paper has been keeping yearly statistics of this character. The mileage of extensions built was but 140.57 or practically one-half of that recorded during 1918. If the 34.05 miles of track opened up during the year by extensions to the rapid transit lines in New York City are deducted, there were but 106.62 miles of new track built by urban and interurban surface lines during 1919. This figure represents a decrease of 50 per cent over the urban and interurban surface lines last year. However, the amount of track rebuilt by the urban and interurban companies exceeded that of the year 1918 by 234.45 miles, or an increase of 150 per cent. This undoubtedly indicates the trend of track work for the next few years, inasmuch as most of the companies feel that due to the ever increasing cost of operation and the unstable con-

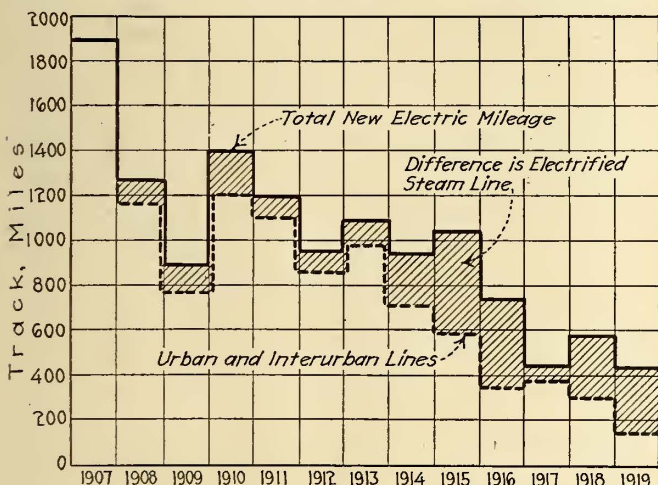
for other years, a table has been prepared from previous statistical issues showing track extensions divided wherever possible as between urban, interurban and electrified sections of former steam railroads, together with the number of companies involved.

The study of the statistics for individual companies which have been grouped into five geographical districts show that the companies in the district "North of the Ohio and East of the Mississippi Rivers" have built more extensions and rebuilt more track than any of the other groups. The states of Connecticut, District of Columbia, Wisconsin, Tennessee, Colorado, Kansas, Minnesota, Nebraska, New Mexico, and Utah, all show an increase over 1918, while the New England district is the only group as a whole to show an increase over the previous year. New York State has the largest amount of track extensions with 38.23 miles as against 87.93 miles the previous year. If, however, the extensions to the rapid transit lines are not considered, Michigan is the banner state with 9.80 miles of extensions to its credit. The longest piece of new track built by any urban or interurban service road, however, was west of the Mississippi River, and amounted to 5.38 miles. This was by the Seattle Municipal Railway. Only three other extensions are greater than four miles.

The Cleveland Railway, however, reports extensions of 6.77 miles during the year but this total was made up of several smaller parts. Four extensions, however, were added to the rapid transit lines in New York City, amounting to 34.05 miles.

The largest amount of track rebuilt by any one company during the year was by the Boston Elevated Railway with the Public Service Railway and the United Railways Company of St. Louis, close seconds, the amounts rebuilt being 23.50, 22 and 21.82 miles respectively. Only four other companies rebuilt more than 10 miles of track. Each geographical group, however, showed as a whole more track rebuilt than last year, the greatest amount, however, being in the State of New York, with Massachusetts holding second place.

The most important piece of heavy electric traction electrification that has been opened up in recent years was during 1919, this being the new 280 mile extension of the Chicago, Milwaukee & St. Paul R.R. in the State of Washington, from Seattle to Othello, a distance of approximately 200 miles. The New York, New Haven



THIS CHART SHOWS MILES OF NEW TRACK BUILT EACH YEAR SINCE 1907

ditions affecting revenues that they cannot finance extensions except where the traffic will immediately pay the cost of service and a return on the investment.

The single track mileage for extensions built by urban and interurban electric railways during the year 1919, together with the mileage of track rebuilt or reconstructed and also that electrified by steam railroads during 1919 is given in the accompanying table.

The data for this table have been compiled from reports of approximately seven hundred companies throughout the United States and Canada, the majority of whom reported no extensions or reconstruction work except the usual maintenance for the year. Seventy-three companies reported a total of 428 miles of extensions built, 25.9 per cent of which was by urban companies, 6.9 per cent built by interurban companies and the balance by two steam railroads that extended their zones of electric operation.

In order to facilitate comparison with similar data

COMPARISON OF TRACK CONSTRUCTION

Year	No. of Cos.	Extensions			Total	Track Rebuilt
		Urban Track	Interurban Track	Electrified Steam Lines		
1907	(a)	(a)	(a)	.....	1,880.00	(a)
1908	157	1,174.5	84.00	.....	1,258.50	(a)
1909	160	774.7	112.40	.....	887.16	(a)
1910	217	1,204.8	192.40	.....	1,397.20	(a)
1911	223	1,105.0	86.50	.....	1,191.50	(a)
1912	171	869.4	80.80	.....	950.20	(a)
1913	181	974.9	119.00	.....	1,093.90	(a)
1914	163	716.5	229.00	.....	946.40	(a)
1915	136	596.0	448.20	.....	1,044.2	(a)
1916	104	115.40	240.9	388.00	744.3	(a)
1917	121	251.10	125.60	66.00	442.7	375.40
1918	80	216.41	97.41	275.70	589.53	155.43
1919	73	110.90	29.67	287.60	428.17	390.64

(a) Not available.

& Hartford Railroad opened up a new classification yard at Cedar Hill, Conn., with small mileage.

Approximately 10 per cent of the total extensions built and track reconstructed was in Canada, the longest extension being by the Montreal Tramways Company.

Next year's plans, so far as it is possible to determine from information at hand, call for 151 miles of extensions and the rebuilding of 331 miles of track.

#### TRACK EXTENSIONS AND TRACK REBUILT DURING 1919

##### *New England States:*

	Extensions	Rebuilt
<b>Connecticut:</b>		
The Connecticut Co.	2.97	4.24
Danbury & Bethel St. Ry.	0.00	0.75
Hartford & Springfield St. Ry.	4.70	3.00
<b>Maine:</b>		
Bangor Railway & Electric Co.	0.00	1.74
Knox County Electric Ry.	0.00	0.28
Portland Railroad	0.00	2.89
Waterville, Fairfield & Oakland Ry.	0.00	0.50
<b>Massachusetts:</b>		
Boston Elevated Ry.	0.20	23.50
Holyoke St. Ry.	0.00	0.76
Massachusetts Northeastern St. Ry.	0.00	4.00
Northampton St. Ry.	0.00	0.95
Springfield St. Ry.	0.00	2.50
Union Street Railway (New Bedford)	0.00	0.42
Worcester Consolidated St. Ry.	0.11	0.55
<b>New Hampshire:</b>		
Chester & Derry R.R.	0.00	0.50
Claremont Railway	0.00	0.23
Dover, Somersworth & Rochester St. Ry.	0.00	0.50
<b>Rhode Island:</b>		
Bay State St. Ry.	0.00	0.03
Rhode Island Co.	0.00	4.18

##### *North of the Ohio and East of the Mississippi River*

	Extensions	Rebuilt
<b>District of Columbia:</b>		
Capital Traction Co.	0.00	1.89
City & Suburban Ry. of Washington	0.00	0.21
Washington & Old Dominion Ry.	0.50	0.00
Washington Railway & Elec. Co.	0.24	2.61
<b>Illinois:</b>		
Alton, Granite & St. Louis Trac. Co.	0.00	0.12
Calumet & So. Chicago Ry. Co.	2.40	0.80
Chicago & Desplances Valley Elec. Ry.	0.00	0.50
Chicago & West Towns Ry.	0.00	5.00
Chicago City Railway	0.17	2.60
Chicago Elevated Rys.	0.00	6.87
Chicago, North Shore & Milwaukee R.R. (Carrollville)	4.67	0.36
Chicago Railways Co.	1.12	1.43
E. St. Louis & Suburban Ry.	0.02	1.09
East St. Louis Railway	0.00	1.70
Illinois Central Electric Ry.	0.13	0.00
Lincoln Municipal St. Ry.	0.00	1.00
<b>Indiana:</b>		
Chicago, So. Bend & No. Indiana Ry.	0.00	0.50
Ft. Wayne & North Indiana Traction Co.	0.50	1.15
Indiana Railways & Light Co.	0.00	2.50
Indianapolis St. Ry.	1.00	2.50
Public Utilities Co.	0.00	0.40
Vincennes Traction Co.	0.00	1.25
Washington Street Railway	0.00	2.00
<b>Maryland:</b>		
United Railways & Electric Co. of Baltimore	2.33	16.25
<b>Michigan:</b>		
Detroit, Jackson & Chicago Ry.	0.80	0.80
Detroit, Monroe & Toledo Short Line Ry.	1.60	0.00
Detroit United Ry. (City System)	4.80	14.40
Ironwood & Bessemer Ry. & Light Co.	0.00	1.00
Menominee & Marinette Light & Traction Co.	0.00	0.50
Rapid Railway System (Detroit and Mt. Clemens)	3.60	6.60
<b>New Jersey:</b>		
Bridgeton & Millville Traction Co.	0.00	9.00
Public Service Ry. (Yorkship Village Extension)	1.65	22.00
Trenton & Mercer County Traction Corp.	0.90	3.50
<b>New York:</b>		
Albany Southern R.R. (Sidings)	0.02	0.00
Binghamton Railway Co. (Port Dickinson Line)	0.50	0.00
Brooklyn Rapid Transit Co. (Surface Lines)	0.00	4.00
Buffalo & Depew Ry.	0.75	0.00
Buffalo & Lake Erie Traction Co.	2.41	0.52
Elmira Water, Light & R.R.	0.00	1.03
Empire State R.R.	0.00	0.28
Fonda, Johnstown & Gloversville R.R.	0.00	1.09
Hornell Traction Co.	0.00	0.04
Hudson Valley Railway Co.	0.00	0.45
Interborough Rapid Transit Co. (New York), Clark St. Tunnel and Pelham Park Line	11.35	0.00
International Railway Co. (Buffalo)	0.00	1.83
Marine Railway Co. (New York)	0.50	0.00
New York Municipal Ry. Corp. (Broadway Subway, Culver Line and Coney Island)	22.70	0.00
Ogdensburg St. Ry.	0.00	0.20
Orange County Traction Co. (Newburgh)	0.00	2.00
Waverly, Sayre & Athens Traction Co.	0.00	0.38
<b>Ohio:</b>		
Cincinnati (Ohio) Traction Co.	0.00	7.40
City Ry. Co. (Dayton)	0.00	0.76
Cleveland, Painesville & Eastern R.R.	0.00	4.00
Cleveland Railway Co.	6.77	17.61
Columbus, Delaware & Marion Elec. Co.	0.00	0.75
Columbus & Shenango Ry. & Lt. Co.	0.00	0.72
Ohio River Electric Ry. & Pwr. Co.	0.00	1.00

	Extensions	Rebuilt
Peoples Ry. Co. (Dayton)	0.00	0.19
Richland Public Service Co.	0.00	0.50
Tiffin, Fostoria & Eastern Ry. Co. (between Tiffin and Bascom)	0.50	0.00
Toledo Rys. & Lt. Co.	0.16	2.44
<b>Pennsylvania:</b>		
Cleveland & Erie Traction Co.	0.00	0.50
Danville & Sunbury Transit Co.	0.00	0.25
Easton Pennsylvania Rys. (Pottsville)	0.00	1.38
Eastern Transit Co.	0.00	1.00
Hanover & McSherrystown St. Ry.	0.00	0.25
Harrisburg Rys. Co.	0.00	0.97
Highland Grove Traction Co.	0.75	0.75
Lehigh Valley Transit Co.	1.25	4.50
Lykens Valley Ry.	0.00	1.00
Mauch Chunk & Leighton Transit Co. (siding)	0.10	0.00
Montgomery Transit Co.	0.00	2.00
North Branch Transit Co.	0.00	0.93
Northwestern Penn. Ry. Co.	0.00	0.20
Reading Transit & Light Co.	0.00	8.57
Schuylkill Railways Co. (Girardville & Shenandoah)	0.75	0.25
Scranton Railway Co.	0.00	1.50
Susquehanna Traction Co.	0.00	0.66
Westchester St. Ry. Co.	0.00	0.50
West Penn. Rys. (In Greensburg)	0.33	0.00
<b>Wisconsin:</b>		
Madison Railways Co.	0.93	0.00
Milwaukee Electric Railway & Light Co.	0.60	6.26
Wisconsin Public Service Co.	0.00	0.76
Wisconsin Valley Electric Co. (Wassau)	0.00	0.24
<i>South of the Ohio and East of the Mississippi River</i>		
<b>Alabama:</b>		
Birmingham Ry., Lt. & Pwr. Co.	0.00	10.00
Sheffield Company (The)	0.00	0.57
<b>Georgia:</b>		
Augusta-Aiken Ry. & Elec. Co.	0.00	10.00
<b>Kentucky:</b>		
Paducah Traction Co.	0.00	1.00
South Covington & Cincinnati St. Ry.	0.00	1.45
<b>North Carolina:</b>		
Durham Traction Co. (Durham)	0.33	1.60
Southern Public Utilities Co. (Winston-Salem)	0.00	2.00
Tidewater Power Co. (Shipyard Extension)	2.84	0.00
<b>South Carolina:</b>		
Charleston Consolidated Ry. & Ltg. Co.	0.00	1.90
Southern Public Utilities Co., Greenville	0.00	3.00
<b>Tennessee:</b>		
Nashville Ry. & Lt. Co.	1.32	2.90
<b>Virginia:</b>		
Charlottesville & Albemarle Ry.	0.00	0.21
Newport News & Hampton Ry., Gas & Elec. Co.	0.00	1.23
Virginia Ry. & Pwr. Co.	2.24	6.84
<b>West Virginia:</b>		
Charleston Interurban R.R.	1.00	1.00
Monongahela Valley Traction Co.	0.00	0.61
Ohio Valley Electric Ry.	0.00	0.26
Wellsburg, Bethany & Washington Ry.	2.00	3.00
<i>West of the Mississippi River</i>		
<b>California:</b>		
Municipal Railway of San Francisco	2.00	0.42
Petaluma & Santa Rosa R.R. (yards and sidings)	0.22	0.00
Sacramento Northern R.R. (yards and sidings)	4.00	0.00
San Francisco, Napa & Calistoga Ry.	0.00	4.34
<b>Colorado:</b>		
Arkansas Valley Ry. Lt. & Pwr. Co.	0.28	0.7
<b>Iowa:</b>		
Albia Light & Ry. Co.	0.00	5.00
Dubuque Electric Co.	0.00	2.00
Hutchinson Inter-Urban Ry.	0.00	2.50
<b>Kansas:</b>		
Joplin & Pittsburg Ry. (siding)	1.50	0.00
Kansas City-Western Ry.	0.00	1.00
<b>Louisiana:</b>		
Municipal Street Railway (Alexandria)	1.60	0.00
New Orleans Railway & Light Co.	2.28	0.42
<b>Minnesota:</b>		
Granite City Ry.	0.00	1.00
Mankato Electric Traction Co.	0.75	0.00
Twin City Rapid Transit Co.	1.18	5.40
<b>Missouri:</b>		
Hannibal Ry. & Elec. Co.	0.00	0.38
Kansas City Railways	0.76	2.16
Missouri Electric R.R.	0.00	0.24
St. Joseph Ry. Lt. & Pwr. Co.	0.00	0.50
United Railways Co. of St. Louis	0.00	21.82
<b>Montana:</b>		
Butte Electric Ry.	0.00	0.76
<b>Nebraska:</b>		
Omaha & Council Bluffs St. Ry.	1.00	4.20
Omaha, Lincoln & Beatrice Ry. (University Pl. to Havelock)	2.75	0.00
<b>New Mexico:</b>		
City Electric Co. (Albuquerque)	0.06	0.76
<b>Oklahoma:</b>		
Sand Springs Ry. (sidings)	1.50	0.00
<b>Oregon:</b>		
Pacific Power & Light Co. (Astoria)	0.00	0.51
<b>Texas:</b>		
Dallas Railway	1.12	6.89
Eastern Texas Electric Co.	0.38	0.00
El Paso Electric Ry. (High School Line)	0.90	0.78
Northern Texas Traction Co. (West of Grand Prairie)	1.02	0.00
<b>Utah:</b>		
Salt-Lake, Garfield & Western Ry. (bet. Salt Air and Garfield)	2.00	0.00

	Extensions	Rebuilt
<b>Washington:</b>		
Gray's Harbor Ry. & Lt. Co.	0.00	0.75
Olympia Light & Pwr. Co.	0.00	2.00
Puget Sound Electric Ry.	0.46	0.00
Seattle Municipal Ry.	5.38	0.00
Tacoma Ry. & Pwr. Co.	0.31	0.00

<i>Canada:</i>		
Brantford Municipal Ry.	2.20	0.00
Calgary Municipal Ry.	4.00	0.00
Cape Breton Electric Co., Ltd. (siding)	0.06	0.38
Hamilton St. Ry.	0.00	0.46
Hull Electric Co.	0.00	2.00
International Transit Co.	0.00	1.32
Levis County Ry. Co. (sidings)	0.24	9.50
Montreal Tramways Co.	4.59	4.73
Niagara, St. Catharines & Toronto Ry.	0.00	4.89
Nova Scotia Tramways & Pwr. Co., Ltd.	1.14	2.01
Peterboro Radial Ry.	0.00	0.33
Quebec Ry. Lt. & Pwr. Co. (Beauport Rd. and 10th Sts.)	1.65	0.00
Sandwich, Windsor & Amherstburg Ry.	0.00	0.10
St. Thomas Municipal St. Ry.	0.00	0.50
Sherbrooke Ry. & Pwr. Co.	0.32	0.32
Toronto Railway Co.	0.00	3.63
Toronto Suburban Ry.	0.00	2.00

**ELECTRIFIED STEAM LINES**

New York, New Haven & Hartford R.R. (yard at Cedar Hill, Conn.)	7.60	0.76
Chicago, Milwaukee & St. Paul R.R. (between Othello and Seattle)	280.00	.....
Kitchener & Waterloo Ry. (purchased from Grand River Ry. in City of Kitchener)	0.92	.....

**SUMMARY OF TRACK CONSTRUCTION—1919**

Item	New England	North of the Ohio and East of the Miss-issippi	South of the Ohio and East of the Miss-issippi	West of the Mississippi	Total United States	Canada	Total
<b>TRACK EXTENSIONS</b>							
<b>Urban and Interurban Lines</b>							
Number of companies	4	33	6	22	65	8	73
Miles of track—							
Urban	2.31	64.78	7.73	21.88	96.70	14.20	110.90
Interurban	5.67	11.75	2.00	10.25	29.67	.....	29.67
<b>Electrified Steam Lines</b>							
Number of companies	1	.....	.....	1	2	.....	2
Miles of track	7.60	.....	.....	280.00	287.60	.....	287.60
Total track	15.58	76.53	9.73	312.13	413.97	14.20	428.17
<b>TRACK RECONSTRUCTED</b>							
<b>Urban and Interurban Lines</b>							
Number of companies	19	75	17	23	134	14	148
Miles of track—							
Urban	36.18	157.37	33.96	53.23	280.74	26.32	307.06
Interurban	15.29	36.71	13.61	11.36	76.97	5.85	82.82
<b>Electrified Steam Lines</b>							
Number of companies	1	.....	.....	.....	1	.....	1
Miles of track	0.76	.....	.....	.....	0.76	.....	0.76
Total track	52.23	186.68	47.57	64.59	351.07	32.17	383.24

# Statistics of the Electric Railway Industry

## Figures Are Given by States and Districts of the Track Mileage and Rolling Stock Owned

THE accompanying table, compiled from the August, 1919, "Electric Railway List" of the McGraw-Hill Company, gives mileage statistics and cars owned by the electric railway companies in the United States. This information was gathered last June and July and can be said to be representative of July 1, 1919. No attempt has been made to bring any of these statistics up to date by adding the track extensions and the numbers of cars on order during the past year, given elsewhere in this issue, inasmuch as the physical property "junked" was not determinable.

A few words of explanation are necessary regarding the tables. Every effort was made in compiling these statistics to prevent duplication, as it was found that often the same mileage and equipment would be reported by both the holding and operating company. The mileage represents the single-track equivalent owned and operated, duplication as to joint tracks being eliminated wherever possible. Passenger and freight cars are classified as between motors and trailers. Service cars are considered as being non-revenue cars used by a company, such as work cars, snow plows, etc. "Other cars" cover funeral, sleeping and dining cars as well as those that cannot otherwise be classified.

A comparison of the totals given in this table with those of a somewhat similar table, published in the issue of Jan. 4, 1919, shows a number of what might be termed discrepancies, especially in the number of companies, which are shown as being 881 in 1919, and 991 in 1918. This difference or decrease is attributed largely to the fact that in previous years the several divisions of many of the larger companies, for which separate accounts are kept, were counted separately, while this year the number of companies shown is intended to be representative only of the number of individual operating organizations. The balance is in actual abandonments and suspensions, which is shown on page 60 of this issue.

The number of miles of track owned shows also a

slight decrease, namely, from 48,484 to 48,336. This may represent an actual decrease, or it may be due to variations in the method of reporting by companies. As the nominal decrease is less than 1 per cent of the total number of miles reported, no particular significance is placed by the compilers on this figure except as it shows that the industry as regards miles of track is practically stationary. The accuracy of the method followed of collecting and compiling the figures in this table is not sufficient to warrant definite conclusions being drawn from yearly differences either way of 2 per cent or less.

The rolling stock statistics show 105,096 cars for 1919 against 102,379 for 1918, an increase of 2,717. Part only of this increase, however, should be considered as actual increase, as explained later in this statement. Certain freight equipment has not been included in this table, but a more liberal policy of inclusion has been followed this year than in the past. Thus 510 coal cars belonging to the East St. Louis & Belleville Railway, and 910 freight and express cars belonging to the Illinois Traction Company have this year been included in the table. None of the 2,300 freight cars, however, belonging to the Fort Dodge, Des Moines & Southern Railway, or any of the cars belonging to the Chicago Tunnel Company have been included.

Any comparison of details throughout the table of the various classes of equipment show that the reports as given out by the companies are not consistent from year to year, for while the total of all cars shows an increase over the previous year this increase cannot be fixed upon any of the various classes; some actually show a decrease. This undoubtedly is due in part to the discrepancies already mentioned in connection with track and also to the non-uniform use in reporting of the expression "service cars," "express cars," and "freight cars," for what is known as a "service car" on one road may be called a "freight car" or "express car" on another road. For the first time an effort has

been made to determine the approximate number of so-called "service cars," the total accounting being 3,672 or an average of 0.076 car per mile of single track owned. This figure is not correct inasmuch as it was impossible to classify the 10,000 odd "other cars."

The main table includes all companies operated by overhead or underground trolley, third-rail, cable, gas-electric or storage batteries. The recapitulation separates this total into several classes and shows that of the 48,326 miles of track 46,275 are operated electrically by street and interurban railway companies.

STATISTICS OF ELECTRIC RAILWAY COMPANIES IN THE U. S.

Table with multiple columns: State, No. of Companies, Miles of Single Track, Passenger Cars (Motor, Trailer), Elec. Locomotives, Express and Freight Cars (Motor, Trailer), Service Cars, Other Cars. Includes sub-sections for New England, Eastern, Southern, and Western States.

Part II—Statistics of Companies by Population Method Used

Table with columns: State, No. of Companies, Miles of Track, Passenger Cars (Motor, Trailer), Other Cars. Includes Cable Roads and Total cable roads.

Summary table with columns: State, No. of Companies, Miles of Track, Passenger Motor, Cars Trailer, Other Cars. Categories: Storage Battery Roads, Gas-Electric Roads, Electrified Steam Railroads.

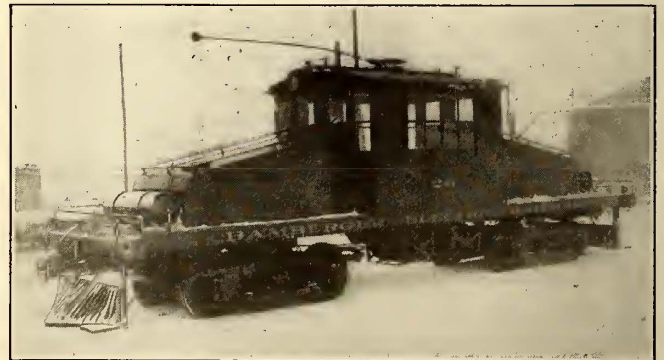
(a) Includes 2 freight and express motors and 28 trailers. (b) Exclusive of Cascade Div., C. M. & S. P., which is only in partial operation. (c) Electric locomotives.

RECAPITULATION

Summary table with columns: Class, No. of Companies, Miles of Single Track, Passenger Cars (Motor, Trailer), Elec. Locomotives, Express and Freight Cars (Motor, Trailer), Service Cars, Other Cars. Total in U. S. 811, 48,325.86, 79,655, 4,497, 869, 866, 5,622, 3,672, 10,114.

Bamberger Road Builds Two Locomotives

Due to a marked increase in the freight business of the Bamberger Electric Railroad, it recently became necessary to have two additional locomotives. It was decided that all parts of these locomotives should be built in the shops of the company except the trucks (of Baldwin make) and equipment. The illustration shows the general style of the locomotive.



LOCOMOTIVE BUILT BY BAMBERGER ROAD

These locomotives are 37 ft. over all, weigh 40 tons and are equipped with four 125-hp. GE-205B interpole motors. They are arranged for multiple-unit operation. The air equipment consists of two Westinghouse D3EG compressors and type EL brake valves. A blower for cooling the motors has also been installed.

These locomotives will operate on 750 volts direct current, and are geared for a safe coasting speed of 45 m.p.h., so that, in addition to their being used for freight service, they can be used for pulling emergency passenger trains. The construction was done under the supervision of N. S. Wiltsie, general superintendent, and M. L. Allen, master mechanic.



# Electric Railway Receiverships

The Companies Forced Into Receivership During 1919 Exceed in Number, Miles and Capitalization Those of Any Year Since Statistics Have Been Compiled — At End of Year 10 Per Cent of the Companies in the United States Are Under the Control of the Courts

THE FINANCIAL condition of the electric railway industry during the past few years is reflected in the large number of receiverships during the year 1919. The increasing cost of service with stationary fares is undoubtedly the main cause which has forced more companies to the wall than in any one year since annual statistics have been published by this paper. The receiverships, as will be noted, are not confined to companies operating solely in thinly populated territory or in the smaller cities. The larger and supposedly more prosperous communities such as Providence, St. Louis, Brooklyn, New York, and New Orleans, have also seen their local transportation systems placed under receivership. These conditions, however, while largely the result of accumulated burdens of regulation, contained in their franchises or of organization weaknesses can in nearly all cases be attributed to the present very unsatisfactory and decreased net earning power of the industry.

The year 1919 saw forty-eight companies in receivership while only twenty-eight were sold at foreclosure for the protection of their investors or creditors. Of the twenty-eight companies that were sold several had suspended operation and abandoned their franchises, the physical property only being sold for what it would bring to the junkman.

The number of properties abandoned, however, are not all shown in the list of receiverships for several companies voluntarily suspended service and abandoned their franchises. These, however, were small companies. With the approval of the state commissions, several of the larger companies have suspended service over certain non-profitable routes, without removing the tracks, which would necessarily mean that the investment must be written off the books and securities to that amount retired. In many cases this was financially impossible, for suspensions as a rule were made only to conserve the ever-declining net operating revenue. The creation of a surplus and a sufficient depreciation reserve were out of the question.

The accompanying compilations are designed to cover all companies in the hands of receivers on Jan. 1, 1919, and to show those that have been forced into receivership as well as those sold at foreclosure or reorganized without sale during the year. The figures as to mileage, stock and bonds have in most cases been checked by the companies concerned. In cases where the statistics did not have the approval

of the company concerned, they were taken from the several financial manuals and the average taken when any disagreement existed. All figures, with the exception of receivers' certificates, are for the date of receivership. The receivers' certificates are as of Dec. 31, 1919.

In the case of some companies such as New York Railways, Pittsburgh Railways and Brooklyn Rapid Transit Company, where the system is made up largely of leased lines, the figures are intended to show all of the securities in the hands of the public that are dependent for a return on the company involved in receivership.

This compilation does not show, however, the full damage of the year to the industry, for several other companies are near the danger line so far as earning power, credit and adequate service are concerned. Many dividends have been cut and some entirely omitted, in order that interest payments on outstanding bonds may be continued. No effort has been made to tabulate such instances, but the fact that they exist is mentioned to make more emphatic that the financial condition of all the electric railways not included in the compilations is by no means sound.

The record of receiverships since 1909, Table I, indicates the number of companies and their securities involved for each successive year. In the 1919 receiverships approximately 7.8 per cent of the mileage and 9 per cent of the securities invested in the industry were involved, exceeding by a considerable degree any previous year. Of the forty-eight companies involved in receivership proceedings 50 per cent had less than 25 miles of track, 20 per cent between 25 and 100 miles and 30 per cent over 100 miles. The largest single company was the United Railways Company of St. Louis with 460.9 miles of track, although the surface lines of the Brooklyn Rapid Transit Company, prior to the time that the Brooklyn City Railroad lease was broken, had 537.87 miles of track.

Most of the receiverships were caused by a default in interest payments on outstanding bonds, due to revenues not being sufficient to meet the ever-increasing cost of operation. In several instances special reasons existed. For example, a receiver was appointed for the Berkshire Street Railway at the time the trainmen went out on strike and later, after operation was resumed, the receiver was discharged without prejudice. In Providence the receivership of the Rhode

TABLE I—RECORD OF ELECTRIC RAILWAY RECEIVERSHIPS

Year	Number of Companies Involved	Miles of Single Track	Outstanding Stock	Securities Bonds
1909	22	558.00	\$29,962,200	\$22,325,000
1910	11	696.61	12,629,400	75,490,735
1911	19	518.90	29,533,450	38,973,293
1912	26	373.58	20,410,700	11,133,800
1913	18	342.84	31,006,900	47,272,200
1914	10	362.39	35,562,550	19,050,460
1915	27	1,152.10	40,298,050	39,372,375
1916	15	359.26	14,476,600	10,849,200
1917	21	1,177.32	33,918,725	33,778,400
1918	29	2,017.61	92,130,388	163,257,102
1919	48	3,781.12	221,259,354	312,915,104

TABLE II—RECORD OF ELECTRIC RAILWAY FORECLOSURE SALES

Year	Number of Companies Involved	Miles of Track	Outstanding Stock	Securities Bonds	Receiver's Certificates
1909	21	488.00	\$22,265,700	\$21,174,000	(a)
1910	22	724.36	19,106,613	26,374,075	(a)
1911	25	660.72	91,354,800	115,092,750	(a)
1912	18	267.18	14,197,300	10,685,250	(a)
1913	17	302.28	15,243,700	19,094,500	(a)
1914	11	181.26	26,239,700	44,094,241	(a)
1915	19	308.31	30,508,817	16,759,997	(a)
1916	19	430.14	13,895,400	22,702,300	(a)
1917	26	745.19	27,281,900	27,313,045	(a)
1918	23	524.22	37,740,325	20,149,384	(a)
1919	28	2,625.48	83,893,400	75,736,738	\$42,300

(a) not available

TABLE III—ELECTRIC RAILWAY RECEIVERSHIPS AND FORECLOSURES AS OF DEC. 31, 1919

	Year of Receiv- ership	Miles of Single Track Involved	Outstanding Securities		
			Capital Stock	Funded Debt	Receivers' Certificates
<b>NEW ENGLAND DISTRICT</b>					
<b>Connecticut</b>					
Danbury (Ct.) & Bethel St. Ry.	1917	16.00	\$320,000	\$588,500	\$60,000
Hartford & Springfield St. Ry. (Warehouse Point)	1918	48.00	785,000	961,000	None
The Shore Line Electric Ry. (Norwich)	1919	237.80	1,000,000	6,700,000	None
<b>Maine</b>					
Atlantic Shore Ry. (Kennebunk)	1915	49.93	1,000,000	1,746,250	None
Lewiston (Me.), Augusta & Waterville Electric R.R. (a)	1918	165.91	3,000,000	3,659,000	None
<b>Massachusetts</b>					
Bay State St. Ry. (Boston) (a)	1917	989.78	24,531,500	24,345,000	None
Plymouth (Mass.) & Sandwich St. Ry.	1918	6.40	151,800	None	None
Blue Hill St. Ry. (Canton)	1919	19.70	300,000	250,000	None
Berkshire St. Ry. Co. (Pittsfield) (b)	1919	145.38	5,398,100	1,600,000	None
<b>New Hampshire</b>					
Portsmouth (N. H.) Electric Ry. (a)	1916	19.03		474,661	
Concord (N. H.) & Manchester Elec. Br. (a)	1916	31.50	250,000	473,000	
Portsmouth, Dover (N. H.) & York St. Ry.	1917	42.33	(c)	707,000	25,000
<b>Rhode Island</b>					
Bay State St. Ry. (Newport Div.)	1917	22.20	(d)	996,800	None
The Rhode Island Co. (Providence)	1919	101.15	9,685,500	1,662,000	None
United Traction & Electric Co. (Providence)	1919	289.93	8,000,000	9,000,000	None
<b>Vermont</b>					
Springfield (Vt.) Elec. Ry.	1918	9.00	100,800	100,000	22,323
Total, 1-1-19	11 cos.	1,400.08	\$30,139,100	\$34,051,211	\$107,323
Receiverships added during 1919	5 cos.	794.06	24,383,600	19,212,000	
Less those sold or reorganized during 1919	5 cos.	1,351.60	33,179,600	30,551,661	
Net receiverships, 12-31-19	11 cos.	842.54	21,343,100	22,711,500	\$107,323
<b>NORTH OF THE OHIO AND EAST OF THE MISSISSIPPI RIVER</b>					
<b>Illinois</b>					
Chicago (Ill.) & Oak Park Elevated R.R.	1911	20.97	\$10,000,000	\$6,537,000	\$1,645,000
Southern Traction Co. of Illinois (E. St. Louis) (a)	1914	15.00	(e)		
Chicago, Aurora (Ill.) & De Kalb R.R.	1916	30.20	950,000	427,500	None
Galesburg & Western R.R. (Rock Island)	1919	16.00	500,000	521,000	None
Aurora, Elgin & Chicago R.R. (Wheaton)	1919	170.00	6,200,000	8,887,000	None
<b>Indiana</b>					
Winona Interurban Ry. Co. (Warsaw)	1916	70.00	750,000	2,343,700	None
Beech Grove (Ind.) Traction Co.	1917	3.90	150,000	100,000	None
Evansville (Ind.) Rys. Co. (a)	1918	61.50	1,519,400	2,129,000	None
Ft. Wayne (Ind.) & No. Indiana Tr. Co. (a)	1919	220.00	6,500,000	11,801,700	None
Vincennes (Ind.) Trac. Co.	1919	7.50	350,000	235,000	50,000
<b>Michigan</b>					
Marquette City & Presque Isle (Mich.) Ry.	1912	6.00	200,000	100,000	None
Trans St. Mary's Trac. Co. (Sault Ste Marie) (a)	1917	8.01	400,000	150,000	None
<b>New Jersey</b>					
North Jersey Rapid Transit Co. (Hohokus)	1912	18.00	800,000	800,000	None
Atlantic City (N. J.) & Shore R.R. Co.	1915	45.00	1,000,000	950,000	None
Monmouth County Electric Co. (Red Bank)	1916	18.50	350,000	500,000	17,500
Ocean City (N. J.) Electric Ry. Co. (b)	1919	10.00	100,000	75,000	None
<b>New York</b>					
Second Ave. R.R. (New York City)	1908	30.02	1,862,000	5,631,000	3,140,000
Rochester (N. Y.) Corning & Elmira Trac. Co.	1912	(f) 6.00	271,000	1,000,000	None
Buffalo (N. Y.) Southern Ry. Co. (a)	1913	25.35	547,200	600,000	41,800
Buffalo (N. Y.) & Lake Erie Traction Co.	1915	168.00	7,500,000	7,066,000	1,313,000
Buffalo, Lockport & Rochester (N. Y.) Ry. (g)	1916	58.20	4,000,000	2,750,000	None
Hornell (N. Y.) Traction Co.	1917	10.90	117,900	150,000	25,000
Manhattan & Queens Trac. Co. (Long Island City)	1917	22.00	(b) 20,000	(i) 2,186,390	None
Binghamton (N. Y.) Ry. Co.	1918	49.74	978,995	2,390,000	None
Buffalo (N. Y.) & Depew Ry.	1918	13.59	305,000	350,000	50,000
Penn Yan (N. Y.) & Lake Shore Ry.	1918	10.00	94,000	100,000	
Brooklyn (N. Y.) Rapid Transit Co. (j)	1918	(Holding Co.)	87,788,268	126,107,477	18,000,000
New York Consolidated Ry.	1918	141.68	18,900,000	22,967,000	5,000,000
New York Municipal Ry. Corp.	1918	67.82	2,000,000	60,000,000	13,000,000
<b>Surface Lines:</b>					
Brooklyn City R.R. (k)	1919	231.60	12,000,000	(l) 12,305,477	None
Brooklyn Heights R.R.	1919	36.60	2,000,000	(o) 8,242,174	None
Brooklyn, Queen's County & Suburban R.R.	1919	61.92	2,000,000	(n) 9,256,710	None
Nassau Electric Ry.	1919	144.39	15,000,000	(p) 20,787,115	None
Coney Island & Brooklyn Ry.	1919	59.53	2,983,900	(q) 6,223,298	None
Brooklyn & North River R.R. (m)	1919	3.83	100,000	(r) 261,318	None
New York (N. Y.) Railways Co.	1919	116.22	24,932,304	66,333,930	None
Eighth Ave. R.R. Co. (n)		20.01	1,000,000	750,000	
Ninth Ave. R.R. Co. (n)		17.37	800,000	3,000,000	
Huntington (N. Y.) R.R. Co. (a)	1919	19.97	30,000	26,000	None
Interborough Consolidated Corp.	1919	(Holding Co.)	50,403,634	67,825,000	None
<b>Ohio</b>					
Sandusky, Norwalk (Ohio) & Mansfield Elec. Ry.	1912	33.00	600,000	600,000	None
Cincinnati (Ohio) & Columbus Trac. Co. (o)	1913	53.00	1,904,500	748,000	None
Cincinnati (Ohio) Lawrenceburg & Aurora Electric St. Ry. Co.	1913	31.89	808,900	750,000	None
Interurban Ry. & Terminal Co. (Cincinnati)	1914	101.24	3,500,000	1,650,000	
Plymouth & Shelby Trac. Co.	1917	6.97	200,000	200,000	None
Pennsylvania & Ohio Ry. Co. (Ashtabula) (a)	1917	26.00	1,300,000	700,000	
Columbus Magnetic Springs & Northern Ry. (Richwood) (a)	1918	18.50	230,000	250,000	500
Ohio River Electric Ry. (Pomeroy)	1919	12.70	300,000	315,000	None
Springfield (Ohio) Terminal Ry. & Power Co.	1919	33.00	350,000	250,000	None
Miamisburg (Ohio) & Germantown Trac. Co. (a)	1919	5.00		50,000	None
<b>Pennsylvania</b>					
Philadelphia & Easton Electric Ry. (Doylestown)	1912	34.10	612,600	911,000	None
Sunbury (Pa.) & Susquehanna Ry.	1913	9.20	600,000	640,000	None
North Branch Transit Co. (Bloomsburg)	1915	30.00	500,000	532,500	None
Southern Cambria Ry. (Johnstown) (b)	1917	30.00	1,000,000	1,284,500	None
Buffalo & Lackawanna Trac. Co. (Erie)	1918	8.80	55,000	1,000,000	None
Cumberland Ry. Co. (Carlisle)	1918	12.40	350,000	404,700	
Pittsburgh (Pa.) Rys.	1918	605.25	21,726,750	41,579,500	None
Seranton (Pa.) & Binghamton Ry.	1918	50.00	6,000,000	4,100,000	
Carbondale Transit Co. (Mauch Chunk) (a)	1918	12.50	150,000	208,400	
Philadelphia (Pa.) Railways Co.	1919	16.00	400,000	400,000	None
Penn Central Ry. Co. (Johnstown)	1919	7.50	250,000		
Northampton Traction Co. (Easton)	1919	21.00	500,000	1,009,000	5,000
Northampton, Easton (Pa.) & Washington Trac. Co.	1919	17.80	1,250,000	739,000	None
Northwestern Pennsylvania Ry. Co. (Meadville) (a)	1919	69.40	1,500,000	2,060,000	None
Total, 1-1-19	39 cos.	1,963.54	\$92,252,445	\$173,785,890	\$24,232,800
Receiverships added during 1919 (a)	20 cos.	1,317.03	79,046,204	153,527,922	55,000
Less those sold or reorganized during 1919	15 cos.	901.40	32,981,100	38,898,077	42,300
Net receiverships, 12-31-19 (a)	44 cos.	2,379.17	138,317,549	288,415,735	24,245,500

Island Company was caused largely by jitney competition and demands for increased wages by the trainmen. In New York and Brooklyn, the receiverships of the New York Railways and the surface lines of the Brooklyn Rapid Transit Company were caused by the inability of the companies to meet their obligations under a 5-cent fare with free transfers. In Huntington, Long Island, the company was left without power and had to cease operations, with the result that a receiver was appointed to protect the physical property. In the cases of the Northampton Traction Company and the Northampton, Easton and Washington Railway receiverships were largely the result of strikes by the trainmen for increased wages. In Jacksonville, Fla., the refusal of the people at a referendum to vote the company an increase in fare from 5 to 7 cents caused the receivership. The United Railways of St. Louis receivership was caused by the inability of the company to repay the six-months' loan of \$3,235,000 made to it by the War Finance Corporation on June 1, 1918.

#### FORECLOSURE SALES

The foreclosure sales in 1919 numbered twenty-eight and involved nearly \$150,000,000 of securities, exceeding each preceeding year with the exception of 1911, when the securities involved only were greater. Five more companies than in 1918 were foreclosed, involving nearly five times as much mileage and three times as much capitalization. The sale of the former Bay State Street Railway Company had much influence on these figures, for it involved nearly 1000 miles of track and \$48,000,000 of securities. This property was sold to the Eastern Massachusetts Street Railway, a company organized in accordance with a "special act" of the State legislature and which provided for the appointment of five trustees by the governor to operate the

property for a period of ten years.

No separate table of foreclosure sales has been made, but such companies as have been sold during the year have an affix (a) after their name in Table III. The majority of the properties foreclosed in 1919 are still operating in some reorganized or new form.

These wrecked companies, together with those whose abandonment in 1919 was a voluntary act or an aftermath of receivership and sale in prior years, are shown in Table II.

ABANDONMENTS AND SUSPENSIONS

An effort was made to separate abandoned and dismantled roads from those on which service had only been suspended and the physical property neither removed or sold. Companies which are known to have ceased operation and of which nothing can be learned to give hope of again reopening are included in the first-named class.

In the case of companies suspending service either in whole or in part, no attempt has been made to estimate the capitalization involved, due to the fact that in practically all cases any pro-ration on a mileage basis is valueless because the rolling stock and power-station equipment remain useful for other parts of the line still in operation. To estimate the value of securities involved in track and roadway construction is impossible without exact knowledge of the existing construction.

Table IV is by no means complete, as to make it so would involve longer research than time permitted. Only such companies as have been reported in this paper from time to time are included in these lists.

A few words might be said with regard to some of the lines that have been abandoned. The London & Lake Erie Traction Company advises that the city of St. Thomas (Ont.) has purchased

TABLE III—ELECTRIC RAILWAY RECEIVERSHIPS AND FORECLOSURES AS OF DEC. 31, 1919—Continued

SOUTH OF THE OHIO AND EAST OF THE MISSISSIPPI RIVER

	Year of Receiv-ership	Miles of Single Track Involved	Outstanding Securities		
			Capital Stock	Funded Debt	Receivers' Certificates
<b>Alabama</b>					
Birmingham (Ala.) Tidewater Ry. ....	1919	32.80	\$325,000	\$1,500,000	None
Birmingham (Ala.) Ry. Lt. & Power Co. ....	1919	153.65	(p) 4,230,000	(p) 8,820,504	None
Montgomery (Ala.) Lt. & Traction Co. ....	1919	38.00	(r) 2,000,000	(r) 1,430,000	\$250,000
North Alabama Traction Co. (Albany) ....	1919	7.63	75,000	225,000	.....
<b>Florida</b>					
St. Petersburg (Fla.) & Gulf Ry. Co. (a) ....	1918	26.11	300,000	250,000	None
Jacksonville (Fla.) Traction Co. ....	1919	64.10	1,500,000	2,074,500	20,000
<b>Georgia</b>					
City & Suburban Ry. Co. (Brunswick) ....	1919	9.50	100,000	194,000	None
Savannah (Ga.) Electric Co. ....	1919	59.10	(r) 3,500,000	(r) 3,500,000	None
<b>Kentucky</b>					
Paducah (Ky.) Traction Co. (b) ....	1918	19.34	350,000	1,023,000	None
Southern Traction Co. (Bowling Green) (a) ....	1918	4.50	10,000	24,500	None
<b>Mississippi</b>					
Jackson (Miss.) Light & Traction Co. ....	1919	13.50	(r) 1,600,000	(r) 915,000	None
Pascagoula (Miss.) St. Ry. & Power Co. (a) ....	1919	9.08	(r) 500,000	(r) 350,000	.....
<b>Tennessee</b>					
Memphis (Tenn.) Street Railway ....	1919	30.40	5,000,000	10,094,000	None
Chattanooga (Tenn.) Ry. & Light Co. ....	1919	79.80	(r) 5,000,000	(r) 6,185,000	None
<b>West Virginia</b>					
Morgantown (W. Va.) & Wheeling Trac. Co. (u) ....	1916	27.00	345,000	500,000	214,000
Grafton (W. Va.) Light & Power Co. ....	1917	7.00	(t) 400,000	(t) 300,000	None
West Virginia Traction & Electric Co. (Wheeling) ....	1919	39.00	1,869,600	4,762,000	None
South Morgantown (W. Va.) Traction Co. ....	1919	6.00	36,000	None	.....
Total, 1-1-19. ....	5 cos.	83.95	\$1,405,000	\$2,097,500	.....
Receiverships added during 1919. ....	13 cos.	542.56	25,735,600	40,050,004	\$270,000
Less those sold or reorganized during 1919. ....	4 cos.	59.03	1,160,000	1,647,500	.....
Net receiverships, 12-31-19. ....	14 cos.	567.48	25,980,600	40,500,004	270,000

WEST OF THE MISSISSIPPI RIVER

<b>Arizona</b>					
Tucson (Ariz.) Rapid Transit Co. ....	1919	4.25	\$500,000	\$114,800	None
<b>Colorado</b>					
Denver (Colo.) & Interurban R.R. ....	1918	44.43	101,500	1,079,900	None
Colorado Springs (Colo.) & Cripple Creek R.R. ....	1919	75.80	2,000,000	2,827,878	50,000
<b>Idaho</b>					
Boise (Idaho) Railway Co. (a) ....	(v)	7.73	.....	75,000	None
<b>Iowa</b>					
Des Moines (Ia.) City Railway Co. ....	1918	90.40	1,305,000	5,807,000	73,611
<b>Kansas</b>					
Iola (Kan.) Electric Railroad (w) ....	1918	10.50	150,000	150,000	None
Southwestern Interurban Ry. (Winfield) ....	1919	25.00	150,000	None	None
<b>Louisiana</b>					
New Orleans (La.) Ry. & Light Co. ....	1919	220.00	(r) 30,199,250	(r) 38,778,000	(r) 500,000
<b>Minnesota</b>					
St. Paul Southern Ry. Co. (Hastings) ....	1918	17.54	658,225	425,400	40,000
<b>Missouri</b>					
Kansas City (Mo.) Outer Belt Electric R.R. ....	1912	(x)	None	1,298,000	100,000
Kansas City, Ozark & Southern Ry. (Ava.) ....	1913	15.00	300,000	None	.....
Kansas City (Mo.) Lawrence & Topeka R.R. ....	1919	12.75	251,000	400,000	None
United Railways Co. of St. Louis (Mo.) ....	1919	460.90	41,296,000	52,590,000	2,300,000
Missouri Electric R.R. (St. Louis) ....	1919	20.00	1,000,000	700,000	None
<b>Oregon</b>					
Southern Oregon Traction Co. (Medford) ....	1918	8.19	150,000	150,000	.....
<b>Texas</b>					
Abilene (Tex.) Street Railway Co. (a) ....	(y)	4.75	25,000	30,000	.....
Corpus Christi (Tex.) Ry. & Light Co. ....	1919	10.00	(e)	(e)	.....
Greenville (Tex.) Railway & Light Co. ....	1919	8.00	300,000	300,000	None
<b>Washington</b>					
Spokane & Inland Empire R.R. Co. (a) ....	1919	290.47	16,397,700	4,414,500	None
Total, 1-1-19. ....	9 cos.	198.54	\$2,689,725	\$9,014,400	213,611
Receiverships added during 1919. ....	10 cos.	1,127.17	92,093,950	100,125,178	2,850,000
Less those sold or reorganized during 1919. ....	4 cos.	313.45	16,572,700	4,669,500	.....
Net receiverships, 12-31-19. ....	15 cos.	1,002.26	78,210,975	104,470,078	3,063,611

RECAPITULATION

Total, 1-1-19. ....	64	3,646.11	\$126,486,270	\$218,949,001	\$24,553,734
Receiverships added during 1919. ....	48	3,781.12	221,259,354	312,915,104	3,175,000
Less those sold or reorganized during 1919. ....	28	2,625.48	83,893,400	75,766,738	42,300
Net receiverships, 12-31-19. ....	84	4,801.75	263,852,224	456,097,367	27,686,434

NOTES—

- (a) Sold at foreclosure during 1919.
- (b) Receiver discharged during 1919; no foreclosure sale.
- (c) Included in that of the Atlantic Shore Ry., Kennebunk Me.
- (d) Figure given in Funded Debt column includes also proportion of capital stock outstanding applicable to electric railway.
- (e) Not available, company inaccessible.
- (f) Graded but no track laid.
- (g) Trustee foreclosed mortgage.
- (h) No full paid capital stock, figure shown covers installment only.
- (i) No outstanding funded debt, but current liability as shown.
- (j) Figures given are for the total amount of securities of B.R.T. Co. in the hands of public, including also those of lesser companies, which are guaranteed by B.R.T. Co.
- (k) Lease to Brooklyn Heights cancelled by Court and independent operations commenced Oct. 18, 1919.
- (l) Includes certificates of indebtedness held by B.R.T.
- (m) Operations ceased on Sept. 4, 1919.
- (n) Leases of these two roads to N. Y. Rys. abrogated by the Court and properties returned to their owners. Now operated separately.
- (o) Securities of B.R.T. and I.C.C., two holding companies, excluded in totals.
- (p) Railway securities shown. Estimated to be 57.2% of the total.
- (r) Securities cover combined property. Not able to separate railway.
- (s) Operation suspended Jan. 1, 1919, and will not be resumed. Company defunct.
- (t) Figures are for railway only.
- (u) But 3 miles of this road is electrified, the balance being operated by steam locomotives. Figures shown are for entire property.
- (v) No formal receivership proceedings.
- (w) Operation suspended March 21, 1919. Road being dismantled.
- (z) Has no track built, but owns 7 miles of right-of-way.
- (y) Date of receivership not available, some time previous to Jan. 1, 1919.

TABLE IV—ABANDONMENTS (ENTIRE LINE)

	Miles	Stock	Bonds	Rec.	Cer.
Miamisburg & Germantown (o).....	5.00	.....	\$50,000	.....	.....
Parkersburg (W. Va.) & Ohio Vy. Elec. Ry. (c).....	4.60	\$150,000	150,000	.....	.....
Los Angeles & San Diego (Cal.) Beach Ry. ....	21.54	562,500	375,000	.....	.....
Indiana Utilities Co. (Lake James Ry.)....	3.75	(a)200,000	(a)105,000	.....	.....
Kansas Electric Utilities Co. (Parsons, Kan.).....	7.50	(b)	(b)	.....	.....
Lebanon & Franklin Traction Co. (Dayton, Ohio) (c).....	10.80	80,000	135,000	.....	.....
Suburban Traction Co. (part of Interurban Ry. & Terminal Co.).....	.....	(b)	(b)	.....	.....
Columbus, Magnetic Springs & Northern Ry. ....	18.50	230,000	250,000	500	.....
Iola (Kan.) Electric R.R. ....	10.50	150,000	150,000	.....	.....
Ft. Scott (Kan.) Gas & Elec. Co. ....	7.00	116,700	97,000	.....	.....
Swansea (Mass.) & Seekonk St. Ry. Co. ....	10.12	.....	80,000	.....	.....
Southern Trac. Co. (Bowling Green Ky.)..	4.50	10,000	24,500	.....	.....
Madison Lt. & Ry. Co. (Madison, Wis.) (c)	3.50	(a)150,000	(a)146,000	.....	.....
Alton & Jacksonville Ry. ....	6.80	(b)	(b)	.....	.....
Pascagoula (Miss.) Ry. & Pr. Co. ....	9.08	(a)500,000	(a)350,000	.....	.....

(a) Covers capitalization of combined properties.  
 (b) Not available.  
 (c) In 1918 list of suspensions.

## ABANDONMENTS—SMALL PIECES

	Miles
Pacific Elec. Ry Co. (Riverside Line in Riverside, South of Jarupa Ave.) ..	0.96
The Connecticut Co. ....	0.20
Illinois Central Elec. Ry. (sidings removed) ..	0.31
Springfield (Mass.) St. Ry. Co. (car house tracks) ..	0.06
Interstate Consolidated St. Ry. (siding removed) ..	4.00
Southern Ry. Co. (Natchez, Miss.) ..	0.78
United Rys. Co. of St. Louis. ....	.....
Ocean City (N. J.) Electric R.R. Co. (Wesley Ave. from 9th to 1st sts. and 1st St. from Wesley Ave. to Bay Ave.) ..	0.59
Buffalo & Lake Erie Trac. Co. (French St., Erie, Pa.) ..	0.52
Hanover & McSherrystown St. Ry. Co. ....	1.00
Milwaukee (Wis.) Elec. Ry. & Lt. Co. ....	2.00
Yonkers R.R. Co. (in Hastings) ..	.....
Caldwell (Idaho) Traction Co. (Lake Lowell Br.) ..	.....

the car houses, sub-station and other property within the city limits, but the traction line between London and Port Stanley has ceased operations and the physical property is scrapped. The track and line materials of the Parkersburg & Ohio Valley Electric Railway was sold to a junkman for \$16,000. The company owned no cars or power plant. The Miamisburg & Germantown Traction Company, formerly a part of the Cincinnati, Dayton & Toledo Traction Company, prior to foreclosure and reorganization, was sold at foreclosure and junked. The Los Angeles & San Diego Beach Railway, with permission of the California Public Service Commission, was abandoned. The Columbus, Magnetic Springs & Northern was sold at foreclosure and scrapped. The Swansea & Seekonk Street Railway ceased operation in August last and is to be sold for what it will bring for junk. This line was once before sold but the townspeople along the line formed a company to take over its operation.

The trustees of the Eastern Massachusetts Street Railway have followed a plan of suspending service wherever the lines failed to earn their upkeep unless the communities affected met the operating deficits as provided in the act under which the road is being operated.

In New York the receiver has, with the permission of the court, ceased operating the storage-battery lines in the downtown section of Manhattan as well as the shuttle service over the Manhattan Bridge, formerly operated by the Brooklyn & North River Railroad Company. The city of New York, however, has instituted private bus operation, under city supervision over the routes abandoned.

A few companies heretofore reported as being abandoned were reclaimed—among these was the Ocean

SUSPENSIONS (PARTS OF SYSTEMS INCLUDED AS SPECIFIED)

	Miles
Eastern Mass. St. Ry. Co.:	
Fletcher St., Lowell, Mass. ....	0.25
Newburyport to Ipswich Junction, Hamilton. ....	16.22
Georgetown Sq. to Dummer Academy, Newbury. ....	5.97
Bridgewater Cor. to Lund's Cor., New Bedford. ....	27.05
Lakeville to East Taunton. ....	4.34
Bridgewater Ctr. to Raynham Ctr. ....	5.73
Oakdale Route, Dedham, Mass. ....	1.42
Charles River-Needham Route. ....	3.82
So. Braintree-Randolph Route. ....	3.75
Prospect St.-Montrose Route, Branches from Main Line. ....	2.61
North Chelmsford to Tyngsboro. ....	3.28
New York Railways:	
Ave. C Line (from E 23d St. to Desbrosses St. Ferry) ..	13.85
Spring and Delancey St. Line (from Grand St. Ferry to Chambers St. Ferry) ..	
Sixth Ave. Ferry Line (from 6th Ave. and 3d St. to Desbrosses St. Ferry) ..	
Tri-City Ry. & Lt. Co. (Muscatine Lines) ..	10.00
Nashville (Tenn.) Traction Co. (Whole Co.) ..	4.50
Fernandina (Fla.) Municipal Ry. (property for sale) ..	2.25
Fryeburg Horse R.R. (Whole Co.) ..	3.00
Oxford Electric Co. (Norway, Me.) (Whole Co.) ..	2.13
Worcester & Warren St. Ry. Co. (Brookfield, Mass.) ..	20.10
Conway (N. H.) Elec. St. Ry. Co. (Whole Co.) ..	6.60
Ocean St. Passgr. Ry. Co. (Cape May, N. J.) ..	1.40
Fresno (Cal.) Traction Co. Passenger Service Co.) Lines, Fresno. ....	8.14
Sacramento (Cal.) Northern R.R. (Chico to Hamilton) ..	11.00
Brooklyn & North River R.R. (N.Y.C.) (Manhattan Bridge) ..	3.83
Yonkers Railroad Co (In Hastings) ..	1.50
Empire State R.R. Corp (East River Rd. route between Riverside Cemetery in Scriba to Southerly terminus) ..	.....
Buffalo & Lackawanna Trac. Co. (Local service between terminal at Lafayette Sq., Buffalo & Lackawanna City Line) ..	8.80
Buffalo & Lake Erie (Dunkirk City Lines) ..	6.27
Pelham Park & City Island Ry. ....	3.29
Mid-Crosstown Ry. (N.Y.C.) ..	5.25
Third Ave. Bridge Co. (Queensboro Bridge, N.Y.C.) ..	3.63
S. New York Power & Ry. Corp., (Normal School Line in Oneonta) ..	1.03
Ohio River Electric Ry. Co. (Pomeroy, Ohio) ..	12.70
Tiffin-Fostoria & Eastern Elec. Ry. (Tiffin City Lines) ..	.....
Marion & Suburban Ry. (Ohio) ..	.....
Walla Walla (Wash.) Vy. Ry. (East Walla Walla and Prospect Heights Lines) ..	.....
Yakima, (Wash.) Vy. Transportation Co. (North Fourth St. Line) ..	11.61
Suffolk Traction Co., Patchogue, N. Y. ....	4.75
Abiline (Tex.) St. Ry. Co. ....	8.20
Amarillo (Tex.) St. Ry. Co. ....	8.29
East Auburn-Turner Line of former Lewiston, Augusta & Waterville St. Ry. ....	19.77
Huntington (N. Y.) R.R. Co. (sold at foreclosure, to be opened up again) ..	.....

City (N. J.) Electric Railroad, reported as suspending in 1918, which was subsidized by the town and operated under a trustee during the summer months with satisfactory results. The trustee was discharged on Sept. 30, 1919.

The Sharon Division of the Norwood, Canton & Sharon Street Railway, a 5-mile line in Massachusetts, resumed operation in July with two 6-cent zones, with deficits to be met from the town budget.

The Richmond & Chesapeake Bay Railroad was taken over by a newly organized company, the Richmond-Ashland Railway, and operation again commenced in July. Service was also resumed by the New York & Pennsylvania Traction Company on its line between Canistee, N. Y., and Shinglehouse, Pa., last August.

The Massachusetts Street Railway was organized by local men to take over the defunct Bristol & Norfolk Street Railway, which formerly operated between Holbrook and Randolph. It ceased operation in 1918 and was sold for junk, but its dismantlement was stopped. No information is available to show that service was actually resumed.

## National Industrial Conference Board Issues Cost-of-Living Bulletin

According to a bulletin issued by the National Industrial Conference Board on Dec. 29, there has been an increase in the cost of living between July, 1919, and November, 1919, of 5.8 per cent. From March, 1919, the increase has been 13.5 per cent; from November, 1918, 10.4 per cent, and from July, 1914, 82.2 per cent. The percentages are based on the consumption of an average family.

# Association News

## Engineering Association Committee Assignments and Appointments

SECRETARY E. B. BURRITT has just issued the following lists of subjects to be covered by the Engineering Association committees and the personnel of these committees. The committees are already corresponding with regard to the year's activities, and a meeting of the power generation committee will be held in New York City on Jan. 5.

### SUBJECT ASSIGNMENTS

*Buildings and Structures:* (1) Facilities for prepayment and post-payment fare collection at terminals. (2) Investigate use of lag screws instead of bolts in timber-deck structures.

*Equipment:* (1) Revision of standards for brake-shoes and brakeshoe heads. (2) Continue standardization of motor parts. (3) Report on helical gears. (4) Investigate feasibility of adopting standard cars. (5) Co-operate with way committee on rail heads.

*National Electrical Safety Code:* Continue work of committee.

*Power Distribution:* (1) Continue revision of specifications of overhead line material. (2) Revise specifications for crossings of power lines with railroads; on the joint committee with other engineering associations. (3) Specifications for catenary line construction. (4) Revision of specification for standard stranding of cables. (5) Specifications for standard thread for pins and insulators. (6) Harmonize specification for electric conduit construction with general specification and form of contract for railway structures of 1916.

*Power Generation:* (1) Recommended forms of contracts for the purchase of power (a) normal, (b) emergency. (2) Powdered coal, oil, gas and special fuels for use in electric railway power plants. (3) Tabulation of statistics on cost of power in typical cases of various sized plants. (4) Appoint member on national committee on standardization of method for determining cost of power, when this subject becomes active.

*Way Matters:* (1) Complete standard specifications for track spirals. (2) Standard sections for curved rail heads—in co-operation with committee on equipment. (3) Study of progress made in rail joints. (4) Revise specifications for plain bolted special work. (5) Further consideration of specification for wood block paving.

### COMMITTEE APPOINTMENTS

Following are tentative, although nearly complete, lists of appointments to the several committees of the Engineering Association for the current association year:

*Buildings and Structures:* H. G. Throop, New York State Railways, Syracuse, N. Y., chairman; E. H. Berry, Cincinnati (Ohio) Traction Company; R. C. Bird, Central Traction & Lighting Bureau, New York City; B. P. Legare, United Railroads of San Francisco, Cal.; James Link, Knoxville (Tenn.) Railway & Light Com-

pany, Knoxville, Tenn.; W. H. Wharton, Brooklyn (N.Y.) Rapid Transit Company.

*Equipment:* Daniel Durie, West Penn Railways, Connellyville, Pa., chairman; W. S. Adams, J. G. Brill Company, Philadelphia, Pa.; H. A. Benedict, Public Service Railway, Newark, N. J.; R. H. Dalgleish, Capital Traction Company, Washington, D. C.; James C. C. Holding, Midvale Steel & Ordinance Company, Philadelphia, Pa.; H. A. Johnson, Metropolitan West Side Elevated Railway, Chicago, Ill.; J. S. McWhirter, Third Avenue Railway, New York City; E. D. Priest, General Electric Company, Schenectady, N. Y.; F. W. Sargent, American Brake Shoe & Foundry Company, New York City; K. A. Simmon, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.; J. M. Yount, United Railroads of San Francisco, San Francisco, Cal.

*National Electrical Safety Code:* J. H. Libbey, Eastern Massachusetts Street Railway, Boston, Mass., chairman; C. A. Greenidge, J. G. White Management Corporation, New York City; C. S. Kimball, Washington Railway & Electric Company, Washington, D. C.

*Power Distribution:* Chas. R. Harte, The Connecticut Company, New Haven, Conn., chairman; C. C. Beck, The Ohio Brass Company, Mansfield, Ohio; J. H. Drew, Drew Electric & Manufacturing Company, Cleveland, Ohio; R. W. Eaton, Public Service Engineer, City Hall, Providence, R. I.; H. H. Febrey, American Steel & Wire Company, New York City; C. J. Hixson, General Electric Company, Schenectady, N. Y.; Chas. H. Jones, Metropolitan West Side Elevated Railway, Chicago, Ill.; J. H. Libbey, Eastern Massachusetts Street Railway, Boston, Mass.; F. McVittie, New York State Railways, Rochester, N. Y.; M. B. Rosevear, Public Service Railway, Newark, N. J.; W. Schaake, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.; A. Schlesinger, Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.

*Power Generation:* A. B. Stitzer, Republic Engineers, Inc., New York City, chairman; H. P. Bell, San Francisco-Oakland Terminal Railways, Oakland, Cal.; N. A. Carle, Public Service Electric Company, Newark, N. J.; H. E. Davis, New York State Railways, Utica, N. Y.; C. W. De Forrest, Union Gas & Electric Company, Cincinnati, Ohio; W. S. Finlay, Jr., Interborough Rapid Transit Company, New York City; C. A. Greenidge, J. G. White Management Corporation, New York City; F. C. Hanker, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.; A. H. Kruesi, General Electric Company, Schenectady, N. Y.; E. H. Scofield, Minneapolis (Minn.) Street Railway; Fred'k A. Scheffler, Fuller Engineering Company, New York City; W. C. Slade, The Rhode Island Company, Providence, R. I.

*Way Matters:* R. C. Cram, Brooklyn (N. Y.) Rapid Transit Company, chairman; W. F. Graves, Montreal (Que.) Tramways, vice-chairman; H. A. Abell, New York State Railways, Rochester, N. Y.; Charles A. Alden, Bethlehem Steel Company, Steelton, Pa.; Wm. R. Dunham, Jr., The Connecticut Company, New Haven, Conn.; H. Fort Flowers, Differential Car Company, Inc., New York City; A. E. Harvey, Kansas City (Mo.) Railways; E. C. Johnson, Pacific Electric Railway, Los Angeles, Cal. C. G. Keen, American Railways, Philadelphia, Pa.; E. M. T. Ryder, Third Avenue Railway, New York City; C. A. Sinclair, Washington & Virginia Railway, Washington, D. C.; E. A. West, Denver (Colo.) Tramway.

## Accounting Discussed at Providence

**W.** E. JONES, general accountant The Rhode Island Company, was the principal speaker at the meeting of the Rhode Island Company section held on Nov. 3. He gave the 100 members present a graphic picture of the amount of detail work necessary on the part of the accounting department in properly recording and reporting the company's operations. He described the many financial reports which are compiled, and touched on the company's financial condition as reflected by those reports. He stated that out of every dollar expended on the property during the nine months ended Sept. 30, 1919, 67 cents went for employees' wages, exclusive of the amount paid on the monthly payroll. This left but 33 cents with which to buy coal, materials, and supplies, etc., pay accident and damage claims, and provide for other general expenses. A very small margin was left with which to pay taxes and any return on the investment.

Mr. Jones stated the following to be the relative amounts expended on the various accounts, in terms of cents on the dollar: Maintenance of way and structure, 10; maintenance of equipment, 9; power, 13; conducting transportation, 39; traffic in general and miscellaneous, 11; taxes, 9, and rentals and interest, 9.

Among items of business taken up at the meeting was the matter of a meeting place for the section. It was decided that future meetings would be held in Slocum Post Hall, and the date of the meeting was changed to the second Thursday of each month. C. E. Redfern, ex-president of the section, stated that provision for the expenses of the monthly meeting had been made in such a way that it would not be necessary to make any additional assessments. He also outlined a campaign for increasing membership. The section voted to continue affiliation with the American Electric Railway Association.

## British Tramway Workers Get Large Wage Awards

**T**HE Interim Court of Arbitration of Great Britain has awarded large increases in wages to employees of tramways, light railways and omnibus lines. The present award will, it is stated, add close to \$5,000,000 to the annual wage bills for the tramway industry. In a special statement of the Municipal Tramways Association it is said that in the effect on the transportation industry, crippled by the financial aftermath of the war, this last advance is of the utmost gravity. On the present basis few tramways, whether municipally or privately owned, can continue if they are to maintain their undertakings in a sound financial state. Increases in fares will be necessary up to the statutory maximum, where the fares are not fully up to the legal powers at the present time, and in very many instances higher charging powers must be conferred. The result will be that the price of transportation must rise with the rise in the cost of labor and materials represented in its service, just as much as the prices of other commodities have risen for the same reasons. The immediate need is to lift the basis of fares to a new economic level.

This is absolutely essential if the country is to be assured efficient urban transportation, and the recent wage award has made this necessity a matter of extreme urgency.

## Letters to the Editors

### Mr. Gould Discusses Energy Saving

CHICAGO, ILL., Dec. 26, 1919.

To the Editors:

Your report of my remarks in your issue of Dec. 20, page 991, is a bit involved. In the discussion of the paper on economies in car operation by Mr. Phillips at the Grand Rapids meeting, I spoke briefly with a view to emphasizing the possibilities for energy saving at the car through better handling of the controller and brake by the average motorman. Other factors remaining unchanged, an increase in the average rate of acceleration and retardation will lower the car energy consumption.

Fundamental curves showing watt-hours per ton-mile plotted against the rate of acceleration in miles per hour per second have frequently been published. For a given car and equipment, the energy acceleration curve and the energy retardation curve have about the same shape. These curves show that faster feeding or faster braking, up to a certain good rate, will bring about a substantial reduction in energy consumption, but feeding or braking beyond this rate does not appreciably reduce the energy demand. It does, however, shorten the power-on time and consequently increases the possible coasting time, but these quantities have not the same value in equivalent energy reduction as they have in the parts of the curve represented by slower feeding and braking.

Briefly, there is a certain proper rate of feeding and braking at which motormen should operate a given car. This rate, if maintained, will afford all the reduction in energy consumption that consistently can be expected through the introduction of power-saving devices. The so called "cannon ball" acceleration is undesirable because of discomfort to passengers, undue stresses on equipment, slipping wheels, blowing breakers and the possibility of accidents. And, coupled with these, is the fact that cannon ball acceleration does not appreciably reduce the energy consumption below a good average rate of feeding.

Through the installation of Economy Railway watt-hour meters we have been able conclusively to demonstrate the foregoing from the practical operating standpoint, and also to show that on cars equipped with watt-hour meters motormen will quickly learn to take full advantage of the series running position when it means reduced energy consumption, rather than habitually feeding through to multiple when there is not an opportunity to run on the full multiple notch.

Another point mentioned at the Grand Rapids meeting, which was not quoted correctly, was my statement with regard to distribution and other losses. We have conducted a great many tests and sales demonstrations with Economy watt-hour meters in regular operating service, and in a number of notable instances we have not only metered all the motors on a line, but also have segregated the line so that we could meter the a. c. or d. c. feeders. In this way we obtain a measure of the total power at the switchboard and the actual propulsion power as recorded by the Economy meters on the cars.

The point made at the Grand Rapids meeting was that the difference between the power as measured at the switchboard and at the cars varies from 6 per cent or 8 per cent on a line of a city system to as high as 30 per cent on an interurban line with rotary converters. This difference is made up of conversion and distribution losses, lighting and brake-compressor motors, but no allowance has been made in the foregoing figures for electric heating. The point is that until the actual propulsion power is measured at the car and the sum of the car readings is compared with the switchboard output, the average railway property does not realize the slack between energy generated and energy used solely for propelling the cars.

We have reports of energy saving for a period of years varying from 10 per cent to 20 per cent, and along with this saving the users of Economy meters are able definitely to put a money value on their distribution losses and miscellaneous uses of power and in numerous cases are able to allocate and reduce these losses. The foregoing partly illustrates the reason for our slogan: "Meter the energy. That's what you want to save."

L. E. GOULD, President.

## Let Railways Do the Bussing and Trucking

NEW YORK, Dec. 26, 1919.

TO THE EDITORS:

The Dec. 10 quarterly meeting of the New York Electric Railway Association was marked by some able papers and discussion on the inroads of the motor truck and, to a lesser extent, on the competition of the motor bus. Unadulterated objection to auto-motive equipment, it is pleasing to see from this meeting, is giving way to the desire to learn just what there is in the motor truck and the motor bus from the economic and service standpoints.

Indeed, it is high time that the facts of the auto-motive situation were faced without self-deception. If the electric railways could secure "a fair field and no favor," the scope of the motor bus and the motor truck would be greatly circumscribed. Unfortunately, several years of agitation have brought amelioration only in spots. Neither of the two junior common carriers is generally subject to anything like the flock of taxes, of service and of rate regulations that have descended in the course of time upon both the steam railroad and electric railway, and candor compels the confession that the self-propelled vehicles are not likely to be subjected to similar burdens within a period near enough to be of substantial help to the older utilities.

We have but to study the course of events in Great Britain to see why genuine relief is remote. In that country, the tramways have agitated for years and years against the unfair competition of the motor bus; unfair because the bus could enter the public service field so readily, could compete with existing lines, could charge any fare the traffic would bear and yet withal pay almost nothing to the community. Indeed, it has taken more than a decade of hard work to secure local legislation on such an obvious matter as motor-bus charges for road maintenance. As for overall parity in taxation, that is as far off as ever.

If the municipally-owned tramways of Great Britain have sought justice in vain against the encroachments of privately-owned bus companies, what chance have the electric railways of the United States? It is still as much as a politician's life is worth to introduce or vote

for measures that will give a square deal to our electric railways. Had we not better follow the example of the British tramways, both public and private, and go into the automotive game, too? Perhaps, the quickest way to insure that self-propelled vehicles be made to assume the burdens of the common carrier is to inaugurate such services ourselves! There is little likelihood that effective legislation can be obtained against the small sniper of traffic. He is hard to regulate at best, and he is frequently the recipient of much sympathy from that part of the public which doesn't love a corporation. Furthermore, the public will not readily tax out of existence a new and flexible mode of transportation which it has found so convenient a supplement to transit on rails. It is noteworthy that even the drastic lesson of Toledo has not resulted in the banishment of bus operation there.

The problem of making self-propelled vehicles pay their due share of road upkeep is not so simple as it seems. The paving burdens of the electric railway's predecessor did not arise solely from the harm caused to cobbles by the hoofs of its horses; there was a well-defined feeling that the railway ought to pay something for getting a sort of right-of-way that the placing of rails on the highway was a hindrance rather than a help to other traffic. A parallel charge can hardly be made in the case of buses or motor trucks employed in public service, inasmuch as they use exactly that same runway as other vehicles. Just what roadway maintenance charge should be assessed against a 1½-ton or 2-ton bus running every hour or half-hour over a state highway that carries scores to hundreds of private vehicles per hour? If, as in at least one Eastern State, there is a special State tax of \$2 per seat per annum for public service vehicles as such (aside from other vehicle taxes), it cannot be asserted that the bus is not contributing something toward the upkeep of the highway.

Above and beyond all is the fact that so large and so influential a part of the population now has a selfish interest in securing ever-better roads, that no evidences of road destruction by public-service or private-service vehicles will halt the spending of money for roadway improvement. It is not difficult to foresee the day when the automotive interests will clamor for the removal of the suburban or cross-country railway in unpaved track, which follows a non-paved highway, because it is using to the exclusion of others, one-fourth to one-third of the entire roadway for the sake of running a car every 60, 30 or even 15 minutes at a lower speed than the bus. Let us not overlook the fact that there is a considerable kick in an industry that now numbers nearly 7,000,000 licensed vehicles.

It would be a sad error to ignore either the motor bus or the motor truck development merely because many of the pioneers have come to grief in the public service despite the advantages they enjoyed in lighter taxation or no taxation at all. Every young industry makes mistakes. The automotive field is already passing out of the haphazard, individual-operator stage into that of skilled organizations which are capable of determining where to draw the line in character and cost of service. Such organizations, whether for goods or passenger carriage, should logically be an integral part of existing railway systems. That has been the development abroad and that must be the development here if we are to be spared a ruinous struggle between modes of transportation which should and can be reciprocal instead of antagonistic.

CARRYALL.

# Bulletin News Page

Summary of the Principal Happenings of the Industry of Current Interest Since the Last Issue of this Paper was Published

PRINTED JANUARY 2, 1920

Both the municipal and the private tramways in Great Britain are seriously affected by the award of the court of arbitration increasing the wages of adult tramway employees. Taking into account the present and the previous increases of wages and the shortening of hours it is contended that on the present basis of fares few, if any, of the municipal undertakings can carry on. As for the private companies, they are calling upon the government to amend the antiquated limitations of maximum fares and for relief from street maintenance and other expenses.

The directors of the North Eastern Railway have provisionally sanctioned a scheme for the electrification of the main line between York and Newcastle, a distance of 80 miles, and of a loop line 31 miles long.

A Swiss firm has outbid English concerns for turbines for Edinburgh.

The Railroad Commission of California informs the Governor that one of the big problems facing the commission is the settlement of the electric railway situation. The commission sees the automobile a most formidable and determined competitor of the electric railway.

Mayor Couzens of Detroit proposes the construction of a \$15,000,000 municipal-railway to compete with privately-owned lines of the Detroit United Railway.

The President's Industrial Conference will reconvene on Jan. 12 with public hearings to aid in drafting the final recommendations of the conference. The conference regards as intolerable any interruption in essential public utilities.

Robert N. Wooley of the Interstate Commerce Commission sees the electrification of the steam roads as the next step that must be taken in the transportation world.

The Boston Elevated Railway will have \$15,000,000 to spend in the next five years as the result of the enactment of the Cambridge subway bill.

There is published this week, practically in full, the findings of the arbitration board increasing the dividend on the stock of the Cleveland Railway under the Tayler franchise from 6 per cent to 7 per cent.

The three engineers appointed to appraise the Memphis Street Railway

have filed their reports. It now remains to reconcile the figures, which disagree.

Application has been made to foreclose the Shore Line Electric Railway in Connecticut.

Representatives of the bondholders' protective committee have purchased the property of the Fort Wayne & Northern Indiana Traction Company under foreclosure.

The Huntington (N. Y.) Railroad, which suspended service on Sept. 21, may be put back into operation.

The Savannah (Ga.) Electric Company has been placed in the hands of Howard C. Foss, district manager of Stone & Webster.

Important divergencies of opinion have developed between Henry L. Doherty, operating the Toledo Railways & Light Company, and the commission appointed by the court to draft plans for the settlement of the controversy in that city; but it would not appear that any of the differences are insurmountable.

The San Diego (Cal.) Electric Railway on Jan. 1 installed a zone system of fare collection on its lines. The city of San Diego is divided into two zones with a 5-cent fare for a ride in each.

The Detroit (Mich.) United Railway has withdrawn its request for a 1-cent transfer charge. It is announced that a charge for transfers is no longer needed. The company will continue to operate on a straight 5-cent fare basis.

The Charleston (W. Va.) Interurban Railroad has applied to the State Public Service Commission for an increase in rates on its Charleston lines. The increase asked averages 35 per cent.

The recent decision of the Illinois Supreme Court upholding the power of the State Public Utilities Commission to increase electric railway rates above the limit fixed by municipal franchise provisions, has ended a dispute of long standing between the city of Quincy and the commission.

The flat 6-cent fare ordered for the Chicago (Ill.) Surface Lines by the State Public Utilities Commission, went into effect at midnight on Dec. 27. It will continue pending the final valuation of the properties and the fixing of a permanent rate.

The State Board of Public Utilities Commissioners has authorized the

Trenton & Mercer County Traction Corporation, Trenton, N. J., to increase its fare from 6 cents to 7 cents and to charge 1 cent for each transfer.

Colonel Albert T. Perkins, general manager for the receiver of the United Railways, St. Louis, Mo., has refused the request of the St. Louis municipal authorities for a conference to discuss the question of reducing fares on the company's lines.

The Union Street Railway, New Bedford, Mass., has been authorized by the State Public Service Commission to file a new schedule increasing its fare.

The Interborough Rapid Transit Company, New York, at the eleventh hour, succeeded in securing funds to meet obligations that came due on Jan. 1.

The Tacoma Railway & Power Company and the Pacific Traction Company, Tacoma, Wash., have filed with the State Public Service Commission tariffs under which they propose to charge 10-cent fares in Tacoma.

The power to order the abandonment of the skip-stop in Memphis, Tenn., rests with the State Public Utilities Commission, according to a decision handed down on Dec. 24 by Judge McCall. The city has been enjoined from enforcing the terms of an ordinance directing the Memphis Street Railway to stop its cars at all street intersections.

The preliminary hearings before the Connecticut Public Service Commission on the zone system in effect on the lines of the Connecticut Company, New Haven, have been concluded.

The voters of Salem, Mass., on Jan. 27, will pass on the action of the City Council in barring jitneys from the city limits.

Colonel Timothy S. Williams formerly president of the Brooklyn (N. Y.) Rapid Transit Company, has announced his retirement from all connection with the company.

Federal Judge Julius M. Mayer on Dec. 28 instructed the receivers for the New York Railways and the Brooklyn Rapid Transit Company to apply to the Board of Estimate for a conference with city officials, with a view to arriving at a final solution of the transit problem in New York City. The Board of Estimate on Dec. 30 adopted a resolution calling for an investigation of all the traction companies in New York.



## Recent Happenings in Great Britain

### Wage Award Affects Tramways Seriously — Eighty-Mile Main Line Electrification Announced

(By Our Regular Correspondent)

The award of the court of arbitration increasing the wages of adult tramway employees by 4s. a week and of youths by 2s. a week, threatens to place British tramway undertakings in as bad a financial position as that now existing in connection with American electric railways. After the two tramway associations had time to consider the position, they issued statements in the latter part of October.

#### RAILWAY CRISIS AT HAND

The Municipal Tramways Association says that the award has precipitated a crisis which for some time past had been overtaking the urban transportation industry. The report refers to the accumulation of arrears of maintenance and repairs during the war, to the fact that overtaking of the arrears can now be carried out only at greatly increased cost, and to the fact that tramway extensions required for the development of new housing schemes cannot be undertaken owing to financial embarrassment.

The present award will add nearly £1,000,000 to the annual wages bill. This raises the cost of transportation to a level which it is hard to justify. Taking into account also previous increases of wages and shortening of hours, it is contended that on the present basis of fares few if any undertakings can carry on. Immediate increases of fares up to the statutory maximum will be necessary. Even such increases will not prevent some of the weaker concerns from having to cut their losses and go out of business.

#### MUNICIPAL TRAMWAYS ALSO SUFFER

No less emphatic is the report issued by the conference of tramway companies who are members of the Tramways & Light Railways Association. It is affirmed that to bear the burden and give an efficient service the industry must be put on such a basis as will enable it to yield a fair return on capital spent and to attract fresh capital for developments. The government is called on to amend the antiquated limitations on maximum fares and to relieve the undertakings of street maintenance and other expenses which do not properly belong to the tramway service. The relief which has been granted under the statutory undertakings (temporary increase of charges) act, 1918, is inadequate and is only temporary. Some change is also necessary as to workmen's fares which at present result in a loss. Assuming the existing conditions to continue (the report affirms) the inevitable end is bankruptcy, first of the weaker undertakings, and later even of the strongest.

It will thus be seen that here as well

as in America there is need for a careful general investigation. Now that we have a Ministry of Transport possibly justice can be done without anything in the way of an elaborate inquiry before a special commission such as that which has been going on in the United States. Unfortunately, however, for the municipal tramways, they were largely excluded and at their own desire from the ministry of transport act passed last summer. By a strange irony the reason advanced for the exclusion was that they were prosperous. They will be prosperous no longer unless something is done. Even if fares are continually raised, a point must come when a further increase will decrease revenue rather than increase it.

The men employed on the railways (as distinguished from the tramways) are now putting forward fresh demands. The standardization of wages is again under discussion with the government. The National Union of Railwaymen are also seeking to have the railways administered and directed by joint boards of control on which the employees would be well represented.

#### NORTH EASTERN TO ELECTRIFY

A step in the latter direction is indicated in the answer to a Parliamentary question given in the end of October. The government intimated that it was impossible to consider any joint management proposal during the coming two years of State control of railways. It proposed, however, to appoint a railway advisory committee and will be glad to see one or two railway workers appointed members of the body.

Early in November the important announcement was made that the directors of the North Eastern Railway had provisionally sanctioned a scheme for the electrification of the main line between York and Newcastle, a distance of 80 miles, and of a loop line 31 miles long from Northallerton to Ferryhill, via Stockton. It seems probable that the work of conversion will not be begun for some time yet as the Ministry of Transport, which is just getting into working order, will have to consider the scheme and provide for a certain amount of standardization in view of future electrification, and possibly before anything definite is done the Ministry will desire to await the passing of the electricity supply bill which is dragging its way slowly through Parliament.

In any event, the scheme is the biggest thing in the way of heavy electric traction which this country has yet seen. The main line of the North Eastern Company carries every variety of traffic from the London and Edinburgh express passenger trains to slow local trains and heavy mineral and goods traffic.

The protected third-rail system with high-pressure direct current is proposed, but in yards, sidings, and big stations overhead wire conductors will be used. Electric locomotives will be employed throughout and will be fitted to take energy both from the third-rail and from the overhead wire. The details of the present scheme have been worked out by Sir Vincent Raven, chief mechanical engineer to the North Eastern Railway, and Merz & MacLellan, consulting electrical engineers to that company.

#### LONDON DELEGATION IN UNITED STATES

Some interesting points emerge in connection with the London Underground Electric Railways. Some time ago a delegation representing these undertakings sailed for the United States where the members are to carry on an investigation into the working of American electric railways and also the manufacturing processes associated with them and with automobiles. Operation, traffic, engineering—in fact, all aspects—will have attention. The members of the commission are Frank Pick, commercial manager of the associated companies; C. J. Spencer, manager of the London United and other tramways included in the "underground" group of companies; G. W. Shave, engineer of London General Omnibus Company; and A. R. McCallum, assistant mechanical engineer to the underground railways.

The scheme of tramway extensions which the London County Council proposes to promote in the next session of Parliament provides for 43 miles of track, mostly on the conduit system, at an estimated cost of £3,031,000. Cars and electric cables would cost £245,000 in addition, and street widenings £928,000 more, giving a total of more than £4,200,000. The lines are urgently required, especially those for linking up dead-end terminals, and it is estimated that taking the results over the whole system the proposal will be justified on financial grounds. This is not very apparent on the face of it when one looks at the enormous cost of construction at post-war prices and the very high wages now payable to tramway employees. However, the extensions which have been proposed by the London County Council are urgently needed as a substantial step toward unifying the tramway system of London.

#### SWISS OUTBID ENGLISH

Some sensation has been caused by the Corporation of Edinburgh accepting a tender by Brown, Boveri & Company, Baden, Switzerland, for the supply of turbo-alternators at £106,618. This was £70,000 lower than the lowest British tender. Sir Charles Parsons, of the famous firm of C. A. Parsons & Company, who were among the tenderers, has stated that if he had done the work without any profit at all he would not have come within measurable distance of the Swiss offer.

# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Wants Buses Halted

**Brooklyn City Railroad to Ask Injunction — Commissioner Would Operate Bus Lines Permanently**

The Brooklyn (N. Y.) City Railroad, which operates the surface lines recently separated from the Brooklyn Rapid Transit System, has served notice upon Grover A. Whalen, Commissioner of Plant and Structures of New York City, that on Jan. 12 it will institute legal proceedings to restrain him from operating municipal bus lines in competition with the lines of the company.

The buses which the company seeks to have barred operate in competition with several lines of the Brooklyn City Railroad and are under the supervision of Commissioner Whalen. The court action will be based upon the fact that the latter has failed to obtain a certificate of convenience and necessity for their operation, and that they are materially affecting the electric lines' receipts. In the papers served upon Commissioner Whalen the railroad declares that, unless the buses are halted, the company may have to cease operating certain of its lines.

A recent decision of the State Supreme Court concerning the operation of a bus line in competition with the Niagara Gorge Railroad is thought to cover the Brooklyn situation. In that case the court granted a permanent injunction against the bus line on the ground that the latter had not obtained a certificate of public convenience and necessity.

At a recent meeting of the Board of Estimate & Apportionment, Commissioner Whalen recommended that the city go permanently into the bus business. He submitted statistics dealing with the operating expenses and fixed charges for motorbus service over nine routes with 100 buses. His estimate appears in the accompanying table.

Buses, 100, at \$5,500.....	\$550,000
Spare parts .....	10,000
Garage equipment .....	10,000
	\$570,000
<b>OPERATION AND MAINTENANCE.</b>	
Liability insurance, accident .....	\$50,000
Garage .....	25,000
Chauffeurs, 180, at \$1,800.....	324,000
Depreciation, buses, 30 per cent. ....	165,000
Depreciation, other equipment, 10 per cent. ....	2,000
One superintendent .....	3,500
One assistant superintendent.....	2,000
Thirty-two starters and checkers, at \$1,350.....	43,200
One inspector equipment .....	2,000
One auditor-bookkeeper .....	2,500
Three clerks, at \$1,500.....	4,500
One stenographer .....	1,300
Contingencies .....	10,000
Total of above items.....	\$635,000
Total of above items per day (100 buses and 365 days).....	\$1,740
Total, above items per day per bus, (Gasoline, oil and tire per mile:	17.40
(Gasoline, Oil Tires and Repairs) Total	
4 cents 6½ cents 1½ cents 12 cents	

Mr. Whalen declared that, if ninety-two buses were purchased, the daily profit, with 60,000 passengers per day, would amount to \$376.

## Industrial Conference Reports on Labor

**Presidents' Body Will Resume Sessions on Jan. 12, When Public Hearings Will Begin**

Tentative recommendation for the establishment of machinery to prevent or retard labor conflicts in private industry were announced on Dec. 29 by the President's Industrial Conference, with a view to obtaining constructive criticism before a final plan is adopted.

The plan, as outlined, contemplates the creation of a national industrial tribunal and regional boards of inquiry and adjustment, which would move to the settlement of disputes before there was any stoppage of production. Decisions would have the full force and effect of a trade agreement between the parties to the dispute.

### PUBLIC UTILITY SERVICE ESSENTIAL

Remarking that some public utilities, such as railroads, are essential to the very existence of the people, the conference's tentative statement expressed the opinion that the "interruption in such essential public utilities is intolerable." But the conference states that further consideration is required of the problem whether some method can be arrived at that will avert all danger of interruption to service.

When the conference reconvenes on Jan. 12 public hearings will be held to obtain expert advice as to the drafting of the final recommendations in the light of such criticism of the tentative report as may be received.

With regard to public utilities the conference made the following statement:

The plan here proposed presents greater difficulties in application to certain public utilities than to competitive industry. The continuous operation of public utilities is vital to public welfare. As the capital invested is employed in public use, so the labor engaged in public service, and the withdrawal of either with the result of suspending service makes the people the real victim.

The conference believes that a plan of tribunals or boards of adjustment and industry should be applied to public utilities, but in the adaptation of the plan two problems present themselves: First, governmental regulation of public utilities is now usually confined to rates and services. The conference considers that there must be some merging of responsibility for regulation of rates and services and the settlement of wages and conditions of labor. Such co-ordination would give greater security to the public, to employee and to employer. Second is the problem whether some method can be arrived at that will avert all danger of interruption to services. These matters require further consideration before concrete proposals are put forward.

## Competition for Detroit

**Mayor Couzens Will Outline Plan for 140 Miles of New Line to Cost \$15,000,000**

Shortly before Christmas Mayor Couzens of Detroit, Mich., announced that he had practically perfected plans for a railway system in Detroit independent of the Detroit United Railway. The plan which Mayor Couzens is expected to present to the City Council very soon, although not made public, is understood to include a railway comprising about 140 miles of trackage to cover every section of the city and run over the boundary lines of the city in some places.

### CROSTOWN LINE PLANNED

In speaking in favor of his plan the Mayor stated that with the aid of his advisors, including a well-known New York traction expert, he is endeavoring to make the proposed system as "fool proof" as possible. He is determined to give the best kind of service as to cars and as to streets as well by means of a plan that will not be assailable by the supporters of other plans.

Although the plan does not include dealings with the Detroit United Railway, it is believed that the city would not be adverse to an interchange agreement if the railway company wished it, after the Mayor's plan was fully worked out.

Included in the proposed system it is believed there will be a line crossing Woodward Avenue independent of the Detroit United Railway's existing crosstown lines, a line to enter or skirt the village of Hamtramck and a line on Clark Avenue to tap the Fort Street line. This latter line would permit the city to take advantage of the Supreme Court decision of several years standing which gives the city the right to oust the Detroit United Railway from Fort Street.

### ORDINANCE TO BE PRESENTED SOON

The plan will be presented by the Mayor in the form of an ordinance which it is expected will soon be prepared by the Corporation Counsel's office.

The Street Railway Commission, the members of which resigned when the Mayor rejected their proposed Taylor, or service-at-cost plan, will not be replaced at present. The Mayor will act as his own street railway commission and will consult transportation experts in working out his plan.

Elsewhere in this issue mention is made of the improvement program that was announced recently by the officers of the Detroit United Railway.

# Commission Sees Clearly Electric Railway Needs

## New and Changed Relations Necessary Between Railways and the People—Auto an Element

Declaring that the regulation of public utilities as practised by the State Railroad Commission of California during times that threatened public welfare from many angles has been sustained and that it believes further proof of the soundness of the practices of the commission will be found with the return of normal conditions, the commission on Dec. 3, in a letter to Governor William D. Stephens, reviews its work during the year ended June 30, 1919. The letter, which transmits the annual report of the commission to the Governor, points out as among the most important acts of the commission its intervention in the Key Route strike, settlement of the Los Angeles power controversy, and its San Diego railway decision.

### MANY APPEALS FOR INCREASED RATES

The predicament of the State's utilities, due to the constantly changing operating conditions, was reflected principally in applications to the commission for authority to increase rates, the petitions in every case setting up the claim that increased labor costs and higher material prices had destroyed the margin between financial soundness, with ability to function properly, and profitless operation; between efficient service to the public and service hampered by income insufficient to meet constantly increasing demands for service. The petitions for higher rates covered every class of utility. Of their actions on the petitions the commissioners say:

The commission found it necessary to grant many increases because of the showing made by the utilities, which was carefully checked, and from investigations made by the commission's staff. As a matter of fact, the need for increased income for the utilities to enable them to function to the highest point of efficiency was obvious. We believe that on the whole the commission's rate decisions have been received by the public as necessary acts of fair dealing on the part of the commission—acts fair alike to the consumer and the utility.

One of the big problems facing the commission, the Governor is informed, is the electric railway situation, the unsettled conditions in the electric traction service field and the necessity of considering measures for possible financial relief and improvements in service being matters that are daily becoming more pressing. In pointing out the difficulties of the electric railways, the commission says:

The following figures will indicate in a graphic manner the gravity of the situation, the figures showing the collective financial result of electric railways in this State making operative reports to the commission:

Gross Income .....	\$37,202,685
Operating expenses \$27,897,137	
Other deductions.. 1,151,443	29,048,580
Net revenue .....	\$8,154,105
Taxes .....	\$1,979,190
Interest .....	8,955,586
	\$10,934,776
Net deficit .....	\$2,780,671

This deficit is the combined losses of twenty roads and profits of fourteen roads,

a total of thirty-four with nearly 2,000 miles of road and more than 3,000 miles of track.

There are now pending before the Railroad Commission formal applications asking relief from some of the largest electric railways. Fares have already been increased on the San Francisco-Oakland Terminal Railway, the Oakland, Antioch & Eastern Railway, Stockton Electric Company, Humboldt Traction Company of Eureka, San Jose Railroads, Union Traction Company of Santa Cruz, Fresno Traction Company and the electrically operated transbay service of the Southern Pacific Company (the last named is under federal control). During the year a readjustment of interurban fares on the Pacific Electric Railway was authorized, thus producing considerable additional revenue. These increases, however, were more than offset by increased operating expenses.

### SAN DIEGO SETS A PRECEDENT

Added importance is attached by the commission to the San Diego Electric Railway investigation and decision. In that case the commission laid down a number of new principles and rules for the conduct and regulation of electric railways in the State. For the first time the commission departed from the one-fare rule and adopted the zone system of fares within the limits of a municipality. The following is from the commission's letter:

For more than a year the commission carried on an investigation into the railway situation in San Diego, the inquiry following an application by the San Diego Electric Railway and the Point Loma Railroad for financial relief and permission to abandon a number of its lines. The exhaustive investigation revealed a deplorable financial and operating condition, with a steadily increasing loss to the owners of the road and a corresponding reduction in the efficiency of service. A larger income had to be provided or inevitably service over practically the entire system in San Diego abandoned in the near future.

Creation of the zone system of fares, a direct order to the company compelling rehabilitation of its system, refusal to allow the company to abandon its lines, and recommendations that the city change its paving requirements are incidents in the general plan evolved by the commission.

### AUTO VS. STREET CAR

On the general railway situation throughout the State the commission says:

A thorough investigation has been under way during the past year and it has become clear that there is no uniform remedy that can be applied to the electric railway difficulties in this State. Each property will have to be considered on its merits.

The "high cost of living" has borne heavier on the electric railway business than any other industry for the reason that for electric railways the standard fare has been the nickel. Not only have franchise provisions fixed on this unit, but the 5-cent fare has become an institution for American cities.

The electric railways have met in the recent past a most formidable and determined competitor—the automobile. Both the private automobile and the jitney have made enormous inroads on the passenger traffic that was formerly dependent upon electric railways. The automobile truck is an even more serious competitor in the freight traffic field, for the electric interurban railways almost without exception are depending for their freight revenue on short-haul business. And yet it is clear that both the passenger automobile and the freight auto truck as competitors of the steam and the electric railways are even now only in the first stages of their development.

Electric railway utilities find it more and more difficult to obtain necessary new capital, and for many companies the only escape from financial collapse is through drastic reorganization.

The commission declares that the only permanent and effective remedy for this unhealthy situation will be found through the creation of new and changed relations between these properties and the people as represented by the municipality and other authorities. In this connection the commission says:

We do not believe that obstacles should be thrown in the way of the economic evolution we are now witnessing in the transportation field. And if the motor vehicle can give better and more efficient service at a lower cost than other forms of transportation, it would be unwise and indeed, in the long run, ineffective, to interfere with such a development.

We are by no means convinced, however, that the day has come when the communities can dispense with their electric street and interurban railway systems, and other agencies, in our opinion, are not as yet in a position to take the place of these utilities.

On this subject the commission says further:

It seems to us that the relations between these roads and the public must first be changed through a remaking or modification of franchise provisions. The people apparently do not appreciate that matters stood differently in the past when certain franchise provisions were first established. Then street railway operation was considered a speculative and highly profitable business. There is no doubt that during the last half dozen years or more the speculative element has been entirely eliminated from street railway profits.

An indiscriminate raise in fares is not a remedy for the street railway situation. After fares are raised beyond a certain point the street railway is permanently the loser. One plan which might be looked upon with favor lies in a partnership between the communities and the company until such time as the communities see fit themselves to render electric railway service. The machinery to bring about such changed relations may take different forms. Recently the resettlement franchise has been chosen in several instances.

### I. C. C. Member Urges Electrification

Electrification of steam railroads, forced by the search for cheap power, is predicted by Robert N. Woolley, of the Interstate Commerce Commission, as the next step that must be taken in the transportation world. Mr. Woolley in an interview said that this could be done by converting bituminous coal into coke at the pit heads of the mines and the use of the coke as fuel in gigantic electrical stations. He is quoted as follows:

It is generally conceded that the electrification of steam railroads must come in the not distant future. The super-power plant would make electrification possible at an earlier date. It would increase traffic capacity from 25 to 50 per cent, would increase speed in transportation and would practically eliminate railroad congestion, particularly during the winter season.

The advantages to be secured through the electrification of the roads are many. An electric locomotive will handle twice the load of a steam locomotive. It operates best in cold weather when a steam locomotive has its greatest troubles. On down grades what is known as regenerative braking returns from 25 to 50 per cent of the power used in climbing. An electric locomotive can be operated over a 1,000-mile run with only casual inspection.

Electrification is the cheapest and most practical method of producing an increase in traffic capacity. This could be accomplished by additional tracks or by the elimination or reduction of grades, but the entire cost of electrification, including power stations and transportation lines, is less than the cost of either.

## Many Toledo Sessions

### Franchise Settlement Commission Fast Working Out Its Plans—Immediate Municipal Ownership Impossible

Following the session on Dec. 22 of the municipal-ownership division of the commission which is charged by the court with developing franchise settlement ordinances for Toledo, Ohio, it was announced that that division had abandoned hope of providing for the immediate purchase of the railway property of the Toledo Railways & Light Company. By unanimous vote it was decided that rather than report back that nothing could be accomplished now, the commission would precede along the general lines upon which the service-at-cost branch was working. The ordinance of the service-at-cost division will provide that a fund shall be created for the purchase of the railway but that the accumulation of the fund shall not be begun for ten years.

H. L. Doherty, operating head of the company, made his first appearance before either branch of the commission at the session of Dec. 26. He asked Henry W. Ashley, chairman of the municipal-ownership division, if he wished to see him, but Mr. Ashley replied that the members of the commission had nothing to take up with Mr. Doherty at the time.

Mr. Doherty then addressed the service-at-cost division of the commission. He told the members that he was apprehensive of three features of the proposed service-at-cost franchise grant. The points he mentioned were the valuation of the railway property, the maximum fare which will be allowed if any fare limit is fixed and the rate of return the company will be allowed to receive on its investment. The chairman of the service-at-cost division explained that what had been done by the division was only tentative. The object of the commission was to prepare sound ordinances with the Cleveland plan as a basis. Mr. Doherty said it seemed to him that whenever anything was found in the Cleveland plan favorable to the company the tendency at Toledo was to change it.

On the same day, namely, Dec. 26, the municipal-ownership division of the commission devoted its session largely to a consideration of the provisions of the service-at-cost ordinance. Law Director Martin explained just how it will be possible for the municipal-ownership division to adopt for its own purposes the ordinance as drawn by the service-at-cost section of the commission, changing it only by providing for the addition of 1 cent or a fraction of 1 cent to each fare to create a fund to make the initial payment on the property and to acquire title within a few years. Mr. Martin told the commission that he knew of no way under the present laws in which the city could obtain at once the money to make the initial payment for the property. Although the municipal-ownership section of the commission is considering the adoption of the terms of the service-at-

cost plan with modifications, it is understood that section of the commission will defer acting upon it for the present pending the possibility of the passage of the Legislature of the Brach bill to authorize cities to extend their general credit for buying electric railway properties.

The session on Dec. 27 of the service-at-cost section of the commission was a very important one from the standpoint of the subjects covered, but it did result in considerable differences of the opinion between the commissioners and the representatives of the company. The service-at-cost members voted unanimously to establish a maximum fare of 7 cents with a 1-cent charge for transfers. They did this over the protest of Mr. Doherty. This supersedes the commission's former decision for a 6 and 1 maximum fare. The commissioners expressed the belief that it was unlikely the actual maximum rate would ever be required to be put into effect. Mr. Doherty said that if a maximum fare was provided for, the company would have to insist that control of the service should pass to the company when the maximum fare was in effect. He was not in favor of a maximum fare. True service-at-cost should be service-at-cost. Mr. Doherty urged that the section of the Toledo plan covering the terms of purchase by the city should provide for a call price of \$110 a share for the stock of the company throughout the life of the grant.

### Fast Through Service Established

The formal opening on Dec. 17 of the through service over the line of the Wheeling Traction between Wheeling, W. Va., and Steubenville, Ohio, was made a most interesting occasion. About sixty Wheeling business men responded to the invitation of C. P. Billings, manager of the Wheeling Traction Company, to inspect the line.

The first stop was made at the new power plant of the Wheeling Electric Company, located at Beach Bottom. By special arrangement with the manager of the plant the entire party was given the opportunity to inspect this station from which power is now being transmitted as far north and west as Akron, Ohio.

At Steubenville the party was the guest of the Steubenville business men at luncheon.

The new special service which the traction company is inaugurating between Wheeling and Steubenville gives a through car from Wheeling to Steubenville every half hour. It is the hope of Manager Billings that this service can be reduced from one hour and thirty minutes to one hour and five minutes. Most of the road between Warwood and Steubenville is single track, and in order to give fast through service additional sidings will be provided.

In this connection Manager Billings states that the company is planning to

erect a package warehouse at some central point in Wheeling.

An announcement in this direction is expected soon. This station will be used for the receipt and distribution of freight packages sent by shippers from Wheeling to suburban towns. A part of this plan also contemplates the putting on of regular baggage cars to be used at certain hours of the day.

### Changes Proposed in New Jersey Commission

Charges of neglect and misconduct in office brought against the Board of Public Utility Commissioners of New Jersey by officials of Montclair were dismissed on Dec. 31 by Governor W. N. Runyon. The charges were submitted to the Governor after commissioners had granted the request of the Public Service Railway to establish a zone fare system. The Montclair officials demanded that the commission be ousted from office.

The chief grievance against the board was based upon the alleged fact that the zone fare system was inaugurated without a complete prior valuation of the company's assets and liabilities having been made.

The Governor's statement says that the board's duty was to evolve a scheme which should meet the running expenses of the utility company during emergency times, and that this the board did after long consultations with experts, and voluminous testimony.

The question of whether or not the board's judgment was bad does not enter, the statement says, and since no evidence of wrongdoing was found the charges were held without foundation. The Governor said:

While I am thus constrained to dismiss the charges against the commissioners I do not hesitate to reaffirm my opinion that the public has lost confidence in this commission, and I hereby state that, as a member of the State Senate, at the coming session of the Legislature, I shall introduce a bill abolishing the existing commission of five men and substituting a new commission of three.

## News Notes

**Muscatine Grant Modified.**—The people of Muscatine, Ia., by a vote of 1933 to 530 have decided to amend the franchise of the Clinton, Davenport & Muscatine Railway. About 50 per cent of the normal vote was cast. The amended franchise provides for a 4-cent fare from 5 until 8 o'clock in the morning and from 5 to 7 in the evening, with a straight 7-cent fare the remainder of the day. To take advantage of the 4-cent fare the passenger must buy a book of seventy-five tickets for \$3.

**\$15,000,000 for Boston "L" to Spend.**—The enactment of the Cambridge

Subway bill into law provides the Boston (Mass.) Elevated Railway with \$8,000,000, which together with an additional \$7,000,000 will place at the disposal of the board of trustees a total of \$15,000,000 which it is planned to spend on a five-year improvement program providing for the development of rolling stock, the rehabilitation and general improvement of the power division, changes in repair shops and additional track construction.

**Power Employees Get Increase.**—An increase of 13 per cent in the pay of power house and substation men, electrical workers and others engaged in the generation and distribution of electric light and power has been announced by W. E. Coman, general manager of the Washington Water Power Company, Spokane. The raise affects approximately 200 men and took effect on Dec. 1, adding \$40,000 a year to the company's payrolls. This is the second increase this year, the first having been granted last June. The increase was granted because of the abnormal cost of living.

**Want Service in "The Flats" at Cleveland.**—Fielder Sanders, Street Railway Commissioner, has prepared a resolution which will grant the Cleveland (Ohio) Railway a franchise to lay tracks on West Third Street from Scranton Road to Broadway and thence to Broadway and East Thirty-fourth Street. This would give service to about 10,000 people who work in "the flats," a district occupied by lumber yards, factories, mills and furnaces. Company officials say that the initial outlay for such a line would be about \$200,000. The line could be so arranged as to make connection with downtown cars when the station on the square is completed.

**Men in Pittsburgh Record Sentiment in Vote.**—The first reliable test of sentiment among the platform employees of the Pittsburgh (Pa.) Railways, who went on strike last summer in opposition to the directions of their international officers, came in the election in the third week of December when the men re-elected those of their local leaders who led them in the strike and who finally induced them to return to work. The settlement of the strike was opposed by the men because of the terms incident to it, but P. J. Ward, business agent of Division No. 5, Amalgamated Association, was returned to office with his entire slate, in the election. All offices were contested. Mr. Ward had three opponents.

**May Develop Bayonne Peninsula.**—The Public Service Railway, Newark, N. J., has considered the advisability of building a "high-speed" line, either elevated or subway, from Port Richmond, through the Bayonne peninsula and Hudson County, to New York City. Richard E. Danforth, vice-president and general manager of the company, revealed this plan in testifying before the Public Utility Commission in the zone hearing recently, on the "usefulness" of

the abandoned "Old Dummy Road" right-of-way in Bayonne. Mr. Danforth explained that such a line would build up the Bayonne peninsula, which is 5 miles long and 1 mile wide. He is quoted as saying that he would like to see the project started within five years and built through to the Hudson River.

**Extension Favored.**—A resolution endorsing the extension of the Cincinnati, Lawrenceburg & Aurora Traction Company's line from Anderson's Ferry to the Dixie Terminal and the Rapid Transit Loop was adopted at a meeting of the public utilities committees of the Chamber of Commerce, City Club and Business Men's Club held at the Chamber of Commerce in Cincinnati. The resolution when fully expanded will provide that the Rapid Transit Commission finance the project. The cost will be more than \$1,000,000. It was said that the revenues derived from the road and a sinking fund will pay for the construction work in forty years. The resolution adopted will be submitted to the boards of directors of the three organizations for final approval.

**Strike Rids Los Angeles System of Radicals.**—When the strike on the Los Angeles (Cal.) Railway Corporation's system was over early this fall there was no "reinstatement" of employees. Service was being maintained and the company selected only those desired from among former employees who applied. The name of each former employee who desired to re-enter the service was posted in the carhouse out of which he had previously worked. Over the list was an invitation for any employee to make known to the management reasons why any applicant listed should not be employed. The platform men who desired to work in peace and quiet free from the labor agitator, were quick to aid the management in keeping out those who had made trouble before. The final result of the strike, therefore, has been the entire elimination of the radicals.

**Proposed Extension of Boston Elevated.**—Plans for the extension of the Boston (Mass.) Elevated Railway by utilization of tracks of the New York, New Haven & Hartford Railroad were considered by representatives of the Boston Elevated Railway, the New York, New Haven & Hartford Railroad and the Massachusetts Public Service Commission at a meeting held in Boston on Dec. 19. The project as discussed provides for the use of the tracks of the Midland Division of the New York, New Haven & Hartford Railroad from a point near Andrews Square, Dorchester, to the Dorchester Terminus, returning from that point over the tracks of the Shawmut Division of the New Haven Railroad. Details of this scheme are under consideration and a public meeting on the proposition will be held by the Massachusetts Public Service Commission on Dec. 29, 1919.

**Buses in St. Louis.**—Trials and exhibition trips of the two double-deck motorbuses which have been received

by the Missouri Motorbus Company have been completed and promoters of the company have announced that service on an east and west through route in St. Louis would begin during the week ended Jan. 3. J. Lucas Turner, general manager of the company, said that all the buses necessary for complete service on the line would be on hand by Feb. 1. The buses are of the same pattern as those used on Lake Shore Drive in Chicago. Conditions for the operation of motorbus lines are still somewhat uncertain as the Board of Aldermen has not acted on the pending ordinance on the subject. The promoters of the bus company contend that pending the enactment of an ordinance, they can run subject to the general traffic regulations, inasmuch as they claim no special privilege.

**Nine-Hour Day in Brooklyn.**—The Brooklyn (N. Y.) Rapid Transit System on Dec. 22 put into effect the first of its nine-hour schedules on its surface lines, as agreed in the settlement of the recent strike. The Halsey Street carhouse was chosen for the readjustment. Under the agreement 50 per cent of the runs are to be completed in eleven hours, 40 per cent within thirteen hours and the remaining 10 per cent within fourteen hours. Company officials said the change from a ten to a nine-hour basic day would necessitate a 10 per cent increase in the number of car crews. About fifty days are left to work out similar new schedules for the remainder of the routes. The new rule of seniority, by which employees are paid the maximum rate of 62 cents an hour after three years instead of ten, as heretofore, also is in effect for the first time. The guards and conductors on the elevated now reach their maximum rate of pay after eighteen months.

## Program of Meeting

### New England Street Railway Club

The meeting of the New England Street Railway Club at the Hotel Somerset, Boston, Mass., on Jan. 15 will be manufacturers' night. Ordinarily nothing more need be added to that bald announcement, but the committee has felt constrained to describe the entertainment which has been arranged as "a super production of scintillating and musical talent, a deluge of fun, to delight and entertain everyone, irrespective of age, creed or race." All this is introduced with a half-tone of five young women, who bring to mind all that has been said recently about "Aphrodite." "Pep and Speed" are promised "all for the price of \$3.50 for members and guests." Checks should be sent to John W. Belling, P. O. Box 2564, Boston, Mass.

In a separate statement to the members it is explained that the secretary will, on Jan. 1, vacate his headquarters at 12 Pearl Street, Boston, in the interest of economy and for the good of the club until such time as the club's finances permit establishing more desirable quarters.

# Financial and Corporate

## Experts Again Disagree

Millions Apart on Memphis Street Railway Appraisal, Involving in All Less Than \$15,000,000

The three engineers who have completed their appraisal of the physical properties of the Memphis (Tenn.) Street Railway agree upon a valuation, based upon the original cost price, of \$9,306,012. That valuation includes, besides the actual value of the tangible property, an allowance for overhead cost, working capital and the cost of financing during construction.

### REPORT PRESENTED TO COMMISSION

Ross W. Harris, the expert employed to represent the City of Memphis, in a lengthy supplemental report, places the physical valuation at \$7,900,000.

Albert S. Richey, representing the Public Utilities Commission, adds to the valuation above \$785,579 development cost and \$1,920,544 as the value of superseded property, which the company originally paid for but which is now worn out or not in use. This brings his total valuation up to \$12,024,165.

J. H. Perkins, representing the railway, places the total valuation at \$13,158,516. He arrives at that value by adding to the physical valuation agreed upon by all three experts a larger sum for superseded property and development cost.

Mr. Harris admits that if superseded property is to be considered the company can honestly show expenditures through the past seventeen years of \$1,264,183 for material and equipment not now in use. That added to his original investment figures would make a possible maximum valuation of \$10,570,225.

The report of the engineers has been placed in the hands of the commission and it is supposed that it will order a reopening of the hearing, based upon the findings of the appraisers, some time early in the year.

The appraisers did not go into franchise values or the financial affairs of the company in any way, basing their report solely upon the present physical valuation of the entire plant at the present cost to reproduce it. The real estate holdings of the company were, however, figured at the original cost.

### APPRAISAL FOLLOWED FARE REQUEST

The physical valuation upon which the company is permitted to make a reasonable return will be fixed by the decision of the commission from the report of the appraisers.

The appraisal at Memphis grew out of the request of the company for an increase in fares to 6 cents. This request was allowed by the State Com-

mission on June 13 in accordance with terms noted in the ELECTRIC RAILWAY JOURNAL for June 21, page 1247. At that time the commission ordered an examination of the value of the railway property by experts, one to be appointed by the commission, and one by the receivers, with the right reserved by the city to appoint an engineer in its own interest.

From the information so far to hand the company has not announced its future course of action, but the city, through its counsel has publicly stated that it believes the emergency necessitating an increase in fare has passed and that in any event it will oppose allowance for some of the items in the appraisal which have been included under "going value."

The latest investment manuals show that the Memphis Street Railway has outstanding \$2,500,000 of 6 per cent preferred stock, \$2,500,000 of common stock, \$8,324,000 of consolidated mortgage 5 per cent bonds, \$1,250,000 of collateral trust 6 per cent notes and \$250,000 of unsecured 6 per cent notes, making its total capital liabilities \$14,824,000, or just about twice the "bare bones" value as found by the engineer for the city.

## Receiver for Savannah Electric Company

Howard C. Foss, Savannah, Ga., district manager of Stone & Webster, has been appointed receiver for the Savannah Electric Company on the application of the General Electric Company, holder of an unsecured claim of \$3,807 for electrical equipment and supplies. It was stated that the company is unable to pay its indebtedness or to pay interest on its bonds due on Jan. 1, or to borrow additional money necessary for extensions and improvements.

A committee of the holders of securities of the company has been formed for protective purposes. On this committee are Charles Francis Adams, Stedman Buttrick and George C. Lee, with Elbert A. Harvey as secretary. This committee invites the holders of the first consolidated mortgage bonds dated Jan. 1, 1902, to deposit their bonds on or before March 1, 1920, with the Commonwealth Trust Company, Boston, depository, which according to usual custom will issue transferable certificates for all bonds deposited. In calling for the deposit of these securities, it is pointed out that the bonds should be accompanied by the Jan. 1, 1920, and subsequent coupons. Registered bonds should be accompanied by a properly executed transfer thereof in blank.

## Application to Foreclose

Shore Line Leases Broken and Application Made to Foreclose Connecticut Line

The affairs of the Shore Line Electric Railway, Norwich, Conn., under the receiver, appear to be moving fast toward a climax. Abandonment of lines has been referred to previously in the ELECTRIC RAILWAY JOURNAL. Now comes the turning back to the Connecticut Company, New Haven, Conn., of lines operated under lease from that company and the application by the Old Colony Trust Company, Boston, Mass., for an order to allow it to foreclose a mortgage made by the Shore Line in 1916 to secure \$2,725,000 of bonds.

In his application to the court for the termination of the lease made with the Connecticut Company the receiver of the Shore Line represented:

1. That the Shore Line Electric Railway entered into a lease with the Connecticut Company, under date of July 7, 1913, by the terms of which lease the Shore Line Electric Railway was entitled to the possession for the period of ninety-nine years from the first day of May, 1913, of certain electric railways belonging to the Connecticut Company, extending from the town of New London to South Coventry, in the town of Coventry; a railway extending from Moosup in the town of Plainfield to the village of East Killingly; the apparatus connected with said electric railways and certain railway stock and equipment used in connection therewith; certain rights to operate cars over the railroad of the New York, New Haven & Hartford Railroad between Taff's, so-called, in the town of Norwich, and Central Village, so-called, in the town of Plainfield, and certain papers and documents showing the nature of said right conveyed.

2. That the Shore Line Electric Railway took possession of said property and as said lessee has operated said electric railway lines described in said lease.

3. That your receiver has operated said leased lines since Oct. 1, 1919, the day of his appointment as temporary receiver of the Shore Line Electric Railway, and the result of said operation shows a net loss of operating expenses over and above operating revenue.

4. That your receiver has determined it is not for the interest of the receivership estate to adopt said lease and has given notice to that effect to the Connecticut Company.

The receiver consequently made application to this court for an order:

1. Approving his action in electing not to adopt said lease.

2. Authorizing him to enter into an agreement for the termination and cancellation of said lease.

Divested of the lines mentioned the receiver will be left to operate only the Norwich & Westerly line, the Groton & Stonington line, the Westerly & Atlantic Beach line and the lines westerly from New London towards New Haven.

Before Judge Warner and before the Public Utilities Commission the receiver recently stated that there were outstanding \$300,000 of preferred stock, \$700,000 of common stock, \$3,200,000 of bonds, \$1,000,000 of Class A debentures and \$2,500,000 of Class B debentures. The Morton F. Plant Estate, he said, owns all of the bonds, all of the preferred stock except \$2,200, all of the common stock except \$9,800 and all of the debentures except \$35,000.

The reports of the receiver showed that the lines in operation were run at a loss of \$21,850 in October and \$3,751 in November.

## Cleveland Railway Arbitration Findings

### Substance Presented of Two Reports in Recent Dividend Case Increasing Return to 7 Per Cent

On July 18 the City Council of Cleveland, Ohio, by appropriate resolutions proposed to arbitrate with the Cleveland Railway the question whether the dividend rate upon the capital stock of the company should be increased from 6 to 7 per cent, the arbitration to be conducted in the manner described in the Tayler service-at-cost franchise.

#### ARBITRATION UNDER FRANCHISE ORDINANCE

Arbitrators were chosen as provided in the ordinance, hearings were begun on Sept. 15, and subsequently seventeen public sessions were had at which testimony was offered and arguments of counsel submitted. Briefs were then filed by counsel and the board gave consideration to the matter in conference.

Both parties requested the board, in addition to the award on the single issue presented, to make such findings of fact and make such recommendations as to railway conditions in Cleveland as, in their opinion, were justified by the evidence submitted.

As explained very briefly in the *ELECTRIC RAILWAY JOURNAL* for Dec. 20, page 1018, the decision by the majority was to increase the return to the company to 7 per cent. The arbitrators were City Light Commissioner W. E. Davis, representing the city; Joseph R. Nutt, president of the Citizens Savings & Trust Company, appointed by the railway, and Attorney A. A. Stearns, named by United States District Judge D. C. Westenhaver as the third member or umpire. All three members signed the report making recommendations to stabilize the stock value of the Cleveland Railway, but only Mr. Nutt and Mr. Stearns signed the decision increasing the dividend rate.

#### ESSENTIALS OF REPORT REVIEWED

The report signed by all three members follows in full except for the introduction:

We find without disagreement:

1. The Tayler franchise and the amendments thereto have been shown by ten years of trial to be sound in principle, practical in operation and of great benefit to the Cleveland Railway and its stockholders and to the public. It has kept the Cleveland Railway from exposure to the dangers and misfortunes that have overtaken the railway properties in most other large cities. The protective features of the franchise, together with the exceptionally high standard of railway management and intelligent municipal supervision which the Cleveland Railway has had, have resulted in giving to Cleveland the best street railway service, at lowest cost of any city in the United States.

2. The stock of the Cleveland Railway, is so protected by the provisions of the franchise that the investment ought to be ranked with municipal securities. The protective features referred to are

(a)—The valuation fixed upon the physical property at the time the franchise was passed was conservative, and, unquestionably, by subsequent improvements and betterments and liberal expenditures for upkeep, the property has greatly increased in value.

(b)—The provisions for increase of fare insure payment of interest, except possibly under stress of war conditions, and the

readiness of the parties to meet the extraordinary conditions by agreement as to increase of maximum rate of fare has heretofore provided for interest requirements.

(c)—The provisions for arbitration of disputed questions prevent either party to the compact from exercising unreasonable power affecting the rights of the public or the parties. This privilege of arbitration safeguards all interests involved and strengthens the security of the investment.

(d)—The semi-public control prevents all exploitation of the property by those in control of the stock.

(e)—The city cannot avail itself of the provisions of the franchise or the law of the State to bring about municipal ownership except by redeeming the stock at 110.

(f)—The city may renew the franchise by exercising the power reserved in the grant, and the extreme improbability that the city will ever fail to renew the franchise and permit the property to revert to the company makes the grant practically a perpetual one. The failure to renew would turn back the property to the company for the last fifteen years of the term with the privilege of charging the maximum rate of fare and the privilege of reducing the service without check from public authority. It is unreasonable to assume that public opinion, to which the city must always respond, would permit such a course of action. The city renewed the franchise in May, 1919, which was the first time the emergency has been presented since the grant has been in force. So long as the company continues to give good service and at a lower cost to the car rider than any other city, no political administration will face the criticism of the public resulting from the failure to renew the franchise when such failure increases the fare and reduces the service. This apparently self-evident fact adds to the security of the investment.

#### STOCK A SAFE INVESTMENT

(g)—If it be assumed that the city at some time and under conditions of the future not now foreseen will fail to renew the franchise, the privilege resulting to the company of operating the property for fifteen years at the maximum rate of fare has been shown by the testimony before us to probably afford the company, even under the present high cost of operation, sufficient earnings to liquidate the entire capitalization during that period.

The foregoing protective features are deemed by this board to justify the finding that the stock of the Cleveland Railway is a safe and dependable investment.

3. Notwithstanding the successful operation of the Tayler plan due to the intrinsic merit and to the high class administration of the property both by railway and city officials, and notwithstanding the protective features whereby the investment is made secure, it appears from the evidence before us that the public, including many persons trained by the study of financial problems, are unacquainted with the conditions and protective features of the Cleveland Railway franchise.

The natural tendency to consider the Cleveland Railway merely as a public utility and to put it in the class with other public utilities which have failed to give either service or profit, and to discredit any enterprise which is in part politically controlled, becomes a burden and handicap to the company in time of stress when financial conditions are disturbed, and we recommend an amendment to the franchise providing for the setting up of a reserve fund at a rate not less than \$300,000 per annum to be held in trust for not less than ten years, and at the end of each ten-year period to be used for betterments and extensions in the event the franchise at the end of that time is renewed, for which no capital shall be issued, thus tending to reduce the rate of fare; otherwise, to be held for the liquidation of stock at the termination of the grant.

4. We recommend that Sec. 20 of the grant be amended so as to provide for the maintenance of the system in an average condition of 70 per cent of its capital value, in place of 70 per cent of its reproductive value, as now provided.

The majority report of the board, signed by Mr. Stearns and Joseph R. Nutt, reads in part as follows:

The parties hereto, are advised that the board of arbitration finds that the rate of interest on capital stock of the Cleveland

Railway should be 7 per cent, effective Jan. 1, 1920, and that the franchise ordinance should be amended to conform thereto.

While the underlying principle of the compact was that the status quo should be preserved to the utmost limit possible, yet in the nature of things the covenant must from time to time yield to necessity.

In the present emergency the railway asked the city to agree to an amendment raising the interest rate, and the city declined to do so. This was not one of the questions reserved for arbitration, and the refusal of the city to consent to the amendment would have ended the matter, except that the city agreed that the question might be arbitrated, and that an arbitration tribunal might be created in the manner provided in the franchise, and the railway joined in this agreement, and thus the parties stipulated together that the question should be arbitrated and the award made binding upon both.

No other amendment is proposed or submitted under the terms of this arbitration except the single question as to whether the rate of interest shall be raised from 6 to 7 per cent.

The railway company in the first instance, presented two general reasons why the rate of interest should be raised:

1. That 6 per cent was not a fair return, meaning that the existing stockholders and others who might acquire stock ought to have a larger return upon their investment, due to the decrease in the purchasing power of money.

2. That the railway company has a certain necessary program of extension and enlargement to meet the requirements of public necessity, and that conditions were now such that they could not finance this program on a 6 per cent basis.

The first of these reasons have been eliminated from our consideration, as the railway now disclaims reliance upon it, and, furthermore, the evidence discloses that a 6 per cent return is not yet discarded in this market as a fair return. The finding must therefore, rest wholly upon the second reason urged.

The exact question is, therefore, Will the railway be able to finance the program at 6 per cent?

The most important result of this meeting is the full and complete illumination of the question of the safety of the Cleveland Railway stock as an investment. A right understanding of the franchise discloses that the stock of the Cleveland Railway is safeguarded and protected so as to become a quasi-municipal investment.

The protective features of the stock which were developed in this hearing are the conservative valuation originally fixed upon the physical property, and the subsequent appreciation of value due to liberal expenditures for upkeep, the automatic increase of fare, the provisions for arbitration, the semi-public control preventing exploitation by stockholders, the provisions for purchase at 110 in the event of municipal ownership, the power in the city to renew the franchise and the strong probability that the grant will be renewed and so become practically perpetual, and the opportunity for liquidation of the stock by operation at the maximum rate of fare in the event the city does not renew the franchise.

It does not necessarily follow, that because Cleveland Railway stock is safe, sound and dependable as an investment and a quasi-municipal security it can be sold in this market on a 6 per cent basis.

We have before us bankers and financiers who testify that in their opinion Cleveland Railway will not sell in this market on a 6 per cent basis. The impressions which they find in the public mind and which they partly indorse, together with the fact that numerous 7 per cent safe offerings are coming into the market, turn the scale in their opinion against the Cleveland Railway security.

Any of these financial experts could easily be convinced, on close study of the franchise provisions, that the views of the public about the stock are wrong, but their testimony relates merely to the view of the public and not to whether it is right or wrong, and they very well understand, as does everyone, that no campaign of education with interpretations from experts could be carried out so as to convince the public of its error. The public mind engaged in buying securities does not operate in that way. Hence they testify that the stock will not be sold on a 6 per cent basis, and no one testifies that it will.

If it be accepted as the only opinion before us that Cleveland Railway stock will not sell in competition with other 7 per cent securities unless it also earns 7 per cent, then the interest rate must be raised if the Cleveland Railway is to continue to serve the public.

Counsel for the city do not dispute the

point that the opinion evidence before us is wholly to the effect that the stock will not sell upon a 6 per cent basis. They have contented themselves with saying that the stock is of such character that it is safe investment, and that the public ought to be willing to buy it on a 6 per cent basis, and the evidence produced by the city supports very strongly this claim.

The city contends that under the circumstances the rate of interest should not be increased, but that the facts about the stock should be laid before the stock buying public and an effort made to sell before resorting to the proposed amendment.

It is claimed that it is not a proper subject of opinion evidence as to whether the stock will sell, any more than it would be a subject of opinion evidence as to how far a certain man might be able to jump, that the proper thing to do would be to let him try.

Many practical situations arise, however, in which opinion evidence as to the future must be resorted to.

The Cleveland Railway situation is acute. The program of extension to meet the requirements of the public is already upon us. Commitments are already made in excess of the resources in sight.

The interests of the public are such that we cannot wait for experiments.

### Bondholders Buy Fort Wayne Line

The property of the Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., was sold under foreclosure on Dec. 29 for \$1,301,000 to W. J. Devine and P. M. Chandler, representing the bondholders' protective committee.

The terms of the original plan for the reorganization of the company, drawn up last summer, were reviewed in the *ELECTRIC RAILWAY JOURNAL* for Aug. 30. Notice is given now, however, that the committee representing the first consolidated mortgage thirty-year 5 per cent gold bonds of the Fort Wayne & Wabash Valley Traction Company deposited under agreement dated Sept. 12, 1917, and the protective committee representing the first and refunding mortgage 5 per cent twenty-year gold bonds and other securities of the Fort Wayne & Northern Indiana Traction Company deposited under agreement dated Oct. 31, 1917, and the protective committee representing the first mortgage 5 per cent bonds of the Lafayette & Logansport Traction Company deposited under agreement dated Jan. 15, 1918, have approved certain revisions of the plan and agreement of reorganization dated Aug. 18, 1919, under which a somewhat better representation will be given to the Lafayette & Logansport Traction Company bonds and to the Wabash River Traction Company bonds, and also an additional amount of the first mortgage bonds of the new company will be reserved for expenses and contingencies; also the right will be reserved to the new company to issue, with the approval of the Public Service Commission of Indiana, at any future time, a class of securities which will be subject to the first mortgage bonds but prior to the adjustment mortgage bonds and all junior securities, in order to assist in providing for the future requirements of the company.

The holders of the undeposited bonds may deposit them under the plan, as revised, up to the close of business on Jan. 10.

### Clearing the Title

The extra term of the Circuit Court of Taylor County, which convened at Grafton, W. Va., a few days ago with Special Judge S. M. Musgrove on the bench, was in session for a short time during the third week of December. The object of the special term was the entry of an order of dismissal in the pending suit of the city of Grafton against the Grafton Traction Company, which stood in the way of a consummation of the deal for the transfer of the railway to a syndicate which is seeking to purchase it.

The claim of the city is for paving. It amounts to about \$7,000, but the city has consented to accept \$5,000. For the purpose of clearing the title to the property, it was necessary to have this suit dismissed. The order of the dismissal was entered at the first day of the special term and the court then took an adjournment in the hope of hearing that the prospective purchasers were ready to pay over the money.

Under an agreement entered between the creditors of the railway and the purchasers of the property the latter was to close up the deal not later than Jan. 15, but assurance was given that the matter would be consummated before that time. The court will not enter a final adjournment order until the deal is closed, for in the event there is failure to pay over the money, the order of dismissal will be set aside and the case of the city against the traction company will be restored to the docket.

### Long Island Road May Resume

The prospects appear to be good for putting the Huntington (N. Y.) Railroad back into operation. Service over the line has been suspended since Sept. 21.

The complete cessation of operation followed the cutting off of power by the Long Island Railroad after Supreme Court Justice Faber had appointed Wallace E. J. Collins, Huntington, as permanent receiver of the road. At the same time Justice Faber signed an order dissolving the company.

Subsequently the property was disposed of by the receiver to William A. Dempsey. He thinks that part of the road can be run profitably. The conditions under which he is willing to resume service were outlined by him at a meeting in Huntington on Dec. 12. He said he wanted a franchise that would permit him to discontinue any part of the line that might prove unprofitable. His plan was to extend service to Bookman's corner in Melville next May, as an experiment to determine whether the line could be operated on a paying basis without stopping that portion of it.

The town board later decided in favor of Mr. Dempsey. The board of supervisors has also ratified this decision. The service when resumed will provide railway facilities in Huntington, from Holesite to the Jericho Turnpike. If

Mr. Dempsey resumes services as he has proposed, there will be a gap between the ends of the Huntington and the Babylon line. What will be done with the remainder of the line is a matter for conjecture.

The old company went into the hands of Mr. Collins as receiver on Sept. 20. About 20 miles of railway were involved in the sale. There were outstanding \$30,000 of stock and \$26,000 of funded debt.

### Interborough Receivership Averted

The Interborough Rapid Transit Company, New York, N. Y., through a plan approved by Federal Judge Mayer, succeeded on Dec. 31 in raising enough money to carry it over the first quarter of the new year.

The company needed \$3,300,000 to meet payments due on Jan. 1, failure to meet which, it was asserted, would throw the company into bankruptcy. The Interborough Consolidated Corporation, the holding company of the Interborough, and a bankrupt, finally agreed to lend the Interborough Rapid Transit Company \$1,000,000, and this with money borrowed from other sources made up the amount needed.

The loan was effected through a petition by a committee representing \$32,900,000 of the Interborough Metropolitan Company collateral trust 4½ per cent gold bonds, out of a total issue of \$63,776,000, and through a request by James R. Sheffield, trustee in bankruptcy of the Interborough Consolidated, to Federal Judge Mayer for instructions. The permission of the court was necessary before the money could be transferred. Half of the \$1,000,000 goes back to the bankrupt concern in payment of a debt due by the Interborough Company.

The total amount needed to meet pressing obligations was given as \$6,600,000 but it was said the company wanted at least \$7,300,000, of which \$4,000,000 was then in its treasury. Later, it was indicated that the Consolidated Corporation had more than \$1,900,000 and that if the company could raise the difference between this amount and \$3,300,000 it would be safe.

Mr. Hedley gave out a statement saying the company had been barely saved from a receivership by pledging of almost the last security it held, a \$450,000 4½ per cent mortgage on Brooklyn real estate, and by the sale of the \$2,900,000 of six-month 7 per cent secured notes.

Mr. Hedley said the only security left to the company was a credit of \$2,200,000, the balance of an amount placed with the city as security when the subway was built. While the company's present difficulties had been bridged, he said, a similar situation will confront it in April and again in July unless the fare is increased. He expressed hope that new developments in the traction situation will bring about a meeting between officials of the traction companies and the city.



## Financial News Notes

**Road Suspends for a Day.**—The St. Albans & Swanton Traction Company, St. Albans, Vt., has resumed operation after a shut-down of twenty-four hours. Conditions became so onerous that the company could no longer continue to give service, but the city, following the suspension, agreed through the City Council to change the charter so as to lessen the obligations of the road. The differences appear to be settled for the time being at least.

**Remarkable Increase in Direct Stock Sales.**—During the single year of 1919, up to and including Dec. 24, Byllesby companies, including the Standard Gas & Electric Company, Chicago, Ill., sold \$3,220,100 of their preferred stock direct to their customers, the number of sales for the year being 5,356, or an average of a little more than six shares to an investor. Compared with 1918, this is an increase of 47 per cent. in the volume of stock sold and 24 per cent in the number of purchasers.

**Plans Return to Regular Dividend Rate.**—The Montreal (Que.) Tramways, which suspended the payment of its 10 per cent dividend rate early in 1918, owing to the unsettled state of the fare question, is reported in a press dispatch to have resumed the payment of arrears, a declaration of 2½ per cent being ordered for the second quarter of 1918, with the intention of making periodical payments until the arrears are paid up. It was stated that the regular 10 per cent rate would be resumed early in the new year.

**Abandonment Again Threatened.**—The citizens of Ocean City, N. J., have appointed a committee to prepare a petition containing an ordinance to empower the city to engage in the transportation business. The plan of the ordinance is to give the city power to continue the operation of the Ocean City Electric Railway. The bondholders of the company expressed a determination to discontinue running cars after Dec. 31. It was said that the company may finally operate a car two or three times a day until some decision is reached by the city.

**Baton Rouge Notes Offered.**—Stone & Webster, Boston, Mass., are offering for subscription at 98½ and interest, to yield more than 7.50 per cent, \$300,000 of three-year 7 per cent convertible gold notes of the Baton Rouge (La.), Electric Company dated Jan. 1, 1920 and due Jan. 1, 1923. The proceeds from the issue are to be used to retire \$147,000 of coupon notes of the company due Jan. 1, 1920, and the floating debt and also will provide additional funds for construction requirements. The

company does the entire electric railway, electric lighting, power and gas business in Baton Rouge.

**Completes Little Rock Refunding.**—It was announced that the Little Rock Railway & Electric Company, Little Rock, Ark., would pay at maturity on Jan. 1, 1920, the \$600,000 of 6 per cent bonds then due. Payment was to be made at the office of the Interstate Trust & Banking Company, New Orleans, La. It was announced that in connection with this payment this company would issue \$1,000,000 of 7 per cent one-year notes dated Jan. 1, 1920, and due on Jan. 1, 1921. The First National Bank, Little Rock, is reported to have underwritten this issue.

**Small Bond Issue Asked.**—The Trenton, Hamilton & Ewing Traction Company and the Trenton & Mercer County Traction Corporation, lessee, have asked the Board of Public Utility Commissioners of New Jersey for permission to issue \$26,000 of bonds for the payment of the proposed extension of the Trenton Junction division into Trenton Junction proper. Work on the extension will be started as soon as the bond issue is approved. Of the bond issue \$10,000 will go to the Philadelphia & Reading Railway as part payment for the construction of a tunnel under Sullivan Way.

**Purchase Price Fixed.**—A price of \$55,000 has been agreed upon for the purchase by the city of the Greenwood Avenue line of the Western Washington Power Company in the Ballard District of Seattle, Wash., and it is expected the deal will be consummated in the very near future. The deal includes two one-man cars valued at \$6,050 each, five trailers now being rented by the city, and a one-acre tract at present used as a carhouse, besides 20,000 ft. of track on Fifteenth Avenue, N. W. Permission is also granted the city to use the Everett interurban tracks outside the city limits.

**Successor Company Planned.**—Rumor has it that the new company which will succeed the Lewiston, Augusta & Waterville Street Railway, sold under foreclosure recently, will be known as the Androscoggin & Kennebeck Railway. It is said that the plan of reorganization has not yet been prepared and presented to the bondholders, but that it is expected the plan will very shortly be in the possession of the security holders. The protective committee for the holders of the first and refunding mortgage bonds of the Lewiston, Augusta & Waterville Street Railway is composed of Henry W. Cushman, Frank Silliman, Jr., Frank D. True and C. Stevenson Newhall.

**Houston Valuation Hearing Jan. 5.**—The hearing of the case of the Houston (Tex.) Electric Company against the city of Houston, whereby an injunction is sought to restrain the city from interfering with the railway in collecting a higher fare than 5 cents, has been suspended to Jan. 5. The hearing has been held before a master in chan-

cery who has been investigating the valuation of the traction company's property, rates of return, and other facts in determination of the question of whether the rate of 5-cent fare authorized by the city is confiscatory. When the hearing is resumed Lamar Lyndon, valuation engineer, who made a valuation of the property for the city, will present his report. The report has been in the hands of the city for some time and the figures have already been before the master, but Mr. Lyndon will appear to explain these in detail.

**Hearing on Staten Island Abandonment.**—Public Service Commissioner Lewis Nixon of the First District of New York held a hearing on Dec. 29, St. George, Staten Island, in reference to the proposal of the Staten Island Midland Railway and the Richmond Light & Railroad Company to discontinue service. These companies have been owned by the estate of the late H. H. Rogers and have been steadily losing money for a period of several years. The trustees of the estate are now no longer willing to finance these continuing losses, and propose to discontinue the operation of the lines at an early date. The two electric railways named, it is reported, have had deficits aggregating \$100,000 each year for several years past. The deficit for the month of November is stated by the representatives of the company to have been \$17,000. The hearing was held to see if it is possible to work out a plan by which the operation of the lines may continue.

**Refunding Completed at Toledo.**—The Toledo Traction, Light & Power Company, Toledo, Ohio., has sold to Harris, Forbes & Company \$10,000,000 principal amount of Toledo Traction, Light & Power Company first lien 7 per cent two-year gold bonds, proceeds from this issue to be used to refund the \$10,500,000 of bonds maturing Jan. 1, 1920. The \$1,200,000 of Toledo Traction, Light & Power Company second lien bonds which were called for payment on Jan. 2, 1920, have all been converted into Cities Service Company common and preferred stocks, the holders of these second lien bonds, having in addition to receiving a good income return on their bonds for two years, received a large increase in market value owing to appreciation in market prices of the Cities Service Company stocks into which these second lien bonds were convertible. For the twelve months ended Nov. 30, 1919, earnings of the Toledo Traction, Light & Power Company, with all earnings of the street railway department eliminated, were \$4,183,552, and \$1,728,627 net, and after providing for interest on the first lien bonds there was a balance for the twelve months of \$856,233. The bonds were offered for subscription by Harris, Forbes & Company and the National City Company, New York, N. Y., on more than 7½ per cent. The company is reducing the amount of the outstanding first lien bonds by \$500,000.

# Traffic and Transportation

## Quincy Case Reviewed

Sequence of Events Presented Leading to Opinion Upholding Commission's Power to Raise Fares

The opinion of the Supreme Court of Illinois, handed down on Dec. 17, in which the court held that the State Public Utilities Commission has the power to authorize electric railway fares in excess of those fixed by municipal franchise, came as a result of a long-drawn-out contest between the city of Quincy and the commission. The city took exception to the action of the commission in permitting the Quincy Railway to raise its rates.

The decision of the Supreme Court was discussed in the issue of the ELECTRIC RAILWAY JOURNAL for Dec. 27, page 1064. A review of the events leading up to the rendering of the opinion follows:

During the year 1912 the Quincy Railway accepted a so-called franchise ordinance from the city of Quincy which fixed the rates for electric railway service for a period of twenty years. The ordinance fixed the fare at 5 cents.

On Jan. 30, 1918, a petition was filed with the Public Utilities Commission of Illinois by several companies affiliated with the Illinois Traction System, asking for increased rates to meet the conditions existing on account of the war. On May 16, 1918, an order was entered by the commission granting certain relief asked for in this application, among others being that of the parties should take or claim any additional fares in Quincy amounted to a cancellation of the sale of six tickets for 25 cents and the sale of reduced fare tickets to school children and established a flat 5-cent fare.

On June 24, 1918, the city of Quincy took a statutory appeal under the public utilities act to the Circuit Court of Sangamon County from the opinion and order of the Public Utilities Commission so far as it applied to the Quincy property. Owing to the fact that the record before the commission involved numerous other properties a stipulation was entered into between the parties concerned in this appeal that the record to be sent to the Circuit Court for review should comprise only so much of the record as related to the Quincy property, and it was further stipulated that neither of the parties should take or claim any advantage by reason of parts of the record being left out of the record taken on appeal to the Circuit Court.

The purpose of this stipulation was to bring before the court the simple legal proposition as to the right of the Public Utilities Commission of Illinois to increase fares above those provided by the city ordinance, and it was this question which was finally litigated through the courts to the recent decision by the Supreme Court of Illinois.

On Feb. 5, 1919, a hearing was had on the appeal before Judge E. S. Smith of the Sangamon County Court at Springfield, and the court affirmed the order of the Public Utilities Commission. The city of Quincy then prosecuted an appeal to the Supreme Court of Illinois, whereupon the record of the commission relating to the Quincy property and the order of the Circuit Court of Sangamon County affirming the order was taken to the Illinois Supreme Court and the legal question involved there presented for consideration.

On Dec. 17, 1919, the Supreme Court of Illinois filed its opinion in this matter, affirming the order and decree of the Circuit Court of Sangamon County. The effect of this decision is to hold that the commission has jurisdiction and power to increase fares above those fixed by city franchise ordinances. The theory of the opinion of the Supreme Court goes upon the well-settled principle of law that the State of Illinois, under its police power, has full and

complete jurisdiction over rates and fares for its public utilities and that by the passage of the public utilities act the State had delegated to that body, as its agent for that purpose, jurisdiction to consider and fix such rates.

Meanwhile, under an order of the commission dated June 17, 1919, the company was allowed further to increase its fares to 7 cents with four tickets for 25 cents. The company recently applied for a continuation of the 7-cent rate, which was to have become inoperative on Dec. 31.

## Seven Cents in Trenton

Commission Estimates New Rate Will Give Company Income of \$1,237,235 —One Cent for Transfer

The State Board of Public Utility Commissioners on Dec. 27 granted authority to the Trenton & Mercer County Traction Corporation, Trenton, N. J., to increase its fare from 6 cents to 7 cents and to charge 1 cent for each transfer. The present fare is 6 cents with free transfers. The company also sought to increase the fare in the four zones on the various suburban lines. The increase means virtually an 8-cent fare in many instances. The new rate of fare goes into effect on Jan. 4.

The commission based the increase upon the actual physical valuation of the company's property as made by the board's inspectors. The new rate of fare will give the company a gross income of \$1,237,235 a year and the return to the company on capital invested will be 4.5 per cent on the new property valuation or 5.8 per cent on the new value less extreme depreciation, all according to estimate.

One of the reservations of the commission is that the company must appropriate annually for maintenance and depreciation a sum equal to one-quarter of the revenue. Using the pre-war prices results in a valuation about \$1,000,000 less than is claimed by the company. J. G. White & Company estimated that the property was worth, as of June 1, 1918, \$4,875,615. Deducting \$1,000,000 because of the high unit prices used and allowing for additions since the date of the inventory, makes a total value at the present time, according to the company's appraisal, of \$4,229,728.

An allowance of \$100,000 for working capital is made as against \$40,000 allowed in 1915. The operating expenses for 1920, with the latest increase in wages allowed for, are estimated at \$660,000, taxes are taken at \$85,000 and maintenance and depreciation at \$320,000. The board estimates that the new fare will amount to \$1,223,035; that miscellaneous revenue will amount to \$14,200.

## Chicago Fares Reduced

Surface Lines Now Charging Flat Six-Cent Rate Ordered by Commission

The Chicago (Ill.) Surface Lines began charging a flat 6-cent fare on Dec. 27 in compliance with an order of the State Public Utilities Commission issued on Dec. 23. It is generally understood that the new rate will not be adequate to provide a reasonable return. The commission, in fixing it at 6 cents, hoped, however, to provide funds for the payment of bond interest, pending a final valuation of the companies' properties and the fixing of a permanent rate.

As announced in the ELECTRIC RAILWAY JOURNAL for Dec. 27, page 1065, the commission took action because it found that the Surface Lines were receiving too large a return. The revenue under the ticket plan adopted on Dec. 1 exceeded the commission's estimate. Judging by the experience of other large cities it was expected that an average fare of 6.25 cents would result. Even with the establishment of over 200 agencies only 12 per cent of the paying passengers used tickets sold at the rate of fifty for \$3.50 and only 1 per cent those sold at the rate of ten for 65 cents. The result was an average revenue fare of 6.85 cents for the first eighteen days of December.

### FREE TRANSFERS STAY

On the question of fixing the rate at 5 cents and charging for transfers, the commission's latest order said:

This is the method used in some cities like Philadelphia and Cleveland which, nominally, have a 5-cent fare, but in which, taking the charge for transfers into consideration, the average fare is considerably more. This would involve a deviation from the fixed policy in Chicago for many years and in our opinion should not be seriously considered in a tentative order. It will be time to consider a departure from this fixed policy, if at all, when the evidence is closed and the case is ready for a final order.

The commission directed that all outstanding tickets should be accepted for transportation or redeemed by the companies at the prices paid for them. Tickets from the fifty-ride books are to be accepted for transportation, even though detached and presented by persons other than the original purchasers.

Attorneys for the city objected strenuously to the entry of the 6-cent fare order. They would be satisfied with nothing but a 5-cent fare, and one of the commissioners reprimanded Special Counsel Cleveland, saying that the municipal authorities could see no merit in any fare order that did not "bear the stamp of the City Hall."

The Surface Lines' case in the valuation proceedings has been closed. The commissioners agreed that the city would have to proceed without further delay in completing the hearings so that a final order might be entered at an early date. The next session was set for Jan 7. Meanwhile the course which the city will take in its fight for a 5-cent fare remains in doubt.

## Request for Transfer Charge Withdrawn

### Remarkable Improvement in Conditions Has Made Additional Fare Charge Unnecessary, Says Detroit Company

The Detroit (Mich.) United Railway in a letter to Circuit Judge Adolph F. Marschner on Dec. 26 waived its claim for a 1-cent transfer charge. This notice followed a few days after Mayor Couzens announced that he had almost perfected plans for railway service in Detroit, independent of the Detroit United system, as referred to elsewhere in this issue.

With the request for the additional charge of 1 cent for transfers withdrawn, the Detroit United Railway will continue to run its cars on a straight 5-cent fare basis as long as present conditions continue. The company states that the additional charge, which was asked for by the company at the time of the strike settlement last spring during a period of business uncertainty, is now not necessary because of improved conditions.

Judge Marschner's court order, issued on June 11, following a conference of the Mayor, city attorneys and legal representatives of the railway provided for a straight 5-cent fare on all lines with free transfers to all lines. This provided for the increase of fares on the Pingree or 3-cent lines to 5 cents, but left the franchises untouched. Workingmen's tickets good during certain hours on the 5-cent lines were eliminated.

Under the agreement reached, a board of arbitration was provided which was to settle the question of the necessity for the 1-cent charge for transfers, after the new fare arrangement had been in operation for a trial period of three months. This board was composed of Mayor James Couzens, the city's representative; John J. Stanley, president of the Cleveland Railway, appointed by the Detroit United Railway, and Frank H. Goddard, the third member, who was chosen by the first two named.

Monthly audits of the railway company's books were made by city auditors, and as a result it was claimed that the books showed a net income each month instead of a deficit as the company had claimed would result without the charge for transfers. The auditors made no allowance, however, for depreciation while the Detroit United officials claimed a monthly depreciation of \$75,000. The amount of depreciation claimed was exceeded by the net earnings during the months of August and September, as the auditors contended that a net income for August was shown as approximately \$210,000, and in September approximately \$180,000.

The work of the arbitration board is automatically ended by the waiver action by the company. City officials had not urged the matter of arbitration, as it was felt that such proceedings would be of no advantage to the city except as vindication of the stand

taken by the city officials during the controversy last June. In view of the fact that the company admitted during the controversy that 1-cent transfers, if granted, would mean an increased revenue of about \$1,000,000 a year, the waiver action represents a saving of that amount to the car riders of Detroit. This is held by the Mayor to be vindication of the action taken at the time of settlement.

In the communication to Judge Marschner, abrogation of the court order in its entirety is not asked. The Detroit United Railway merely asked that the matter of arbitration be dropped for the present. This leaves the company free to make a request for additional income later if the addition of new equipment and cost of repairs make it necessary.

The letter to Circuit Judge A. F. Marschner, signed by B. F. Weadock, attorney Detroit United Railway, said:

## Court Seeks Action in New York

### Suggests City Grant Temporary Eight-Cent Fare Pending Full Consideration of Traction Tangle

United States Judge Julius M. Mayer, in a report on the traction situation in New York City, made public on Dec. 28, instructs Lindley M. Garrison, receiver of the Brooklyn Rapid Transit Company; Job E. Hedges, receiver of the New York Railways, and James R. Sheffield, trustee of the Interborough Consolidated Corporation, a bankrupt, to apply to the Board of Estimate for a public hearing to the end that plans for the temporary relief of the companies and for a final solution of the problems facing them may be brought about.

Judge Mayer points out that efforts so far to obtain a conference with the city officials have failed, that early in 1920 a crisis will arise that may threaten the lives of some of the companies and which will surely lay heavy hardships upon them and upon the public, and that the time has come for prompt and speedy action. The temporary plan suggested by the court provides in brief for an 8-cent fare, the restoration of the system of free transfers on the surface lines, cessation of rents on leased lines and setting aside any surplus, after prescribed conditions are filled, to make payments on account of court claims.

The permanent plan provides for concessions by the companies, such as the surrender of perpetual franchises.

The following temporary plan is proposed in Judge Mayer's memorandum:

1. By concurrent action of the Board of Estimate & Apportionment, the Public Service Commission and the Transit Construction Commissioner a temporary increase in fare to 8 cents to be granted, such increase to terminate June 30, 1920, unless it is extended by proper official action. This

... When the order was entered providing for arbitration on the necessity of charging 1 cent for transfers there was a general feeling of business uncertainty, and the indications were that this unsettled and depressed condition would continue. Had it so continued, the 1 cent for transfer would not have provided a sufficient fare.

However, in the latter part of June affairs assumed a more settled aspect, business picked up, it began to increase, it continued to increase, until finally it reached an abnormal state.

This new situation required more equipment. We had hoped to add it, but unfortunately, certain conditions existing during and following the period of the war, made it impossible for the company to purchase the additional cars and material to afford better service.

If we had not been thus prevented, the added burden, even with the great increase in business, would have demanded this extra charge. But until needed we will not ask it.

Our engineers inform us that a sum exceeding \$15,000,000 is immediately necessary to bring the present tracks and equipment to sufficient capacity to handle properly the street car riders of Detroit. We realize this necessity. We hope to meet it and we even hope a public spirit of co-operation may assist us to meet it.

However, while the present business activity continues and we are forced to curtail the necessary service, it does not seem right to ask the people for this additional cent.

I therefore desire to advise your honor that the company withdraws its request for a cent for a transfer, and consequently arbitration is not at present necessary.

The city has a copy of this communication.

increase to be open to all companies operating subway, elevated or surface lines in New York which accept this plan, so far as it affects their respective lines.

2. In the case of solvent companies the acceptance to be by the corporations themselves by resolution of their boards of directors. In the case of companies whose property is in the hands of receivers the acceptance to be by the corporations, by the receivers with the approval of the court, and by the committees of security holders in so far as such committees have been organized.

3. In the case of surface lines, the following conditions especially applicable to them should be accepted for the first half of 1920:

a. In respect of the lines formerly embraced within the New York Railways:

a1. So far as affects transfers and public convenience, they shall be operated as one system substantially as they were operated by the New York Railways prior to the receivership, the fare to be 8 cents, with no extra charge for transfers.

#### INTEREST THE ONLY RENTAL

a2. No rentals are to be paid except by way of maturing interest upon underlying bonds held by the public.

a3. No interest is to be paid upon the first real estate and refunding mortgage bonds or the adjustment mortgage bonds which are now in default.

a4. Any surplus earnings after the payment of operating expenses, taxes and interest on underlying bonds as aforesaid shall be spent as may be jointly approved by the court and the public officials upon additions and betterments, including equipment, the aim to be to distribute this expenditure among the various lines as nearly as may be practicable in proportion to their contribution to net earnings. The balance, if any, to be paid in satisfaction of or on account of tort claims incurred prior to receivership.

b. In respect of the lines formerly embraced within the Brooklyn Rapid Transit System:

b1. They shall be operated so far as affects transfers and public convenience, as one system substantially as they were operated prior to the surrender of the Brooklyn City lines, the fare to be 8 cents, with no extra charge for transfers.

b2. No rentals are to be paid, except by way of maturing interest, upon underlying bonds held by the public.

b3. No interest is to be paid upon the certificates of indebtedness issued by the various surface line companies.

b4. Any surplus earnings after payment of operating expenses, taxes and interest upon bonds as aforesaid shall be spent as may be jointly approved by the court and the public officials, upon additions and betterments, including equipment, the aim being to distribute this expenditure among the various lines as nearly as may be practicable in proportion to their contribution to net earnings. The balance, if any, to be paid in satisfaction of or on account of tort claims incurred prior to receivership.

b5. It is recognized that in the case of the Brooklyn City Railroad, by reason of its relatively low bonded debt, this temporary plan furnishes a smaller return as compared with its total securities than in the case of most of the other surface lines of the Brooklyn Rapid Transit System. Some fair disposition can no doubt be made of this situation.

c. No income is to be used in the payment of other rentals or dividends to stockholders.

d. If deemed preferable by the public officials, the surplus above underlying fixed charges could in whole or in part be paid into a suspense fund, the disposition of which would be determined by the ultimate plan.

4. The Interborough Rapid Transit Company to agree as follows:

a. Its income, after paying operating expenses and taxes, to be applied to the payment of its fixed charges, including interest on bonds and notes and the payments under the Manhattan lease.

b. The balance, if any, to be disposed of only on joint approval of the court and the public officials.

5. In respect of the subway and elevated lines of the Brooklyn Rapid Transit system:

The income, after the payment of operating expenses, taxes and interest on underlying bonds and receivers' certificates, to be applied as follows:

a. An amount to be approved by the court and the public officials to be paid into a fund for the satisfaction or reduction of the tort claims that accrued prior to the receivership.

#### DISPOSAL OF REMAINDER

b. The remaining earnings to be applied as follows: (a) The receiver to retain the company's preferentials as provided in Contract No. 4. (b) The city then to receive its preferential under said contract.

c. Under the terms of the order creating the receiver's certificates, 70 per cent of the earnings received by the receiver must be impounded for the security and payment of the receiver's certificates, the remaining 30 per cent to be available for expenditure upon the property.

d. Both the Interborough and the Brooklyn Rapid Transit companies and the receiver of the latter are to waive for the first half of 1920 any right to have the earnings for the half year applied toward the reduction of accumulated arrears of their preferentials.

6. The foregoing plan provides for a temporary arrangement, including an increased fare, which (unless extended by the public officials) will end with the first half of the calendar year 1920. It is hoped that before then a plan for readjusting the relations between the various companies and the city and plans for the reorganization of such of the traction companies as are insolvent or require reorganization will have been worked out and agreed to by all the necessary parties. If this should prove impracticable, the extension of the temporary arrangements for a few months more would be in the hands of the public officials, to be dealt with in their discretion.

It is manifestly impossible to propose in advance the terms of any new arrangement for final solution, as they will involve conference and careful consideration. Nevertheless, it is desirable to promote prompt discussion, and to that end some general principles may be suggested.

The Board of Estimate adopted unanimously on Dec. 30 a resolution offered by Comptroller Charles L. Craig for an investigation by the board into the affairs of all of the traction companies. The same day Transit Construction Commissioner John H. Delaney sent to the board a letter advocating city ownership, stating that representatives of the rapid transit companies were desirous of a conference with the city administration. Nothing was done by the Board of Estimate toward providing a method for the coming investigation.

## San Diego Zone Fares Effective

### Careful Preparations and Wide Publicity Mark Installation of Higher Rates—Much Advertising by Company

A two-zone system with a 5-cent fare in each zone, became effective on the lines of the San Diego (Cal.) Electric Railway on Jan. 1. By the new plan, under which the city is divided into an inner and an outer zone, the cash fare for a ride from the city limits to the center of San Diego becomes 10 cents. Free transfers are continued. The system was authorized by the California Railroad Commission in an order handed down on Nov. 14, and was described in the issue of the *ELECTRIC RAILWAY JOURNAL* for Nov. 15, page 961.

While the new rates were at first spoken of as a 10-cent fare to the end of the outer zone, under the ticket system devised by the company the highest city fare paid is really 7.5 cents, and on monthly book tickets, the rate is

Likewise the company carried extensive advertising of the new rates in all publications reaching the 12,000 or more men in the destroyer section of the Pacific fleet, whose base is at San Diego. These men are liberal patrons of the electric railway system, and every effort was made to see that they were informed of the provisions of the new rates.

The suburban newspapers were also used, by means of display advertisements, to acquaint the patrons of the lines with the new rates, as these include an increase in fares to all suburban points. For instance, the round-trip fare to Chula Vista under the old rate was 30 cents, while under the new rate it is 40 cents. The round trip to Coronado from the inner zone, formerly 15 cents, is raised to 20 cents under the new

**Zone Fares ordered by California Railroad Commission Effective JANUARY 1ST**

INNER ZONE 5¢ CASH FARE  
 OUTER ZONE WHEN NOT THRU INNER ZONE 5¢ CASH FARE  
 Continuous Trip Outer and Inner Zones Without TICKETS 10 CENTS.  
 FOUR TICKETS For 30¢ Equivalent to 75¢ FARE THRU BOTH ZONES

**MONTHLY COMMUTATION BOOKS INCLUDE ONE ROUND TRIP EACH DAY OF CALENDAR MONTH, EQUIVALENT TO 6¢ FARE THRU BOTH ZONES**  
 Transfers Issued Only at time FARE PAID

**SAN DIEGO ELECTRIC RAILWAY CO.**

MAP ADVERTISING SAN DIEGO FARE CHANGE

6.5 cents per ride, with transfer privilege to any part of the city. The 7.5-cent tickets come in strips of four, which cost 30 cents, and may be purchased in any quantity and are good for bearer. The 6.5-cent commutation tickets are good only for the purchaser and must be used on the date printed thereon.

#### EXTENSIVE PUBLICITY PROGRAM

A minimum of confusion attended the installation of the new system. Since this is the first occasion on which the California Railroad Commission has authorized the establishment of zone fares on urban lines, the working-out of the plan is awaited with great interest both by the company and the commission. Careful preparations were consequently made to educate the public concerning the new fares.

The company employed varied forms of publicity in stating its case and in informing its patrons as to the working of the zone plan. Large display advertisements in the newspapers were used, each day the advertisement stressing some particular phase of the new rates, and, in addition, folders and circulars printed in English and in Spanish were circulated among residents of the city and suburbs, giving all the needed information.

rates, including transportation on the ferry.

At the corner of Fifth Street and Broadway, one of the chief transfer points in San Diego, a large sign-board was erected on the scaffolding of a department store building in course of construction, where all passers-by could see it. The sign-board has a map of the city plainly showing, in contrasting colors, the two zones into which the city has been divided. A facsimile of the map is shown above.

Metal markers have been placed on the different car lines to designate the boundaries of the zones, so that passengers may readily distinguish whether they board cars in the inner, or 5-cent zone, or the outer, or 10-cent zone.

#### ADVERTISING CAR EMPLOYED

Another form of publicity for the new rates and the new method of fare collection was the sending of a special advertising car over the different routes in the city, with employees on board to explain the new system, and to sell tickets to patrons who desired them.

There is some doubt as to how the method of collecting fares on the city lines will work out. Under the system formerly in operation, all cars were

operated on the pay-as-you-enter plan. Under the new rates inbound passengers pay as they enter, but outbound passengers pay as they leave, so that there can be no dispute as to whether the ride included both zones. Passengers entering the car in the outer zone are given identification checks, which are collected by the conductor when the car reaches the limit of the inner zone.

The conductors were called to the office of M. J. Perrin, manager of transportation, in small groups for the week preceding the installation of the new rates and were schooled in the operation of the system. The tickets have been placed on sale at banks and other institutions as well as at the company's offices. Books of forty of the 7.5-cent tickets, issued as a convenient form for Christmas gifts, proved good sellers.

## Fare Plea at Charleston

West Virginia Company Would Increase Rates 35 Per Cent—Varying Opinions on Case

Diverse findings have been arrived at by the various authorities examining into the application of the Charleston Interurban Railroad for an increase of fares in the city of Charleston, W. Va. In a statement submitted to the Public Service Commission by the company, it would appear that the company's earnings on its investment are very small—perhaps as low as 1 or 2 per cent.

Don O. Blagg, city attorney of Charleston, in offering opposition to the allowance of the increase, placed the company's net earnings at 8 to 10 per cent.

The company sets forth that it applied to the Public Service Commission for authority to increase its passenger rates for the following reasons: (a) Increased cost of operation and maintenance. (b) Increased cost of necessary additions and improvements.

At the time an increase of rates was granted to the petitioner it was generally assumed that at the conclusion of the war a readjustment of prices of labor and commodities would occur, resulting in a considerable reduction in the cost of materials and probably some reduction in the price of labor. Since the cessation of hostilities, however, the prices of material and labor have both continued to increase and are still increasing.

### MATERIAL WAGE INCREASE

The petitioner has materially increased the wages of its employees, but further increases in wages will be necessary to maintain a fair level with increases being granted elsewhere and to meet the increased cost of living to such employees.

The cost of the new construction and reconstruction, necessary to be done will amount to several hundred thousand dollars, and, because of the bad financial showing of electric railways all over the country, petitioner feels compelled to rely largely upon its own resources and local sources of revenue

for funds necessary to make improvements.

The increase of rates now requested is the first ever asked applicable to the city of Charleston itself. It is an increase of 40 per cent upon the cash rate and of 30 per cent upon the ticket fare rates, making an average increase of approximately 35 per cent or less upon the present rates.

The increase granted in 1918 was a small advance upon the interurban lines, largely in the way of an adjustment and equalization of rates upon a 2-cent per mile basis. The increase now sought is upon the basis of 2½ cents per mile, distributed as equitably as may be by zones over its interurban lines. This is an increase of 25 per cent over the existing rates, and taken in connection with the increase granted in 1918, and with the commutation rates allowed, makes a total increase of approximately 35 per cent upon the rates existing prior to 1918, which were the initial rates fixed by the petitioner.

H. E. Nease, the Public Service Commission's own statistician, after an examination of the accounts and property of the company, file a report in which he found that the company, in the first six months of 1918, earned 18 and 20 per cent net on its investment. He explained:

During the six months period ended June 30, 1918, the company expended \$89,744 for additions and betterments, bringing the total gross investment up to \$1,690,037, and the depreciated investment up to \$1,477,252.

A question was raised regarding the charging of operating expenses amounting to \$24,000, incurred in connection with reconstruction and other expenses incident to the double-tracking of Virginia Street, against the income for that six months period. With that item charged off, Mr. Nease shows, the net income for the period was \$108,158. He continues:

In my opinion, this is not a proper charge to the operating expenses applicable to this period, but should be spread over a number of years. Not more than \$1,500 of the amount should be included in the expense for this period. Eliminating this item for expenses, the total net operating income for this six months period, therefore, is approximately \$131,000, or about 18 per cent on the investment.

The report shows that the net investment of the company on Dec. 31, 1918, was \$1,387,507, or more than five times what the investment of the company was fifteen years ago. It also shows that the net income of the company for the year 1918 was \$234,795, or five times what the net income was ten years ago.

### Last Five-Cent Fare Abolished

By order of the Public Service Commission of Massachusetts the Union Street Railway, New Bedford, Mass., has been authorized to file a schedule of new tariffs which has become necessary on account of the insufficient margin existing between the operating expenses and the gross revenue.

By this order, the last single 5-cent fare will disappear in the State of Massachusetts. It is worthy of note that this fact is striking evidence of

the notable efficiency of operation and management of the Union Street Railway in that it has operated so long under the original fare schedule.

## Declines Conference on St. Louis Fares

Officials of the United Railways, St. Louis, Mo., have declined to confer with city officials regarding a reduction of the fares. Col. Albert T. Perkins, general manager for the receiver, has notified Director of Public Utilities Hooke that a conference would be useless, as the determination of the fare questions is entirely within the province of the Public Service Commission.

Mr. Hooke requested the conference, in order to arrive at a compromise without necessitating the renewal of a hearing before the commission. Rolla Wells, receiver for the company, previously indicated he would oppose any reduction of the fare. He asserted that there is no reason for reducing the schedule at this time, as the company is not making money at present. He declared that 4 cents of every fare collected went for wages of employees. After receiving the communication from Colonel Perkins, Mr. Hooke said that no further move would be made by the city until a decision is rendered by the Public Service Commission on the petition for a rehearing of the case. He said that additional evidence would be adduced to show that the present scale of fares is exorbitant.

## Transportation News Notes

**Pupils' Fares Reduced.**—The New York & Stamford Railway, Port Chester, N. Y., has reduced the fare to pupils attending the Greenwich (Conn.) schools. The new rate is 5 cents.

**Eleven Hurt at Toledo.**—Eleven persons were seriously injured on Dec. 16 when a package freight car of the Lake Shore Electric Railway collided with a car of the Toledo Railway & Light Company at the east end of the Cherry Street Bridge, Toledo, Ohio.

**Springfield Six-Cent Fares Continue.**—The Public Utilities Commission of Illinois has issued an order continuing the 6-cent fare charged by the Springfield Consolidated Railway until March 1, 1920. The company's application for a 7-cent fare is at present before the commission.

**Seven Cents Asked in Olympia.**—The Olympia Light & Power Company, which furnishes electric railway service in Olympia, Wash., has applied to the City Council for an increase in fare from 5 cents to 7 cents. The company is operating its car lines at a loss of \$2,000 a month.

**Ten Cents in Northport.**—The town of Northport, N. Y., has authorized the Northport Traction Company to increase its fare from 5 cents to 10 cents. The line connects Northport Village and the station of the Long Island Railroad. The increase was made subject to the approval of the State Public Service Commission.

**Six-Cent Fare Again Extended.**—The city of Spokane, Wash., has agreed to an extension of the present 6-cent fare charged by the Washington Water Power Company and the Spokane & Inland Empire Railroad for a further period of ninety days. The city will make a demand on March 2, 1920, when the agreement is scheduled to expire, for a return to a 5-cent fare.

**Tacoma Asks Ten Cents.**—The Tacoma Railway & Power Company and the Pacific Traction Company on Dec. 18 filed tariffs with the Public Service Commission, asking for permission to charge a 10-cent fare on the Tacoma railway lines. The companies are represented by James P. Howe and Scott Henderson, who assert that increased fares are necessary to avoid bankruptcy. Under the State law, the tariff will become effective thirty days after filing, provided no protests are made.

**Would Add Five Cents to Fare.**—Increases from 20 cents to 25 cents on the ferry rate between Bristol and Bristol Ferry and from 25 cents to 30 cents in the rate between Bristol Ferry and the Newport Naval Station, are proposed by the Newport & Providence Railway, Newport, R. I., in tariffs filed recently with the State Public Utilities Commission. At present the company charges 5 cents between Union Station and the Two-Mile Corner in Middletown. Under the new tariff the fare will be 10 cents.

**Commission to Pass on Skip Stop.**—The attempt of the city of Memphis, Tenn., to force the Memphis Street Railway to abandon the skip stop on its lines, was temporarily halted on Dec. 24 when Judge McCall ruled that the power to order the discontinuance of the skip stop vested with the State Railroad & Public Utilities Commission. The company has obtained an injunction restraining the city from enforcing the terms of an ordinance providing for the stopping of cars at all street intersections.

**Motor Trucks to Supplement Interurbans.**—The Toledo & Indiana Railroad, Toledo, Ohio, will supplement its interurban freight service with a motor truck system reaching towns in the vicinity of Bryan, Ohio, according to plans recently announced. Motor trucks will connect at Bryan with the company's freight car which leaves the Toledo terminal daily at 4 p.m. Goods consigned to Montpelier, Edgerton and other towns will be delivered at the Bryan rate plus a charge of 20 cents for each hundred pounds.

**Jitney Settlement Up to Voters.**—The City Council of Salem, Mass., has au-

thorized a special municipal election to be held on Jan. 27 to determine whether the Council's recent action in revoking jitney licenses shall be rescinded. A petition asking the Council to reconsider the revocation of jitney licenses was signed by 400 persons. The operators plan to resume service under the clause of the city charter which provides for the automatic suspension of any measure against which is directed a measure signed by a specified number of voters.

**Protest Against Increased Fare.**—The borough of Ambridge, Pa., and the citizens of Baden, Pa., near Pittsburgh, Pa., have filed with the Public Service Commission of Pennsylvania complaints against the increased fares of the Beaver Valley Traction Company, which went into effect on Dec. 1. The Ambridge complaint, in addition to objecting to the fares, asks the commission to compel the railway to furnish excess fare certificates. The Baden complaint opposes the discontinuance of the two-minute service between Baden and Ambridge, and asks that the company establish a ten-minute service during the rush hours.

**Ten Cents on Iowa Interurban.**—Ten-cent fares went into effect on Nov. 16 on Urbandale, Valley Junction and Fort Des Moines lines of the Interurban Railway, Des Moines, Ia. This was in accordance with a decision of Federal Judge Martin J. Wade that the three lines are interurbans and subject to the minimum interurban fare of 10 cents. All three lines terminate in suburbs of Des Moines. Five-cent fares will be collected when the passenger boards the cars and an additional 5 cents when the car reaches the city limits. Transfers will be accepted and children will be compelled to pay only one-half fare.

**Skip Stops Go in St. Louis.**—The Public Service Commission of Missouri has ordered the United Railways of St. Louis, Mo., to discontinue the skip stop and restore the old stops. The United Railways was permitted to use the skip stop during the coal shortage caused by the miners' strike. The Southwestern Regional Coal Committee notified the company some time ago that the emergency was ended and that the use of the skip stop was no longer necessary as a fuel conservation measure. The commissioners announced that the company might later make application for permission to install a permanent skip-stop schedule.

**Kansas City Wants City Plan Commission.**—The municipal authorities of Kansas City, Mo., have under consideration a proposal for the creation of a City Plan Commission. By the terms of an ordinance already drafted the president of the Kansas City Railways would be, ex officio, a member of the commission, since the sponsors of the idea feel that, as the working out of the plan depends largely upon the solution of the traffic problem the co-operation of the railway is essential.

P. J. Kealy, the company's president, has taken an active part in the campaign for the creation of the commission.

**Preliminary Hearings Concluded.**—The preliminary hearings at Hartford on the zone system of fares as in use on lines of the Connecticut Company have been finished. The witnesses for the company have been cross-examined, and the Public Service Commission now has taken up the consideration of complaints from different communities regarding locations of zone points and similar matters. It is not anticipated that these hearings will result in any material change in the zone system. In fact, there was hardly any opposition to the zone system as such, the complaints being chiefly because some of the car riders have to pay higher fares.

**Seven Cents in Chester.**—On page 1023 of the issue of the ELECTRIC RAILWAY JOURNAL for Dec. 20 appeared an announcement of an 8-cent fare on the lines of the Southern Pennsylvania Traction Company, Chester, Pa. This was an error. The Southern Pennsylvania Traction Company filed a tariff calling for an 8-cent fare effective October 26. On Oct. 24 the City Commission of Wilmington, Del, refused permission to the Wilmington & Philadelphia Traction Company, which leases the Southern Pennsylvania Traction Company, the right to increase its fares to 8 cents in the city of Wilmington, restricting them to 7 cents. Accordingly, under special permission from the Public Service Commission of Pennsylvania, a new tariff was filed effective upon less than thirty days' notice for a 7-cent fare on the Southern Pennsylvania Traction Company's lines in order to make the fares uniform throughout the system.

**Freight Traffic Increases on Utah Line.**—The Bamberger Electric Railroad, the general offices of which are at Salt Lake City, Utah, is enjoying a substantial increase in freight traffic, arising out of the securing of joint freight rates from and to points on its line in connection with the several connecting steam carriers. This arrangement was consummated with the officials of the United States Railroad Administration during last summer. Since the rates have been published, the railroad has been able to induce a number of industries to locate warehouses and factories on its lines, and the result is a very rapid development of revenue-producing freight traffic. In the company's terminals at Ogden and Salt Lake City, where freight rates are on a parity, industries prefer an electric rather than a steam location on account of the closer proximity to the business center, the cleaner service, the better and prompter service by means of the comparatively small organization of the electric railway as compared with the complicated red tape of the big steam carrier.

## Personal Mention

### T. S. Williams Retires

Former President of Brooklyn Rapid Transit Company Connected With System for Twenty-five Years

Col. Timothy S. Williams, formerly president of the Brooklyn (N. Y.) Rapid Transit Company, who has been connected with the company for the last year as general manager for the receiver, Lindley M. Garrison, announced on Dec. 24 that he would retire from all connection with the system shortly after Jan. 1. Colonel Williams tendered his resignation last November to take effect Dec. 31. He stated that he had no definite plans for the future.

Colonel Williams resigned the presidency of the company soon after Mr. Garrison was appointed receiver. He is still an official of a number of the underlying companies which make up the Brooklyn Rapid Transit System.

Colonel Williams has been connected with what is now known as the Brooklyn Rapid Transit System for twenty-five years, less a few months. Following his graduation from Cornell University in the class of 1884, he became a reporter on the old *Commercial Advertiser*, in New York City. He left newspaper work to become private secretary to Governor Hill. Governor Flower retained him. In 1895, when Governor Flower retired from office and undertook the reorganization of the Long Island Traction Company, Colonel Williams was made secretary of the reorganization committee.

Later in the same year he was made secretary and treasurer of the Brooklyn Heights Railroad, and when the Brooklyn Rapid Transit Company was formed he was made a director and secretary and treasurer. In 1900 he became vice-president of the corporation and its constituent companies and in 1911 he succeeded Edwin W. Winter as president.

Colonel Williams has always taken an active interest in the affairs of the American Electric Railway Association and has served on a number of its most important committees. He was elected fourth vice-president of the association in 1914 and gradually moved up, but in the spring of 1917 resigned as first vice-president, owing to the demands upon his time as president of the B. R. T. in connection with the subway plans then under negotiation. In the fall of the same year he was elected second vice-president of the association, the position which he now occupies. Colonel Williams' policy in regard to publicity has always been a broad one. He has been popular with newspaper men, and the *ELECTRIC RAILWAY JOURNAL* has benefited by this policy in that it

has had easy access to information relating to improvements on the property. The most important event of Colonel Williams' administration has been, of course, the development of the subway system in Greater New York by the New York Municipal Railway Corporation, a subsidiary of the B. R. T., under the dual subway contract. This construction will stand as a monument to Colonel Williams' administrative ability.

L. H. Bean, formerly manager of the properties of Stone & Webster at Tacoma, Wash., has sailed for Genoa at the head of a party which will conduct a general engineering investigation in Belgium, France and Switzerland and other European countries.

Edward H. Sharpe, who has been general agent for the Pacific Electric Railway, Los Angeles, Cal., at San Bernardino for the past two years, has been appointed assistant to O. H. Smith, general passenger agent of the company. Mr. Sharpe's headquarters will be in Los Angeles.

J. M. Johnson, who resigned last May as general superintendent of the Ithaca (N. Y.) Traction Corporation, on Dec. 1 assumed the duties of superintendent of traffic of the Trenton & Mercer County Traction Corporation, Trenton, N. J. Mr. Johnson entered the electric railway field in 1909 as superintendent of transportation of the South Shore Traction Company, Long Island City, N. Y. He resigned three years later to become general superintendent of the Manhattan Bridge Three-Cent Line, Brooklyn, N. Y., remaining with the company for five years. In 1917 he joined Ford, Bacon & Davis, New York, as a valuation engineer, resigning the following year to become general superintendent of the Ithaca Traction Corporation.

## Obituary

Ralph L. Shainwald, president of the Standard Paint Company, New York, N. Y., died on Dec. 10.

Frank R. Grover, a Chicago attorney, died on Dec. 10 at his home in Evanston, Ill. Mr. Grover was one of the promoters of the Chicago, North Shore & Milwaukee Railroad.

Henry R. Rea, president of the Morris County Traction Company, Morristown, N. J., died on Dec. 19. Mr. Rea had been active for many years in business circles in Pittsburgh, Pa.

K. M. Watson, general claim agent of the Northern Texas Traction Company and the Tarrant County Traction Company, Fort Worth, Tex., is dead. Mr. Watson was a former president of the Texas State Railway Claim Agents' Association, and had been prominent in electric railway circles in Texas for years.

A. L. Dewey, auditor of disbursements of the Chicago (Ill.) Surface Lines, died on Nov. 10. Mr. Dewey had been with the electric railway companies in Chicago for many years. Prior to the merger of the properties in 1914 he was general auditor of the Chicago City Railway.

Benjamin Phillips, assistant superintendent of transportation of the Chicago (Ill.) Surface Lines, died suddenly on Nov. 22. Mr. Phillips had served as assistant traffic manager since the merger of the companies in 1914. Prior to that time he was general superintendent of the Chicago Railways. He entered the service in 1884 as a conductor.

Stephen P. Brown, civil engineer, was drowned on Dec. 6 when he broke through the ice on Sebec Lake, Dover, Me. Mr. Brown recently resigned as vice-president of the Ford, Bacon & Davis Corporation. He aided in the construction of the Pennsylvania Terminal at New York and had charge of constructing the Canadian Northern Railroad Terminal in Montreal.

John F. Barker, formerly president of the Gilbert & Barker Manufacturing Company, Springfield, Mo., died of heart failure on Nov. 21. He was largely instrumental in the forming of the Gilbert & Barker Manufacturing Company in 1865, having previously been employed at the water shop of the United States Armory in Springfield. On the organization of the company mentioned he was elected treasurer and manager, a position which he occupied until 1884, when he was elected president. This office he held until his retirement in 1911. For forty-six years he was the dominating personality of the business and for this entire time he enjoyed the affection and esteem of his associates and employees.

Henry W. Hodge, one of the foremost American engineers in bridge building, died suddenly on Dec. 22 at his home in New York City after a six-weeks illness. Mr. Hodge was born in Washington, D. C., fifty-four years ago. He supervised the construction of some of the largest buildings in New York City, including the Woolworth Building. Among the bridges which he designed are that of the Great Northern Railroad over the Mississippi River and that of the Chicago, Rock Island & Pacific Railroad at Duluth. In 1916 he was appointed a member of the Public Service Commission for the First District, resigning the following year to become Director of Military Railroads and Bridges with the American Expeditionary Forces. He was consulting engineer for the Brooklyn Rapid Transit Company and many other corporations.

# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,  
SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## Sales of Railway Supplies During 1919 Largely for Maintenance

Rolling Stock Sales, Particularly of Safety Cars, Increased While Rails and Track Accessories Showed Less Activity— Automatic Substation Business Heavy

Nineteen-nineteen has past and with it a record of good business for some manufacturers and poor business for others. Despite the large number of orders placed for devices to increase economy, the volume of business placed by the electric railways during 1919 was slightly less than that placed during 1918. The great majority of sales were made on a maintenance basis, the railways with few exceptions failing to make purchases in large amounts even after the prices of certain commodities had fallen 5 to 10 per cent. From time to time, certain lines did exceptionally well and booked a large amount of business. In almost every case, however, devices were ordered which would permit of savings to the railways.

All kinds of power saving apparatus, pneumatic door-control equipment, one-man car devices, and accessories have had a greater degree of success than the majority of lines sold.

### MORE CARS PURCHASED THAN IN 1918

Wherever possible, railways placed orders for rolling stock although the extent to which they were handicapped by lack of finances is readily shown by a comparison of cars purchased during 1919 with the two previous years. Total purchases of cars of all kinds for 1919 amounted to 2,444 or just twenty-five cars more than the number of cars purchased in 1918, which was 2,419. From a financial standpoint the year just closed was much better than the previous ones on account of the higher prices prevailing during 1919 for rolling stock. The total number of cars built in 1917 was 2,455 which indicates that car building has neither gained nor lost during the past three years. Because of the fact that a number of large sales were brought about in specific localities during the war, it would appear that the business since the war has increased sufficiently to keep pace with rolling stock orders placed during the war. During 1919, 165 cars were built in railway shops as compared with eighty-nine cars built in company shops in 1918 and with 281 built in this manner in 1917.

That the one-man car has set a new high record for sales, is readily shown by the number of safety cars purchased

this year. Of this type 1,383 were purchased, an increase of more than 100 per cent over the number ordered in 1918. In addition, the 1,383 safety cars placed this year represent 56 per cent of the total number of cars for the year. This is the first year that the number of one-man cars has ever exceeded the number of two-man cars ordered. In 1918, 644 safety cars were ordered as compared with 1,074 two-man cars, while during 1919 the tables have been reversed, 1,383 safety cars being purchased as against 897 two-man cars. Of this number 635 were motor-passenger city cars and 262 were interurban cars. The increase in sales of safety cars has been phenomenal. In 1917, 280 were ordered, in 1918, 644 were purchased and in 1919 contracts have been let for 1,383 such cars.

Few freight cars were built during the year, the total service cars in all amounting to only thirty-one cars. Some few freight cars were probably built in company shops, but the total amount was but a small percentage of the number of freight, gondola or flat cars purchased in previous years.

### CAR DELIVERIES IMPROVE

Deliveries throughout the year on rolling stock have been exceptional. During the early part of the year deliveries were four to five months at the longest, while as the year progressed they gradually grew better, until in the late fall safety cars in small quantities were being quoted at a month to six weeks for partial delivery and two to three months for the remainder. Orders for 200 or more safety cars were three to four months. Deliveries on the heavier cars ranged from three to four months, although some orders were completed in less time. On account of the numerous orders being received, car manufacturers decided to build safety cars on a large scale, and accordingly several of them built from one to three hundred safety cars to be held in stock in case purchasers did not appear before the cars were completed. This accounted for the excellent deliveries that were obtained during the last quarter.

During 1918, car builders were rushed with war work and could not give the attention to car orders that was possible during peace time. Much

the same plan was followed in 1919. Cars were turned out along standard lines and any companies requiring special features in cars were notified that the delivery would be lengthened considerably. The companies which wanted cars wanted them badly with the result that they took whatever they could get.

Owing to the relative high price of newly built cars, railway managers have at different times scoured the country in an effort to pick up enough used cars to serve their purposes. In nearly all cases, however, any company which was fortunate enough to have a few extra cars which could be repaired or rebuilt, busied themselves by getting the cars in shape and putting them out to help decrease headway and give better service.

### RAILS HAVE LIGHT SALES

Reconstructed and extended track mileage during 1919 was less than during 1918 and offered a poor field for sales.

Approximately 150 miles of new track or less than one-half of 1 per cent was added to the total track mileage. In the U. S. alone, about 390 miles of electric railway mileage was rebuilt. Of this mileage most of the work was in short sections. Two hundred and eighty-seven miles of steam lines were electrified.

At the beginning of 1919 there was little space available for rolling rails but as the year progressed the mills sent out notices to the effect that they could take on additional rollings. The space, however, was not contracted for. Rollings which up to that time had been comparatively light dropped off more and more, and throughout a fairly dull summer and quiet autumn excellent deliveries could be had on rails in at least two mills. One mill was prepared to roll immediately and to ship within two weeks of the receipt of the order provided it was only moderately large. Rollings for 1919 have been very small and although they may in the aggregate amount to more than those of 1918, it must be remembered that the output in 1918 was smaller than has ever been known in the electric railway industry.

Conditions during the winter were not nearly so severe as for the year before with the result that the demand for snow and ice removal equipment, trolley wire, sleet cutters, brushes and brooms and other equipment was not so good as usual. After a fairly mild winter it was not surprising that few orders were placed during the spring and summer season for snow plows and sweepers.

Purchasing during 1919, which for the most part has been strictly for



maintenance needs, was smaller than usual. Of course, some railways have received fare increases either by an increased flat fare, zone fare or by use of transfers, and purchases from these companies have been of the usual pre-war amounts.

Rail grinders have been active with sales estimated as being larger than in 1918. Fare boxes and fare registers also have had a fair amount of business and were slightly ahead of the previous year's sales. Field coils, commutators and controller parts had a regular demand and sales in these, and other copper specialties were almost normal. Armature and coil winding machines failed to sell readily early in the year but later picked up and sold much better toward the end of the year although total sales were not far ahead of those of 1918. Wire products were steady with a slightly lessened demand for steel guys and cable. Copper trolley wire and transmission fell off in sales, due largely to the small amount of extensions and new work done. Demands for composition brass and copper wire have been greater than during 1918, although perhaps not to a large degree.

Almost all accessories used on safety cars have experienced good sales and the majority show sales ahead of those for last year. Air-brakes and safety control apparatus including door and step mechanism have had a very good season.

#### HAND BRAKE SALES GOOD

Hand brake sales for the year were better than those of 1918. Car roofing was fairly active. Curtain fixtures had a steady demand. Both these products sold well in the automotive industry, however. Carbon brushes experienced good sales.

Sales of track hardware, tampers, picks, sledges, hammers, bars, chisels and mauls were actually but 5 to 10 per cent less than in 1918. Increased prices and lack of track construction accounts for this decrease. Conditions in this line are improving and the future looks promising. Steel tie and fabricated track sales are about equal to those of last year. Pneumatic tie tampers have had light sales although they have developed new business in bonding rails and for tearing up asphalt between tracks.

Lifting jacks sold well although most stocks were placed through jobbers making it difficult to trace all sales. Brakeshoes have sold in fair volume. This was also true of steel axles. Recent sales show improvement but buying is spasmodic.

Transformer demands have been steady. Railway motors, however, have not been as active as in pre-war years. Fewer heavy cars, which take two to four motors, were built last year than for the past three years. Motors for safety cars are smaller and cost considerably less than those for the heavy two-man cars, which partly accounts for the reduced total amount received from motor sales. Automatic substations

had remarkable sales, the General Electric Company reporting nineteen installations totalling 11,650 kw. In addition the company has a total of 11,800 kw. on order, which will be placed on seventeen different railways. Installations by this company in 1918 amounted to only 4,600 kw. which shows an increase in last year's business of more than 200 per cent.

Cedar pole sales improved slightly although a number of reports show a variance. Chestnut pole sales do not show up so well and are below a normal pre-war year. Pole and wood tie preservatives have sold slightly under last year's mark. The demand for paint and varnishes was less than in 1918.

Railways which held scrap until the third or fourth quarter had no difficulty in disposing of it at good prices. Relaying rails were in demand and good prices were obtained on all used material.

#### PRICES MOUNT HIGHER

Regardless of demand, prices of practically all materials, railway supplies and equipment increased at least once during the year. Some items, such as cotton cord, insulated wire, register cord, coils and insulation advanced a number of times. During the fourth quarter bronze castings such as are used in line material dropped 5 per cent while malleables were again marked up, this time the increase amounting to 7½ per cent.

#### LABOR NOT DEPENDABLE

In addition to a shortage of certain raw materials, labor has been less dependable than ever before. Malleables have been far behind on deliveries, owing to a shortage of unskilled labor. Much malleable capacity is now idle which would be available if the necessary labor could be secured. Higher wages are being paid everywhere, yet production has not been increased. Working days have been cut down to eight hours, which has had no effect other than to materially increase wages on account of overtime.

Railway credits have been maintained fairly well during the past year. Fewer roads than ever took advantage of cash discounts and central stations and holding companies frequently took thirty to sixty days longer before settlements were made. On the whole, however, collections have been satisfactory.

#### BETTER TIMES AHEAD

With reduced operating expenses resulting from the use of safety cars and financial relief which, to a considerable extent, will be realized by fare increases and transfer charges which the general public has been educated to expect, the prospects for the coming year are brighter than they have been for the past three years. Although the number of cars ordered has been approximately the same during 1917, 1918, and 1919 the increased cost of the cars in the past two years

has resulted in a greater expenditure for rolling stock. It is believed that during the past three years the low point in sales of electric railway supplies has been reached and that 1920 will show a rising curve.

### Rolling Stock

La Crosse City Railway, Winona, Minn., expects to purchase eight safety cars this year.

Brockton & Plymouth Street Railway, Plymouth, Mass., expects to purchase two safety cars this year.

Lincoln (Ill.) Municipal Street Railway expects during the year to purchase one open or summer car.

Charles City (Iowa) Western Railway will be in the market during the year for one electric locomotive.

New York & Stamford Railway, Port Chester, N. Y., expects to purchase seven safety cars during the year.

Westchester Street Railway, White Plains, N. Y., expects to purchase several safety cars during the year.

Gadsden, Bellevue & Lookout Mountain Railway, Gadsden, Ala., expects to purchase two closed passenger cars this year.

United Railways, St. Louis, Mo., expects to purchase 100 large cars of the Peter Witt type and also twenty safety cars.

Winona (Ind.) Interurban Railway expects to purchase a number of freight trail cars, the number depending upon price and delivery.

San Francisco, Napa & Calistoga Railway, Napa, Cal., will be in the market for one new 50-ton electric freight locomotive during the year.

Capitol Traction Company, and Washington & Maryland Railway, Washington, D. C., expect during 1920 to buy one 7,500-kw. turbine generator set with accessories.

Interstate Public Service Company, Indianapolis, Ind., expects to purchase five double-truck flat cars, one motor ditcher and shovel car, one motor service car and three flat cars.

### Recent Incorporations

Cleburne, Tex.—A company is being organized at Cleburne, Tex., for the purpose of building an electric interurban line from Cleburne to Glen Rose, thence to the West Texas oil fields, a distance of about 50 miles. Funds for preliminary surveys and organization work have been subscribed.

Pawhuska Railway & Public Service Company, Pawhuska, Okla.—The Pawhuska Railway & Public Service Company has been organized with a capital stock of \$20,000. The company has a franchise for a car line within the city limits of Pawhuska. The incorporators are: A. W. Hurley, Charles B. Peters and Vernon Whiting, all of Pawhuska.

**Fort Worth & Mineral Wells Railway, Mineral Wells, Tex.**—Two allied companies have been organized for the purpose of constructing an interurban electric railway between Fort Worth and Mineral Wells, about 50 miles, and between Mineral Wells and Breckenridge, about 55 miles, with branch lines from the latter town to Eastland, Ranger and Cisco. One of these companies is the Fort Worth & Mineral Wells Railway and the other is the Fort Worth, Mineral Wells & Breckenridge Railway. H. E. Robinson of Fort Worth is president of both companies. Surveys have been made and a right-of-way obtained for the proposed lines.

### Franchises

**Seattle (Wash.) Municipal Railway.**—Plans for a system of subways and elevated lines for the business section of Seattle were submitted on Nov. 15 to Mayor Fitzgerald by Thomas F. Murphine, superintendent of the Seattle Municipal Street Railway. Mr. Murphine contends that the rapid growth of Seattle has made it necessary to find means without delay for handling traffic in the downtown district. Plans proposed involve expenditure of more than \$5,000,000.

**Gainesville & Sherman Traction Company, Gainesville, Tex.**—The Gainesville & Sherman Traction company has submitted propositions to the citizens of Gainesville, Whitesboro and Sherman looking to the construction of an interurban electric railway between Gainesville and Sherman, about 30 miles. From these three towns a total cash bonus of \$175,000 and stock subscriptions to the amount of \$275,000 are asked. George M. Easley of Dallas is president and Burt C. Blanton of Dallas is general manager of the company.

### Track and Roadway

**Sand Springs Railway, Tulsa, Okla.**—The Sand Springs Railway will soon begin the construction of a system of interurban lines that will radiate from Tulsa in several directions. One line will traverse the coal regions to the east and southeast of Tulsa and may extend to Broken Bow, a distance of about 20 miles. Another will be built north to Pawhuska.

**Dallas (Tex.) Railway.**—The Dallas Railway has executed a contract with property owners of the Mount Auburn addition to construct and operate a car line in this addition within six months. The property owners agree to raise a cash bonus of \$45,000. The Dallas Standard Traction Company, which now operates a shuttle car line connecting with the line of the Dallas Railway, will be discontinued when the new service is established.

**Dallas (Tex.) Railway.**—The Dallas Railway has made requisition on the

city for approval of the proposal to spend \$140,000 in laying a double track on Masten Street from McKinney Street to Pacific Avenue, and the requisition has been approved. This line will divert the North Dallas lines that now run down McKinney Avenue to Lamar Street and will bring them directly into the business district via the most direct route, and is the improvement suggested by Mayor Wozencraft some time ago.

### Power Houses, Shops and Buildings

**Moncton Tramways, Electricity & Gas Company, Moncton, N. B.**—The car house and machine shops of the Moncton Tramways, Electricity & Gas Company were destroyed by fire on Dec. 25. The damage is estimated at \$50,000.

**Wheeling (W. Va.) Traction Company.**—The Wheeling Traction Company is planning to build a carhouse and repair shop in Warwood, W. Va. The present carhouse at Wheeling, will not be dispensed with but will be used for the Ohio side cars while the new structure in Warwood will be used for all cars on the West Virginia side of the river.

### Trade Notes

**Haynes L. Everest** has just been appointed general sales manager of the Hart & Hegeman Manufacturing Company, Hartford, Conn. Arthur E. Lubeck succeeds Mr. Everest as Western sales manager at Chicago. Mr. Lubeck was formerly assistant Western sales manager and for many years has been in the electrical business in the Middle West.

**W. M. Pegram**, New York Central lines at Columbus, Ohio, has recently been granted a patent on a device for holding abutting rail ends in alignment without the use of bolts. The rail ends are supported by the head with two angle bars which fit into a base plate. Due to the beveled surface of this base plate there is a wedge-like action between the toes of the angle bars and their seat so that the pressure of a wheel or loaded car in passing over the joint tends to tighten it.

**Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.**, announces that Edward D. Kilburn, who since March 15, 1917, has been New York district manager of the company, was recently elected vice-president and general manager of the Westinghouse Electric International Company. Mr. Kilburn was graduated from Cornell University, and immediately after leaving college he entered the employ of the Westinghouse Electric & Manufacturing Company, for a number of years being located at the Syracuse office of the company. Subsequently, he was transferred to the Westinghouse Machine Company with headquarters at

New Haven, Conn. In 1915 he returned to the electric company as manager of the power division of the New York office. A year later he was also made manager of the railway and lighting divisions, subsequently becoming manager of the office.

**Westinghouse Air Brake Company, Pittsburgh, Pa.**, in order to provide facilities adequate to handle the increasing export business and to develop its foreign trade to a greater extent than has been heretofore possible, has organized an export department with headquarters in the Westinghouse Building, Pittsburgh, Pa. Active operations will commence Jan. 1, with E. A. Craig as export manager. Mr. Craig has been associated with the company for thirty-two years. In 1905 he was appointed as auditor and assistant secretary and since 1906 has been Southeastern manager. This department will be represented in the New York office by W. G. Kaylor and in South America by R. M. Oates. The Westinghouse Air Brake Company controls the following foreign companies: The Compagnie des Freins Westinghouse, Sevran, France; the Compagnia Italiana Westinghouse dei Freni, Turin, Italy; the Westinghouse Brake Company of Australasia, Ltd., Concord West, New South Wales, Australia; the Westinghouse Eisenbahn Bremsen Gesellschaft, Hanover, Germany; the Société Anonyme Westinghouse, Petrograd, Russia; and the Westinghouse Brake Company, Ltd., of London, represented in China by Jardine, Matheson & Company, Ltd., Shanghai; in Denmark and Sweden by Frantz Alling, Puggaardsgade 4, Copenhagen; in Holland by Vaillant and Sluyterman, Noordeinde 18a, The Hague; in Japan by Sale & Frazar, Ltd., Yaesu Cho, Tokyo; in Norway by "Vulkan," Jernstoberi and mek. Vaerksted, Christiania, and in South Africa by Bellamy & Lambie, 621 Consolidated Buildings, Johannesburg.

### New Advertising Literature

**Electro Dynamic Company, Bayonne, N. J.**: Bulletin No. 100, covering its type "S" interpole direct-current motor.

**Roller-Smith Company, New York, N. Y.**: Bulletin No. 100, covering its "S. S." types electrical instruments for signal system testing. Direct-current and alternating-current portable ammeters and direct-reading portable ohmmeters are shown and spoken of in this bulletin.

**General Electric Company, Schenectady, N. Y.**: Bulletin No. 68,420, superseding Nos. 68,402-2 and 68,405. It illustrates and describes CR 4,015 inclosed automatic starters for small direct-current motors.

**Wagner Electric Manufacturing Company, St. Louis, Mo.**: Bulletin No. 119 on its distribution type transformers, also Bulletin 120, a twenty-page publication, the "Manual of Electrical Testing."