Electric Railway Journal

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THE REASON FOR A CONVENTION ISSUE

The question may be raised: Why does the ELECTRIC RAILWAY JOURNAL publish a special issue each year at the time of the convention? The reason is this: The plan was begun at the time when the association met in a different city each year, and the issue was devoted to an account of the railway system in that city. The purpose was to acquaint the delegates with the matters of railway interest there so that during their visit they could take them up more readily than if they had no such guide. During those years in which the convention has been held in Atlantic City, no such plan has been necessary, but the Convention Issue has been retained for an even stronger reason. This is because it enabled the presentation at one time of a review of the progress made in the art along some line which was particularly active at the time. Some of the subjects thus selected have been heavy electric traction, welfare work, interurban practice, city standards and public relations. In this way the industry has practically a series of extensive reports or text-books on each of these subjects in which the information is brought right up to the date of publication.

WHY A CAR NUMBER THIS YEAR?

The car is a peculiarly fitting subject for the Convention Issue this year because operating men are showing an unusually keen appreciation of the relation of car design to profitable operation. In fact, at railway gatherings there is no topic more sure of reaching the mark than this one. Many of the best minds in the industry are at work devising new schemes for reducing weight, facilitating boarding and alighting, cutting down original cost and maintenance expense, saving energy, increasing speed, improving heating and ventilation, etc. When the margin of profit in the nickel fare was larger there was not the necessity for attention to these matters that there is now. Under present conditions the general design of the car as well as every detail must justify its choice according to most exacting standards. The popularity of the jitney has indicated one kind of transportation that is needed, particularly in congested sections. This rival will not have existed in vain if it has served to point out some of the desirable lines of progress in quick-service car design. Considerations of accident reduction have also radically affected car planning, as has also the need for reduction in platform labor cost. These and other influences are reflected in the descriptions and comment in this week's car number, which is the result of a sifting process extending over many months. Space limitations forced the rejection of many interesting items of car construction, but it is believed that what has been selected gives a balanced and accurate summary of the present status of the electric railway passenger car.

APPLYING THE YARDSTICK

The subject of public relations is inherently difficult of definition. It is apt to be up in the clouds of generalization. To be effective it must be brought down upon the ground of application and illustration. In the issue of this paper for Sept. 2, page 386, a tentative outline of public relations was printed. This has been well received as a contribution to a visualization of the subject. It may be said to furnish a crude yardstick by which achievement in promoting good will may be measured. A good opportunity to apply it is furnished by the description of the transformation which has come about in Kansas City during the past few years, the leading article in this week's issue. The "yardstick" indicates as the objects of establishing good public relations: "(A) To secure maximum patronage," and "(B) to secure good treatment and popular support." The story shows how sorely needed these things were in Kansas City a few years ago. But the sequel is encouraging. The public came to realize its intimate relation to its traction system, a consummation devoutly to be wished. To-day, if the famous Billy Sunday is to be taken literally, "The street car service is the best I've ever seen in any city where I held meetings"; at any rate, it's good service, and the people like it, use it and boost it.

THE NEW YORK SYMPATHETIC STRIKE

The sympathetic strike in New York, called to bolster up the already defunct street railway strike, promises to be as flat a failure as the cause which it was intended to assist. The workmen in most lines of industry are making too much money to look with favor upon a plan to stop work on the plea that in some way or other, not clearly explained, it will help the labor leaders to establish a union on the transportation lines. But success for the sympathetic strike, in the opinion of most people, would be just as fatal to the consummation of the demands of the labor leaders as would be its failure. If the building trades, the longshoremen, the garment makers and all of the other unions of the city can be called out because of a labor dispute on the transportation system, it follows that with the transportation labor organized the carmen would be called out on a sympathetic strike in the case

of a dispute in any one of these other trades mentioned. In other words, the citizens of the city would never know when they would find the cars running. Each time there was a dispute in the garment trade, the cigar trade or in any other industry with organized labor, which could not be settled in the usual way, the citizens of New York would be deprived of transportation until the employers of that line of business decided to give in. Such a condition of affairs, of course, would be intolerable, but it is the logical sequence to the plan of the sympathetic strike which Messrs. Fitzgerald, Bohm, Frayne and others are attempting to inaugurate in New York.

THE MANUFACTURER'S PLACE IN THE AMERICAN ASSOCIATION

What is to be the function of the new manufacturing members of the American Electric Railway Association? The answer to that question should be set before every manufacturer in the electric railway industry. Not a great deal has been written on this subject. The need for the new membership and the reasons why manufacturers should join the association have been expounded more generally than the question of what functions the manufacturers who have joined can now perform.

The need for an amalgamation of forces was set forth strongly by President Henry, who said: "The good of the industry requires earnest and constant effort, to the end that conditions which are working serious injury to owners, operators and manufacturers alike, may be corrected." Therefore, the American association amended its by-laws at Chicago last February so that it might admit to membership companies engaged in the manufacture and sale of electric railway material upon the same basis and with exactly the same rights and privileges and charged with the same duties and obligations as railway company members. The Chicago amendment opened the way for unity of action, and the membership committee has done its work well. Aggressions against the electric railways as a class can now be met by a united body representing both operating and manufacturing branches of the industry.

The manufacturers were not invited to join as a group, but by companies, just as the railways have joined. In response to the invitation 200 manufacturing member companies will this year, for the first time, be privileged to attend the convention on the new basis, that of equal partnership in the association. The invitation to join was accompanied by President Henry's discourse entitled "A United Industry." In that, the chief executive of the American association set forth to the prospective manufacturing members, so far as was possible at the time, an outline of what their membership would mean and what their function would be.

Those who are charged with the responsibilities of administering the association's affairs should now set before the manufacturers who have joined and those who should join, the scheme of organization activity to which the manufacturer may bend his efforts. The preliminaries have been finished, the industrial forces are united, now how can the new members perform their work? The ELECTRIC RAILWAY JOURNAL believes that the objects, motives and aims which prompted the Chicago amendments should control in deciding how the future activities of the manufacturing company members shall be guided. Those who fathered the Chicago resolution saw the need for manufacturing members and that need was greater than any probable increase in revenue. The men at the helm had in mind definite tasks to be performed by owner, operator and manufacturer working hand in hand.

This year's convention will serve very largely to establish the basis on which the joint work will be prosecuted during the next few years. The manufacturers are going to attend the convention in a spirit of expectancy. They have become members and are willing to accept duty, but largely must look to the present association executives to point the way.

Since the major part of the active association work is done by committees, manufacturers and their assistants will be chosen for appointment to committees which can best utilize their resources and abilities. There are, of course, certain committees, such as the committee on operating rules, which deal with subjects of interest only to the operator. To these the manufacturer will not expect appointment. Contrasted with these are such committees as those on equipment, block signals, way matters, power generation, power distribution, and many others, both standing and special, on which manufacturers' representatives as such can render excellent service. Membership in these committees will be eagerly sought by the manufacturers. They will seek it with a true business spirit, reinforced by a firm desire to help the association to a determination of what is best for the industry.

Another important question is, will the manufacturers in the future have an organization through which they can express to the industry and to the parent association their ideas as manufacturers? An association of member company manufacturers might be formed, and it might request a charter from the American association, although it is obvious that the kind of work which such an association could profitably do would have to be different in scope from that of the other affiliated bodies. But would such a plan divert the energies of the manufacturers from the main object which prompted the Chicago amendments? Might it not hinder the unity of work? If so, could not the ideas of the manufacturers as a group be expressed through a large standing committee? This committee could be organized on much the same basis as the present convention committee, and it might perform similar functions as well.

By handling the purely manufacturing problems through a large manufacturers' committee rather than by an affiliated association, the interest of the manufacturers would not be diverted from the big work of the American association and there would be no complica-

tions arising from the membership and active work of manufacturers in the present affiliated bodies.

We believe that the doubtful points raised will be answered at convention time.

FINANCIAL RELIEF FOR BOSTON?

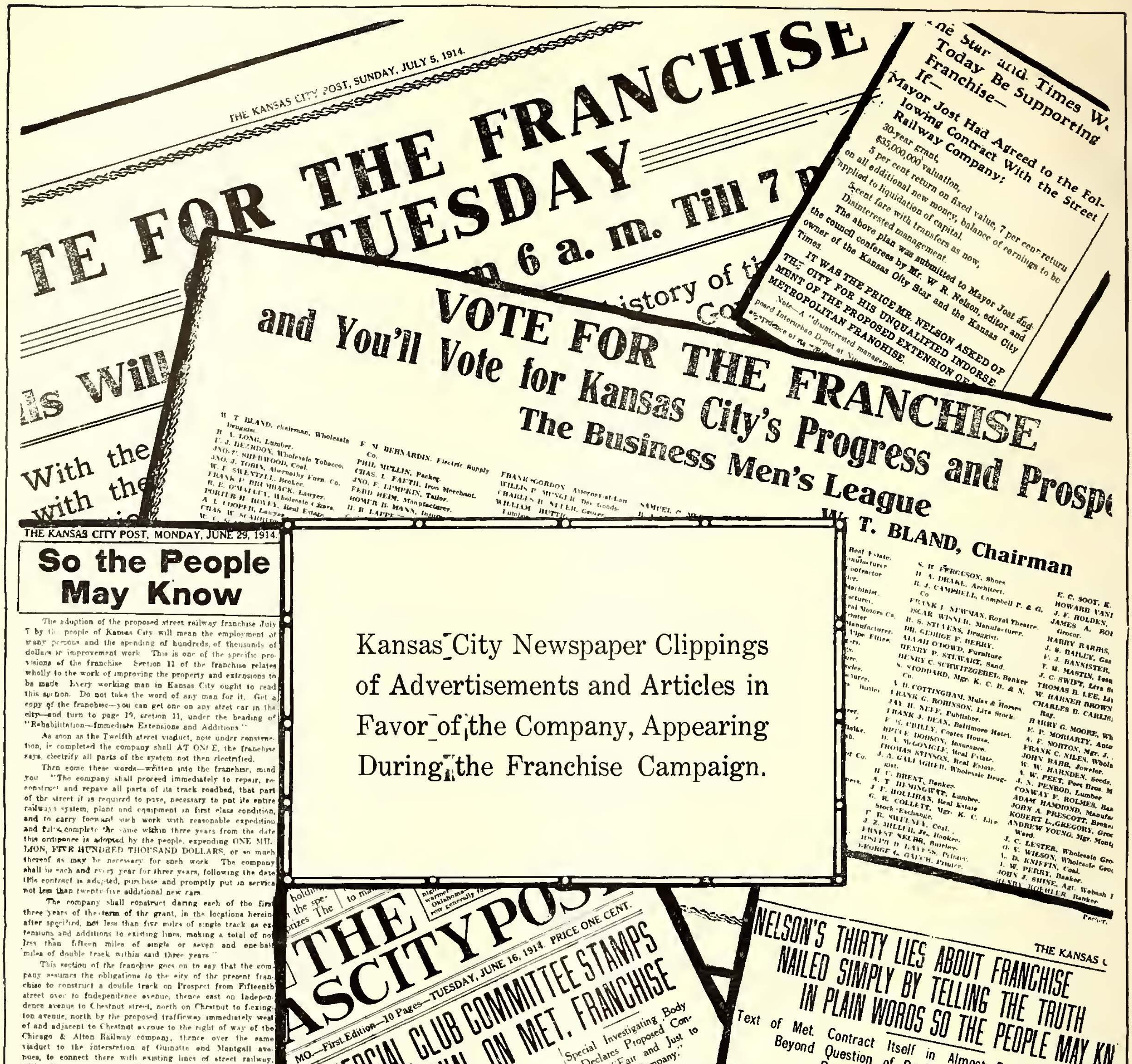
The most serious problem before the electric railway industry to-day is admitted by all to be that of securing greater net receipts so as to make more nearly possible a fair return on the investment. Under present franchise conditions most electric railways are certainly not earning a fair return, and it is a momentous question how to bring about a reduction of present burdens or to secure authority for increased charges for service, or both. It is true that forty electric railways, as shown by a recent tabulation of the information bureau of the American Electric Railway Association, have been granted increased fares in some form or other during the last three years, but the public as yet is far from being educated up to the point of a general appreciation of electric railway revenue needs. Likewise, although some regulatory bodies have urged upon the public a more sympathetic co-operation in the matter of reducing expenses and eliminating unnecessary operating burdens, public opinion has been slow in permitting tangible evidence of such co-operation.

Greater relief along the line of increased receipts and reduced burden can come only as a result of persistent publicity concerning utility needs, and every well presented fare-increase case is likely to prove educative to the local public. In this very issue we are mentioning two rate cases that on account of their exhaustive presentation cannot but help the general cause of successful electric railway operation. In one of these, the Bay State Street Railway case, which was reported in detail in the issue of Sept. 9 and is summarized in the communication columns this week, the company failed to secure a general fare increase to 6 cents, but the clear-cut pronouncement of the commission in regard to the public responsibility for certain onerous operating burdens should cause not a few citizens to readjust their thinking along saner lines. The other case, that of the Boston Elevated Railway, presents questions of financial needs upon which as yet we have officially only the company's point of view, but one can hardly see how the equity of the desired relief can be denied.

The outcome of the Boston Elevated case will be awaited with interest, for the financial condition confronting the company is of such a peculiar character that the public responsibility therefor, if admitted, will probably result in more immediate and more concrete assistance than the mere suggestion of future co-operation. Owing to the increase in public demands, the Boston Elevated Railway has become more and more confined by restrictions imposed by public order. Under ordinary circumstances a Massachusetts street railway in need of additional net revenue may file a proposed fare revision with the Public Service Commission, but the Boston company by legislative enactment is restricted to a 5-cent fare until 1922, and any relief must come from the Legislature. Owing, however, to the increased cost of labor and materials, and to the extensions of service and added permanent investment which the company felt compelled by the pressure of legislation and public opinion to make more rapidly than the business warranted, a 5-cent fare with universal free transfers is not now sufficient to pay even a 6-per cent dividend on the capital stock, which would mean a return of less than 5 per cent on the cash actually paid in by bondholders and stockholders. Without such a dividend being probable new stock will not be salable at par; under the Massachusetts law new stock cannot be issued at less than par, nor can any more bonds be issued until additional stock is put out. This increasingly untenable position in which the company has been placed has been in the last analysis caused by the requirements of the public, and it is certainly not unfair to expect remedial legislation from the State and aid from the city as well.

The section of the company's brief that is of greatest present interest naturally has to do with the plans suggested by it for improving its financial condition. There being no relief in sight from reduced operating expenses or increased business, the company strikes at the heart of the situation when it asks that some arrangement be made to assure a 6-per cent dividend for proper and efficient operation and that the rate of fare be increased whenever the company cannot earn this dividend after meeting all regulatory requirements. Various detailed suggestions are made, but the main ideas are that the car riders of Boston shall henceforth meet more closely the cost of the service rendered to them and that the communities benefited thereby shall contribute toward the cost of improved transportation. Needless to say, these are fundamental precepts of modern utility operation whose justice and practicability have been recognized in other cities, and there is no valid reason why the investigating commission should not be able to combine the various suggestions of the company into a workable plan along these main ideas.

One noteworthy point before we close. It will be recalled that in the recent Bay State case the Massachusetts Public Service Commission held that every possible means of increasing the business and raising the efficiency of the system should be exhausted before rates should be raised. If such a principle is to be applied by the special commission to the Boston Elevated case, the company should make a most creditable showing. While we have not included in our abstract of the company's brief the descriptions of its various moves toward increased economy and efficiency, owing to the prior treatment given to such topics in this journal, we appreciate their importance in the case now pending in Boston, and we desire to emphasize the fact that only the increased cost of labor and materials has made it impossible for the company to show in its operating statements the reductions in cost that it has secured through improved methods and greater efficiency. In regard to this point also, therefore, the company has a reasonable basis upon which to ask for financial relief.



THE KANSAS CITY POST, SUNDAY, JULY 5, 1914.

TE FOR THE FRANCHISE TUESDAY

6 a. m. Till 7 p

...istory of th...

...ls Will...

With the... with the...

The Star and Times W... Today Be Supporting Franchise—If—

Mayor Jost Had Agreed to the Following Contract With the Street Railway Company;

30-year grant,

$35,000,000 valuation,

5 per cent return on fixed value, 7 per cent return on all additional new money, balance of earnings to be applied to liquidation of capital.

5-cent fare with transfers as now,

Disinterested management.

The above plan was submitted to Mayor Jost and the council conferees by Mr. W. R. Nelson, editor and owner of the Kansas City Star and the Kansas City Times.

IT WAS THE PRICE MR. NELSON ASKED OF THE CITY FOR HIS UNQUALIFIED INDORSEMENT OF THE PROPOSED EXTENSION OF THE METROPOLITAN FRANCHISE.

VOTE FOR THE FRANCHISE

and You'll Vote for Kansas City's Progress and Prosp...

The Business Men's League

W. T. BLAND, Chairman

THE KANSAS CITY POST, MONDAY, JUNE 29, 1914.

So the People May Know

The adoption of the proposed street railway franchise July 7 by the people of Kansas City will mean the employment of many persons and the spending of hundreds of thousands of dollars in improvement work. This is one of the specific provisions of the franchise. Section 11 of the franchise relates wholly to the work of improving the property and extensions to be made. Every working man in Kansas City ought to read this section. Do not take the word of any man for it. Get a copy of the franchise—you can get one on any street car in the city—and turn to page 19, section 11, under the heading of "Rehabilitation—Immediate Extensions and Additions."

As soon as the Twelfth street viaduct, now under construction, is completed the company shall AT ONCE, the franchise says, electrify all parts of the system not then electrified.

Then come these words—written into the franchise, mind you: "The company shall proceed immediately to repair, reconstruct and repave all parts of its track roadbed, that part of the street it is required to pave, necessary to put its entire railways system, plant and equipment in first class condition, and to carry forward such work with reasonable expedition and fully complete the same within three years from the date this ordinance is adopted by the people, expending ONE MILLION, FIVE HUNDRED THOUSAND DOLLARS, or so much thereof as may be necessary for such work. The company shall in each and every year for three years, following the date this contract is adopted, purchase and promptly put in service not less than twenty-five additional new cars.

The company shall construct during each of the first three years of the term of the grant, in the locations hereinafter specified, not less than five miles of single track as extensions and additions to existing lines, making a total of not less than fifteen miles of single or seven and one-half miles of double track within said three years."

This section of the franchise goes on to say that the company assumes the obligations to the city of the present franchise to construct a double track on Prospect from Fifteenth street over to Independence avenue, thence east on Independence avenue to Chestnut street, north on Chestnut to Lexington avenue, north by the proposed trafficway immediately west of and adjacent to Chestnut avenue to the right of way of the Chicago & Alton Railway company, thence over the same viaduct to the intersection of Guinotte and Montgall avenues, to connect there with existing lines of street railway, with all necessary connections, work to BEGIN WITHIN SIXTY DAYS after the ordinance takes effect under the board of control. The ordinance provides that the work must be completed within six months.

Here is more work that is to be done at once if the franchise is adopted, all provided for in the contract to be submitted:

Twenty-fourth street, Brighton to Hardesty, double track.
Broadway, Fourteenth to Twenty-fifth street, double track.
Brooklyn, Thirty-ninth to Forty-fourth street, double track.
McGee, Eighteenth to Nineteenth street, single track.
McGee, Nineteenth to Twenty-fourth street, double track.
Main, Nineteenth to Twenty-seventh street, double track.
Station plaza, Main to Broadway, double track.
Twenty-fifth street, Broadway to Summit, double track.
Mail spur, single track, at new station.
Twenty-fourth street, Main to McGee, double track.
Woodland avenue, Missouri avenue to Tenth street, double track.
Blue Valley line, Belmont, Fifteenth street to St. John avenue, single track.
Indiana avenue, Thirty-sixth street to Forty-third street, single track.
Thirty-first street, Indiana to Brighton, double track.
Thirty-first street, Brighton to Raytown road, single track.
Twenty-fifth street, Troost to Grand avenue, single track.
Troost avenue, Forty-eighth to Fifty-third street, double track, just as soon as the street between those two points shall have been brought to established grade.

The contract specifies that work shall begin just as soon as the council shall pass the necessary ordinances and the necessary consent of the property owners obtained.

In addition to all this, during the first three years of the contract, the ordinance provides that $250,000 shall be used by the company in the building of such extensions as the board of control may order.

This is work that must be done. The section provides other ways in which extensions may be had, but there is no way on earth the company can escape doing the work provided for in this section of the proposed franchise.

Isn't it to the interest of every union man and every other working man, to see to it that this franchise is adopted...

THE KANSAS CITY POST ... TUESDAY, JUNE 16, 1914. PRICE ONE CENT.

...MO.—First Edition—10 Pages—

COMMERCIAL CLUB COMMITTEE STAMPS SEAL OF APPROVAL ON MET. FRANCHISE

Special Investigating Body Declares Proposed Contract "Fair and Just to City and Company."

HERE ARE SOME OF REASONS WAY FRANCHISE IS ENDORSED

PARTISANS URGED TO BANISH BIAS

JOST KNOCKS OUT STAR KNOCKS ON FRANCHISE

Mayor Reviews History of Proposed 30-Year Contract With Met. From Time of First Negotiations.

Mayor Henry L. Jost issued a statement Saturday afternoon upholding the proposed Metropolitan Street Railway franchise. The statement is addressed to THE PEOPLE OF KANSAS CITY. In addressing the people, Mayor Jost says:

"I submit herewith a report concerning my work as your servant in relation to the street railway ordinance upon which you will vote next Tuesday. The purpose of this statement is to give you information as best I can on the main features of the ordinance in the hope that it may enable you to understand the subject."

This is followed by a complete review of the pending franchise on which the people will vote next Tuesday. Mayor Jost says:

To the Public:

The street railway ordinance to be voted on next Tuesday is objected to by Colonel Nelson's newspapers and certain speakers chiefly for the following reasons:

1. That no good reason exists for the making of a contract at this time.

THE KANSAS C...

NELSON'S THIRTY LIES ABOUT FRANCHISE NAILED SIMPLY BY TELLING THE TRUTH IN PLAIN WORDS SO THE PEOPLE MAY KN...

Text of Met. Contract Itself in Almost Every Instance Ser... Beyond Question of Doubt as Complete Refutation Because Facts Stand for Themselves.

Here are THIRTY LIES told in this campaign by the Nelson band that is fighting the proposed street railway franchise. ...

Kansas City Newspaper Clippings of Advertisements and Articles in Favor of the Company, Appearing During the Franchise Campaign.

Kansas City Railway Gains Public Favor

An Account of the Steps Taken by the Kansas City Railways to Change Adverse Public Opinion, Bring About Political Peace and Establish Conditions Which Would Permit Refinancing on a Sound, Permanent Basis

AFTER a five-year storm of querulous criticism and destructive regulation the Kansas City Railways, of Kansas City, Mo., and Kansas City, Kan., emerged practically over night into the sunshine of public favor and political peace. Broadly, the change was due to the fact that the public had grown tired of the chiding of the press and the fault-finding of the politicians. Business interests also found that the abominable treatment accorded the outside capital invested in Kansas City's public utilities had spread broadcast and that the financing of any project in or about Kansas City had become almost impossible. And so the story goes, as it has gone, and is going, in a number of other communities bound upon destroying the investment in their public utilities. While it is impossible to outline in minute detail how this radical change in sentiment was brought about, the salient features of the process of evolution are presented in this article.

HISTORY OF THE CONTROVERSY

Early in 1909 maturing bond issues of the subsidiary companies of the Metropolitan Street Railway compelled the management to negotiate for a new blanket franchise in order to make complete refinancing possible. Although the existing franchise would not have expired until June, 1925, or sixteen years later, it was impossible to negotiate on reasonable terms the sale of new bonds which would mature with the existing franchise. In April, 1909, at the suggestion of the railway management, the City Council and the City Utilities Commission employed expert accountants to investigate the railway's financial condition and to determine the amount of money that was being expended for operation, and that necessary to provide for equipment and accommodations to insure comfort, convenience and service for the public.

Immediately upon opening these negotiations there sprang up opposition to granting an extension to the franchise which had sixteen years to run. In the months that followed, however, a franchise agreement was drafted which was satisfactory to the business interests of Kansas City, and the railway company. The terms of this ordinance were bitterly fought by some of the local newspapers, but to combat their position, Bernard Corrigan, then president of the Metropolitan Street Railway, had the franchise contract printed in pamphlet form and distributed to the public He accompanied this pamphlet with a summary of the benefits to the city, which included a reduction in fares. The city was to receive 50 per cent of the net earnings; it was given the right to audit and regulate the salaries of railway employees, to control additions to capital account, and to purchase the property at the expiration of the existing franchise. There were many other advantages to the city in the way of track extensions and the purchase of rolling stock. Certain newspapers continued to impugn the motives of the company and the controversy, which was to continue for a period of five years, was begun in earnest. Later the ordinance was introduced in the City Council, where it was amended in an acceptable manner and submitted to the voters on Dec. 16, 1909. Although the franchise had been passed by the City Council and approved by the Mayor, the opposition of the press caused its rejection by a large majority in a heavy vote.

With the possibility of obtaining a new franchise definitely settled, the management was still confronted with the problem of refinancing. While the earnings at that time permitted maintenance and operation to continue, extensions and improvements could not be financed. Chafing under the continued attack of the press and a public disgruntled by the failure to make needed improvements and extensions of service, the railway company lapsed into a deplorable state both financially and physically. In June, 1911, it became apparent that the requirements of the existing franchise would not meet the demands of the public in regard to service and improvements. Much new capital was necessary to make extensions to provide for the phenomenal growth of both Kansas City, Mo., and Kansas City, Kan. The government census of 1910 showed that the population of these two cities had increased approximately 52 per cent over what it was in 1900, and every indication pointed toward a continued growth in the same proportion. Since modifications in the existing franchise were absolutely necessary, as well as an extension of the time limit to make it possible to obtain money for these improvements, and the city had refused to grant a new contract, a receivership offered the only recourse. Upon the petition of the Kansas City Railway & Light Company, the holding company of the railway and light properties, receivers were appointed June 30, 1911. This action disclosed the financial difficulties of the company and prevented an immediate foreclosure of the various underlying mortgages, with the consequent probable disintegration of the whole system. This situation, of course, also made it impossible to furnish adequate service and the system continued in disfavor with the public.

The foregoing outline of the Metropolitan Street Railway's vicissitudes brought it up to the turning point

Brighten the City Where You Are!

Billy Sunday says:

"Bless the Street Car men.

"I've noticed how quickly the tabernacle is filled I've noticed how quickly the crowds are carried away after a meeting.

"I'm glad for this spirit of co-operation by the Street Car Company.

"The Street Car SERVICE is the BEST I've ever seen in ANY city where I have held meetings!"

And Mr. Sunday has held great meetings in practically every big city in this country. So he KNOWS what he is talking about. He KNOWS good service,

GAINING PUBLIC FAVOR—WHAT AN ADMIRER SAYS OF KANSAS CITY SERVICE NOW

CAR COMPANY HAULS 16,000 PERSONS FROM THE TABERNACLE IN 20 MINUTES

Ingenuity of Traffic Experts Taxed to Have Rolling Stock at Right Time; Electric Button Solves Problem.

Speaking of records—

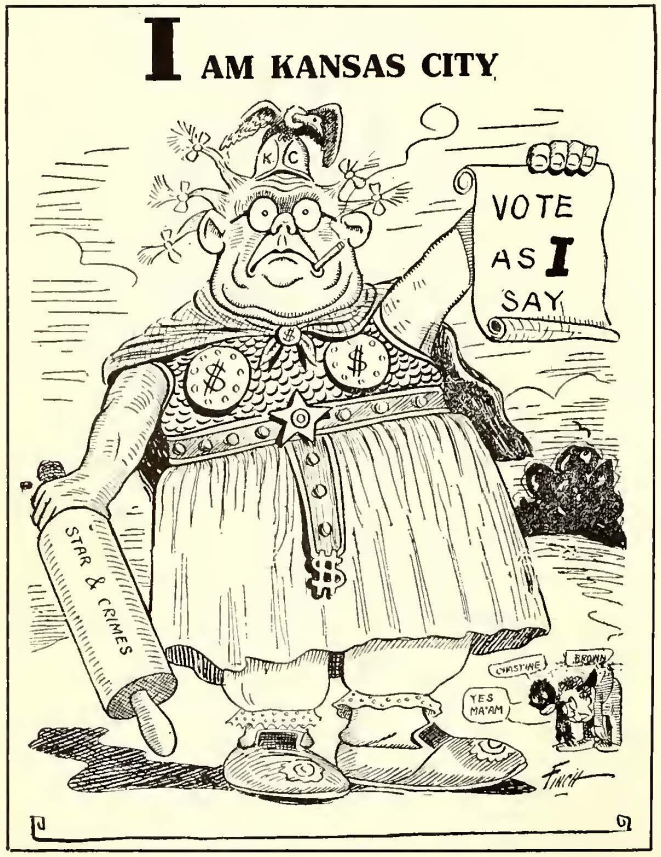
It took the Kansas City Railways company 20 minutes to haul away 16,000 persons from the Billy Sunday tabernacle last night. It cost the 16,000 who rode the street cars $1,600 to attend the meeting. There were 5,000 others who couldn't get in, which made $500 more spent for car fare.

To handle the crowd the ingenuity of the railway officials has been taxed.

It fell to the lot of W. C. Harrington, superintendent of transportation, to solve the problem. The first day Harrington didn't leave Eighth

GAINING PUBLIC FAVOR—A NEWSPAPER TRIBUTE TO KANSAS CITY'S PRESENT RAILWAY SERVICE

of one of the bitterest controversies in utility history. At the time receivers were appointed it appeared that Kansas City publicly and politically was bent upon the complete destruction of its one-time prosperous public utility. Despite the fact that the railway system was in the federal court it was still subject to bitter attacks by some of the newspapers and the public which had fought it for years. These newspapers demanded over and over again that the property be taken out of the hands of the receivers and that the company be compelled to transact its business without a franchise. One of the first moves made by the Federal Court was to determine the railway's capital requirements to meet the public demands. The service had retrograded, the cars were in need of repairs and the lines in various parts of the city needed rehabilitation. In the outlying districts people were clamoring for extensions because



GAINING PUBLIC FAVOR—CARTOONIST'S IDEA OF FRANCHISE OPPOSITION IN KANSAS CITY

they, for the most part, had built their homes in the belief that the railway lines would be extended into their districts.

As the result of all this, Federal Judge Hook gave an opinion in January, 1912, that the physical rehabilitation of the street railway property was impossible without a financial rehabilitation. It was also pointed out by the Court that money could not be obtained to make the extensions demanded, to purchase new cars and remodel the old ones, to build up the trackage, to assist in the construction of viaducts, and to do much other building work unless arrangements were made to secure outside money. It was also the opinion of the Court that outside capital could not be obtained without new contractual relations with the city. The Court then directed the receivers to open negotiations with the city, and it, in turn, agreed that a new contract was necessary, but that a revaluation of the property should be made before the preparation of a new franchise would be undertaken. These negotiations were in progress at a time when the public had become more or less apathetic, although the antagonistic press continued to find fault.

Accordingly a physical valuation of the property was made in 1912 and accepted after some delay by both the city and the receivers, and immediately the work of preparing the form of contract was undertaken. It was not until the spring of 1914, however, that this ordinance assumed practically final form, and during its preparation a policy of fullest publicity was adopted which had much to do with regaining public confidence. In the past the railway company had made the mistake of taking an active part in politics and of conducting its operations behind closed doors. During the negotiations a municipal election was held, and as an indication of the then existing pulse of the public, the officers, who had practically perfected the new public utility contract ordinance, were returned to office by the greatest plurality in the history of the city. In June, 1914, the ordinance was completed and passed almost unanimously by the City Council, and in the July following it was approved by a large majority vote of the people. This vote of public confidence disarmed the antagonistic press and the remaining opposition and began the era of satisfactory public relations which the present management is making every effort to maintain.

The explanation of this practically over-night change in public sentiment is somewhat difficult. To begin with, the public, which had followed the leadership of certain local politicians and the press, both bent on ruining the railway company, had grown tired of the senseless controversy. To convert completely those who were in this frame of mind the railway's first important step in the way of publicity was to convince them that improvements and extensions could not be made unless a new franchise was granted. To give further force to this suggestion the business interests had found that it was practically impossible to obtain outside capital to promote a new project because of the treatment the city had accorded the investments in its public utilities. The public utilities securities were held broadcast and Kansas City's reputation for destroying invested capital had been spread by these security holders. Aside from the publicity given to the effect that this long-drawn controversy had had on obtaining capital, the active co-operation of all commercial associations was sought, and their support was an important factor in molding public opinion. These associations were convinced that the interests of the community and private business were one with the interests of the public utilities, and if Kansas City expected to restore confi-

dence in the minds of outside investors it would have to come to the aid of its practically ruined public utility property.

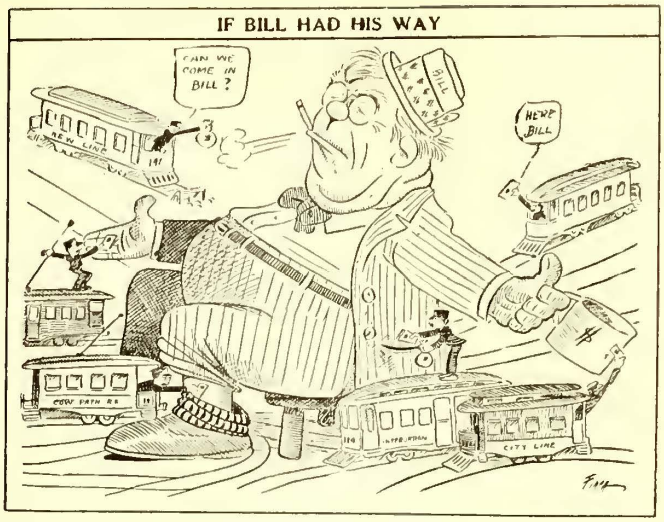
PUBLICITY CAMPAIGN PRECEDING FRANCHISE ELECTION

For the six weeks prior to the vote on the franchise, which was held on July 7, 1914, a most active campaign of publicity was conducted. This was necessary to refute the arguments of the Kansas City *Star* and *Times*, which had led the opposition through the five-year controversy. The plan of publicity followed during this campaign was along two lines, one through the agency of two of the local newspapers that championed the cause of the street railway, and the other through speech-making tours through the various voting precinct headquarters. The newspaper campaign took the form of challenging every statement made by the opposition papers and refuting every argument made by opposition politicians. It also constructively presented the case of the street railway company from the standpoint that the city's credit among outside investors had been greatly injured and the city could not expect to make marked industrial progress until its reputation for fair dealing had been vindicated by establishing the right relations with its public utility. This publicity campaign was conducted in the form of advertisements, editorials and articles. The speech-making campaign in the 200 or more voting precincts extended over practically the same period and these two lines of activity soon began to produce results.

One of the most compelling arguments in favor of voting for the prposed franchise was that it included extensions and additions to the property which would cost more than $2,000,000. This, of course, was of particular interest to the laboring classes. Furthermore, the adopting of the franchise was the first step toward municipal ownership, because under the amortization provision of the new ordinance the city would ultimately own the property. Aside from the direct and indirect arguments for the franchise the newspaper champions of the railway company published from day to day the names of business men, professional men and men in any walk of life who had announced themselves as favoring the franchise. This appeared under the title of an honor roll and it was of great value in influencing public opinion for the franchise. In connection with this campaign it is also interesting to note that as many as six or eight columns of material for and against the franchise appeared in each issue of the local newspapers. At the close of the six week's campaign the public had had its fill of the street railway franchise controversy and it was more than glad to cast a favorable ballot in order to get the question out of politics and the newspapers.

RAILWAY TAKEN OUT OF POLITICS

When Philip J. Kealy assumed the office of president of the Kansas City Railways he gave out a public statement to the effect that the ownership of the street railways had changed and that the company and the city had taken charge as partners. Quoting further from this statement, Mr. Kealy said: "It means a new order in Kansas City street railway affairs, built upon the recognition of mutual interests of the city and the company in the operation of the company. There will be no dodging of issues nor quibbling over demands or orders of the Missouri or Kansas public service commissions as to service." * * * * "It is planned to conduct the street railway property in as economical a manner as the needs of the traveling public and the welfare of its employees will permit. As to the welfare



GAINING PUBLIC FAVOR—ONE NEWSPAPER'S VIEWS OF FORMER TRACTION POSSIBILITIES IN KANSAS CITY

of its employees—it plans to have much to say in the future. As the company grows, so shall they grow.

"Of that which is history in street railway affairs, this company had naught to do. Situations arose upon which men justly agreed and disagreed. But they are of the past. Surely, resentment because of this cannot be cherished against the incoming management. Such conditions shall not arise under the present control, which will regard every person in Kansas City as friendly and refuse to believe otherwise until the contrary is proved.

"The Kansas City street railway system is an intricate one. Situations may arise in the immediate future that will try the patience of the company as well as of the public. Time will be required in perfecting complete reorganization and carrying out plans for betterment. Until they are perfected the management can only ask the public to wait. As rapidly as a definite plan has been arranged for the betterment of the public or employees it will be made public. The management wants the co-operation of the press, the business interests through the Commercial Club, the police department and the people as a whole in an effort to make

GAINING PUBLIC FAVOR—THE KANSAS CITY VOTER ABOUT TWENTY-SEVEN MONTHS AGO

Kansas City's street railway system the best in the land. As time goes on this co-operation will be sought in more detailed ways."

Work of Permanent Publicity Department

Immediately upon completing the reorganization of the Kansas City Railways President Kealy organized a publicity department solely for the purpose of obviating the difficulties into which the policy of the old company had led it. This department is under the direct supervision of Mr. Kealy and it has the active co-operation of all the department heads of the company. E. B. Atchley, formerly editor of one of the local newspapers, was appointed publicity agent, and associated with him are an assistant and a stenographer. The formation and purpose of this department were announced in all of the local newspapers, and since its organization all reporters call on the publicity agent for all the news regarding railway matters.

Shortly after the organization of the publicity department it began the publication of a monthly employees' paper, and, as outlined in the first issue: "It is intended to be the medium for the interchange of ideas between the men who constitute the brains, the bone and the sinew of this company; it is to be their paper; it is intended that each employee shall receive a copy of each issue, and it is hoped he and his family will read it carefully." Correspondents to the *Railwayan*, as this publication is known, have been appointed in every department headquarters, and they are paid $5 a month for furnishing personal news regarding the employees in their departments. Copies of the publication also are sent to all the school teachers, to the public library and its branches, and to every public reading room. Although there is some material included of interest to the general public, the *Railwayan* is intended primarily as a railway family newspaper.

From its inception it has been the policy of the publicity department to supply the newspapers and the public with all the information either may care to know about the operations of the company. Every corporate affair is of public interest under the new franchise. Operation is under joint control and five of the eleven directors are representatives of the city, hence it is especially appropriate that the outside door of the publicity department should be always open to the public. Although at first some of the newspapers were skeptical of this plan of publicity, they have gradually learned that there is nothing secretive about the publicity department and that they may depend upon it for everything in the way of railway news. All changes in service are advertised prior to their becoming effective, and from time to time feature articles are prepared and furnished to the newspapers regarding construction work, cost of improvements, etc. Recently President Kealy made an extensive study of the future development of traction facilities in Kansas City, and this was put into shape for the local newspapers which ran it with illustrations as a feature article. Experience has so far demonstrated that there are innumerable human interest stories regarding the Kansas City street railway operations and that it only requires a newspaper "nose for news" to unearth them.

In connection with accidents the publicity department makes it a point to see that reports of all the facts are accurate. In many instances it has been found that had the reporter been left to obtain his information from general sources, an account of the accident would have been published which would have been decidedly detrimental to the railway's interests, when, as a matter of fact, it was not to blame in the least. Moreover, the department has been able to guide public opinion where it's and the public's interests were in common, but it always makes a practice of giving both sides of any case. In other words, the publicity department sees that the newspapers and the public receive first-hand information and not rumors or hearsay, as nothing is kept from them.

Welfare Work in the Organization

While much time and attention are being given to maintain that public confidence which was so apparent at the franchise election, President Kealy has not neglected the welfare of the company's employees. The *Railwayan* has in a large measure built up a fine spirit of goodfellowship among the employees in that it has formed a clearing house for ideas and the means of transmitting wholesome news items that occur in the departments of every railway system. Through it such questions as public good will, courtesy and the railway problems are presented from time to time for the information of employees, thereby fortifying them in their discussions with the public. The departmental baseball league and a season's schedule of games afford a means of contact for those who are enthusiastic about athletics. A fraternal aid and protective association organized among the employees provides for them and their families in case of illness or death.

One of the latest moves in the way of welfare work was the establishment of a loan bureau through which employees are loaned money without interest, and the appointment of a lawyer whose services are at the disposal of all the company's employees without cost to them. It is this attorney's duty to see that their legal rights are respected and that they are not imposed upon by unscrupulous lawyers or harassed by trumped-up demands. It is not the intention of the company to aid its employees in avoiding just debts, but it is its purpose that the attorney work out a satisfactory settlement or arrangement for payment. Shortly after this attorney's appointment it was discovered that there were numerous cases where the necessities or misfortunes of employees had compelled them to borrow money from ruthless money lenders. In order to obviate this in the future, the establishment of a fund has just been announced from which deserving employees in times of financial stress, may borrow money without interest.

Other activities which have been developed among employees of the railway company include a company band, and only recently a family jubilee of all the employees was held at the railway's expense. The spirit of the employees and the way they are receiving the welfare work undertaken by the management, was amply expressed by the fact that 11,000 persons attended this family jubilee. As matter of fact this response to the company's invitation literally swamped the committee on arrangements. Every department head has taken hold of this welfare work with zest and the response with which it is meeting among the employees has been a great satisfaction to the management. Moreover, this spirit among the employees has been of great assistance in maintaining the proper kind of public relations.

The street railways of Germany, according to the *Zeitschrift für Kleinbahnen*, have taken a very active part in the handling of troops of all kinds since the outbreak of the war, acting as feeders to the State railways. Although only about 3100 miles of track is included by the 300 street railway companies in Germany, more than one-half of the 52,000 street railway employees were called to arms before December, 1915, so that the substitution of platform men could be made in only a limited manner.

Boston Elevated Seeks Financial Relief

Hearings Begun by Special Commission to Investigate Need of Additional Net Revenue—Proposed Remedies Look Toward Assurance of 6 Per Cent Dividends on Stock

PROBABLY the most important set of hearings in the operating history of the Boston (Mass.) Elevated Railway opened at the State House, Boston, on Sept. 25, for the consideration by a special recess commission of the company's plea for financial relief as advanced in a letter to Governor McCall May 22, 1916. The commission is composed of Lieut.-Gov. Calvin Coolidge, presiding; the president of the Senate, the speaker of the House, six members of the Legislature, and the members of the Massachusetts Public Service Commission and of the Boston Transit Commission. Frederic E. Snow of Gaston, Snow & Saltonstall, Boston, opened the case for the company, presenting an eighty-six-page brief and about thirty exhibits. It is expected that the hearings will occupy several weeks. The commission is required to report its findings to the Legislature by Jan. 15, 1917.

INVESTMENT OF THE COMPANY

The Boston Elevated Railway was incorporated by Chapter 548, Acts of 1894, and in 1897 it leased the West End Street Railway. Since that time it has operated the entire street railway system of Boston with the exception of the lines belonging formerly to the Lynn & Boston, and now to the Bay State Street Railway. The permanent investment in the system on June 30, 1916, according to the company's brief, amounted to $116,022,060. This means the cost of physical property only, such as railway, equipment, land, buildings, etc. It includes not only the property owned by the Boston Elevated and the West End lines, but also the subways and tunnels owned by the city of Boston. On the same date, June 30, 1916, the capital investment, exclusive of premiums, was $113,832,145, this being the par value of the stocks and bonds of the Boston Elevated and the West End companies, as well as the expenditures by the city for subways and tunnels and the value of leased lines.

The city of Boston furnished the capital for all the subways and tunnels except the Cambridge subway, and leased them to the company for a rental intended to be sufficient to pay the interest on the investment, and ultimately, by means of a sinking fund, to repay to the city the original cost. The capital for additions to the surface lines, with the exception of the lines leased from the Bay State Street Railway, was provided by the sale of bonds and stock of the West End company, upon which the elevated company pays the interest and dividends under the terms of its lease. The capital for the construction of the elevated lines, the Cambridge subway and the East Cambridge extension, and for the equipment of these as well as of the subways and tunnels owned by the city, was provided by issues of bonds and stock of the elevated lines.

SUGGESTIONS FOR RELIEF

An increase in fare.

Adoption of zone system of fares.

Charging for transfers.

Establishment of inclosed areas at transfer points where practicable, so as to reduce number of paper transfers.

Elimination of 8-cent check.

Purchase of Cambridge subway by the State and its rental to the company.

Temporarily charging off depreciation against premiums paid in on stock and bonds.

Return of $500,000 deposited with the State, so that it will be available for ordinary capital purposes.

Reimbursement for subway rentals.

The above-stated amount of the capital investment, the brief says, does not include a single dollar of water or any allowance for franchises or other public rights. It represents the actual cost of the property devoted to the public use. As far as the outstanding bonds and stock of the West End Street Railway and the Boston Elevated are concerned, the issue of every bond and every share of stock has been approved by the Public Service Commission, or its predecessor, the Railroad Commission, and, with the exception of the $6,400,000 of preferred stock issued by the West End in 1887, every share of stock has been approved by the Public Service Commission, or its predecessor, the Railroad Commission, and, with the exception of the $6,400,000 of preferred stock, every bond and every share of stock has been paid for in cash, and the proceeds expended with commission approval.

LIMITATION ON NEW CAPITAL ISSUES

According to the brief, the elevated system requires in the near future from $5,000,000 to $7,000,000 of additional capital to pay for additions and improvements which have already been made or are in contemplation. Up to June 30, 1916, the company had expended for capital purposes $2,049,351 in excess of the amount for which capital has been authorized. The money for this expenditure was borrowed temporarily and should be capitalized.

The brief states that on June 30, 1916, the outstanding elevated bonds amounted to $26,586,000. The par value of the outstanding capital stock was $23,879,400 and the premiums paid in thereon by the stockholders were $2,707,428, making an aggregate of $26,586,828, or only $828 more than the outstanding bonds. The company cannot, it is said, under the laws of the State, issue any more bonds until it has issued additional stock, and it cannot issue any additional stock because it cannot issue stock at less than par. The present market value of the stock is only $73 a share, although it sold in 1901 as high as $190, and in the last ten years has ranged from $159 to $65.50.

As before stated, the company now requires additional capital, but unless it can obtain the money by short term loans it has no course open. It is deemed impossible to obtain sufficient money by this method, but even if this could be done it would probably be at an excessive cost, and would leave the company at the mercy of changing financial conditions. Such a method of financing was disapproved by the Public Service Commission in the Middlesex & Boston rate case.

The company takes the point of view that to enable it to furnish such adequate transportation facilities as the public may reasonably require, its stock should be

salable at not less than par, and there is no reason to suppose that its stock will be salable at that price unless its earnings are sufficient, after making such provision for depreciation as the Public Service Commission may determine, to pay dividends at the rate of at least 6 per cent per annum, which is only 5.3 per cent on the money actually paid in by the stockholders on account of the premiums. Further, there must be some reasonable assurance that no additional burdens or requirements will be placed upon it which will jeopardize the payment of such dividends.

For many years the stock of the elevated company sold far above par, though paying only 6 per cent dividends, but the high price during that period was due to a large extent to the expectation that the future earnings would warrant dividends in excess of 6 per cent. The possibility of dividends in excess of 6 per cent, however, is said to be at the present time too remote to have any effect on the value of the stock. The company has never paid dividends in excess of 6 per cent, and in the last three years the payments were 5, 5.5 and 5 per cent.

Dividends at the rate of 6 per cent mean a return of only 5.2 per cent on the par value of the bonds and stock of the Boston Elevated and of less than 5 per cent on the cash actually paid in by the bondholders and stockholders. That is, a full year's interest on the bonds outstanding on June 30, 1916, would be $1,195,-300, while 6 per cent on the stock would require $1,432,-764, making a total for interest and dividends of $2,628,064, which is 5.2 per cent on $50,465,400, the par value of the outstanding bonds and stock, or slightly less than 5 per cent on $52,844,423, the amount of cash actually paid in. This rate of return, the company notes, is substantially less than the rate which has been generally recognized as fair or which is essential to attract new capital. It adds that hitherto Massachusetts corporation stocks have sold at a price yielding a relatively low income return because they were non-taxable, but this advantage has been removed by the 1916 income tax law. This reduced the differential of from 1.75 to 2 per cent in favor of Massachusetts stocks to 0.6 per cent, which means that the purchaser of Massachusetts stocks will insist upon a higher income yield than formerly.

Causes of Present Financial Condition

The company's present financial condition is due principally to three causes: (1) The increase in the cost of labor and materials; (2) the enormous increase in the permanent investment at a much greater rate than the growth of business warranted, and (3) the extension of the length of rides in connection with the free transfer system, with a disproportionate increase in revenue.

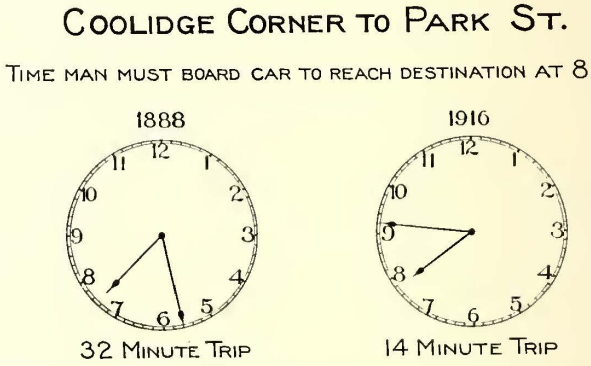
1. *Increased Operating Costs:*

For the year ended June 30, 1916, the gross revenue of the company was $18,781,327, which was paid out as follows:

For operating expenses	$12,079,996
Taxes	1,043,042
Fixed charges or return on investment, including railway and subway rentals, interest and dividends at 5 per cent on elevated stock	5,634,644
Miscellaneous items	13,846
Total	$18,771,528

This left a surplus of about $10,000, and the company failed by $228,000 to earn its dividend of 6 per cent. Compared with 1915, the gross income increased $894,-778 and taxes decreased $26,147, making a total gain of $920,925. This was offset, however, by an increase in operating expenses amounting to $792,012 and in fixed charges of $129,965, which included the dividend at the reduced rate of 5 per cent, or a total of $921,977. The increase in gross income was mainly due to the fact that the company carried 17,160,457, or 4.955 per cent, more revenue passengers in the 1916 fiscal year than in 1915. This increase was much greater than the average rate, and represents a total of but 110.645 per cent over 1897. The increase in population since 1897 has been from 831,608 to 1,244,645, or 49.667 per cent.

There is no likelihood, the company's brief states, of any substantial reduction in relative operating costs under conditions as they now exist. Every effort has been made by the management to secure the greatest economy and efficiency of operation possible. To a very considerable extent the road is operated subject to the supervision of the Public Service Commission, and so far as that body has deemed it consistent with the rendering of proper service, it has co-operated with the management for the reduction of expenses, in some cases even making suggestions to that end. In the Bay State rate case, the Public Service Commission held that the company "must satisfy the commission that the needed income cannot be secured through more effi-



BOSTON ELEVATED—EXAMPLE OF CLOCK DIAGRAMS USED IN BRIEF TO SHOW TIME SAVED ON PRESENT SYSTEM AS COMPARED WITH SURFACE LINES IN 1888

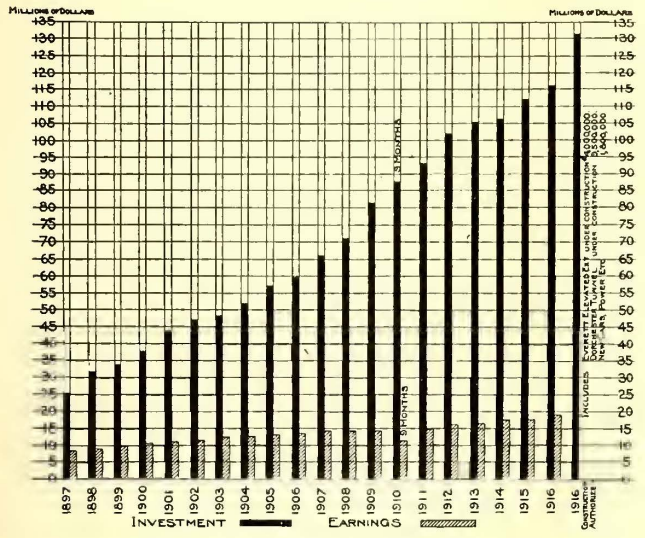
cient management and operation." Along this line the Boston Elevated Railway in its brief describes the many efforts it has made to secure improved methods and increased efficiency, explaining each point in detail and often with supporting exhibits. One of these exhibits, in the matter of time saving, is reproduced in part herewith. The lines along which the company has secured increased efficiency, as noted before from time to time in the ELECTRIC RAILWAY JOURNAL, concern the following: Traffic, car operation and construction, power, tracks and roadbed, yards, electric switches and signals, revenue collection, handling sand, freight and safety work.

In regard to the higher cost of materials, the brief states that it is difficult to give specific unit cost prices for 1916 compared with prices for periods ten to twenty years ago, owing to the fact that substantially all material used by a street railway is in more or less manufactured form and the material used to-day is of a higher grade of manufacture than that used some years ago. The difficulty lies in trying to segregate the increase in price into that part which is due to the actual increase in the raw material and that part which is due to the higher quality of manufactured article.

Evidence of this is noticeable, for instance, in track special work. Crossings, branch-offs, switches, etc., used by street railways ten years ago would not to-day withstand the wear and tear to which present equipment subjects roadbed and track. But if the same construction were used to-day the increase in cost would approximate 30 per cent, whereas the actual cost when

improvements are included averages an increase of 60 per cent. This difficulty is further evidenced by the fact that ties, for instance, ten years ago were in practically no cases treated, while the ties used to-day are subjected to a treatment resulting in a material extension in their life. The company is paying in 1916 62.2 cents for the same grade of ties that cost 50.6 cents in 1905, an increase of 11.6 cents, or approximately 23 per cent advance, whereas the actual cost on account of using treated ties for 1916 is 68 per cent higher than in 1905.

All material used in the repair of equipment shows an increase in cost of the particular items necessary for such work, but in substantially every instance the design and quality of the manufactured article is likewise improved and the same difficulty exists in trying to divide that portion which is chargeable to basic material cost and that portion which is properly chargeable to increase due to improved manufacture. In connection with the increase in price of manufactured articles there enters not only the increase in price of raw material and the increase due to the higher grade



BOSTON ELEVATED—CHART OF INVESTMENT AND EARNINGS

of manufactured article, but also the increased cost of labor used in the manufacture of such articles.

The brief concludes, however, that if it were possible to secure identically the same material as was used ten years ago, it would be found the unit price for same had increased very materially. Moreover, while it is impossible to prophesy what prices for materials will prevail for the next one, two or more years, there is no indication at the present time of any reduction in the cost of materials used in street railway operation for the next few years as compared with the costs for the last twelve months, and there is every reason to believe that the prices prevailing to-day will at least continue for the ensuing year.

In regard to higher labor costs, the brief notes the recent three-year arbitration award, covering the period from May 1, 1916, to May 1, 1919, which means higher wages for labor. It is estimated that the increase in rates of wages and changes in other conditions will result in an increased labor cost for the same service over the year ended May 1, 1916, for the year ending May 1, 1917, of $400,000; for the year ending May 1, 1918, of $600,000, and for the year ending May 1, 1919, of $800,000.

Other operating items mentioned by the brief are accident, paving and depreciation charges. In the cost of accidents and injuries it has been impossible to effect any substantial reduction, owing principally to adverse legislation, court decisions interpreting the law more favorably to claimants, the greater liberality of juries, and the rise and growth of the ambulance chaser. As for paving, if the present program, particularly in Boston, is carried out, the company will be put to a very considerable expense, the estimated aggregate to the end of 1917 being $566,392, as compared with $61,153 in 1916 and $51,925 in 1915. There is no doubt, therefore, that the operating expenses will be relatively larger for the year ending June 30, 1917, than they were for the year ended June 30, 1916, and added to this is the possibility of having to make some additional provision for depreciation. If, as was tentatively suggested in the Middlesex & Boston case, a street railway should be required to charge as an operating expense 20 per cent of its gross operating revenue to cover maintenance and depreciation, the Boston Elevated's operating cost for the year ended June 30, 1915, would have been increased $926,804, and for the year ended June 30, 1916, $679,050.

2. *Increase in Permanent Investment:*

The company's brief reviews at length the growth of its permanent investment, including detailed exhibits of outlays for the various subway, tunnel, elevated and surface lines. The management of the road has for several years foreseen the danger arising from the abnormal increase in the permanent investment and has repeatedly called the attention of the Legislature and of public commissions to the subject. As before stated, the permanent investment of the system on June 30, 1916, was $116,022,060, while the comparative investment on Sept. 30, 1897, when the Boston Elevated assumed the operation of the system, was $25,291,913. It is now four and one-half times as large as it was in 1897. During the same period the population of the territory served has increased from approximately 830,000 to 1,244,000, or only 50 per cent, while the number of revenue passengers has increased from approximately 172,000,000 to 363,000,000, or only 110 per cent.

In 1897 the permanent investment amounted to $2.901 for $1 of gross income, and $2.963 for $1 of passenger revenue. In 1916 it amounted to $6.178 for $1 of gross income, and $6.393 for $1 of passenger revenue. In 1897 the permanent investment was approximately 85 cents per revenue car-mile, while in 1916 it had increased to approximately $2 per revenue car-mile. In 1897 the return upon the investment required 5.680 cents per revenue car-mile out of a total revenue of 28.498 cents per car-mile. In 1916 the return upon the investment, including subway and other rentals, interest on the elevated indebtedness and dividends at the rate of 6 per cent on its stock, called for 10.028 cents per revenue car-mile out of a total revenue per car-mile of 30.985 cents. In 1897, 0.986 cent out of every nickel was required for a return on the investment. In 1916, 1.5 cents out of every nickel of revenue was required for the same purpose. The accompanying reproduction of one of the company's exhibits shows graphically how the investment has increased more rapidly than the business warranted.

3. *Increase in Service Rendered:*

While the operating expenses per car-mile, the brief notes, were substantially the same in 1916 as they were in 1897, being 20.744 cents in 1897 and 20.624 in 1916, and while the amount required to pay a return on the investment, including 6 per cent on the elevated

stock, had increased from 5.680 cents per car-mile in 1897 to 10.028 cents in 1916, the revenue per car-mile increased only from 28.498 cents to 30.985 cents. During this period the average seating capacity of the cars had increased from thirty-two to forty-five, or an increase of more than 40 per cent in the average capacity of the cars. The latest surface cars now in use have sixty-two seats and some of the rapid transit cars seventy-two. It would naturally be supposed, the company remarks, that with an average increase of about 40 per cent in the size of the cars the revenue per car-mile would increase in proportion, assuming that no more cars were operated than was necessary to care for the traffic properly. That this has not been so is due to the practically universal free transfer system and the large increase in the population of the suburbs lying at extreme distances from the center of the city. The accompanying reproduction of an exhibit shows the growth of the transfer system.

The increase in the length of ride is indicated by the increase in facilities which are now required to accommodate the traffic at certain suburban points as compared with the facilities required at the same points in 1897, as shown by the following table:

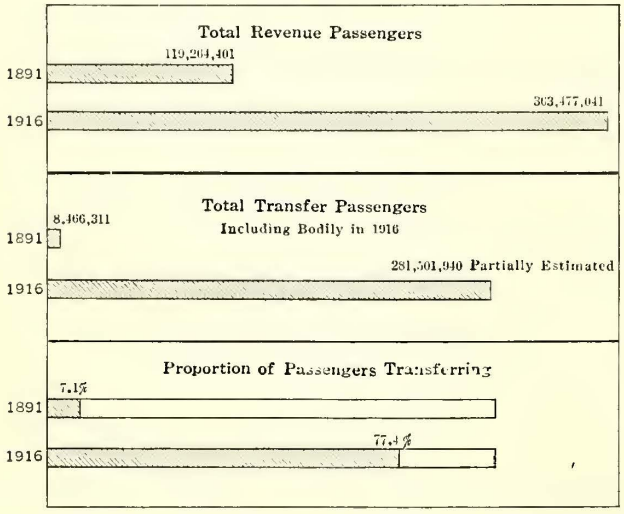
AVERAGE CAR SEATS FURNISHED PER DAY, TWENTY-FOUR HOURS

Section	Route Distance from Park St., Miles (All Surface)	Seats, 1897	Seats, 1916	Per Cent Increase Over 1897
Mattapan Square	6.706	.....	34,464	...
Neponset	6.807	10,052	18,836	87.4
Milton	7.621	16,072	35,176	118.9
Watertown Square	7.320	6,042	65,492	984
Newton (Nonantum Square)	7.063	10,268	41,956	309
Arlington Heights	9.533	7,636	37,680	393
Malden Square	5.585	20,756	67,012	223
Medford Square	5.724	6,518	57,356	780

This increase in the amount of long distance riding has prevented the increase in revenue per car-mile which would naturally have resulted from the increase in the size of the cars. The accompanying illustration shows graphically the increase in the number of seats furnished.

ADDITIONAL NET NOT OBTAINABLE THROUGH REDUCED EXPENSES OR INCREASED BUSINESS

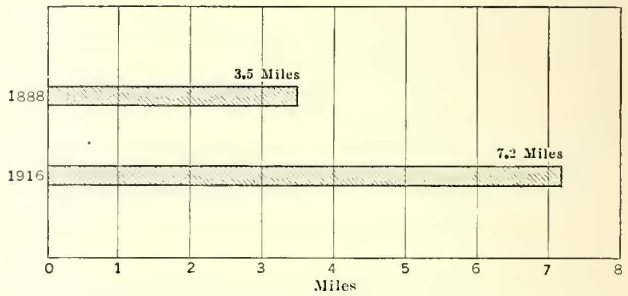
After thus stating the causes of the present financial situation, the brief avers that the additional net



BOSTON ELEVATED—GROWTH OF FREE TRANSFER SERVICE IN TWENTY-FIVE YEARS

revenue now required cannot be obtained through either a reduction in operating expenses or an increase in business. As before stated, the company believes that the operating expenses will be relatively higher during the current year than they were during the year ended June 30, 1916. Moreover, although the company has every reason to expect a substantial increase in business during the current year, it is absolutely impossible to forecast the exact amount of the increase. The increase in revenue passengers for the year ended June 30, 1916, was 17,160,457, or in gross earnings $894,779. This was the largest increase in any one year since the company began business.

On the assumption of an equal increase for the current year, there must be deducted the additional cost of doing the additional business. The cost of power and conducting transportation for the year ended June 30, 1916, was $7,161,355. This increases with the amount of mileage run and, on the assumption that it



BOSTON ELEVATED—SEAT-MILES PER REVENUE PASSENGER OR DISTANCE ONE SEAT IS RUN FOR EACH 5-CENT PASSENGER CARRIED

will require an increase of 5 per cent in the mileage to provide for the 5 per cent increase in the number of revenue passengers, the cost of power and conducting transportation for the current year will be increased by $358,000. Deducting this from the increase in gross amounting to $894,779 leaves $536,779 net to take care of additional expenses and charges amounting to at least $1,000,000.

This estimate allows only 40 per cent as the operating cost of doing the new business, and it is undoubtedly low. Among other things it takes no account of the increased rate of wages during the current year or any increase in maintenance charges due to increased mileage. In the company's opinion estimates for the ensuing years are still more uncertain, but it is evident beyond question that the increase in business cannot be relied upon to provide the additional net revenue which is needed.

HOW TO IMPROVE THE SITUATION

With assistance thus not possible through reduced expenses or increased business, the company in its brief suggests for the consideration of the commission the following methods of improving its financial situation:

1. An increase in the rate of fare.
2. The adoption of the so-called zone system of fares.
3. Charging for transfers.
4. Establishment of inclosed areas at transfer points where practicable so as to reduce the number of paper transfers.
5. Elimination of the 8-cent check between the company and the Bay State Street Railway.
6. Purchase of the Cambridge subway by the State and its rental to the company.
7. Temporarily charging off depreciation against premiums paid in on stock and bonds.
8. Return of the $500,000 deposited with the State so that it will be available for ordinary capital purposes.
9. Reimbursement for subway rentals.

The adoption of some of these suggestions, to the company's mind, would have but a relatively small effect on its net revenue, but they would all contribute in

different degrees to the desired result, as shown below. Some of the suggestions contemplate that the entire cost of the transportation shall be borne by the car riders, while others contemplate that the communities in which the company operates shall make some contribution toward that cost. Heretofore the car riders who traveled upon the elevated system have not only paid the entire cost of transportation as such, so far as it has been paid, but have also through special taxes levied on the corporation contributed to the general expenses of the cities and towns in which the company operates and have likewise through the company made large contributions to the cost of maintaining the highways, which contributions have had no reference to any actual wear and tear caused by the operation of the company's cars.

The brief states, however, that an adequate system of street railway transportation is vital to the prosperity and growth of the community as a whole, apart from the car riders. It increases the value of real estate and the rents to be derived from it, it increases the business of the merchants, and it adds to the revenue of each city and town by increasing the value of the taxable property. The necessity of a contribution by the community toward the cost of improved transportation if existing fares are to be retained has been recognized in connection with new rapid transit construction in New York and Philadelphia, and the brief recites the main points of the arrangements in these cities.

1. *Increase in the Rate of Fare:*

The present fare on the elevated system is 5 cents, and by means of free transfers a passenger can in general ride from any part of the system to any other part for 5 cents. At the time this fare was established, in view of the fact that the length of ride was limited and that an additional fare was charged for transfers to different points and also for exceptionally long rides, the revenue was sufficient to pay the cost of transportation, including a return upon the capital investment. Conditions have changed, the company says, and, owing to the cost of the rapid transit lines, the extensions of the service and the increase in the cost of labor and materials a 5-cent fare with universal free transfers is not now sufficient.

The company is, however, by contract with the State limited to a 5-cent fare until June 10, 1922. This contract is contained in Section 10, Chapter 500, Acts of 1897. It makes no provision for increasing the fare if it should subsequently prove to be insufficient, but it safeguards the public in case the rate of fare should subsequently prove to be higher than necessary: (1) By requiring the company to pay to the State a sum equal to any amount paid out in dividends in excess of 6 per cent, and (2) by providing for a reduction in the rate of fare if the company should be able to earn more than 8 per cent upon its stock. Furthermore, the State retained the right, within certain limits, to control the character and extent of the service, upon which in large part depends the cost. The present insufficiency of the 5-cent fare, while due in part to the increase in the cost of labor and materials, is principally due to the fact that the company has felt compelled through the pressure of the Legislature and public opinion to extend its service more rapidly than any one anticipated in 1897, and more rapidly than the growth of the business warranted. Under these conditions, it is in the opinion of the company not unfair to expect the State to consent to a change in the contract, especially in view of the fact that the change is made necessary largely by the character of the service which the public has required, and that the company without some relief will be unable to meet further transportation requirements.

It is impossible to tell in advance what effect an increase of fare from 5 to 6 cents would have upon the income of the company. It would depend upon the extent to which the riding might be affected, and also upon whether or not tickets were sold at reduced rates. Experience has shown that an increase in the rate of fare not only temporarily, but permanently, reduces the amount of riding, so that the full benefit of the increased rate is not obtained. If this is coupled with the sale of tickets at a reduced rate, the increase in gross income is still less. The brief states that the instances of an increase of fares for urban transportation have been so few as to furnish no satisfactory basis for an estimate as to the effect on traffic.

As far as the collection of a 6-cent cash fare is concerned, the present system of prepayment and mechanical fare boxes could be easily adapted to it. If tickets should be issued, it would involve a very material change in the whole system of fare collection. The brief concludes this point with the statement that if the persons who use the cars are to pay the entire cost of transportation, an increase in the unit of fare is probably the only practicable method of providing the necessary increase in revenue, and in view of the fact that the territory served by the company has been built up on the basis of a uniform fare, is less objectionable than the so-called zone system.

2. *Zone System:*

In order to increase the income of the company by means of a zone system, it would be necessary that the zones be established at such points and such additional fares established for riding through the zones as to produce an average fare in excess of 5 cents. The principal argument in favor of the zone system is that the rate of fare so far as practicable is based upon the length of ride and is proportionate to the service rendered. It is generally considered that when passengers are carried more than 4¼ miles for a 5-cent fare it is done at a loss. This loss must be made up by the income received from passengers riding a shorter distance, who are therefore paying more than full compensation for the service they receive.

The elevated lines extend out from the city to points far beyond the limit to which passengers can be carried for 5 cents without loss, some of the distances ranging from 6.08 miles to 9.18 miles. Transfer provisions may increase the 5-cent fare distance. For example, the brief notes that a passenger may not only ride from Arlington to the center of Boston, a distance of 8.66 miles, for 5 cents, but if he desires he may transfer and continue his ride as far as Mattapan or the Charles River, covering in this way a distance of 18 miles or more for 5 cents. Even longer rides than this are possible under present transfer arrangements.

In the company's opinion, such long rides are a burden on the remainder of the system, but there are arguments against the adoption of a zone system of fares, as follows:

(a) The territory served has been developed, values have been fixed and homes established on the basis of a uniform fare, and it would be unjust at this late day to discriminate against portions of the territory by a difference in the rates of fare.

(b) The zone system, it is claimed, tends to concentrate the population within the interior zone, particularly in the case of people to whom the additional fare is of consequence, and to prevent their making their homes in the suburbs where the conditions are more healthful. On the other hand it is claimed that the zone system does not have that effect and the only difference is that in the case of a uniform fare the price of

real estate in the suburban district advances much more rapidly than in the case of the zone system.

(c) In the case of the city of Boston, where the traffic is heavy at rush hours, the collection of additional fares at zone points would not only entail considerable additional expense but would be likely to delay and inconvenience the passengers somewhat.

If a zone system were to be established in Boston, however, the rapid transit lines would be a controlling factor. The interior zone would have to include the terminals of the rapid transit lines, for the reason that the expense and inconvenience of attempting to collect additional fares on the rapid transit trains would render it impracticable. The Forest Hills station on the elevated lines is about 4¾ miles from the center of the city, and this is the extreme limit to which a passenger can be carried for a 5-cent fare without loss. With this fixing the limit of the interior or 5-cent zone, a line could be drawn approximately the same distance from the center which, commencing at Fields Corner in Dorchester, would pass through Forest Hills, corner of Market and Washington Streets, Brighton, Mount Auburn, North Cambridge, Teele Square in Somerville, Medford Square in Medford and Malden Square in Malden. If a 5-cent fare was established for all rides either within or without this zone, and an additional fare of 2 cents for each passenger crossing the zone boundary whether going to or from the center of the city, it would undoubtedly mean a substantial increase in income.

In the company's opinion, however, the extent to which the net income would be increased is a matter purely of estimate, depending upon the number of passengers who would pay the increased fare and the additional cost of collection. If 10 per cent of the total revenue passengers paid the additional 2 cents, it would mean an increase in gross income on the basis of last year's business of $727,000. Against this must be offset the cost of collection. The company, through the installation of mechanical fare boxes, prepayment cars and inclosed areas, has endeavored so far as possible to economize in the collection of fares and to minimize losses. The present method of collecting fares could not be used for the collection of zone fares. Some different method would have to be adopted, and it would probably mean the employment of special fare collectors at times of heavy traffic. The additional expense of collecting these zone fares has been estimated at from $150,000 to $200,000 a year.

The brief concludes that whether a zone system of fares is adopted or not, the commission should lay down the fundamental principle that as long as a uniform fare exists, no further extensions of the system into territory not now served should be permitted unless it is within a distance to which passengers can be carried without loss.

3. *Payment for Transfers:*

As there were approximately 281,000,000 free transfer passengers for the year ended June 30, 1916, a charge of 1 cent for each transfer would on the face of it substantially add to the company's income. The system is, however, different from any other in the United States. It is a combination of surface and rapid transit lines, and so arranged that passengers from most of the suburbs will make their journey partly on the surface lines and partly on the rapid transit lines.

Transfers of this character constitute the largest part of the free transfers, and if each one were to be charged 1 cent for his transfer the unit of fare might just as well be increased to 6 cents unless the passenger were given the alternative of riding to his destination on the surface lines. The cost of maintaining a duplicate service would, however, offset any increase in income from those who chose to pay for transfers. A charge for transfers from one surface line to another might prove of advantage if the company could be guaranteed against having to provide additional through service, but the minute passengers were required to pay for their transfers the pressure upon the company to provide a through service for a single fare would be very great. The company believes that material advantage would be gained by reducing the number of transfer points and eliminating the use of paper transfers as far as possible.

4. *Inclosed Areas at Transfer Points:*

Free transfers are made either through the medium of inclosed areas or a paper transfer that is accepted in lieu of a cash fare. There are now 111 points on the system at which paper transfers are accepted, and during the year ended June 30, 1916, 109,843,228 free transfer checks were issued and 85,621,020 received by the company. The real solution of the transfer problem, discussed in detail in the brief, is to eliminate as far as possible the use of the paper transfers.

During the last three years the company has with the co-operation of the Public Service Commission put into effect several inclosed areas on its own property, and is also with the co-operation of the Boston Transit Commission establishing inclosed areas in connection with the new Dorchester Tunnel. Nevertheless, in order to enable the company to establish additional inclosed areas at some of the largest transfer points, additional legislation is necessary. In connection with surface lines and rapid transit lines not constructed by the Boston Transit Commission, the company should be authorized by the Legislature to take land by right of eminent domain as far as necessary for the establishment of inclosed areas, and should also be authorized to use public highways for that purpose as far as traffic is not unreasonably interfered with.

The Public Service Commission should also be authorized to grant necessary relocations of surface tracks wherever it is necessary for the purpose. While the local authorities have power to grant these relocations, yet they are confronted by strong local opposition on the part of storekeepers who benefit by the stop-over privileges which passengers avail themselves of at certain transfer points. The system, however, is essentially at the present time a metropolitan system, and the right to grant necessary locations for inclosed areas should rest with the Public Service Commission, which represents the territory as a whole.

5. *Eight-Cent Checks:*

During the fiscal year ended June 30, 1916, the company collected 1,827,762 of the 8-cent checks issued by the Bay State Street Railway, and the Bay State company collected 655,137 of the checks issued by the Boston Elevated Railway. The only explanation for the difference is that people living on the Bay State line in places where the Boston Elevated runs in adjacent territory purchase checks in the morning when riding on the Bay State cars and use the other portion when returning on the Boston Elevated cars in the afternoon. In parts of Chelsea this could readily be done, and, if it is done, each ride would cost but 4 cents in place of 5 cents.

This is the only instance where a passenger can ride over the entire elevated system for 4 cents, and the checks were never intended to permit such a practice. While the company believes it has the right to discontinue the issue and acceptance of these checks, its right so to do has been questioned, and suitable legislation

authorizing it should be enacted. If the exchange checks were entirely discontinued and the same number of passengers continued to ride, the result would be that both the companies would benefit to the extent of 1 cent each on 2,472,899 passengers, amounting to $24,728, all of which would be net earnings.

6. *Purchase of Cambridge Subway by the State or a Metropolitan District:*

The purchase of the Cambridge subway by the State or a metropolitan district would provide the company with approximately $9,100,000 of new capital at a cost of 4½ per cent annually, which is much less than it will cost the company to obtain the money by the issue of its own stock and bonds. Whether the company can obtain any new capital, the brief states, and if so, at what cost, depends very largely upon the action of the special commission now sitting and the subsequent action of the Legislature.

7. *Charging Off Depreciation Against the Premiums Paid In On Capital Stock:*

If the Public Service Commission should feel that any provision must now be made for past depreciation, then, instead of restricting the issue of new capital or requiring this depreciation to be cared for in any one year, it should be authorized by the Legislature to allow the depreciation to be charged against the premiums paid in by the stockholders. This money, however, represents the investment of the stockholders just as much as that portion paid in up to the par of the stock, and it would be unfair to apply it permanently to depreciation. The company's suggestion, it is said, is intended merely as a temporary expedient to help the immediate situation and the fund, so far as it is used for that purpose, should be restored by charging a proportionate amount into operating expenses over a period of, say, ten years.

8. *Return of* $500,000 *Deposit With State:*

The repayment of this deposit to the company would give it that much additional capital which would be immediately available to pay the cost of additions and improvements. Necessary legislation should be passed authorizing the repayment of this sum.

9. *Reimbursement for Subway Rentals:*

With the exception of an increase in the rate of fare, none of the suggestions heretofore submitted will provide the company with a fair return upon its investment or with sufficient net revenue to obtain new capital in order to meet its immediate requirements. While they would all have a tendency in time to increase the income or reduce the expenses, the effect would not be immediate. The only adequate alternative for an increase in fare which the company is able to submit is the assumption by the communities benefited, of a portion of the present subway and tunnel rentals. The revenue car-miles run in the subways and tunnels for the year were 5,138,284, and the rentals of $844,184 alone imposed a charge of approximately 16.5 cents per car-mile without taking anything into account for a return upon the equipment. The return upon the entire permanent investment of the Boston Elevated for the year ended June 30, 1916, counting dividends at 6 per cent, called for 10.028 cents per car-mile.

The leases of the subways and tunnels from the city run until July 1, 1936, and thereafter are subject to termination by either party. The rate of rental cannot be changed without the consent of both the city and the company, and even with their consent probably cannot be changed without the consent of the holders of the bonds issued by the city to pay for the subways, which latter consent it would probably be impracticable to obtain. In the company's opinion, however, there is no legal reason why the State should not be authorized to retain the franchise and compensation taxes and apply them to the reimbursement of the company for subway and tunnel rentals as far as necessary to enable it to pay 6 per cent dividends on its stock. The balance would be distributed among the cities and towns on the same basis as at present. The franchise and compensation taxes, amounting together to $583,700 for 1915, are not retained by the State, but are paid over to the different cities and towns in which the company's tracks are located in proportion to the mileage operated in each of them.

On the basis of the company's operations in 1915, the above plan would have called for a reimbursement to the company of approximately $119,397, or a reduction in the amounts to be distributed among the cities and towns of about 20 per cent. The taxes for 1916 have not yet been ascertained, but with the franchise tax and corporation tax for 1916 the same as in 1915, this arrangement would call for a repayment of approximately $238,794, or a reduction in the amount to be distributed among the cities and towns of approximately 40 per cent.

This suggestion is offered as one of the alternatives for an immediate increase in fare. None of the other suggestions in themselves, the company believes, would produce enough additional net revenue, and unless some plan of this kind is adopted the company knows of no practicable method of obtaining the necessary additional net revenue except by an increase in fares. It has the great advantage of being flexible, as the amount for which the company is to be reimbursed each year depends upon the result of its actual operations, which cannot be forecast in advance. This suggestion also equalizes to some extent the burden of the rapid transit subways and tunnels by placing it proportionately upon all the cities and towns which are to be benefited instead of leaving it to be borne by the city of Boston alone. This plan would have the further advantage of making the public directly interested in the question of whether or not further burdens should be imposed upon the company.

General Conclusion

While general market conditions undoubtedly have had much to do with the increased cost of obtaining money for street railway purposes, the uncertainty as to street railway investments and in the case of the Boston Elevated Railway the uncertainty as to its future financial condition and its ability to maintain its 6 per cent dividend have increased the cost of obtaining new money. It is in the interest of the public that this should be obtained at the lowest possible rate, and in so far as this is affected by the uncertainty as to the maintenance of 6 per cent dividend this uncertainty should be removed.

Whatever else may be done, it is vital that the rate of fare should be increased whenever the company is unable to earn 6 per cent on its stock after making such allowance for depreciation and other reserves as the Public Service Commission may approve or require, and adequate provision should be made for this by legislation.

Whatever action is recommended by the special investigating commission, it should, in the company's opinion, include some arrangement for a period of years, say until the expiration of the present subway leases, by which the company may be assured of 6 per cent dividends as long as it is properly managed and properly performs its functions as a public agent.

New England Street Railway Club Outing

A Visit to Connecticut Valley and Many Forms of Entertainment Were Features of This Most Enjoyable Event

TWO hundred and thirty-five members and friends of the New England Street Railway Club assembled at Springfield, Mass., Sept. 21, for the annual fall outing of the organization, which was one of the most enjoyable in the club's history. The program included features of transportation interest in addition to almost continuous entertainment, and registrations covered practically all sections of New England.

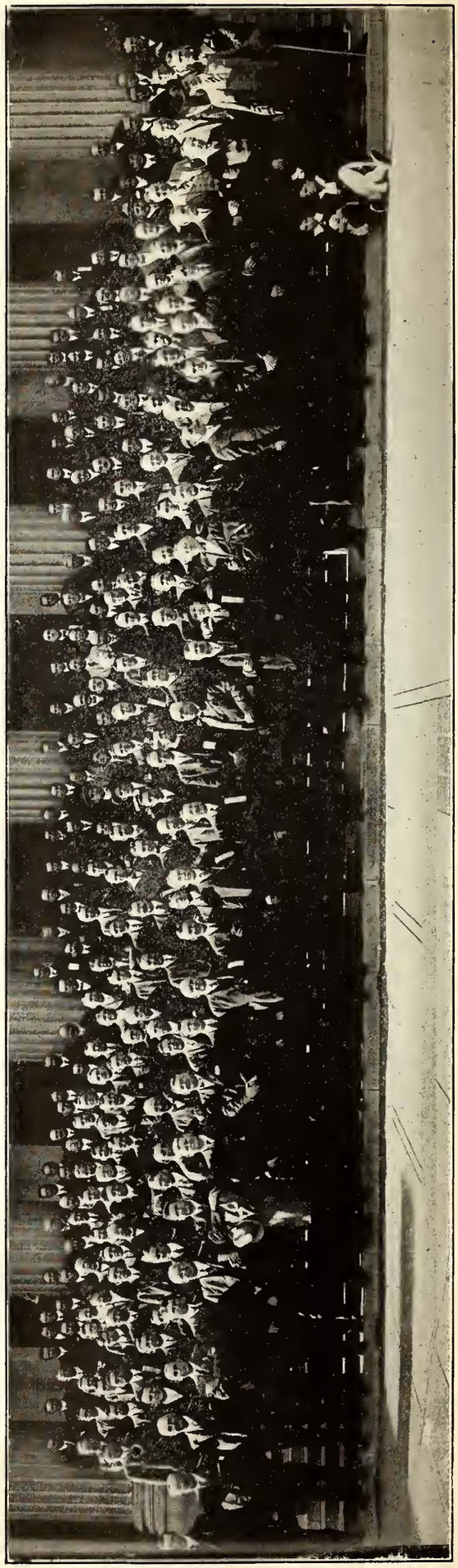
Upon arrival at Springfield the members were welcomed by President C. V. Wood of the Springfield Street Railway, who is also president of the club, and his associates in the local company. A buffet luncheon followed at the rooms of the Springfield Board of Trade, which was also attended by prominent business and professional men, who greeted the club most cordially. The outing program consisted of a cleverly designed transfer check on which the various events were scheduled, with time punch marks indicating the hour of departure of the special cars provided for the club at every point in the itinerary, and containing humorous admonitions in the form of conditions of use, the transfers being valid only to members casting off the cares of their daily work and entering properly into the spirit of the occasion. In one corner of the transfer there was a series of sketches somewhat similar to those at one time used on a real transfer to identify passengers, but those on the outing transfer consisted of humorous sketches appropriate to the occasion.

At the close of the luncheon the club assembled at the celebrated "municipal group" of buildings on Court Square, where a photograph was taken. Following this, six special cars were taken to the grounds of the Eastern States Industrial Exposition in West Springfield, where the members inspected an arena with a capacity of 7000 persons, a prepayment area and loop track facilities for handling the large traffic anticipated at the grounds next month. The new buildings were also visited, and cars were then taken to Riverside Park, where a clambake and green-corn feast of maximum dimensions was followed by an entertainment, the crowning feature of which was a superb display of fireworks, including a set piece showing a realistic likeness of President Wood; also a luminous trolley car, which crossed the lawn in the midst of great applause. The party then returned to Springfield, and the day closed with a cabaret show at one of the hotels.

On Friday morning an early start was made for the Hooker Street car shops of the Springfield company, now under construction. The extensive facilities in prospect here were scrutinized with interest. For the convenience of the visitors, the Springfield Street Railway Company distributed to the members of the club at this point a leaflet which gave the plans, elevations, section and other drawings of the North Main Street carhouse.

Upon arrival at Holyoke, President L. D. Pellissier of the Holyoke Street Railway welcomed the members to the city, and escorted them through the lately completed shops of his company.

The next objective of the club was the summit of Mount Tom, which was reached by electric car. Here the members enjoyed a good dinner and a fine view, the propitious weather adding greatly to the pleasure of the trip. The party returned to Springfield by special cars in the afternoon, and disbanded for home.



Members of the New England Street Railway Club on the Occasion of Their Outing to Springfield and Holyoke Last Week

View Taken in Front of Municipal Group in Springfield on Sept. 21

The Individual Contract in Indianapolis

The Recent Use of Individual Contracts in New York Makes This Account of Their Adoption in Indianapolis Two Years Ago of Especial Interest

DURING the recent strike agitation in New York much discussion centered around the individual working agreements that had been signed or were being signed by employees of the Interborough Rapid Transit Company and the New York Railways. Numerous statements appeared in the daily press to the effect that similar service contracts had been used before for electric railway employees in Indianapolis, Ind., and that legal opinions rendered in regard to such contracts might serve as precedents in the New York case. Explanations of this so-called Indianapolis precedent, however, have been either vague or inconsistent, and the editors of this paper have deemed it wise now to review, from the complete record previously published in these columns, the main features of the Indianapolis case, in order that its exact effect upon the New York situation may be judged. The review should be of value in this respect, for as far as is known the contracts in Indianapolis, which are far more detailed than the New York agreements, form with the latter the only individual working agreements in the electric railway field.

How the Indianapolis Case Arose

The individual contracts between electric railway employees in and around Indianapolis and their companies came into existence as a result of the labor troubles stirred up in 1913 by the Amalgamated Association of Street and Electric Railway Employees of America. This association made a determined effort to organize electric railway employees in the Indianapolis section, but after a campaign of several months only a few employees had joined the union.

In August, 1913, short strikes on some of the interurban lines radiating from Indianapolis proved complete failures, but at the beginning of November a strike was called on the city lines of the Indianapolis Traction & Terminal Company. Violence followed, and the governor was compelled to call out the militia. On Nov. 7, 1913, to settle the strike, the governor and the Indiana Public Service Commission, in conference with the company, prepared an agreement which was ratified by the employees and ended the strike. This provided in general that any grievances as to wages, hours and other working conditions not settled between the employees and the company should be decided by the Public Service Commission and be binding for three years and that all adjustments and arbitration should proceed only in the name of a committee of employees, the intent being that the company would not treat with or recognize any union but would not discriminate between union and non-union men in its employ.

This settlement had no sooner been made than another attempt was made to call a strike of the men of the various interurban companies operating into Indianapolis. The men, however, refused to leave their cars and expressed to the companies their desire to be left alone by outside agitators. To define the situation more clearly it was suggested that agreements be drawn up which would in the future provide for arbitration by the Public Service Commission of matters not adjusted between the interurban lines and their employees, and such agreements were individually executed by employees of the Indianapolis & Cincinnati Traction Company and the Terre Haute, Indianapolis & Eastern Traction Company. Although, in a strict sense, these were the first individual contracts used in Indianapolis, they will be passed over here in order not to confuse the reader and attention will be turned to the more generally instructive case of the contracts later devised for employees of the Indianapolis Traction & Terminal Company.

The Indiana Public Service Commission, sitting as the board of arbitration as provided in the Indianapolis Traction & Terminal Company settlement of Nov. 7, began its hearings on Dec. 4. In its decision, rendered on Feb. 11, 1914, the commission ordered a wage increase and certain changes in working conditions, arranged for the future arbitration of disputes and held that the company was not required to recognize the union. It ruled that the company should not be obliged to employ only union men and that no men then or thereafter in its employ should be required to become a member of any labor organization, but that the company should not discharge a man solely for the reason that he was a union member. It was also provided that no discrimination by employees for or against union or non-union men would be permitted.

Impracticable Features of Award Led to Individual Contracts

The above-mentioned award of February, 1914, contained certain conditions which were found to be impracticable in the electric railway business. These conditions had mostly to do with the provisions that each motorman and conductor should be permitted and required to be off one Sunday in each month; that he should be permitted and required to have eight consecutive hours' rest between runs, and that extra men should receive a minimum wage of $45 per month. Under these regulations the company found it impossible to take care of the extra baseball, park and theatre traffic on Sundays and holidays.

The Amalgamated Association, having failed up to this time to force recognition of the union, undertook to take advantage of these defects in the award and compel the company to recognize the union as the price for a new agreement which would make the award workable. The railway refused to consent to any recognition of the union, and formulated an individual contract to be submitted to the employees.

This individual agreement, dated April 22, 1914, was in substantially the same form as the February arbitration award, but it contained clauses permitting car-service men who signed it to work Sundays if they so desired and provided eight hours' rest in each twenty-four hours but not necessarily eight consecutive hours between runs if the public service should at times prevent this. This individual contract was readily accepted by a majority of the employees. All the non-union men signed it, and many of the union men, about 90 per cent of all employees thus becoming parties to the modified agreement. The full text of the individual contract for employees of the Indianapolis Traction & Terminal Company appears on page 780.

Arbitration Board Upholds Contract

The Amalgamated Association, evidently wanting to have the sole right to enter into contracts on behalf of

employees, immediately attacked the individual agreements, and endeavored to prove to three members of the Indiana Public Service Commission, acting as the board of arbitration under the February settlement, that such contracts conflicted with the February award in the matter of working conditions and were invalid. In the early autumn of 1914, however, this arbitration board held that the individual contract was valid in all provisions in which it did not conflict with the February award, and that if the company succeeded in getting the signatures of all employees the service contract would then be effective in all particulars. In other words, the only point where the individual agreement could not be construed as in accord with the February award concerned the aforementioned "impracticable" working conditions. In this regard the arbitration board held that the original eight-hour provision should remain unabridged, but that extra men could be hired for service on Sundays and holidays at the regular rate and not at the $45 monthly minimum wage. Thus the regular employees were disqualified from taking their regular Sunday runs on one Sunday each month and also whenever eight hours did not intervene between the end of the Sunday run and the beginning of the Monday run, but the arbitrators' decision left the men the opportunity to do the Sunday work as a result of all the employees executing the individual contracts.

Not satisfied with the arbitration finding, the Amal-

INDIANAPOLIS TRACTION & TERMINAL COMPANY WORKING AGREEMENT

INDIANAPOLIS, IND., APRIL 22, 1914

THIS AGREEMENT, by and between the Indianapolis Traction & Terminal Company and its car service men, witnesseth:

First: The rate of pay until Nov. 7, 1916, for men employed regularly as motormen and conductors shall be as follows:

In continuous service—One year or less, 21 cents per hour; one year and less than two years, 23 cents per hour; two years and less than three years, 24 cents per hour; three years and less than four years, 25 cents per hour; four years and less than five years, 26 cents per hour; five years or more, 27 cents per hour.

Forty-five dollars minimum monthly wage, provided that from any sum added to actual earnings to make such monthly minimum wage, the company shall deduct the value of any runs such employee missed by reason of his own fault.

The foregoing rates of wage shall not apply, however, to men employed especially to serve on special occasions as motormen and conductors when it is necessary to supplement the regular force.

Second: Each employee signing this contract agrees to in all things abide by the rules and orders of said company as the same are now or may from time to time be established. The business of said company shall at all times be conducted on the open shop principle. No scheduled run shall exceed twelve consecutive hours of continuous service, and schedules allowing at least eight hours' rest in each twenty-four hours shall be provided; but these rules shall be flexibly adapted to the actual needs of the public service; in all cases causing as little hardship as possible, to enable the company to accommodate park, theater, baseball and other special travel requirements, and at the same time not deprive the employee of the privilege of taking his regular run on any day.

Third: If at any time said car service men, or any of them, have any grievances of any kind or character as to wages or conditions of labor, such grievances shall be presented to and taken up with the company on the second or fourth Tuesday of each month, at the office of the superintendent. And such employee or employees may appear in person or be represented by any other employee or employees in the same class of service. Said superintendent will give a fair hearing, and from his decision an appeal may be taken on the third Tuesday of the month to the president of the company, who shall hear such appeal and correct any erroneous decision of the superintendent. And within ten days thereafter any such grievance not satisfactorily disposed of in the foregoing manner, shall be referred to the Public Service Commission of the State of Indiana for final decision. Said commission shall and is hereby agreed to be a permanent board of arbitration of all questions which may be referred to it under the provisions and in harmony with the terms of this contract. The authority and jurisdiction of said commission to revise, reverse or modify any decision rendered by it on any matter so referred shall be continuous. The evidence may be submitted by affidavit or orally upon oath. It is agreed that all such decisions of said commission shall be binding and conclusive unless so modified, revised or rescinded by said commission. And the parties hereby mutually agree to at all times conform to and obey any and all such decisions, and that this contract shall in all things be liberally construed so as to provide an effectual and constantly available remedy to adjudicate all controversies which may at any time arise.

Fourth: In any decision of the said Public Service Commission, said commission may decide when and under what conditions the said decision shall take effect, and to whom it shall apply, and fix any conditions it may deem proper, and either party may at any time file and have heard a motion for a modification or review of such decision. The decision of said commission on any point shall be in harmony with the express terms and provisions of this contract.

Fifth: Any discharged employee may appeal for reinstatement to the superintendent and from the superintendent to the president, and from the president to the Public Service Commission in the manner and at the times hereinbefore provided. Upon hearing of his appeal by the commission, if the commission finds that there is a reasonable and strong suspicion of his being guilty of conduct inconsistent with the proper discharge of his duties as an employee, he shall not be reinstated, but if the commission, on the other hand, shall find that he was discharged wholly without cause, he shall be reinstated upon such terms and under such conditions as the commission shall order.

Sixth: The parties hereto enter into this contract for the purpose of assuring a continuous and uninterrupted public service to the citizens of Indianapolis. It is the intention of the parties hereto, by entering into this contract, to avoid any possible suspension of the operation of the cars of said Indianapolis Traction & Terminal Company, or of any other cars operated over its tracks, due to any labor controversy, and to that end and in consideration of the mutuality of the obligations hereinafter as well as hereinbefore contained, it is further agreed as follows:

By each and every employee becoming a party hereto, that he will not participate in any strike of the employees of said company, or interruption of the service to the public, and will not at any time or for any reason engage in any such strike, or counsel or advise any other employee so to do, or enter into any agreement of any kind or character with any person or persons, the purpose of which shall be to induce or procure the employees of said Indianapolis Traction & Terminal Company, or any of them, by concerted action, to quit the service of said company, in a body or at a given time, or in any way to interfere with the operation of any car or cars or other property of said company, or to prevent its employing persons to run said cars, or otherwise to hamper or obstruct the said company in the discharge of its duties to the public as a common carrier of passengers, but that he will submit to arbitration in the manner above described any grievances or controversy which may arise, or that desiring to leave the service of the company on account of any such grievance or controversy without such arbitration thereof, or for any other cause, he will only do so peaceably and as an individual, singly, and without confederation or agreement, as aforesaid, and at such a time and in such a manner that the public service will not be impaired.

And in consideration thereof, said company on its part agrees that it will not lock out its employees in a body or close down its works, or cease operation of its cars, or refuse to employ and keep in its employ a force of suitable and competent men who are willing to abide by the terms of this agreement, or discharge men wholly without cause or otherwise violate the agreements herein contained.

Seventh: Any presentation of grievances, or any arbitration as herein provided, shall proceed only in the name of and under the direct charge of the complaining employee or employees or committee thereof, who before said Public Service Commission shall be entitled to appear by a duly admitted attorney of the Indianapolis bar.

Eighth: This agreement shall be signed by the duly authorized officials of the said Indianapolis Traction & Terminal Company, and by each of said motormen and conductors of said Indianapolis Traction & Terminal Company agreeing thereto. It shall become operative as a contract between the company and each and every employee who executes a copy which the company has previously executed, from the date of its execution by such employee, and may be executed by any employee at the time he enters the service of the company or any time thereafter. Joint execution by employer is not required or essential to its validity.

IN WITNESS WHEREOF said company has hereto set its name by its duly elected and authorized president, and said employees agreeing hereto have each subscribed their respective names, with the dates of their respective signatures thereto.

INDIANAPOLIS TRACTION & TERMINAL COMPANY,

By .....
President.

APPROVED:

.....

Employees:

Name:	*Date:*
.....	.....
.....	.....

gamated Association demanded that all the individual contracts be surrendered and, upon the refusal of the company to comply with this demand, began to make preparations for a strike. The avowed purpose of this was to force the company and the signers of the individual contracts to submit to the cancellation of these agreements.

At this stage in the proceeding, however, an action was brought in the United States Circuit Court by the Guaranty Trust & Safe Deposit Company, Philadelphia, Pa., as trustee of the mortgage securing the bonds of the Indianapolis Traction & Terminal Company, to restrain the strike agitation. This was based upon two grounds:

1. That, inasmuch as the arbitration award of February, 1914, had provided against a strike, the action of the Amalgamated Association officials and all persons having no contract relations with the company, in attempting to induce, persuade, force or intimidate the men who were working under the award to break that award, was a wrongful act, which could be enjoined.

2. That the action of all such persons and also those who were employees of the company but had not signed the individual agreements, in attempting to induce, persuade, intimidate or force those who had signed the individual agreements to break them, was a wrongful act, which could be enjoined.

Court Issues Strike Injunction

The result of this action was a temporary restraining order on Sept. 23 and later, on Nov. 7, an injunction restraining the leaders of the Amalgamated Association and local labor union leaders from confederating to bring about a street railway strike in Indianapolis and prohibiting the car-service men from striking. The federal court applied the well-established doctrine that a person who is not a party to a contract has no right to solicit or persuade or otherwise procure a party to that contract to make a breach of it.

The individual service contract of the company was found by the court to be valid, binding and in full force on its signers, and the men who had not signed the contracts could not in any way interfere with those who had signed them enjoying the privileges provided thereunder. The names of about 200 union men who were working under the February award and more than 500 others who were working under individual contracts were included in the court order, and each was enjoined from striking or attempting to bring about a strike. The outside and local labor leaders were also enjoined from inducing any of the employees named to violate either the February award or an individual contract by striking to compel the company to operate upon the closed-shop principle.

A strike injunction has really, therefore, been in force since September, 1914. From then to the present time no labor organizer has presumed to advise, persuade or in any way solicit the car-service men on the Indianapolis lines to violate their agreements with the company by going out on strike. The injunction case was appealed by the Amalgamated Association to the Federal Circuit Court of Appeals, in Chicago, and it was argued on Nov. 30, 1915, and reargued on May 23, 1916, but no decision has yet been rendered.

Supplementary Wage and Bonus Agreements

The wage scale prescribed by the individual contract first offered on April 22, 1914, was to remain in force until Nov. 7, 1916, when the original three-year settlement agreement with the Governor and the Public Service Commission would run out. Prior to this time, on July 6, 1916, the company, as a result of a long discussion with representative employees, announced an increase in wages, as noted in the ELECTRIC RAILWAY JOURNAL of July 15. This increase was to be agreed to by the men as a supplementary clause of the individual working contract. The new wages were to become effective on Jan. 1, 1917, and to remain in force up to and including Dec. 31, 1921. Outside of the increase in wages provided for there was no change in the working conditions as stated in the individual contracts. All car-service men signing the individual working agreement and the new wage supplement, however, were to receive a bonus of 1 cent an hour for each hour worked up to and including Nov. 7, 1916, and a bonus of the difference between the old rate and the new rate from Nov. 8 to Dec. 31, 1916, inclusive. It was further provided that each employee, to be entitled to the bonus, must thereafter have truly opposed and used his influence to oppose any strike or attempt to strike, and, in the event of a strike, have faithfully reported for duty at his usual time and place each day and operated his car as his superior officer directed.

It was provided that for men signing the various agreements on or before July 8, 1916, the bonus would begin to accrue on July 1, and for those signing after July 1 and before Aug. 1 it would begin to accrue at the date of signing. In case of new employees entering the service before Jan. 1, 1917, the bonus would begin to accrue at the date of signing. Before July 8 most of the men had accepted the new terms.

The Right to Strike

Paul Shoup, president Pacific Electric Railway, Los Angeles, Cal., delivered an address before the Los Angeles Advertising Club on Sept. 4, on the subject of "Obligation." The address related largely to the Federal eight-hour railroad law, but Mr. Shoup also discussed the electric railway affairs and obligations of the worker. Among other things he said:

"No one disputes the right of a man to quit his job because of a personal dissatisfaction. The inference is, however, that he will not as a result become a burden on the public and that he has reasonable expectations of maintaining the independence he has exhibited in quitting work. No one blames a man for seeking better wages, but this seeking has proper foundation only in that he is able to give more to the world in productive labor, whether of hand or mind, than the value placed upon his labor heretofore. Men are sought for at higher wages because they are able to deliver the goods, but the situation is very different when men, through associated power, secure a larger return for their labor without any consideration as to what they may be giving for that labor.

"We must all understand why our individual returns for our work cannot be increased except at the expense of someone else unless we are able to give more to the world in the way of value than we have been giving. We must understand the meaning of the word 'obligation' and that it is not difficult, in failing to realize it, to wreck the whole industrial fabric of this country.

"How far we are from accepting the eight-hour day as having the practical sanction of society is shown by the election held upon an amendment to the constitution in California looking for the establishment of an eight-hour day; this was in November, 1914. The adverse majority was the greatest given against any measure ever submitted to the voters of this State; 560,000 voted against the measure and only 282,000 for it. In every county the first vote was adverse. In Oregon and Washington, where a similar measure was submitted, the results were the same."

AMERICAN ASSOCIATION NEWS

Entertainment Committee Greatly Augmented

President Charles L. Henry of the American Association has appointed the following to the entertainment committee in addition to the men whose names were listed on page 1189 of the June 24 issue.

H. H. Adams, superintendent shops and equipment, Chicago (Ill.) Surface Line.

Carl Beck, Westinghouse Traction Brake Company, St. Louis, Mo. M. R. Boylan, General Auditor, Public Service Railway, Newark, N. J.; L. C. Bradley, district manager, Stone & Webster, Texas district, Houston, Tex.; G. Sabin Brush, superintendent railway department Cumberland County Power & Light Company, Portland, Me.; S. T. Bale, J. G. Brill Company, Philadelphia, Pa.; W. L. Boyer, president Bemis Car Truck Company, Springfield, Mass.

C. L. Cadle, electrical engineer New York State Railways, Rochester, N. Y.; Bruce Cameron, superintendent of transportation United Railways, St. Louis, Mo.; W. A. Carson, general manager Evansville (Ind.) Railways; T. W. Casey, National Pneumatic Company, New York City; G. H. Caskey, auditor Newport News & Hampton Railway, Gas & Electric Company, Hampton, Va.; E. F. Chaffee, O. M. Edwards Company, Syracuse, N. Y.; C. G. Chamberlin, W. H. Coe Manufacturing Company, Providence, R. I.; C. S. Ching, chief instructor Boston Elevated Railway, Roxbury, Mass.; S. K. Colby, Aluminum Company of America, New York City; R. C. Cram, assistant engineer Brooklyn (N. Y.) Rapid Transit System; H. D. Crampton, secretary Capital Traction Company, Washington, D. C.

D. B. Dean, J. G. Brill Company, Philadelphia, Pa.; J. H. Denton, Railway Utility Company, New York City; G. B. Dobbins, secretary Michigan Railway, Jackson, Mich.

A. H. Ehle, assistant sales manager Baldwin Locomotive Works, Philadelphia, Pa.

Thomas Farmer, Jr., Consolidated Car Heating Company, New York City; W. J. Flickinger, chairman efficiency committee, The Connecticut Company, New Haven, Conn.

N. M. Garland, Ohio Brass Company, New York City; J. E. Gibson, general superintendent Kansas City (Mo.) Railways; C. R. Gowen, general passenger agent New York State Railways, Syracuse, N. Y.; F. O. Grayson, president and general manager Grayson Railway Supply Company, St. Louis, Mo.; Alfred Green, Galena Signal Oil Company, New York City; S. W. Greenland, general manager Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.

A. A. Hale, Griffin Wheel Company, Boston, Mass.; W. J. Harvie, president Syracuse & Suburban Railroad, Syracuse, N. Y.; H. A. Hegeman, vice-president U. S. Metal & Manufacturing Company, New York City; F. W. Hild, general manager Denver (Col.) Tramway Company; J. M. High, Pantasote Company, New York City; L. W. Horne, vice-president and general manager Lord Manufacturing Company, New York City.

H. W. Irwin, Bay State Street Railway, Boston, Mass.

A. P. Jenks, General Electric Company, Chicago, Ill.

C. B. Keyes, General Electric Company, New York City; C. S. Kimball, engineer maintenance of way, Washington Railway & Electric Company, Washington, D. C.; G. L. Kippenberger, St. Louis (Mo.) Car Company; P. M. Kling, Laconia (N. H.) Car Company.

W. A Lake, Pantasote Company, New York City; C. W. Laskay, Hale & Kilburn Company, New York City; N. Le Grand, St. Louis (Mo.) Car Company.

T. F. McKenna, Electric Service Supplies Company, Scranton, Pa.; R. C. Mills, second vice-president Sioux Falls (S. D.) Traction System.

H. N. Ransom, Westinghouse Electric & Manufacturing Company, New York City; J. P. Ripley, railway engineer J. G. White & Company, Inc., New York City.

Martin Schreiber, engineer maintenance of way Public Service Railway, Newark, N. J.; E. E. Soules, manager publicity and advertising Illinois Traction System, Peoria, Ill.; R. M. Sparks, general passenger agent Bay State Street Railway, Boston, Mass.; R. W. Spofford, general manager Augusta-Aiken Railway & Electric Corporation, Augusta, Ga.; E. C. Spring, Philadelphia & Western Railway, Upper Darby, Pa.; Jerry Stanton, General Electric Company, Philadelphia, Pa.

A. D. B. Van Zandt, publicity agent Detroit (Mich.) United Railway.

J. W. Welsh, electric engineer Pittsburgh (Pa.) Railways; Howard Whitney, engineer maintenance of way Springfield (Mass.) Street Railway.

The Chicago Special

The Chicago Convention train reservations indicate the largest Chicago special in several years. On Sept. 27, eighty-five reservations had been made with E. K. Bisby, passenger department, Pennsylvania lines, Chicago. The train will leave the Union Station, Chicago, at 11 a. m., Sunday, Oct. 8, and will make the regular Pennsylvania Limited stops that afternoon and evening, arriving at Pittsburgh at 11.40 p. m., and at Atlantic City at 9.30 a. m. Monday.

COMMUNICATIONS

Unit for Comparing Track Upkeep Costs

The American Railways Company
Philadelphia, Pa., Sept. 23, 1916.

To the Editors:

In reference to a practical unit of track cost which has been so ably discussed in your columns recently, I venture the opinion that the importance of any cost keeping is the end for which the costs are kept.

A manufacturing concern may, by standardization, reduce costs, or it may increase prices to cover known costs found by accurate cost keeping. Failing in either of the above expedients, the factory may close its doors.

The street railways have control of these factors in a very limited degree. In the case of track work, the total cost of maintenance per track mile is the most logical unit, as stated by Mr. Roundey in your issue of Sept. 16, and also the most workable. It is idle in this instance to say that some maintenance is extraordinary and some ordinary, as the total of both are chargeable to current operation unless the property has been able to set aside large maintenance reserves, and the reserve, in case there be such, must have come from operating expenses. If it appears desirable to gather exact knowledge of the comparative value of different types of construction under various operating conditions the matter becomes complicated to the point of despair. I agree with Mr. Cram when he states in your issue of Aug. 26 that the most careful accounting which he has seen is of little help if there is no one present during

the analysis who is familiar with all the construction details.

It is generally impossible for the accounting department to record so minutely the various details of any job, that without expert interpretation a cost of maintenance, per any conceivable unit, may be given in unqualified figures. For example, a piece of track may require maintenance on account of poor drainage, unsuitable ballast, tie renewals, joint failure, rail failure, bond failure or rapid destruction of paving, which may not have been foreseen by the engineer, or, if foreseen, proper materials may not have been obtainable. These partial failures may have been hastened by a change in volume or character of the traffic burden. If we assume that the variables have been determined with sufficient accuracy to evolve a workable unit then let us consider a municipal paving program which orders a street paved or repaved in the tenth or twelfth year of the life of the track, or which withholds permission to rebuild until, as happened in one case within the writer's knowledge, maintenance on a 2-mile stretch of double track was costing $600 per month.

Should not the engineer keep his records of costs and details of construction in such shape that for any section of track he can give, with but little trouble, the detail suggested by Mr. West? By use of a suitable job order system any unit cost can be worked up as occasion requires, without undertaking the unprofitable task of trying to measure open track with hourly service by the same yardstick used to measure the paved special work with fifteen-second headway.

C. G. KEEN, Engineer Way and Structures.

Encouragement in the Bay State Decision

BOSTON, MASS., Sept. 25, 1916.

To the Editors:

The abstract of the Bay State fare decision, published in your issue of Sept. 9, with the excellent editorial analysis of it in the same issue, gave a very clear statement of its salient features. The importance of the case has led me, however, during the past three weeks, to go over every page of the decision very carefully, with the result that I believe a great deal of encouragement can be drawn from it, even if the company did not receive permission to increase its rates in the one-fare zones from 5 cents to 6 cents. To indicate the reasons for this opinion the chief features of the case will be reviewed. The principal reasons cited by the commission for declining to authorize a general increase in rates may be summarized as follows:

1. That the company's valuation of its investment is too high by about 6 per cent.

2. That 7 per cent earnings are not necessarily a basis for a fair return in Massachusetts.

3. That annual depreciation charges should be, roughly, $700,000 instead of $1,000,000.

4. That fares on profitable lines should not be raised in order to carry along unprofitable ones.

5. That every possible means of increasing the business and raising the efficiency of the system should be exhausted before rates should be raised.

The commission frankly states, however: "In fixing this rate (6 per cent as a fair return) we must not be understood as ruling that a street railway company which finds it possible to declare dividends in excess of 7 per cent per annum may reasonably be required to reduce its charges. Each case must be judged upon its own merits."

This seems to be sound doctrine and will interest companies and commissions elsewhere but does not afford the Bay State Street Railway the relief requested. The commission evidently realizing this suggested a number of ways to assist the company as follows:

1. Regulation of jitneys, as the operators of this new form of public service ought to be subjected to proper regulation and to some of the obligations which the owners of the regularly established forms of transportation are by law compelled to observe."

2. The public must be prepared to expect in some instances reduction of service and should give its "sympathetic co-operation" by making sacrifices as the "larger good may seem to demand" in such matters as "a reasonable reduction in the present excessive number of stopping places," etc.

3. That "the entire system of street railway taxation may be in need of revising, and less onerous burdens should be imposed."

4. "It is unreasonable to expect the company to meet the cost of work on the street surface (paving, etc.) except in so far as it disturbs the surface itself."

5. "Through their local governments" the various communities served can "help to improve traffic conditions on the streets so that the operation of cars may not be unnecessarily impeded."

6. Also, they "can grant, without imposing undue restrictions, such new locations as may from time to time be necessary for the improvement of the service."

7. "In the judgment of the commission, the public can also be reasonably expected to make contribution in the form of some increase in fares."

The commission virtually concludes with the assurance that fares may be raised in the less populous districts and says: "If the company wishes to increase the prevailing fares upon these lines it is just and reasonable, in our judgment, for it to do so."

In another place the commission says that "the company ought to follow up the suggestions made by Mr. Arnold and other experts," and promises that it (the commission) "stands ready to assist and co-operate in every feasible and proper way." It is interesting to note that the Arnold recommendations, among other things, provided for the use of one-man cars and a speeding up of schedules.

The commission realizes that the company should have and is entitled to a greater net revenue. The tone of the decision as a whole is friendly to the street railway industry at large and shows a realization that it is about time to cry halt to electric railway baiting.

Railway service benefits two classes, the car rider and the property owner. It was established primarily for the benefit of the former, although the latter has been benefited to as great or even greater extent. The car rider supports the railway. The property owner may incidentally be a car rider too but often he rides in an automobile or may be a non-resident, all of which, of course, makes no difference. The question is why does the car rider who foots the transportation bills have to pay for paving and other excessive burdens levied on him indirectly through the medium of the railway and be deprived of transportation facilities which otherwise he could enjoy if it were not for these measures?

This thought seemed to be a strong factor with the Massachusetts commission in reaching its decision in this justly celebrated case for in denying a general fare raise at this time the note of warning is given in no uncertain terms that if the present 5-cent rate of fare is to be continued the railways must be relieved of "onerous burdens" and "excessive taxation."

OBSERVER.

Some Recent Advances in

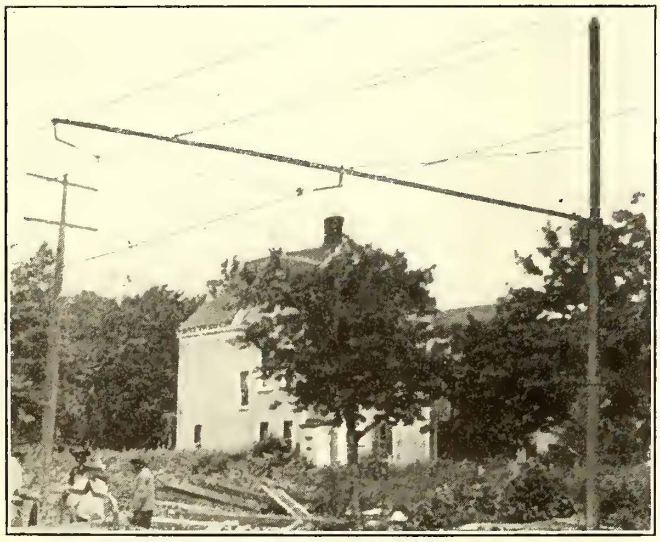
EQUIPMENT AND ITS MAINTENANCE

Portable Controller for Moving Trucks in the Shops—Reinforced Trolley Splice for Catenary Construction—Straightening Poles with Pivoted Jack—New Contactor Signals—Long Bracket Arms Used During Construction—Automatic Slack Adjuster for Single-Truck Brake Rigging

Unusually Long Bracket Arms

BY G. H. McKELWAY
Line Engineer Brooklyn Rapid Transit System

In order to avoid interference between a cableway constructed by a contractor for digging a sewer in an important street and the span construction in use for supporting the trolley wire, it was necessary to remove the spans from the poles on the side of the street where the contractor was working and to support the trolley wire from mastarms attached to the poles on the opposite side of the street. Such practice on double-track lines is not common unless the tracks are at one side



LONG BRACKET ARM USED DURING CONSTRUCTION WORK

of the street where they can be spanned with ease by a comparatively short bracket.

In the work in question the tracks were in the center of a comparatively wide street, the width being 80 ft. between house lines and 44 ft. between curb lines.

In order properly to support the trolley wire over the far track it was necessary to make the arms 31 ft. 6 in. long, or of a length greater than the supporting poles, which were of steel and 30 ft. long. Not only were the arms actually longer than the poles but their apparent length was increased by the fact that the poles were set 6 ft. in the ground, so that the arms appeared to be almost 75 per cent longer than the poles.

The arms were made of 3-in. pipe, each supported by two guy rods leading up to the pole. As the poles were not long enough to take these rods at their proper angle the poles were lengthened by the insertion of wooden extensions set into the tubing after the caps had been removed. The arms were bolted to these extensions.

Owing to the nature of the street, which was a heavily traveled one, it was impossible to back guy the poles to relieve them of some of the strain from the arms but this was found to be unnecessary, and even bracing was not needed.

Reinforcing Splices in Catenary Construction

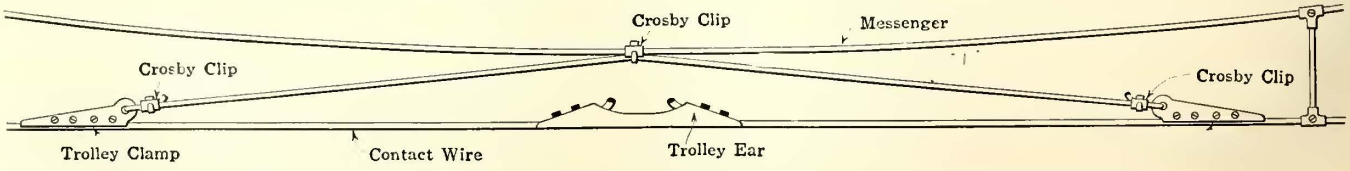
BY M. E. HARDING
Engineer of Overhead Washington, Baltimore & Annapolis Electric Railroad, Annapolis Junction, Md.

A point of weakness in overhead construction is at the splices in the contact wire. This company had considerable trouble at one time due to the breaking of splicing ears, and to overcome this trouble two expedients were adopted. A new type of splicing ear was designed, and the spliced wire was reinforced by means of guys between the messenger wire and the contact wire, as shown in the accompanying diagram.

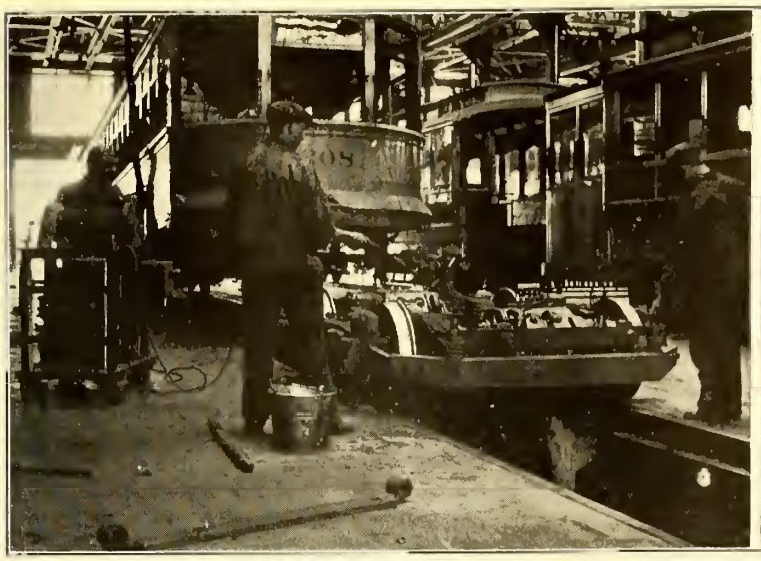
The feature of the splicing ear, a patent upon which has been granted to the writer, is that the wire is passed through a hole on the end at an easy angle so that it is practically not bent at all at the point of entry. The wire is clamped by means of two cap bolts, and as an extra precaution the end may be bent up as shown. The hole in the end of the ear is so low at the point of entry of the wire that a practically continuous bearing surface is provided for the trolley wheel or shoe.

The guying arrangement consists simply of a clamp ear attached about 18 in. on each side of the splice with a light stranded wire running up to the messenger and clamped to it by means of a crosby clip.

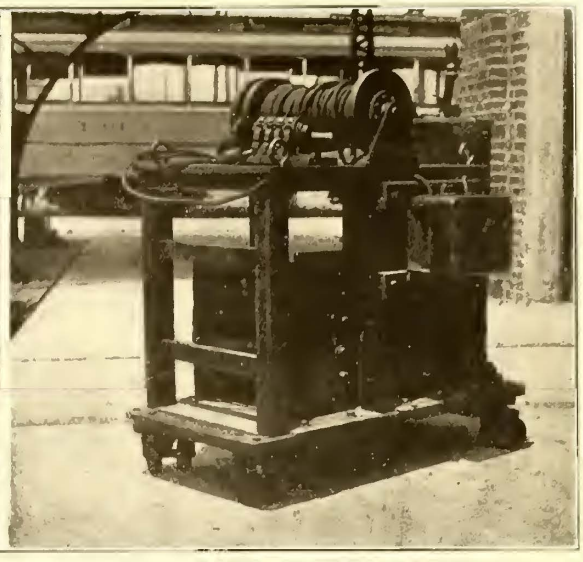
While on the subject of line work, it may be of interest to know that in putting in the splicing ears as described above we use ladders, and by so doing save considerable in expense which would otherwise be necessary for line cars. The interference with traffic is also less. These ladders we carry on regular cars tied on to the truss rods with rope. On the new cars we have hooks specially put on for the purpose and the rope is unnecessary.



REINFORCEMENT OF SPLICE IN CONTACT WIRE USED BY WASHINGTON, BALTIMORE & ANNAPOLIS ELECTRIC RAILROAD



VIEW OF PORTABLE CONTROL SET IN SERVICE



VIEW OF PORTABLE CONTROLLER

Portable Controller Proves a Time-Saver

This Convenient Device Solves Problem of Moving Trucks in the Car Shops

BY H. C. EBELING
Engineer Cleveland (Ohio) Railway

Trucks completely equipped are moved for short distances in the general repair shops of the Cleveland (Ohio) Railway Company by the aid of a portable control set. Power is supplied through the use of this equipment to the motors in a truck, thus making it unnecessary for the workmen to get beneath a car when it is elevated for either removing or replacing trucks. It also saves much time in performing this operation. This device was made at the suggestion of the general shop foreman and it has been found to be a very useful piece of equipment in the truck and motor shops. It was made portable so that it could serve all parts of a large shop building, and duplicates were supplied to the motor and truck repair shops. A view of this equipment is shown in the accompanying illustrations.

The operation of this portable control set is quite simple and is readily understood by the repair shop men. A contact board is laid on top of the motor, and the motor leads are slipped under the bronze contact springs. Energy is supplied through a flexible cord connection to the trolley wire which passes over each of the tracks in both the motor and truck repair buildings. When the power is turned on to move the trucks, a cable connec-

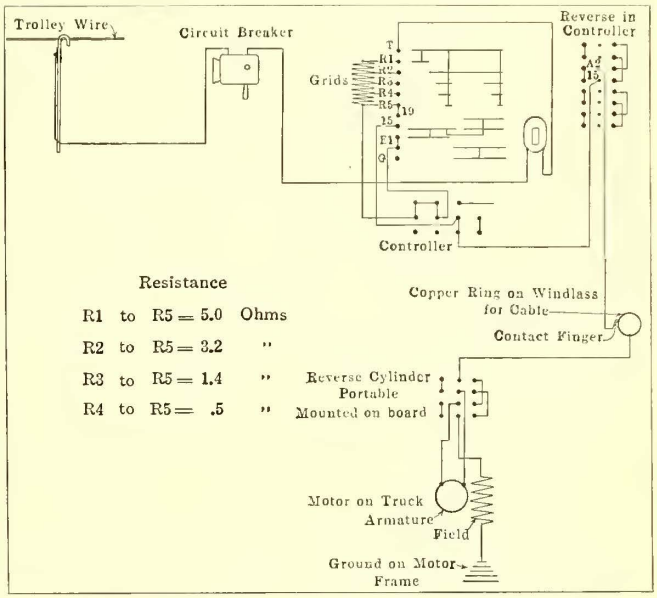
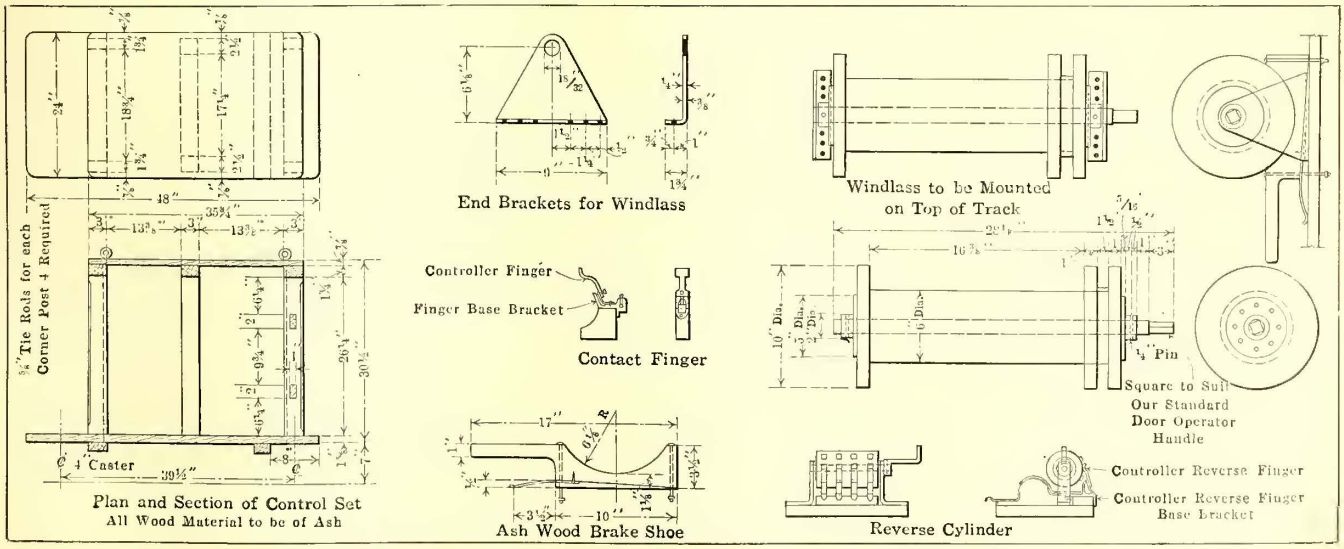


DIAGRAM OF PORTABLE CONTROL SET CONNECTIONS



DETAILS OF CONSTRUCTION OF CONTROLLER OF PORTABLE CONTROL SET

tion between the controller and the truck is permitted to unwind from a drum as the truck moves along the track. A small reverse cylinder is also provided for use in case the motor connections are made improperly. A contact finger and ring on the drum supply a continuous path for the current from the trolley to the cable as it unwinds from the drum. The other features of this equipment are shown in the diagram on the preceding page.

A New Contactor Signal Using Standard High-Speed Aspects

Recently Developed Signal Designed to Comply with Tests Recommended by the Block Signal Committee of the Association

The campaign for "safety first" which has been carried on for the past few years has had great influence on every branch of the railway industry, and to a marked degree on the signaling art, which is one of the pioneers in this movement. One of the most important developments of the past seventeen years is the contactor-operated signal for electric roads.

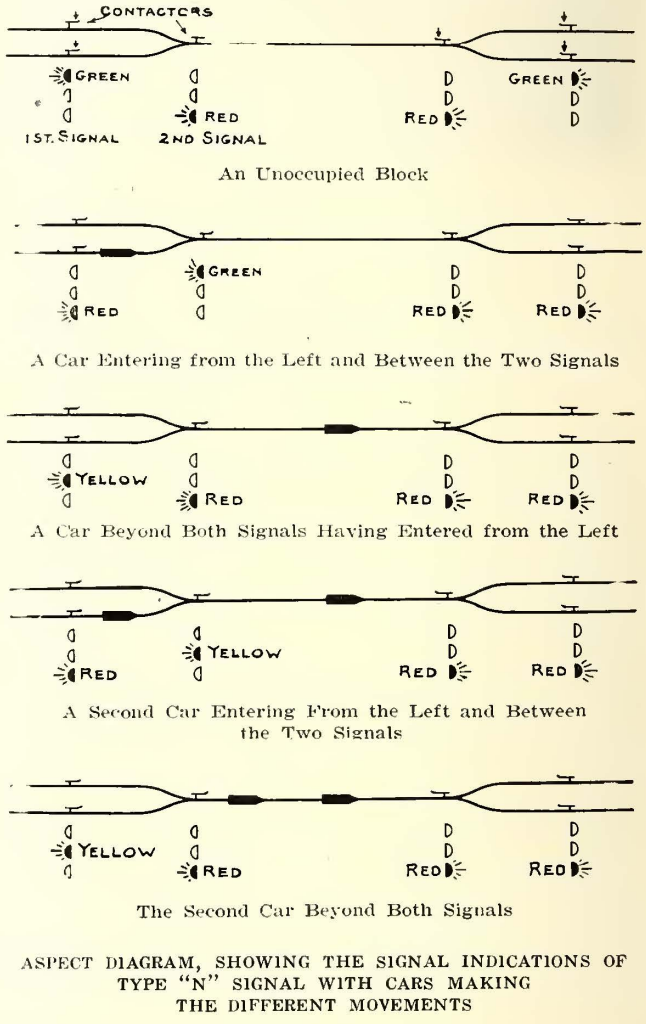
When electric railways began to use signals, they ran infrequent and low-speed cars and had small financial resources, and the old hand-thrown signal enabled cars to be operated with some degree of safety. As the service became more frequent, contactors were developed to operate these signals to save time and obtain greater safety. As the service was still more frequent it became necessary to develop signals so as to allow several cars to occupy the block at the same time while going in the same direction, and the registering mechanism was added. Later, with still higher speed, trouble began to develop with the contactors. It was also found as time went on and users of signals on electric railways obtained more experience with signals that false indications resulted from line wire troubles as in the earlier development of signals for use on steam roads.

The engineers of the public service commissions and the signal committee of the Engineering and Transportation Associations began investigating this question, and this year the signal committee is recommending a set of tests which it considers a contactor-operated signal should meet in order to be safe, regardless of any of the unusual conditions which arise on any of the wires leading from the contactors or mechanism cases or regardless of the unusual car movements which sometimes take place. With these recommendations in mind, the United States Electric Signal Company, West Newton, Mass., has developed its new Type N registering signal and claims that this signal overcomes all of the objections to previous types of contactor signals enumerated above and meets all the tests being recommended by the signal committee.

In the type N signal, a three-light signal aspect case is mounted on a trolley pole slightly in advance of the point where the double track unites in the single track. A little further on, possibly one or two poles, and opposite the single track, is mounted a second three-light aspect case. The mechanism case is mounted on either of these two poles.

Approximately opposite the first signal on each branch of the trolley wire is mounted a contactor. Approximately opposite the second signal is mounted a third contactor. This makes three contactors at each end of the block instead of two as previously. The two contactors opposite the first signal are connected together so that the operation of the signal is just the same whether a car enters the block from the right hand branch or the left hand.

From each contactor two wires run to the magnet controlled by it and, as the contactor is operated, two contacts are made in almost immediate sequence by a gravity-operated contact arm, whereby a very light charge is sent on one wire and a much heavier charge is sent on the other wire to the magnet. This magnet is so arranged that it will operate only if a very light charge is sent into it and then almost immediately thereafter a much heavier charge. This prevents the magnet from operating by a foreign feed, cross, break



ASPECT DIAGRAM, SHOWING THE SIGNAL INDICATIONS OF TYPE "N" SIGNAL WITH CARS MAKING THE DIFFERENT MOVEMENTS

or ground. It also avoids any danger that a false contact will be made in case the wire coming from the contactor chafes against the contactor or trolley wire or becomes broken and touches the trolley wire, and thus falsely registers cars out of the block.

The other end of the single track, of course, is equipped in the same way.

When there are no cars in the block, the first signal shows a green light and the second signal shows a red light. The two signals are of equal importance and the motorman is instructed that a green light means a clear track, or "Proceed." A yellow light means that there is a car in the block ahead moving in the same direction, or "Proceed with caution." A red light means "Danger, stop!" The meaning is the same on both signals.

A motorman approaching an unoccupied block sees a green light in the first signal and proceeds past it.

After the front of his car is past the first signal, the trolley wheel strikes the contactor which makes up the circuits for operating the registering-in magnet, the registering-in magnet lifts its armature, which is then locked up, and this movement causes a red light to show in both signals at the opposite end of the block. After the registering-in magnet has lifted its armature and registered the car in, a circuit is made up giving a green light in the second signal and putting a red light in the first signal behind the car.

It should be noted that it is the operation of the registering-in magnet which gives the "proceed" light in the second signal. While the motorman does not have to pay any attention to the registering of his car, still he will not get a "proceed" signal unless his car is properly registered in. The red light in the first signal now prevents another car from passing the first signal until the armature of the registering-in magnet is dropped back into operating position again, and this occurs as the trolley wheel strikes the contactor mounted approximately opposite the second signal. When the trolley wheel strikes this second contactor, which is just after the front of the car has passed the second signal, a circuit is completed to a magnet which pulls the lock from beneath the armature of the registering-in magnet and allows its armature to drop back by gravity into operating position again. When this armature drops back, a red light shows in the second signal and a yellow light in the first signal.

The motorman of the second car approaching sees a yellow light in the first signal and knows that there is a car ahead of him in the block proceeding in the same direction and passes the signal and proceeds with caution. As the trolley wheel strikes the first contactor, the registering-in magnet is operated in just the same way in which the first car operated it, and a yellow light is then given in the second signal and a red light in the first signal behind the car. As this car's trolley wheel strikes the second contactor, the first signal returns to yellow and the second signal to red. Each succeeding car gets the same indication and operates in the same way as the second car.

The circuits are so arranged that as the trolley wheel passes the contactor on the double track the registering-in magnet is operated and its armature locked up, and as the trolley wheel thereafter strikes the contactor on the single track the registering-in magnet's armature is unlocked and dropped by gravity. If, however, a car is leaving the block, the trolley wheel first strikes the contactor on the single track. This causes a control magnet to lift its armature, which is locked up, and when the trolley wheel thereafter strikes the contactor on either branch of the double track the registering-out magnet is energized and the armature of the control magnet is unlocked and falls by gravity, thereby cutting out the registering-out magnet circuit and again cutting in the registering-in magnet circuit. The contactors are made directional in this way. Therefore, as each car leaves the block it registers itself out on the registering machine, and when the last car has left the block the signals return to the normal condition indicating an unoccupied block.

If fifteen cars should enter the block, the number which the registering machine will take care of, then all of the signals go to danger and so remain until one of the cars leaves the block.

The Type N signal is not only designed so that the signals are always safe regardless of any combination of crosses, feeds, grounds or breaks which may occur on either the wires running from the contactors or the two line wires running through the block, but it provides also for what might be called unusual movements. Thus, suppose a car accidentally ran under a contactor in advance of a danger signal and discovering its error backs out. In the Type N signal if the car is registered in, in these circumstances it will also register itself out in the backing-up movement. If on the other hand, it failed for any reason to register in as it passed under the contactor, it would also fail to register out as it made the backing up movement under the contactor.

Again, suppose the power went off along the line when a car was at a stop with its trolley wheel under the registering-out contactor, and the breaker at the power house went in and out several times. With the Type N signal there would be no danger that a car would be registered out each time that the breaker at the power house was thrown in. It would be registered out once only. The manufacturers claim also that all other unusual movements likely to occur have been safely taken care of in this new signal.

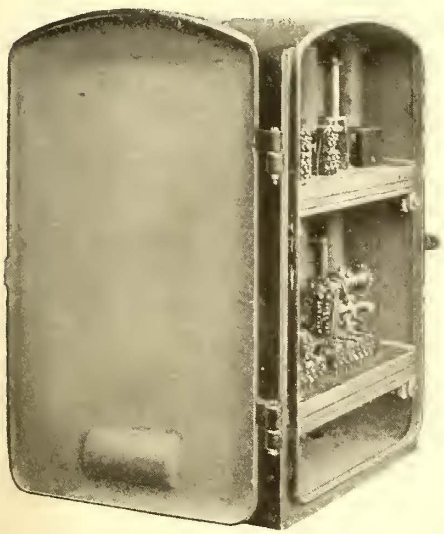


Fig. 1

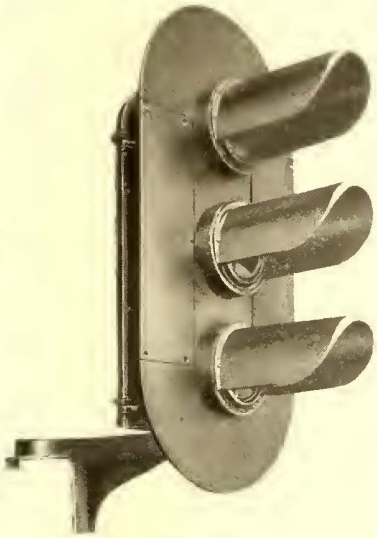


Fig. 2

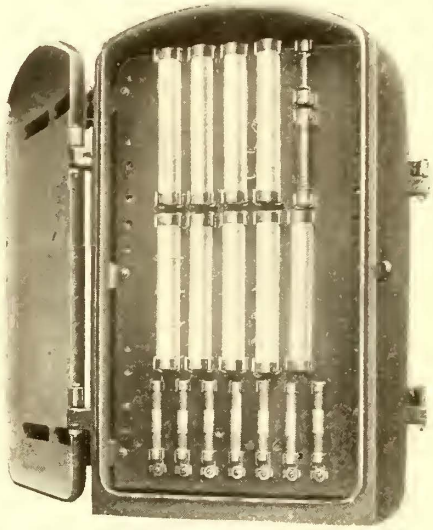


Fig. 3

FIG. 1—MECHANISM CASE OF TYPE "N" SIGNAL, SHOWING RELAY MOUNTED ON REMOVABLE SHELVES; FIG. 2—THREE-LIGHT ASPECT OF THE TYPE "N" SIGNAL; FIG. 3—RESISTORS AND FUSE PANELBOARD

General Construction

The aspect cases are three-light signals with spread-light lenses, ample background and substantial sun shields. Back of each lens are mounted two 23-watt lamps in parallel with a relay in series with the lamp normally in circuit, for cutting in the spare lamp if

the one normally in circuit burns out. While this signaling system operates from the trolley voltage, still the lamps burn at normal candle-power, regardless of the voltage fluctuations, by means of a simple current regulator which has been found entirely satisfactory in two years of actual service. This current regulator makes it practical to use an all-light signal for day as well as night indication with the lamps fed from the trolley voltage, for the candle-power remains constant in the lamps.

A high-speed contactor of very simple design is used with no side contact strips or other parts in the path of the trolley wheel to cause shock and uncertainty of contact at high speed. The contactor is placed on an ordinary ear and guyed into position so that the weight of the span hangs from the contactor, and this weight rests upon an adjustable spring in the contactor which is adjusted to carry all but about 10 lb. to 12 lb. of the total weight of the span. As the trolley wheel with the pole tension on it comes under the contactor, some of the weight of the span is relieved, and the spring moves a plunger upward. Near the end of its upward stroke, the plunger unlatches a gravity-operated contact arm which falls and makes the two contacts in predetermined sequence. As these two contacts must be made almost instantly one after the other, the contact arm is operated by gravity to give the same speed each time, and as the trolley wheel operating the contactor simply unlatches this contact arm, the action of the arm is always the same regardless of the speed of the car. As the trolley wheel leaves the contactor, the plunger of the contactor moves downward, lifting the contact arm into operating position again and relatching it.

As the contact arm is only unlatched near the end of the upward stroke of the plunger of the contactor, it will not be operated by any swaying of the trolley wire such as might be caused by a trolley pole flying off and striking a nearby span wire. The contactor is so designed that expansion and contraction of the trolley wire does not affect its operation nor does creeping of the trolley wire. It has been successfully tried out in high-speed service for the past year and a half.

The mechanism case which is mounted on the trolley pole can be mounted either near the ground or higher as desired. It has two doors on opposite sides of the box. Just inside of one door is a panel board on which are mounted all the resistances and fuses. The resistances have ferrules on their ends and are held in fuse clips so that they can be removed instantly in the same way as the fuses without disconnecting any wires or resistance holders. There is also a cut-out switch which, when opened, deadens the entire panel board, so that a maintainer is in no danger of shock or of causing short-circuits when working on the board.

On the back of the panel board and facing the other door are mounted a series of contacts. Also facing the other door are two shelves made of substantial insulating material, and these shelves slide in and out readily on guides. On the back edge of these shelves are spring-operated contacts which match and touch those on the back of the panel board when the shelves are pushed all the way in. On these shelves and connected to the spring-operated contacts are mounted all the relays, also the registering machine. If anything goes wrong with a signal, a maintainer can instantly pull out one of these shelves without making any disconnections, slip in another shelf and put the signal immediately into service. He then has the relays in his hands where he can thoroughly inspect them without danger of getting a shock, or he can take the shelf to the shop and repair any parts at his leisure. All of the coils are form-wound and insulated with "Micanite" inside and outside. Double insulation is obtained by mounting the coil frames themselves on the shelf of insulating material. The best of insulation is used throughout. There is no fiber. "Micanite" is used for the coils and "Bakelite" for mounting the contacts. The current consumption is small, and wear on the contacts which break the arcs is reduced to a minimum by double breaks and by reason of the fact that the heaviest circuit broken is ¼ amp. The contacts on which the arcs are broken are easily replaceable by the removal of one small screw.

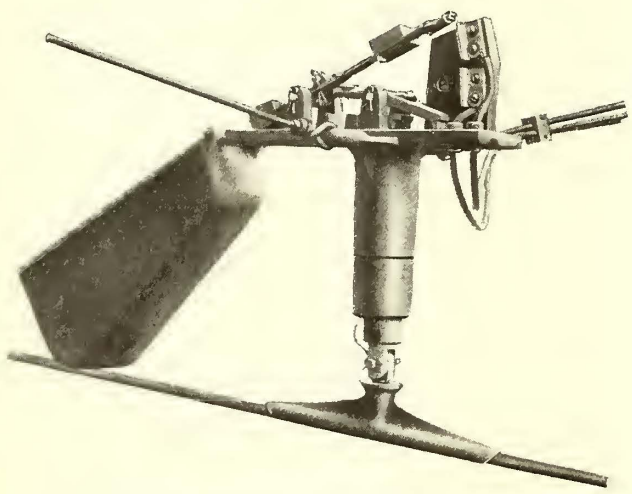


FIG. 4—HIGH-SPEED CONTACTOR FOR TYPE N SIGNAL, SHOWING COVER OPEN

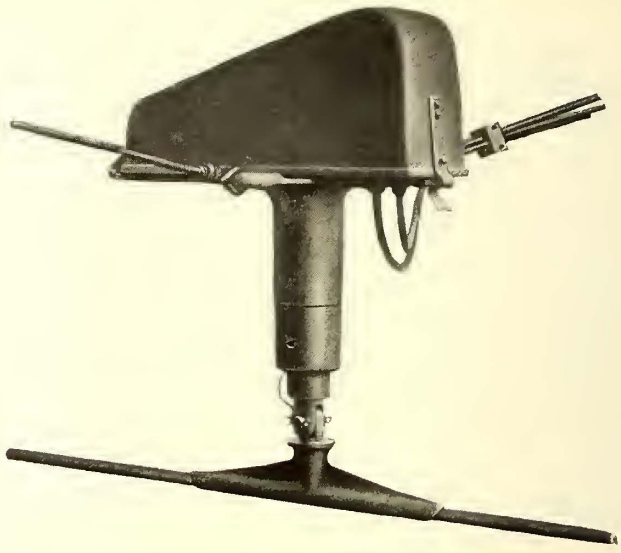


FIG. 5—HIGH-SPEED CONTACTOR FOR TYPE N SIGNAL, SHOWING COVER CLOSED

Summarized, the principal points of improvement which the manufacturers claim for this Type N signal over previous designs are as follows:

Fixed indications are used for a "proceed" indication instead of a momentary flash or movement of a part.

The responsibility on the motorman to watch the registering of his car is removed, yet he can not proceed unless his car is registered.

The same indication is used as the continuous track

circuit indication and it is read in the same way, so that one standard form of indication can be used for all types of signals instead of one for the continuous track circuit, another for the registering and still another for the non-registering signal as now.

The simplest form of indication is used, one which is standard for high speed and has stood the test of time and one which in all likelihood will not have to be changed in the near future.

The simple all-light signal is made practical for daylight indication, when operated by trolley current, by means of the current regulator.

The signal is safe regardless of any crosses, breaks, grounds or foreign feeds which may occur on the wires running from the contactors or the line wires running through the block or current going off the line.

The signal is safe regardless of any unusual movements which a car may make under the contactors.

The signal has full flexibility of operation. A car can enter the block or leave it at any point, entering either from the right or left and do it safely.

The contactors are operable at high speed, for nothing is placed in the path of the trolley wheel, and they are exceedingly simple.

The mechanism is easily maintained, for any unit can be immediately replaced by another without making any disconnections and by simply slipping one out and replacing with another.

The signal can be operated safely when a car is entering the block against a red signal sufficiently far to go around the turnout.

The signals all show "danger" when the full number of cars which the registering machine will protect has entered the block.

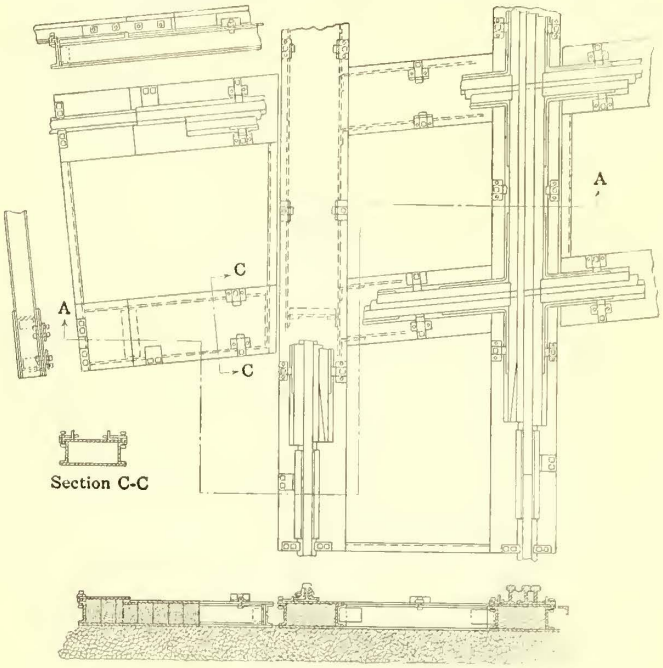
Simultaneous entry of cars at opposite ends of an unoccupied block gives "proceed" to one car and "danger" to the other.

Steel Railroad Crossing Structures Growing in Favor

The Crossing Described Is Wood-Block Filled and Was Placed at a Labor Cost of About $60

The structural-steel box-girder support as a substitute for the wooden ties to carry a railroad crossing has proved its superiority, and its use has been made standard on a number of interurban and steam railroads. At first these structures were filled with concrete, but recently creosoted wood block has been substituted by the International Steel Tie Company, Cleveland, Ohio, the manufacturers of this product, and the riding qualities of the structures have thereby been improved. The detailed construction of one of these steel crossing structures is shown in one of the accompanying illustrations. It will be noted that the structure is so designed that it furnishes a continuous support at all of the joints in the crossing. The creosoted wood-block filler in the inside of the girder is laid transversely with the rail, thereby furnishing additional support to the top plate of the girder and it transmits the wheel loads to the bottom plate, thence to the ballast. The box girders are made up of 5-16-in. plates on the top and bottom with 6-in. channels forming the vertical members. This provides a structure which will carry the heaviest steam railroad track loads over a span of 6 ft. In a number of instances these structures have been installed under practically wornout crossings, and the additional support thereby provided not only prolonged the life of the crossing but greatly improved its riding qualities.

WOOD-BLOCK FILLED CROSSING, WELLINGTON, OHIO



PLAN AND SECTION OF WOOD-BLOCK FILLED CROSSING

The structure shown under the two crossings in the accompanying halftone was installed at the intersection of the Big Four Railroad and the Wheeling & Lake Erie Railroad at Wellington, Ohio. This structure was installed under a traffic consisting of forty trains each way on the double track line and eight trains each way on the single track line. The conditions at this point are practically the same as those existing at an intersection of an interurban line with a steam railroad, and the cost of installing this structure, given in the above table, should be of interest.

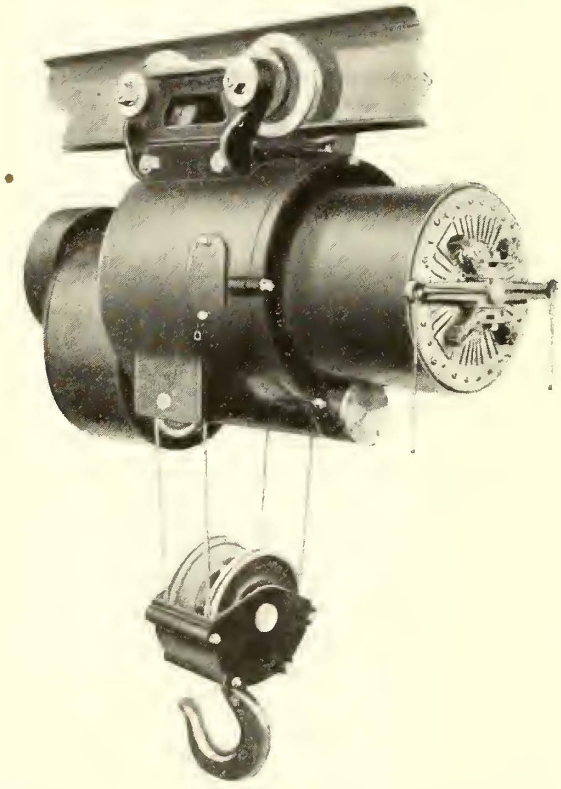
Cost of unloading and trucking new substructure from car to point of installation	$18.00
Trucking out and removing old substructure	20.00
Trucking old substructure	5.00
Placing new substructure	12.50
Back filling and surfacing	5.00
Total cost of unloading and placing new substructure and removing old	$61.38

Statistics of the Portland cement industry in 1915, compiled by the United States Geological Survey, show that there was a slight increase in shipments and a slight decrease in production and stocks as compared with 1914. The shipments of natural cement in 1915 were 750,863 barrels, valued at $358,627, a decrease in quantity of 422 barrels, and an increase in value of $7,257 compared with those of 1914. The shipments of puzzolan cement in 1915 were 42,678 barrels, valued at $39,801, a decrease in quantity of 25,633 barrels and in value of $23,557 compared with the shipments of 1914.

Roller Bearings Applied to Electric Hoist

The Economy Engineering Company of Willoughby, Ohio, has just placed on the market an inclosed electric hoist equipped with twelve Hyatt flexible roller bearings. Six of the roller bearings are used on the shafts to carry the gears, four in the trolleys and two in the load block as shown.

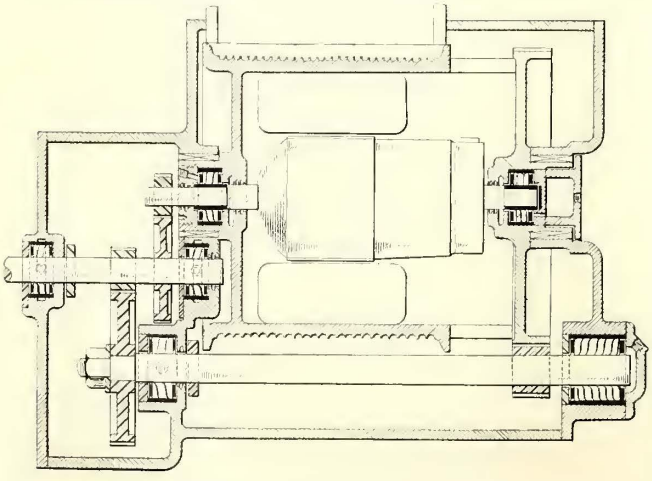
The frame is a cylindrical casting and supports the drum, brakes and motor. Openings in the frame allow these parts to be easily inspected after removal of the cover plate. The drum, which is made of cast iron, is centrally placed in the frame. It is grooved to take a



ELECTRIC HOIST SUITABLE FOR RAILWAY REPAIR SHOPS

rope for a given lift without overlapping. It also carries the drum gear and revolves about the armature of the motor, thus reducing the over-all size of the hoist and giving a high lift.

Any standard direct or alternating-current motor adapted for hoist service can be used with this device.

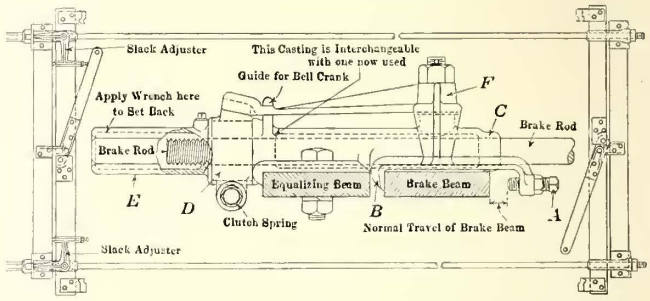


SECTION THROUGH HOIST SHOWING ROLLER BEARINGS

An automatic limit switch cuts off the hoisting motor when the block reaches the limit of its travel. The load is held in any position when the current is off by a solenoid-operated brake.

Slack Adjusters for Any Type of Truck

One of the essential features of a successful brake slack adjuster is that it must be so flexible mechanically that it can be applied to any type of truck. In order to meet this condition the Anderson Brake Adjuster Company, Omaha, Neb., has just issued Bulletin A, showing how this automatic brake slack adjuster may be applied to a Brill 21-E single-truck brake rigging, to Taylor single-truck brake rigging, or to Peckham or St. Louis single-truck brake rigging. In its original form this slack adjuster was primarily designed for installation in the brake rigging of double-truck equipment, but the increased popularity in the single-truck, light-weight cars has made it necessary to redesign the adjuster so that it could be applied to any type of single truck. These adjusters are illustrated and their operation described in the bulletin.



AUTOMATIC SLACK ADJUSTER APPLIED TO SINGLE-TRUCK BRAKE RIGGING

In the accompanying illustration this automatic slack adjuster is shown as it has been designed for Brill 21-E single-truck brake rigging. The manner of its operation is described as follows: The adjuster consists of but three moving parts, namely, the inner and outer clutch members *D* and *E* and the bell-crank *F*. Assuming that the brakes are too slack, the operation is as follows: Upon applying and releasing them as in actual service the brake beam will travel beyond the distance predetermined by the set screw *A*. This turns the bell-crank *F*, which rotates the outer clutch member *D*. This slips upon the inner clutch part *E*, because the braking strain is on the inner clutch at the same time. When the brakes are released the brake beam strikes the bell-crank at *B* and returns it to its normal position after all the braking strain is off the brake rigging. In the release direction the bell-crank *F* and clutch parts *D* and *E* all turn as a unit and thus compensate for wear. In other words, upon the application of the brakes (if they are too slack) but two parts, *F* and *D*, of the mechanism turn, and upon the release of all three, *D*, *E* and *F* turn. None of these parts moves upon the normal travel of the brake rigging as provided for by the set screw *A*. In a brake rigging that is greatly affected by load, proper allowance for that condition must be made by the set screw *A*. The clutch adjustment is permanent and need never be changed.

The social and welfare organization work of the Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo., is to be augmented by the organization of a band, for which twenty men have volunteered. A leader will be employed.

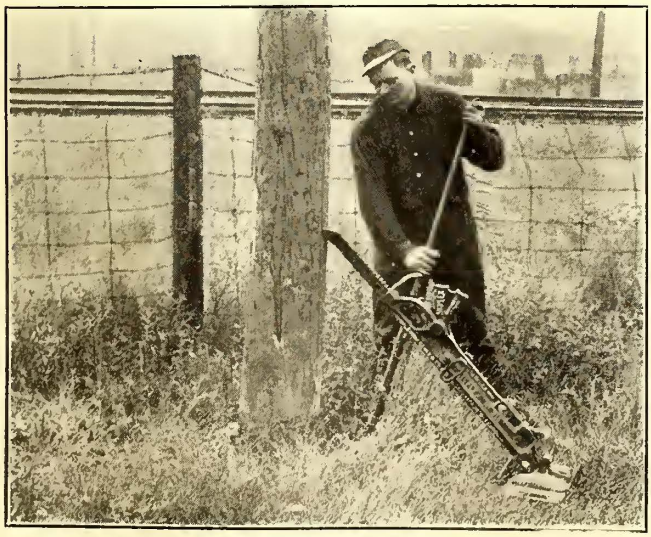
Pivoted Jack Pulls or Straightens Poles

Although the jack which pivots on its base recently put on the market by Templeton, Kenly & Company, Chicago, was designed primarily to pull poles without digging around them, this tool has been found to be as readily adaptable to straightening poles. In one of the

VIEW OF JACK IN POSITION FOR STRAIGHTENING POLE

accompanying illustrations a telephone pole, which by reason of its angle or rake from the vertical carried more than its share of the load, is shown with one of these jacks in position ready for the straightening operation. One man was all that was necessary to complete this job. The non-slipping I-beam base was placed a short distance from the pole to serve as the bearing for the jack. The jack which is pivoted on its base, was then set in position and the head placed against the side of the pole at an inclination of about 45 deg.

In another of the accompanying illustrations the pole is shown again restored to the vertical position, and it required sixteen strokes to the lever to accomplish this. When the pole was practically in the vertical position, the dependable truss formed by the rack bar holding against the non-slipping I-beam base permitted the operator to step away from the pole to check the correctness of its position. When the pole had assumed the vertical position it was only necessary to retamp the earth around the base. In actual service this jack has also been found to be a most useful tool for pulling poles. As a matter of fact an average record of eight minutes for pulling 40-ft. poles was made on a recent job.

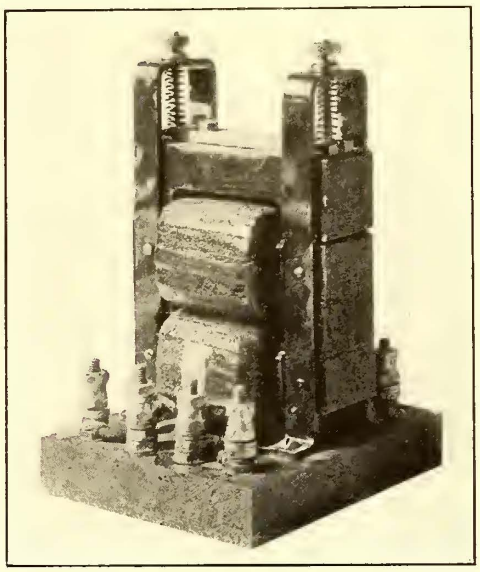


VIEW OF STRAIGHTENED POLE

A Testing Transformer for Signals

In order that there may be an assurance of continuous protection on electric railways, it is necessary that the different units used in connection with the signaling be tested regularly. A test of the apparatus directly connected to the track rails is doubly important because this is required to work under the greatest variation of potential between dry and wet weather. On long track circuits where ballast conditions are such that leakage from rail to rail is excessive, it is oftentimes necessary to operate relays at 50 per cent above normal potential in dry weather to allow the signals to remain in the clear position when no train is on the track section which they protect. To provide for the testing of these alternating-current relays, and particularly those used in connection with the track circuits, a special testing transformer has been designed, which is shown in an accompanying illustration.

The transformer is provided with an adjustable magnetic shunt. By varying the leakage flux, it is possible



TRANSFORMER USED IN TESTING ALTERNATING CURRENT RELAYS

to approximate ideal phase relations of the currents in the two windings of a relay when these are supplied from the same source. Several of these transformers have been manufactured recently by the Union Switch & Signal Company, Swissvale, Pa., and are being used by a number of railroads at the present time. These transformers can be used by most line department employees even though not specially trained in testing signal apparatus, since the instructions for their use are clear and simple.

All axles are scrapped by the mechanical department of the Springfield Consolidated Railway Company, Springfield, Ill., after they have given about 500,000 miles of service. Experience has demonstrated that the 4-in., 4¼-in. and 4½-in. axles used in city service become crystallized, and failures are more frequent after they have been in service that length of time.

NEWS OF ELECTRIC RAILWAYS

GRADUAL RETURN TO NORMAL CONDITIONS IN NEW YORK

Little Response to Sympathetic Strike Effort—Plan Suggested to Prevent Future Interruption of Public Service

The railways in New York whose employees are on strike have gone steadily on with the work of improving their service. As a result service on the lines during the non-rush hours in the daytime has been more than 75 per cent normal for the last week, while the number of lines and cars operated at night have been gradually increased so as to care for the need for transportation during the early evening hours on the north and south lines and on the cross-town lines. Except for the talk of a sympathetic walkout the strike is generally regarded by the newspapers as a waning issue, the space devoted to it being gradually decreased from day to day and made daily less prominent as an item of real news. As for the sympathetic strike, the date for such demonstration was put over from time to time and was finally announced for Wednesday. At this writing the figures which have been compiled for the sympathetic demonstration are so conflicting as to be of little or no worth. Each trade seems to be holding back for the other. As one union leader expressed it, the men he represented "did not propose to be made the goats of the situation."

While the companies have been going quietly about their work of rebuilding their transportation organizations, various bodies in no way directly concerned in the outcome of the issue have been at work petitioning here and there and advancing plans for possible intervention on the part of the public authorities. On Sept. 27 the Governor received a committee of Assemblymen who urged an extra session of the Legislature. He informed the committee that he saw no reason for calling a special session to devise means for ending the labor trouble. On the same day the State Industrial Commission voted three to two on a resolution to the effect that it would not be advisable to take steps toward a settlement of the strike at this time. On the previous day Chairman Straus of the Public Service Commission made another plea for arbitration. He said that the public had the right to demand arbitration, and that if it made its wishes known in strong enough language the operators would have to obey.

On Sept. 27 correspondence was made public between Theodore P. Shonts, president of the Interborough Rapid Transit Company, and L. G. Griffing, assistant grand chief of the Brotherhood of Locomotive Engineers, in which Mr. Shonts refused a request from Mr. Griffing asking a conference "for the purpose of discussing matters which we believe of mutual interest to the Interborough Company and to the organization which we represent."

The strike itself and the desperate efforts made by the leaders of the men to enlist the active co-operation of labor in other fields has naturally provoked a great deal of discussion as to means for preventing interruption of public service and for compelling contracts which are entered into to be lived up to scrupulously. Of the many suggestions made that of Henry R. Towne, former president of the Merchants' Association of New York, has perhaps attracted the greatest attention. As a result of the suggestion made by Mr. Towne, the Merchants' Association has decided to ask the Chamber of Commerce of the United States to take a referendum of its members. The resolution adopted by the board of directors of the Merchants' Association is concluded as follows:

"Resolved, That the tenure of service of employees of public service corporations, particularly of transportation corporations, should be regulated by law in such manner that each person who voluntarily elects to enter such employment shall, as a condition of such employment, be legally obligated by contract to continue therein for a specified term, during which term he may not lawfully quit that employment, nor the corporation lawfully discharge him from its service, except as provided by such contract; and that such contract should provide adequate penalties for violation of its terms by either party."

Mr. Towne advocates an enlistment or enrollment contract for a stated period after a probational period in the case of new employees, renewable by mutual agreement; penalties for violation of the contract by either party, such penalty to consist of a cash fine, the fine against the company to be collected from a fund created by the company and vested in a trustee, the fine against the employee to be collectible from a fund created by the company retaining a percentage of the wages of each employee until the fund equals two weeks' wages, the company to pay interest on the fund and repay the principle and interest when the employee leaves the service, the schedule of the fine to be fixed by law and stated in the contract; the company to recognize the right of the employee to membership in any local organization and not to discriminate against him on such account; the employee to respect the right of the public to uninterrupted service and not to combine with others to cause its interruption; the employee to have the right alone or in combination with others to request concessions in wages and the hours of work or conditions of service; the employee to have the right to appeal from acts or decisions of the company to a joint board of award constituted under the law by joint action of the company and its employees as a board of arbitration; both the company and the employee to have the right to appeal from the rulings of the joint board to an appropriate Federal or State commission.

PROGRESS REPORTED IN DALLAS NEGOTIATIONS

The Dallas traction and lighting controversy is yet unsolved, but it is reported that satisfactory progress is being made toward an agreement among all parties interested. Preparations are being made for the straw vote on the proposal to allow the electric railway and the electric lighting properties a valuation of $8,500,000, as asked by them under the proposed reorganization, instead of the valuation of $7,100,000 as fixed by E. W. Bemis.

In connection with the proposed reorganization, the Oak Cliff street car lines, operated by the Northern Texas Traction Company, a Stone & Webster Company, offer a big problem. Under the city's plan for consolidation of all street car lines in the city under one management, these lines would have to be purchased or leased by the new company that is to be formed, and negotiations have been under way for some time between C. W. Hobson and J. F. Strickland, who will head the reorganized company, on the one side, and representatives of Stone & Webster and the Northern Texas Traction Company on the other. It is understood that all offers for an outright purchase of these lines have been declined, but that the lease of these lines by the proposed new company is about to be agreed on.

In this connection Judge Charles F. O'Donnell, city attorney of Dallas, has been called to New York, where it is known that Mr. Hobson has been in conference with officials of the organization of Stone & Webster. It was also announced that the matter of leasing the Oak Cliff lines to Mr. Hobson had been under consideration in these conferences, and that City Attorney O'Donnell was wanted as a party to these conferences so that the conferees might know beforehand if the proposed terms of the lease would be satisfactory to the city of Dallas.

The contest involving certain charter changes and the model "service-at-cost" franchises that were adopted, on the face of the returns, in the election last April, has been set for Oct. 3 in the District Court, the three District judges in Dallas County sitting *en banc* to hear the case. This contest will have to be settled before anything definite is done in regard to the proposed reorganization of the properties or the lease of the Oak Cliff lines by Mr. Hobson.

SAFETY FIRST FEDERATION CREATES NEW BUREAU OF STANDARDS

Charles L. Bernheimer, treasurer of the Safety First Federation of America and president of the Safety First Society of New York, has announced the establishment of a bureau of standards by the federation. The plan, which has been under consideration for some time, provides for a bureau which shall investigate the merits of various safety articles or devices to be submitted to it. This bureau, after thorough investigation, is to recommend to the directors for approval such devices as have measured up to the standards which will be adopted. If the directors approve the report of the bureau of standards and officially indorse the device or article, permission will be granted to the manufacturer, under certain restrictions, to use the official emblem of the Safety First Federation, and to stamp each article so endorsed with the federation's emblem and some such words as "Tested and approved, Safety First Federation of America, Inc."

Darwin P. Kingsley, president of the New York Life Insurance Company and president of the Safety First Federation, has agreed to act as chairman of the bureau of standards and has associated with him the following: Ernest P. Goodrich, formerly consulting engineer of the Borough of Manhattan, now assistant director of the bureau of municipal research in New York, and consulting engineer of the federation; E. E. Rittenhouse, ex-president of the Life Extension Institute, now commissioner, Public Service and Conservation, Equitable Life Assurance Society; Charles L. Bernheimer, president of the Safety First Society of New York, treasurer of the federation, director of the Chamber of Commerce of the State of New York and one of New York's well-known merchants; William Guerin, ex-chief of the fire prevention bureau of the city of New York, chairman of the federation's committee on fire prevention; George H. Robertson, automobile expert and chairman of the automobile technical committee of the federation; Joseph Tracy, consulting engineer; William Bondy, general counsel of the federation.

Plans have been perfected for a nation-wide campaign to educate pedestrians to use the crosswalks instead of crossing the streets diagonally, or in the middle of the block. For the purpose of raising funds to carry on this campaign, an appeal was authorized, to the owners of all motor vehicles to contribute sums of $1 or more, the campaign to be conducted through the constituent organizations of the federation and through the co-operation of the newspapers.

The second annual convention of the federation will be held in Baltimore on Dec. 7, 8 and 9, at which time the members of the federation will be the guests of the Safety First Society of Baltimore.

ONTARIO HYDRO-ELECTRIC RAILWAY UNION PROBLEMS DISCUSSED

At a meeting in Hamilton, Ont., on Sept. 1 of representatives of municipalities in the Province of Ontario between Niagara Falls and Toronto it was decided to ask the Ontario government to allow the municipalities to take over complete control of the hydro-electric undertakings, consisting of the main transmission lines from Niagara Falls to Hamilton constructed some years ago by the Ontario Hydro-Electric Power Commission on behalf of the municipalities, and the present projected system of hydroelectric railways. It was also decided to seek legislation at the next session of the Legislative Assembly amending the acts which were passed at the last session. In the opinion of the municipal representatives these acts tended to impede the progress of hydro development, particularly the proposed diversion of the Niagara and Chippewa Rivers.

Sir Adam Beck, chairman of the Ontario Hydro-Electric Commission, which has jurisdiction over the proposed system of hydroelectric railways to be constructed in the Niagara and Western Ontario districts, in addressing the convention urged that the municipalities should take over the responsibility of the proposed Chippewa development.

He traced the development of the hydro system from the beginning. It was imperative that the Chippewa development scheme should be commenced forthwith. Premier Hearst had declared in the Legislative Assembly that if the municipalities passed the necessary by-laws, work could be proceeded with. It was therefore suggested that the 120 municipalities interested should submit by-laws to the ratepayers authorizing the municipalities to enter into contracts with the Ontario Hydro-Electric Commission authorizing the commission not only to supply power but also to develop it.

F. A. Gaby, chief engineer of the Hydro-Electric Power Commission, outlined the plan for the development of the proposed hydro-radial scheme for the Niagara peninsula and the district along the north shore of Lake Ontario to Toronto. He stated that the cost of the proposed line between Port Credit and Niagara Falls, which will be connected with the line proposed to be constructed west from Toronto to London, will be $11,263,363. This will cover all equipment and rolling stock and provide for contingencies. Provision was made in the estimates for terminals costing $600,000. Of this sum $200,000 was the estimated cost of the Hamilton terminal.

Sir Adam stated on Sept. 1 that an offer had been made to the Dominion Power & Transmission Company to take over its radial line to Burlington and Oakville, a distance of 22 miles. The radial line to Burlington was completed in 1898 and extended on to Oakville in 1904.

Within the next few weeks the municipalities in the Niagara-Hamilton-Toronto district will ask the Ontario government for orders in council permitting the people to vote on the proposed hydro-radial railway project. This line, it is expected, will be linked up with the proposed Toronto-London-Stratford hydro line.

ENGINEERS OFFERED PRIZES FOR PAPERS

Cash prizes of $50, $30 and $20 are offered by the engineers' subdivision of the Chicago Association of Commerce for the three best papers, not to exceed 3000 words, on any one of the following subjects:

(1) "Engineering and Civic Progress."

(2) "The Engineer of the Future."

(3) "The Business Relation of the Engineer to the Commercial World."

Relationship of the engineer and of engineering to the business and professional world; how best to realize the conceived ideal of engineering, concrete examples illustrative of the true significance of engineering, such as a brief prospectus of a proposed work or a short, crisp, readable news article on a piece of engineering construction—these are suggested lines for development. The contest is open to undergraduates and to graduates of any recognized school of engineering in the United States during the years 1915 and 1916.

The judges of the relative merits of the papers will be F. H. Newell, professor of civil engineering, University of Illinois; John W. Alvord, consulting engineer, Chicago, and John F. Hayford, director, College of Engineering, Northwestern University. All papers should be mailed to Engineers' Subdivision Contest, the Chicago Association of Commerce, 10 South La Salle Street, Chicago, and must be received not later than Nov. 1, 1916.

Joint Congress Committee on Railroads to Meet Nov. 20.—The Railway Business Association has issued a bulletin which declares that "the enormous increase in operating expenses compelled by the eight-hour law accentuates the necessity for general legislation designed to bring regulation into proper relation with the facts of the business as they exist." The legislation proposed is to be advocated before the joint committee of Congress which has set hearings to begin Nov. 20 and is to report in January, 1917.

Proposal for Reduction in Wages Formally Presented.—The Bay State Railway, Boston, Mass., has submitted to the members of Division 235 of the Amalgamated Association a request that a reduction in wages, similar to the scale of prices in effect in 1914 be the working schedule to replace the agreement which expires on Oct. 1. This would mean a reduction from 30 to 28 cents an hour for a maximum, a drop from 25 to 24 cents an hour for the minimum and a change in the sliding scale from five to seven years. A new agreement from the union calling for an advance in wages and better working conditions has been submitted to the company.

Committee Recommended to Study Pittsburgh Transit.—In a communication to Mayor Joseph G. Armstrong and the City Council of Pittsburgh, Pa., the committee on city transit of the Chamber of Commerce has recommended the appointment of a commission to study the local transit problem. It is suggested that the commission be composed of fifteen members, including the director of the department of public works, to serve without remuneration, but that an appropriation of $100,000 to $125,000 be available for the general expenses of the investigation. The commission would render a report within a year to the Mayor and Council, giving recommendations "upon a comprehensive rapid transit system for the city, with plans showing routes, stations, number of tracks and general construction, whether subway, surface or elevated, with estimates of cost of construction, carrying capacity and gross and net income."

PROGRAM OF ASSOCIATION MEETING

National Safety Council

The annual meeting and congress of the National Safety Council will take place at the Hotel Statler in Detroit, Oct. 17 to 20. The development of the council's work has indicated the need for intensive study of the problems of various industries, so that the main feature of the meeting this year is sectional conferences. For instance, the electric light and gas industry members will be assembled in the public utilities section; the foundry members in the foundry section, and the cement members in the cement section. The electric railway sectional meeting will be held on Oct. 19. The chairman of the section meeting is George Oliver Smith, supervisor of safety of the Dohert Operating Company, New York, N. Y., and the vice-chairman is Edward C. Spring, assistant to the president of the Lehigh Valley Transit Company, Allentown, Pa. The addresses to be presented are as follows:

"How Graphic Charts and Bulletins Help in Safety Education," by Harold W. Clapp, general superintendent of the Columbus Railway, Power & Light Company, Columbus, Ohio.

"Safety and Efficiency—How a New Member Tackles the Problem," by Julien H. Harvey, superintendent of efficiency of the Kansas City (Mo.) Railway.

"How the Safety Movement Is Helping the Electric Railway Industry Meet Its Problems," by H. H. Norris, associate editor of the Electric Railway Journal, New York.

"The Application of the National Electric Safety Code to Electric Railway Construction and Operation," by W. J. Canada, electrical engineer of the Bureau of Standards, Washington, D. C.

"Safety Devices on Street and Interurban Cars," by Charles H. Cross, secretary of the central safety committee of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis.

"Warnings at Interurban and Obstructed Crossings."

"Hazards of Power Houses and Carhouses and Their Remedies."

"Methods of Instructing New Motormen in Their Duties," by H. B. Adams, safety supervisor of the Aurora, Elgin & Chicago Railway, Aurora, Ill.

There will also be an address by F. R. Coates, president of the Toledo Railways & Light Company, Toledo, Ohio, on a subject to be announced.

Fifteen minutes will be allowed for the discussion of each of the papers presented. Representatives of electric railways will also be interested in the proceedings of the employees' benefit association sectional meeting.

A new feature of the congress this year will be a mammoth safety exhibit, where the latest types of safety devices will be shown.

It is planned during the congress, if possible, to select a universal danger sign. In preparation members have been asked to consider and test several signs of which samples in colors have been distributed. These show: red circle on black ground; red circle with concentric blue and yellow rings on black ground; red circle on white skull and cross-bones, superimposed on blue circle and yellow background, and red circle on white skull and cross-bones, superimposed on black circle surrounded by yellow rings, all black background.

Financial and Corporate

ANNUAL REPORTS

Interborough Rapid Transit Company

The comparative income statement of the Interborough Rapid Transit Company, New York, N. Y., for the years ended June 30, 1915 and 1916, follows:

	1916 Amount	1916 Per Cent	1915 Amount	1915 Per Cent
Revenue from transportation	$34,182,100	95.24	$32,365,306	96.80
Other operating revenue	1,709,427	4.76	1,068,436	3.20
Gross operating revenue	$35,891,528	100.00	$33,433,742	100.00
Maintenance of way and structure—actual	$1,539,216	4.29	$1,545.949	4.62
Maintenance of equipment—actual	2,132,339	5.94	2,002,095	5.99
Total maintenance	$3,671,556	10.23	$3,548,045	10.61
Maintenance of way and structure—depreciation	$288,103	.80	$192,881	.57
Maintenance of equipment—depreciation	331,122	.92	368,334	1.11
Total depreciation	$619,225	1.72	$561,215	1.68
Total "maintenance" appropriation	$4,290,781	11.95	$4,109,260	12.29
Traffic expenses	542	....	145	....
Transportation expenses	8,330,357	23.22	7,615,957	22.79
Accident and damages	551,886	1.54	386,244	1.54
General expenses	834,597	2.32	829,707	2.09
Total operating expenses	$14,008,165	39.03	$12,941,314	38.71
Net operating revenue	21,883,362	60.97	20,492,428	61.29
Non-operating income	580,830	1.62	623,631	1.86
Gross income	$22,464,193	62.59	$21,116,059	63.15
Deductions from income:				
Taxes	$2,341,606	6.53	$2,133,980	6.38
Interest on bonds (rental)	4,085,440	11.38	4,001,146	11.97
Manhattan dividends (rental)	4,200,000	11.70	4,200,000	12.57
Manhattan cash rental	35,000	.10	35,000	.10
Interest on notes and 5 per cent bonds	3,043,630	8.48	2,632,572	7.87
Sinking fund 5 per cent bonds	.....	....	.....	....
Amortization	312	....	.....	....
Interest on unfunded debt	37,500	.10	37,500	.11
Other rental deductions	7,376	.02	7,376	.02
Total	$13,750,866	38.31	$13,047,575	39.02
Net corporate income	$8,713,326	24.28	$8,068,484	24.13

The gross operating revenue for the year increased $2,457,785 or 7.35 per cent, the result of a gain on the subway division of $1,513,457 or 8.48 per cent, and on the Manhattan Railway division of $944,327 or 6.06 per cent. The increase on the subway division was to the extent of $1,296,296 the result of an increase in passenger revenue, and to the extent of $217,161, an increase in sale of power and in other operating revenue. The increased subway traffic may be attributed to the revival of business evidenced in the autumn of 1915, which continued substantially unbroken to the close of the fiscal year. The increase on the Manhattan Railway division of $944,327 was the result of an increase in passenger revenue of $520,498, and in sale of power and in other operating revenue of $423,829. The increase in passenger revenue on the Manhattan division took place in the last six months of the fiscal year and reflected the improved facilities afforded by the third tracking of the elevated lines, which were opened for operation Jan. 17, 1916.

The report states that the increase in passenger travel on the Manhattan Railway division is very gratifying. Without any of the northern terminals, extensions or feeders being included in this operation, there was an increase between Jan. 17, 1916, and June 30, 1916, of 11,893,155 passengers, as compared to a decrease of 976,972 passengers for the first six months' period of the present fiscal year, and 461,904 for the first sixteen days in January. During this same period there was an increase of 15,840,859 passengers on the subway division as compared to an increase of only 6,216,718 for the previous six months.

The operating expenses in 1916 showed an increase of $1,066,851 or 8.24 per cent, the result of an increase on

the subway division of $672,121 or 10.83 per cent, and an increase on the Manhattan Railway division of $394,730 or 5.86 per cent. The charges to operating expenses for maintenance and depreciation of both way and structures and equipment were $181,520 more than similar charges for the previous year.

The increase in traffic on both subway and elevated divisions, as well as the enlarged express service upon the elevated lines, led to an expansion of the train service, resulting in an increase in car mileage on the subway division of 3,772,304 car-miles and on the elevated division of 1,255,749. This increase in car mileage, the shortening of the hours of station men and increase in rates of pay of transportation employees, were responsible for the increase in the cost of transportation amounting to $714,400.

The net operating revenue increased $1,390,933 or 6.79 per cent, the result of a gain on the subway division of $841,336 or 7.23 per cent, and a gain on the Manhattan Railway division of $549,597 or 6.21 per cent. The total amount of taxes increased $207,626 or 9.73 per cent, the subway division showing an increase of $61,257 or 13.85 per cent, and the Manhattan Railway division an increase of $146,368 or 8.65 per cent.

The income from operation showed a gain of $1,183,307 or 6.44 per cent, the result of increase on the subway division of $780,078 or 6.96 per cent, and on the Manhattan Railway division of $403,228 or 5.63 per cent. The non-operating income decreased $42,800 or 6.86 per cent, principally due to the decrease in interest on bank balances and loans and reflects the temporary advances from general cash for the purposes of the construction of the Manhattan third tracks and power plant improvements.

The gross income increased $1,140,506 or 6.01 per cent, the result of a gain on the subway division of $763,024 or 6.53 per cent, and a gain on the Manhattan Railway division of $377,482 or 5.17 per cent. Income deductions, however, also increased $495,664 or 4.54 per cent. The surplus over dividends of 20 per cent on the capital stock was $1,892,014, a gain of $817,867 over the previous year.

The number of passengers carried was 683,752,114 compared with 647,378,266 last year, an increase of 36,373,848 or 5.62 per cent, the result of a gain on the subway division of 25,919,569 or 7.50 per cent, and a gain on the Manhattan Railway division of 10,454,279 or 3.46 per cent. The subway division was benefited by the improvement in general business conditions during the last ten months of the year, and it received the continuing advantages derived from the building up of the territory contiguous to the subway lines, while the Manhattan division, where the increase was confined to the last half of the year, reflects the result of an improved express service following the opening of the third tracks, as before stated.

Expenditures for additions and betterments during the year aggregated $28,063,562. They included payments made on account of construction and equipment of new subways and Manhattan Railway third tracks and extensions, as well as power plant improvements.

Claims, suits and judgments caused an increase of $155,523 in expenditures, while the expenses rose $15,726. The increase in the expenditures for accidents was principally due to the settlement of the remaining claims arising out of the short-circuit smoke accident at Fifty-third Street and Broadway, collisions on the elevated, and the accidents at center and side doors due to the increasing congestion. The space closing devices are said to be reducing the number of injuries due to the spaces at the curved platforms, but the accumulated space claims for the past have increased and it will be some time before the benefit of the new devices will show in reduced claims. At the close of the fiscal year there were 115 less suits in the courts of record, although seventy-one more such suits were commenced than during last year. The claimants were successful in a smaller percentage of cases tried than the previous year. The total disbursements for injuries and damages and expenses amounted to 1.91 per cent of the gross passenger receipts in the last year, an increase of 0.37 per cent over 1915.

The wages of employees were increased during the year in the sum of approximately $349,000. This sum, however, does not include the increases granted to conductors, motormen, guards, agents, porters, gatemen, special officers, starters, towermen, switchmen and train clerks, effective on Aug. 1, 1916, amounting to about $311,000 additional.

Pacific Electric Railway

According to the annual report of the Pacific Electric Railway, Los Angeles, Cal., covering the year ended June 30, 1916, the passenger earnings were $187,496 less than during the year preceding, notwithstanding the expositions. A résume of the income statement gives the following figures:

Railway operating revenue	$8,856,796
Railway operating expenses	5,994,611
Net revenue from railway operations	$2,862,185
Taxes	515,556
Railway operating income	$2,346,628
Other income	37,301
Gross income	$2,383,929
Interest on bonds and floating debt, bond discounts, rents, etc.	3,205,664
Amount by which the company failed to earn fixed charges	$821,734

In commenting on these figures, President Shoup stated that the competition by practically unregulated automobile carriers is directly responsible for most of the deficit from the year's operation.

Chosen Light Railways and Tramways

According to the report of the railway bureau of the government-general of Chosen (Corea) for the year ended March 31, 1915, the open lines at the end of the year were 44.5 miles in length, and their construction expenses amounted to yen 2,799,474. These lines belong to the Chosen & Gas & Electric Company (5.8 miles, steam), the Zenhoku Light Railway (15.5 miles, steam), the Nikkan Gas & Electric Company (16.2 miles, electric), Kankyo Provincial Government (5.1 miles, hand), the Heijyo Street Tramway (1.2 miles, hand), and K. Mori (0.7 miles, hand). Thus there are 21.3 miles operated by steam, 16.2 miles by electricity and 7 miles by hand. The total length of lines not yet opened is 173.2 miles. The train mileage in the fiscal year reached 53,284 miles, and the car mileage 2,572,536 miles for passenger cars and 265,777 miles for wagons, making a total of 2,838,313 miles. Passengers carried numbered 11,286,473 by electric cars and 294,479 by other cars. The traffic receipts amounted to yen 375,454 and the expenditure to yen 283,657, leaving a balance of yen 91,797 as profit.

New South Wales Government Railways and Tramways

The results of operation of the government railways and tramways of New South Wales, Australia, for the year ended June 30, 1916, was a deficit of £137,457 as compared to a profit of £66,804 for the year preceding. This deficit was caused by the operating loss of £223,749 for the steam lines, for the tramways in the last year showed a profit of £86,292. The tramway earnings in 1916 amounted to £1,991,628, with working expenses of £1,602,650 and interest of £302,686. The earnings for the year showed an increase of £5,568 or 0.28 per cent, while the working expenses decreased £8,636 or 0.54 per cent.

The total capital expenditure for all tramway lines open to traffic on June 30, 1916, amounted to £8,166,423. The expenditures charged to capital account during the year were £196,130. In the last year 292,021,744 passengers were carried, an increase of 2,738,929. A total of 26,451,442 tram miles were run, a decrease of 391,532. Of the 48,757 employees (railways, 39,182; tramways, 9575) 5608 men had joined the expeditionary forces up to June 30, 1916. Of these 199 were killed or missing, and 300 others had been wounded. The added expenses of all lines attributable to the war were £461,524, while free transportation for war purposes was furnished to the extent of £170,000 on the basis of the usual rates.

A number of railway extensions are under construction, while others have been authorized. In consequence of the war, and owing to the difficulties of obtaining supplies, the improvements have not been advanced as rapidly as desired, especially the proposed steel bridge connecting Sydney with the North Shore, the installation of electricity on suburban lines and the construction of the Sydney underground railway.

UNITED RAILROADS REORGANIZATION PLAN ANNOUNCED

The reorganization committee for United Railroads of San Francisco, Cal., has announced a plan which involves the extinguishment of $44,330,100 out of the present $91,928,100 of capital liabilities. The plan provides for the transfer of all the assets of the United Railroads of San Francisco and the San Francisco Electric Railway to the Market Street Railway, which will become the operating company. In consideration of this transfer bondholders of the United Railroads will receive 25 per cent of face value of present 4 per cent bonds in Market Street Railway 5 per cent bonds and 46 per cent of par value of their 4 per cent bonds in new 6 per cent cumulative first preferred stock of the Market Street Railway. The holders of unsecured notes and of stock of United Railroads will cause to be underwritten by the California Railway & Power Company at 90 per cent of their face value $2,500,000 of serial debentures to be presently issued and $3,000,000 of Market Street Railway 5 per cent bonds to be taken in 1918 or before. The proceeds of the debentures are to be used to redeem and discharge underlying bonds totalling $5,200,000, all of which are now maturing or will mature within two years. The holders of unsecured notes and stock of United Railroads will receive new second preferred and common stock of the Market Street Railway and surrender of certain obligations for their underwriting the above-mentioned securities and for causing the conveyance of the properties to be made by United Railroads of San Francisco to the Market Street Railway. The capitalization of the Market Street Railway will be $16,098,000 of 5 per cent bonds, $2,500,000 of 6 per cent debentures, $11,000,000 of first preferred stock, $5,500,000 of second preferred stock, and $12,500,000 of common stock, a total capitalization of $47,598,000.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa.—Consolidation of the Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro Electric Light & Power Company, Waynesboro Gas Company, Carlisle & Shippensburg Street Railway, Shippensburg Gas Company, Shippensburg Water Company and the electric light and power companies operating in Guilford, Quincy, Washington and Antrim townships, in Franklin County is reported again under consideration. Hambleton & Company, Baltimore, are the bankers who are said to be interested.

City Railway, Mount Vernon, Ill.—The City Railway has made application to have a receiver appointed for its property, consisting of the 3 miles of track and three cars. The company was incorporated in 1914 and after constructing the line, cars were operated until Feb. 16.

Consolidated Cities Light, Power & Traction Company, New York, N. Y.—J. S. Orler & Company, Inc., Boston, Mass., are offering for subscription first mortgage 5 per cent gold bonds of the Consolidated Cities Light, Power & Traction Company guaranteed principal and interest by the Cities Service Company. The bonds are dated July 1, 1912, and are due July 1, 1962.

Illinois Traction Company, Peoria, Ill.—The Illinois Traction Company has filed with the Public Utilities Commission of Illinois a petition asking the commission to authorize the St. Louis, Springfield & Peoria Railway to issue first and refunding bonds amounting to $392,000.

Indianapolis Traction & Terminal Company, Indianapolis, Ind.—In its annual report to the Public Service Commission of Indiana for the fiscal year ended June 30, 1916, the Indianapolis Traction & Terminal Company shows that its net earnings amounted to $301,452, an increase of $152,684 for the year. Passenger revenues totaled $3,072,332, an increase of $183,267. During the year the company carried 72,275,389 revenue passengers, 22,703,823 transfer passengers and 2,087,700 employees, policemen and other free passengers. The average fare per revenue passenger was 4.20586 cents, and the average fare for all passengers carried, including transfer and free passengers, was 3.23815 cents. The report shows that the book value of the property is now $11,434,589, and its total investment $12,346,748. During the year the company paid out for interest on funded debt $222,417; interest on unfunded debt, $21,080; taxes, $273,965; accidents and damages, $125,483, and salaries and wages, $1,195,247.

Lake Erie, Bowling Green & Napoleon Railway, Bowling Green, Ohio.—It is said that minority stockholders of the Lake Erie, Bowling Green & Napoleon Railway will become a party to the plan to prevent the purchaser of the property of the company from scrapping the line. They will take part in the injunction suit recently filed to prevent this step. They allege that a profit on the investment could probably be realized under careful management. The decision of the Ohio Public Service Commission in refusing to prevent the abandonment of service on the line is referred to at length in this issue on page 697.

Paris (Tex.) Transit Company.—The Paris Transit Company has filed an amendment to its charter with Secretary of State McKay at Austin, certifying to an increase in its capital stock from $150,000 to $160,000.

Public Service Corporation of New Jersey, Newark, N. J.—The monthly financial statement of the Public Service Corporation of New Jersey for August shows a gross increase of $435,678 in total business over August, 1915, a percentage of increase of 14.4. The balance available—after payment of operating expenses, fixed charges, sinking fund requirement, etc.—for amortization, dividends and surplus was $392,417, and the increase in surplus available for dividends over the corresponding month of 1915 was $89,728. For the eight months ended Aug. 31, 1916, the gross increase in total business amounted to $3,206,776, an increase of 13.3 per cent. The balance available for amortization, dividends and surplus was $3,364,607, and the increase in surplus available for dividends amounted to $790,065.

Southern Cambria Railway, Johnstown, Pa.—The Southern Cambria Railway, on which a wreck occurred on Aug. 12 costing the lives of twenty-six people, has placed its property in the hands of a trustee, James P. Thomas, according to papers filed at the court house in Johnstown. This action was taken, it is reported, in anticipation of heavy claims for damages growing out of the accident.

Union Traction Company of Indiana, Anderson, Ind.—The report of the Union Traction Company of Indiana to the Public Service Commission of Indiana for the fiscal year ended June 30, 1916, shows a total investment of $23,277,985, an increase of $78,982 for the last year. The book value of road and equipment is $22,977,980, an increase of $55,159. The railway operating revenue for the year was $2,621,780, an increase of $167,879 over the previous year. The railway operating expense was $1,511,255, leaving a net revenue from railway operations of $1,110,524. Gross income totaled $1,008,819; interest on funded debt, $666,209, and deductions from gross income, $854,779, leaving a net income of $154,039. The total passenger revenue for the year was $2,190,932, an increase of $137,263. The number of revenue passengers carried was 15,737,969. The total freight revenue was $232,639, and the total express revenue, $84,397. Injuries and damages cost $104,502, and salaries and wages amounted to $835,472.

Waupaca Electric Light & Railway Company, Waupaca, Wis.—The plant and good-will of the Waupaca Electric Light & Railway Company, Waupaca, Wis., has been sold to E. A. Aspness, Montevideo, Minn., and Truman Hibbard, Minneapolis, Minn., by Irving P. Lord, president and principal owner. It is stated that the consideration was about $100,000. The property includes 5.4 miles of single track, ten cars, a going lighting and power business and three water powers. The transfer to the new owners will be made about Nov. 1, at which time Mr. Lord will retire from the management, where he has served for more than twenty-five years. At the time Mr. Lord took over the property it was practically bankrupt, and at the present time it ranks among the most prosperous plants of its size in Wisconsin. Mr. Aspness, one of the new owners, was formerly secretary and general manager of the Montevideo Light & Power Company, and Mr. Hibbard is secretary and general manager of the Electric Machinery Company, Minneapolis.

Wichita Falls (Tex.) Traction Company.—The Wichita Falls Traction Company has filed an amendment to its charter with the Secretary of State at Austin certifying to an increase in its capital from $700,000 to $775,000.

DIVIDENDS DECLARED

Bangor Railway & Electric Company, Bangor, Me., quarterly, 1¾ per cent, preferred.

Central Illinois Public Service Company, Chicago, Ill., quarterly, 1½ per cent, preferred.

Chicago (Ill.) City Railway, quarterly, 2 per cent.

Cincinnati & Hamilton Traction Company, Cincinnati, Ohio, quarterly, 1¼ per cent, preferred; quarterly, 1 per cent, common.

Cincinnati (Ohio) Street Railway, quarterly, 1½ per cent.

Columbia Railway, Gas & Electric Company, Columbia, S. C., quarterly, 1½ per cent, preferred.

Columbus, Newark & Zanesville Electric Railway, Columbus, Ohio, quarterly, 1½ per cent, preferred.

Elmira Water, Light & Railroad Company, Elmira, N. Y., quarterly, 1¾ per cent, first preferred; quarterly, 1¼ per cent, second preferred.

International Traction Company, Buffalo, N. Y., quarterly, 1 per cent, 4 per cent cumulative preferred; quarterly, 1¾ per cent, 7 per cent cumulative first preferred; 1 per cent preferred.

Iowa Railway & Light Company, Cedar Rapids, Iowa, quarterly, 1¾ per cent, preferred.

Kentucky Securities Corporation, Lexington, Ky., quarterly, 1½ per cent, preferred; one-half of 1 per cent on account of the accumulated dividends.

Louisville (Ky.) Traction Company, 2½ per cent, preferred; quarterly, 1 per cent, common.

New Orleans Railway & Light Company, New Orleans, La., quarterly, 1¼ per cent, preferred.

Omaha & Council Bluffs Street Railway, Omaha, Neb., quarterly, 1¼ per cent, preferred; quarterly, 1 per cent, common.

Porto Rico Railways, Ltd., Ponce, Porto Rico, quarterly, 1¾ per cent, preferred.

Public Service Corporation of New Jersey, Newark, N. J., quarterly, 2 per cent.

Republic Railway & Light Company, New York, N. Y., quarterly, 1½ per cent, preferred.

Springfield & Xenia Railway, Springfield, Ohio, quarterly, 2 per cent, preferred.

Stark Electric Railroad, Alliance, Ohio, quarterly, 1 per cent.

United Gas & Electric Corporation, New York, N. Y., quarterly, 1¾ per cent, first preferred.

Virginia Railway & Power Company, Richmond, Va., 1½ per cent, common.

Washington Water Power Company, Spokane, Wash., quarterly, 1 per cent.

York (Pa.) Railway, quarterly, 1¼ per cent, preferred.

Youngstown & Ohio River Railroad, Leetonia, Ohio, quarterly, 1¼ per cent, preferred; three-quarters of 1 per cent on account of accumulated preferred dividends.

ELECTRIC RAILWAY MONTHLY EARNINGS

BATON ROUGE (LA.) ELECTRIC COMPANY

Period	Operating Revenues	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '16	$17,421	*$8,516	$8,905	$3,501	$5,404
1 " " '15	16,016	*9,114	6,902	2,169	4,733
12 " " '16	205,216	*104,420	100,796	36,264	64,532
12 " " '15	182,229	*110,676	71,553	25,322	46,231

COLUMBUS (GA.) ELECTRIC COMPANY

1m., July, '16	$70,246	*$28,591	$41,655	$28,651	$13,004
1 " " '15	57,364	*25,484	31,880	28,679	3,201
12 " " '16	795,636	*335,427	460,209	344,115	116,094
12 " " '15	700,035	*319,471	380,564	345,113	35,451

DALLAS (TEX.) ELECTRIC COMPANY

1m., July, '16	$144,235	*$93,484	$50,751	$36,538	‡$16,213
1 " " '15	144,101	*94,002	50,099	33,397	16,702
12 " " '16	1,901,270	*1,176,633	724,637	427,172	‡312,664
12 " " '15	1,933,274	*1,126,295	806,979	400,819	406,160

EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.

1m., July, '16	$72,309	*$38,992	$33,317	$8,763	$24,554
1 " " '15	65,067	*34,014	31,053	8,716	22,337
12 " " '16	797,879	*418,704	379,175	106,119	273,056
12 " " '15	676,520	*383,473	293,047	104,703	188,344

EL PASO (TEX.) ELECTRIC COMPANY

1m., July, '16	$76,173	*$74,148	$2,025	$4,892	†$2,867
1 " " '15	77,426	*44,006	33,419	4,203	29,216
12 " " '16	1,045,317	*567,785	477,532	54,167	423,365
12 " " '15	991,199	*536,154	455,045	50,336	404,709

*Includes taxes. †Deficit. ‡Includes non-operating income.

Traffic and Transportation

OHIO ABANDONMENT CASE DECIDED

Public Service Commission Holds That It Is Without Jurisdiction to Prevent Abandonment of Service Following Foreclosure Sale.

The Public Utilities Commission of Ohio has decided that it has no jurisdiction in connection with the application made to it to prevent abandonment of service on the Lake Erie, Bowling Green & Napoleon Railway, and has dismissed the complaint.

On Aug. 13, 1916, O. W. Fisher and others, residents of Wood County, Ohio, filed a complaint before the commission, stating among other things that the Lake Erie, Bowling Green & Napoleon Railway and those claiming the right to operate the line, through Theodore Luce as trustee, threatened to discontinue the operation of the railway and to tear up the track and dismantle the property and sell it as junk. They asked the commission to require those claiming the right to operate the railway to continue the operation and furnish passenger and freight service, and to restrain and enjoin the owners from tearing up the tracks and dismembering the property.

Mr. Luce in his answer stated among other things that the railway was never sufficiently patronized to make the operation of it profitable; that the road was sold by the order of the District Court of the United States for the Northern District of Ohio, Western Division, by a receiver appointed by the court; that he purchased the property; that he discontinued the operation of the said railway and intended to dismantle and sell it as scrap in pursuance of the orders of the court. He denied the jurisdiction of the commission to interfere with him in his purpose to dismantle the road and discontinue service.

In the reply filed by the complainants they denied that the decree of the court gave the purchaser any right to dismantle the property or to remove any part which might affect the general operation of the road, or interfere in any way with the continued running of cars, and also denied his right to suspend operation or to dismantle the road.

Because of the gravity of the situation, the commission took the matter up out of its regular order and granted a speedy hearing. In its finding the commission said in part:

"It is needless to say that, as this is an administrative body, clothed with no power to issue injunctions, the sole and only question to be determined in this proceeding is as to its authority to require the continued operation of the railway.

"On the threshold of the inquiry as to the jurisdiction of this commission in this matter, the question arises, Has a railway the right to abandon its service, surrender its franchise, and go out of business, without first securing from some constituted authority, permission so to do? If it has not the right voluntarily to abandon its service and withdraw from the business in which it was engaged, to what tribunal should it apply for such consent and what showing is it required to make before it is entitled to permission to cease to serve the public and carry on the functions for which it was organized?

"We do not find any power lodged in this commission to determine the question as to whether or not a railroad may entirely abandon its service. It seems to us to be a legal question which must be judicially determined by a court having competent jurisdiction to inquire into the justness and reasonableness of the application, and clothed with the equitable power to grant or withhold its consent as the facts and circumstances would warrant; and if granted, to prescribe the conditions upon which it may withdraw.

"In a recent case reported in Volume C, page 871, 1915, Public Utilities Reports, annotated, the New York commission in discussing the question as to whether or not a railroad which was doing unprofitable business might properly be abandoned said, 'While this is doubtless true as a general statement of the abstract right, it does not follow

that a railroad corporation may discontinue its entire service at will and itself be the sole judge of the propriety and necessity of such a discontinuance. It would seem that consent of the State is a prerequisite to the absolute abandonment of the enterprise. We are not called upon to determine how such consent may be obtained; sufficient to say that there is nothing in the Public Service Commission's Law which clothes this commission with authority either to ascertain and decide whether the facts upon which such a right is predicated actually exists in a given case, or to determine the terms and conditions under which the abandonment of such an enterprise may be permitted.'

"If it is necessary, however, for the carrier first to obtain permission from a court of competent jurisdiction before it can withdraw from serving the public, has not that question already been determined in this case by the decree of the court in the foreclosure proceeding in which the purchaser received the right to sell said above described property, or any part thereof; provided, always, however, that any such assignment or sale shall be made for cash and that the proceeds thereof shall be paid forthwith to the special master, and by like expressions in the various decrees of the court which have been herein before quoted?

"Nowhere in a subsequent decree has the court surrendered its jurisdiction of all the questions affecting the disposition of this property; that court still holds the right, until the purchase price is paid, to retake and resell the property. The receiver and the special master are officers of that court, and the purchaser is but selling the property piecemeal and carrying the proceeds into that court which has the whole matter in hand, and is working out the rights of the public, the creditors and the stockholders. It seems to us that it would be presumption on our part to assume to make any order relative to this property while it is being sold for the payment of its debts and under the orders of a court of competent jurisdiction. If we were to assume to have authority, against whom would the order issue? Mr. Luce is in possession, but his title does not ripen until he pays the purchase price and receives the deed of conveyance. If the orders of the court carry with them the right to dismantle this property, and if the complainants feel that such order should not have been made, they have their remedy by appeal. If the orders already made do not amount to the granting of authority to dismantle the property, then any interested party may still apply to that court, and will doubtless grant a hearing upon the application to restrain the dismantling of the property, at least while under its jurisdiction.

"We are informed that since the filing of this complaint an application was made to the Court of Appeals sitting at Sandusky, Ohio, and that it took the view that the exclusive jurisdiction is still in the United States District Court.

"We realize that the withdrawal by a common carrier of its service is a serious loss to a community and if it were possible, would be glad to grant relief, if the facts warranted it; but as we view the matter the question is not within our jurisdiction, and the application will be denied.

"In order that the complainants may have an opportunity of presenting the question to the Supreme Court for review, if they so desire, we have noted their exceptions to the finding of the commission."

SAFETY INCREASED IN SAN FRANCISCO

After a tryout for one month of the plan for keeping jitneys off Market Street in San Francisco between the hours of 10.30 a. m. and 4 p. m., there is general approval of the plan, and its advantages are so apparent that there is little doubt of the rule being made permanent. The traffic chief of the police department stated to a representative of the Electric Railway Journal that only two auto accidents were reported on Market Street in the month since the jitneys were ruled off. From six to fifteen accidents had been reported regularly each month for the thoroughfare. Since the jitneys were prevented from operating on Market Street during the middle of the day, the number of buses in service has decreased at the rate of about fourteen a week. An average of twenty cars a week have abandoned the service and six or seven new cars a week have entered the service.

TEACHING SAFETY TO SCHOOL CHILDREN

Red for "danger" and green for "Irish" was the conception of the danger and safety emblems which Mrs. Katherine D. Larrabee, the lecturer of the bureau of Public safety of the Brooklyn (N. Y.) Rapid Transit Company, found to be most widely entertained among the children of the Brooklyn vacation schools and playgrounds whom she met in the annual summer school safety campaign under the auspices of the Brooklyn Institution for Safety and the Board of Education. Mrs. Larrabee was well pleased that the children universally recognized the danger sign, and she explained to them the more exact significance of the green symbol from the safety point of view.

During the safety work this summer approximately 100 lectures were given in fifty-five different playgrounds throughout Brooklyn. The school authorities, on account of the epidemic of infantile paralysis, were obliged to restrict very largely the extent of some of the playground activities, and the children were met by the lecturer as a rule in small groups rather than in large bodies of 1000 or more. Games and play stories were introduced with great success. An adaptation of the old "stage coach" game, in which various matters bearing on the question of safety were brought out, was especially introduced.

Safety races for prizes formed another part of the playground work, the winners of the trial heats being tagged by a piece of green paper and the losers by a piece of red paper. The winners of the final heats received prizes, such as a baseball to the older children and a rubber ball to the younger children.

The company's bureau of public safety, at the close of the summer playground work, received a letter from Henry J. Silverman, who acted as supervisor of the work in the vacation schools and playgrounds, to the effect that the principals and teachers in the schools had spoken to him about the interesting way in which the subject of safety had been taken up. He was sure that the work would bear good results. In connection with the summer work Ingersoll watches ("Junior" size to boys, "Midgets" to girls) were awarded to twenty-eight pupils for special merit in the safety work, and "safety always" banners were given to sixteen schools.

BAY STATE COMPANY NOT REQUIRED TO EXTEND DISCONNECTED LOCATION

The Public Service Commission of Massachusetts has issued a decision denying that portion of a petition of citizens of Lowell asking that the Bay State Street Railway be compelled to extend its lines from the intersection of Varnum Avenue and Totman Street to the so-called Boulevard entrance at Fowler Road. Chapter 244, Acts of 1916, section 23, gives the board power to order any street railway to build and operate any just and reasonable extension of its lines for which it may have or may be granted locations. The statute imposes upon the commission, however, the duty of examining the circumstances of every case and of considering the effect of any order to be made upon the financial ability of the company to make necessary changes of equal or greater importance. The petition also urged that the company be required to complete a previous location of its lines from the present terminus in Varnum Avenue northward to Totman Street.

The commission states that the present financial condition of the company does not warrant the enforced building of extensions where the prospect of securing sufficient revenue to justify their construction cannot be made to appear. Traffic counts by the parties to the proceedings and by the inspectors of the commission, and other evidence, hold out no promise of such increase in revenue as would indicate that the proposed extension from Varnum Avenue and Totman Street to Fowler Road could, in any reasonable, proximate period, justify its construction. The company's first location, however (from Mammoth Road to Lexington Avenue, in Varnum Avenue), has been partly built upon. This, in the commission's view, gives this part of the line a different status from that of the second location (from Varnum Avenue and Totman Street to Fowler Road), no part of which is regarded as of any value by the company and which the company has indicated its willingness to surrender. It

is the board's view that the action of the company in building upon part of the first location obtained imposed upon the company the obligation of completing the work to the northerly limit of that location. The company is therefore required to complete its line to the intersection of Totman Street and Varnum Avenue, but is permitted to refuse to build the extension to the Boulevard entrance.

SEATTLE BUS QUESTION TO GO BEFORE VOTERS

At a special session of the City Council of Seattle, Wash., recently, a resolution was introduced and adoped which has for its purpose the submission to the voters at the general election on Nov. 7 of the entire subject of jitney bus regulation. The bill and resolution were both proposed by Councilman Allen Dale, and seconded by Councilman R. H. Thomson. The bill will come before a committee of the whole Council at an early date. It will provide for the issuance of certificates to motor bus operators by the superintendent of public utilities, who is to be empowered to grant, refuse or modify the route, terminals or schedule of each application for a certificate. It will also provide that changes in routes may not be made oftener than once in thirty days, and that all certificates shall expire on Dec. 31 of each year. The superintendent of public utilities will be authorized to promulgate necessary rules designating places throughout the city for taking on and discharging passengers. Appeals may be made from orders of the superintendent of public utilities to the Board of Public Works, and from the Board of Public Works to the City Council, which is to be the final arbiter. The City Council will be empowered to require the operators of motor passenger vehicles to furnish a bond in sufficient amount and with adequate security on the condition that the operator shall pay all damages which may be sustained by any person injured by reason of any careless, negligent or unlawful act on the part of the operator, his agents, or employees.

San Francisco May Operate Motor Buses.—As an auxiliary to the Municipal Railway system, the San Francisco Board of Supervisors recently approved the recommendation of City Engineer O'Shaughnessy, who proposed that motor buses be run across Golden Gate Park between Sunset and Richmond Districts, to connect with the municipal cars. No decision has been made as to just what routes will be followed, but the Board of Public Works has been directed to prepare and submit for approval of the Supervisors, specifications for furnishing the city with auto buses suitable for transportating passengers.

Accident in New York Subway.—In a rear end collision on the subway division of the Interborough Rapid Transit Company, New York, N. Y., on Sept. 25, a patrolman on strike duty was seriously injured and a dozen passengers were slightly hurt. The motorman of the follower, the moving train, jumped to safety. He has been in the employ of the company for ten years and Frank Hedley, vice-president and general manager of the company, declared that the extreme nervous tension to which motormen have been subjected because of the strike was directly responsible for the collision. Each of the ten-car trains involved was made up entirely of steel cars.

Commission Decision Rendered in Pittsburgh "Owl" Fare Case.—In an opinion handed down on Sept. 28 the Public Service Commission of Pennsylvania holds that the Pittsburgh Railways acted in violation of both the spirit and the letter of the public service company law of the State in the way in which it proceeded to give notice of the doubling of its "owl" car or night fares, and in an order supplementary to the opinion the commission directs the company to cease from collecting any rates or enforcing any rules or regulations except those contained in its original tariff filed on July 17, 1914, and further orders the company to make reparation to its patrons for excess fares upon presentation of certificates of excess payment issued under order of the commission since June 23.

Plea Made for Omaha Jitneys.—John N. Baldwin, attorney for the Jitney Drivers' Association, declares Omaha's twenty-five jitneys will be driven off the streets on Oct. 1, unless the ordinance relating to liability bonds is made less oppressive. The ordinance requires bonds rendering the insurance company "primarily liable" for damages in the event of accident. This and other clauses are practically prohibitive, according to Mr. Baldwin. The only company which has been bonding jitneys has given notice that no more bonds of the kind now in use will be provided. The jitneys' license will expire on Oct. 1. Mr. Baldwin says that as they cannot secure new bonds unless the ordinance is amended they will be driven off the streets.

Organizing for Kansas City Safety Work.—W. H. Cameron, secretary, and C. W. Price, field secretary, of the National Safety Council, spent Sept. 18 and 19, in Kansas City assisting the newly organized local council in planning its work. The extensive organization of the Kansas City Railways provided useful groundwork for the local council, and at each of the conferences many heads of departments of the railways were present. J. H. Harvey, superintendent of efficiency of the railway, and head of its safety movement, presided at all sessions. These conferences emphasized the value of educating the children. This phase of the work, perhaps the most important, will be prosecuted largely through the machinery already put into motion by the company for reaching the school children.

Buffalo Fare Reduction Case Adjourned.—Apparently not in sympathy with the suggestion made by the Corporation Counsel to start proceedings for a reduction from 5 to 4 cents in the fare charged by the International Railway, Buffalo, N. Y., over its city lines, the City Council adjourned the matter when it came up for a hearing. Porter Norton, counsel for the company, appeared before the city authorities and branded any attempt on the part of the city to force a rate investigation by the Public Service Commission as a reprisal to thwart the company's efforts to have its special franchise assessment reduced. Mayor L. P. Fuhrmann asked the Corporation Counsel why he desired to connect the proceedings to have the company's property appraised and the proposed rate investigation and he replied that the same evidence could be used in both matters. At the company's request the hearing was adjourned.

Division of Ferry and Bridge Fare to Stand.—Members of the Seattle Port Commission and taxpayers residing in the eastern and western districts of Seattle at a special meeting of the commission rejected the plan proposed by C. E. Remsberg, its secretary, for giving the Ferry Line Auto Bus Company 3 cents of every 5 cents paid aboard the bay ferry steamboat at West Seattle, whether or not the passengers use the bus line. Under the present arrangement with the Ferry Auto Bus Company, the taxpayers, according to reports, are losing $1,200 a month. This sum would be increased to about $1,800 a month were Commissioner Remsberg's plan placed in effect. The Port Commission's budget for 1917 shows a deficit of $24,000 for the operation of the West Seattle ferry, according to Charles Cowen, representing property owners in the Cowen Park District. On motion of Commissioner Robert Bridges the commission decided to continue the present plan of dividing the fares of only those passengers who use both the ferry and the autobus line. This line operates from the West Seattle Ferry, in West Seattle, throughout that district.

Prospective Improvement in Long Beach (Cal.) Traffic Conditions.—Officials of the Pacific Electric Railway, Los Angeles, Cal., have recently been in conference with the Long Beach Safety Commission, with the result that a program has been agreed upon by both parties which embraces much needed changes in the traffic conditions. James R. Williams, Safety Commissioner, plans to submit the agreement, which has been jointly compiled, before the city authorities, and it is anticipated that it will carry considerable weight because of the joint sanction of the Safety Commission and the Pacific Electric Railway. The principal features of the new program are as follows: Passage of a new ordinance prohibiting jitneys from operating on streets where car lines are in operation; removing the jitney terminal from the congested district, corner of First Street and Pine Avenue, to the corner of Ocean and Pacific Avenues; possible placing of the jitneys on a franchise basis, and a ten-minute service on all lines of both jitneys and street cars between the hours of 6 a. m. and 10 p. m., and half hourly from 10 p. m. to midnight.

Personal Mention

H. B. Whiteman, who has been acting as assistant secretary and treasurer of the Nashville Railway & Light Company, Nashville, Tenn., has been appointed secretary and treasurer of the company to succeed H. C. Walters, resigned, who has entered the newspaper business.

A. E. Rhoades, inspector for the Transcontinental Freight Bureau in Sacramento, Cal., has been appointed general freight and passenger agent of the Central California Traction Company, Sacramento, Cal., to succeed W. P. Neville, whose resignation from the company is announced elsewhere in this column.

H. C. Walters, whose resignation as secretary and treasurer of the Nashville Railway & Light Company, Nashville, Tenn., was announced in the ELECTRIC RAILWAY JOURNAL for Sept. 23, entered the railway field in 1900 with the company. He started in at the very bottom and worked himself up to the place of secretary and treasurer, which position he filled for the past eight or nine years.

Charles B. Hole, Montclair, N. J., has succeeded Bird S. Coler, New York, N. Y., as president of the North Carolina Public Service Company, whose properties include street railways and electric light and gas plants, etc., at Greensboro, High Point, Salisbury, Spencer and Concord, N. C. Mr. Coler will continue with the company as a member of the board of directors. Mr. Hole will reside at Greensboro.

W. P. Neville has resigned as general freight and passenger agent of the Central California Traction Company, Sacramento, Cal., to become manager of the Lawrence Warehouse Company. Mr. Neville has been with the Central California Traction Company since it was organized seven years ago. He started as freight clerk and was promoted to chief clerk, then to agent and finally to general freight and passenger agent.

D. C. Green, formerly connected with the organization of H. M. Byllesby & Company as local manager at two Oregon and Washington properties, has been appointed general manager of the Fort Smith Light & Traction Company, Fort Smith, Ark., succeeding H. C. Hoagland, who has been managing that property in connection with his work as manager of the Muskogee Gas & Electric Company for some time past. Mr. Hoagland will continue as manager of the Muskogee Gas & Electric Company.

Alfred F. Townsend has been appointed manager of the Stone & Webster properties at Beaumont and Port Arthur, Tex., included in the system of the Eastern Texas Electric Company. Mr. Townsend has been associated with the Stone & Webster interests for the last fifteen years, during which time he has been connected with the Lowell (Mass.) Electric Light Corporation; Ponce (Porto Rico) Railway & Light Company; Sydney (Nova Scotia) & Glace Bay Railway and the Woonsocket (R. I.) Electric Machine & Power Company.

E. E. Hawkins has resigned as president of the Ogdensburg (N. Y.) Street Railway, the Ogdensburg Power & Light Company and the Ogdensburg Gas Company, and will remove to Patchogue, L. I., and devote his entire time to the Patchogue Electric Light Company, of which he is president. Mr. Hawkins has been engaged in public utility work for many years, and besides the connections just mentioned was formerly with the Patchogue & Port Jefferson Traction Company and the New Paltz & Walkill Valley Electric Railway, New Paltz, N. Y.

Harry D. Frueauff, retiring general manager of the City Light & Traction Company, Sedalia, Mo., was the guest of honor on Sept. 8 at a banquet tendered him at Hotel Terry, Sedalia, by the company employees and a few invited guests as a farewell previous to his departure for Montgomery, Ala., where he is to be general manager of the Montgomery Light & Water Power Company as noted previously in the ELECTRIC RAILWAY JOURNAL. In appreciation of the good fellowship that Mr. Frueauff has instilled among all officials and company employees during the three years' service at Sedalia the employees and other company representatives presented him with a valuable Elk charm.

Sam W. Greenland has been elected president of the Indiana Electric Light Association. Mr. Greenland was born at Clarion, Pa., in 1879. He was educated at the Pennsylvania Military College at Chester, Pa., and at the Pennsylvania State College, State College, Pa. At the latter institution he was graduated in electrical engineering. Since that time he had been employed in the construction department of the American Telephone & Telegraph Company in the Pittsburgh district in gas, electric and electric railway engineering with Robert W. Watson, consulting engineer, Harrisburg, Pa., and in central-station operating work. In the latter pursuit Mr. Greenland was first general manager of the Columbus Railway, Light & Power Company, Columbus, Miss. Later he took up the position he now holds, that of general manager of the Fort Wayne & Northern Indiana Traction Company. This company operates 220 miles of electric street and interurban railway in the vicinity of Fort Wayne, as well as electric light and power properties at Fort Wayne and at thirteen other interconnected Indiana towns.

Irving P. Lord, president and general manager of the Waupaca Electric Light & Railway Company, Waupaca, Wis., and principal owner of the company, has sold his interest in the property and will retire from the management to engage in law practice. Mr. Lord was born in Waupaca in October, 1857, and by teaching school and newspaper reporting he obtained funds to attend Lawrence University at Appleton, Wis. Subsequently he studied law and was admitted to the bar in 1881. In 1888 Alexander Dow of the Brush Electric Company, Cleveland, Ohio, and others, incorporated the Waupaca Electric Light Company and Mr. Lord became one of the stockholders. In 1892 Mr. Lord and W. D. Baker acquired the property and reincorporated it under the name of the Waupaca Electric Light & Railway Company, at which time Mr. Lord was made president. Mr. Lord was one of the charter members of the Northwestern Electric Association, which later was superseded by the Wisconsin Electrical Association, and served as president of the Northwestern association for a year. In January, 1912, he was elected president of the Wisconsin Electrical Association. The company at Waupaca operates 5.4 miles of line and ten cars. It furnishes energy for lighting and power in addition to that for railway operation.

W. B. Voth, who resigned recently as chief engineer and purchasing agent of the Empire United Railways, Inc., Syracuse, N. Y., has been appointed general manager of the Ogdensburg (N. Y.) Street Railway, the Ogdensburg Power & Light Company and the Ogdensburg Gas Company, and entered upon his duties with these companies on Sept. 25. Mr. Voth was connected with the Empire United Railways for two years. Before that he was general superintendent of the electric railway and lighting property at Sheboygan, Wis. Mr. Voth is a native of Milwaukee, and was graduated from the University of Wisconsin in 1897. After designing, constructing and operating several small hydroelectric plants in his native State, he was appointed resident engineer at Sheboygan in 1904 during the building of a steam power station and the reconstruction of the local commercial and street lighting system. After finishing the construction work Mr. Voth remained to operate the plant as general superintendent. At the same time he acted as consulting engineer for the Greensboro (N. C.) Company, controlled by the same interests, resigning, however, in 1914, to become chief engineer and purchasing agent of the Empire United Railways.

W. B. VOTH

H. Bertram Potter has been appointed assistant to the president of the Boston (Mass.) Elevated Railway. This office in the company's scheme of organization is intended to supply President Brush with a personal representative who shall be authorized to represent and act for him in all matters. Mr. Potter is thirty-five years of age and has been in electric railway work eleven years. He was educated in the public schools at Cambridge, Mass. When he was sixteen years of age Mr. Potter entered the industrial field in a machine shop at South Boston. His business experience was broadened by a term of service as receiving teller in the then American National Bank, Boston, and by a period of traveling salesmanship for a clothing establishment. Through his banking acquaintance, Mr. Potter was selected in 1905 to go to Lewiston, Me., to take charge of the building of the Lewiston & Turner Street Railway, now a part of the Lewiston, Augusta & Waterville Street Railway system. In the construction and operation of this road, which included about 14 miles of track, Mr. Potter as general manager obtained valuable experience along many lines and developed the first purely electric freight business in New England, as distinguished from the usual ramified express service. Upon the purchase of the road by the Clark interests of Philadelphia he began work for the Lewiston, Augusta & Waterville property, only to be called immediately to the Boston Elevated Railway to develop the electric freight business of the latter. This branch of the company's service has been brought to a high stage of efficiency through agreements with other operating companies which handle the business, the Boston Elevated furnishing certain transportation and terminal facilities within its territory without the handicap of caring for usual detail. When the present chief executive of the company joined the Boston Elevated Railway about six years ago as assistant to the vice-president, Mr. Potter became Mr. Brush's assistant, and has held that post at each successive advance of his superior. His work has been closely identified with the bureau of transportation and during the last three years he has had charge of the company's interests before the Massachusetts Public Service Commission and other public and quasi-public boards and organizations. Mr. Potter's work at public hearings has won him the confidence of the commission and the public alike, and his willingness to meet opponents frankly and squarely with clear and friendly explanations of the company's position has accomplished much in the establishment and in the maintenance of the best public relations. He is a member of the American Electric Railway Transportation & Traffic Association, the New England Street Railway Club, Masons, Elks, Boston Chamber of Commerce and many local organizations.

H. B. POTTER

OBITUARY

James A. Leslie, brief mention of whose death was made in the ELECTRIC RAILWAY JOURNAL of Sept. 2, spent his life in the street railway business. He was born on Nov. 16, 1865, and entered the employ of the old Southern Railroad, St. Louis, as a street car driver. He remained on the front platform until the line was converted into electric, when he became a conductor on the Lindell Railway. There he remained a little over a year, when he returned to the Southern Electric as a road officer. After nine years as a road officer he resigned to retire to private business. In March, 1901, he returned to railway work, entering the service of the United Railways in the fifth division as an instructor of motormen. At this time the Olive line had just been changed from cable to electric power. Shortly afterward he was promoted to be division road officer on Broadway, and then came his promotion to superintendent of the division.

Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (*) indicates a project not previously reported.

RECENT INCORPORATIONS

***McDonald & Burgettstown Street Railway, Pittsburgh, Pa.**—Incorporated to construct and operate a 15-mile electric railway in Washington County. Capital stock, $100,000. Incorporators: R. L. Henderson, Pittsburgh, and others.

FRANCHISES

Riverside, Cal.—The Pacific Electric Railway has received a franchise from the Council to relocate its tracks to the center line of Fourteenth Street between Main Street and a point east of Almond Street.

Lawrence, Kan.—The franchise granted by the city of Lawrence to the Kansas City, Kaw Valley & Western Railway has been refused by the company, owing to restrictions on the hauling of freight through Lawrence and the clause allowing the city to change the franchise whenever it wished. The interurban lines from Kansas City to Lawrence are now operating within the city limits under a temporary agreement.

***St. Louis, Mo.**—The J. C. C. Waldeck Electric Railway has asked the Board of Public Utilities for permission to construct an electric railway over Montrose Avenue from the Missouri Pacific Railway tracks to the plant of the Independent Packing Company at Hickory Street and Ewing Avenue.

Buffalo, N. Y.—The City Council has approved the application of the International Railway for a franchise to lay double tracks and operate cars ½ mile through Franklin Street from Chippewa to Allen Street. Under the charter the franchise must be approved by voters at a general election before it can be effective.

***Portage, Pa.**—Application has been made to the Borough Council for a franchise to construct an electric railway between Portage and Martindale. J. I. Johnson, Johnstown, Pa., is interested.

Parkersburg, W. Va.—The Kanawha Traction & Electric Company has asked the Council of Parkersburg for a thirty-year extension of its franchise.

TRACK AND ROADWAY

***Grass Valley, Cal.**—Plans are being made for the construction of a 1-mile electric line to connect the Empire and Pennsylvania mines, owned by W. B. Bourn, San Francisco.

Martinez & Concord Interurban Railway, Martinez, Cal.—Work will be begun on the construction of the Martinez & Concord Interurban Railway within the next few weeks. Grading will be begun on Escobar, Pine and Jones Streets and the Pacheco Road. Clifford McClellan, San Francisco, is interested. [Aug. 5, '16.]

Marysville, Cal.—It is reported that the Los Verjels Land & Water Company plans to construct an electric line from Bangor to connect with the Northern Electric Railway at Oroville.

Municipal Railway of San Francisco, San Francisco, Cal.—The public utilities committee of the Board of Supervisors will shortly take up the question of building an extension to the municipal street railway down Baker Street to the Palace of Fine Arts and the proposed new State Normal School in the California Building.

Georgia Railway & Power Company, Atlanta, Ga.—This company is double-tracking its Lakewood line from the Jonesboro Road in Lakewood Heights to the Southeastern Fair Grounds, about 1½ miles.

Quincy (Ill.) Railway Company.—This company will build a loop at Twenty-second and State Streets this fall.

Columbus, Greensburg & Richmond Railway, Columbus, Ind.—A business survey of this company's proposed line to connect Columbus and Richmond, Ind., has been made by Otto Rensch and John A. Schaffer, Indianapolis, and C. C. Clinton, Chicago. They contemplate financing the road. Frank McColloe and Albert Holland, Columbus, are local promoters. [Sept. 9, '16.]

Indianapolis Traction & Terminal Company, Indianapolis, Ind.—This company has been directed by the Board of Public Works, following its own request, to maintain double tracks in South Meredian Street from Palmer Street to the tracks of the Indianapolis Union Railway Company. The company expects to do a large amount of repair and rehabilitation work before winter. Among the more important projects under way are the laying of new track and of paving between the tracks in Cornell Avenue from Twenty-seventh Street to Thirtieth Street, this work being now practically completed. Rails have arrived for completing the new tracks in Fairfield Avenue from Thirty-fourth Street to Woodland Avenue. The company expects to complete new tracks in East Michigan Street from Rural Street to Michigan Drive and is now engaged in laying new rails for the West track in West Street from Washington Street to New York Street.

Skowhegan & Athens Electric Railroad, Athens, Me.—President Morris McDonald and Directors George Macomber and Weston Lewis of the Maine Central Railroad, accompanied by Harvey D. Eaton, of Waterville, recently viewed the country over the route of the proposed Skowhegan & Athens Electric Railroad and afterwards told a delegation of citizens that they were highly in favor of the construction of the new road and were willing to make a good traffic contract with the promoters of the proposition. To date the proposition lacks about $8,000 to complete the pledges of $100,000, the sum necessary before it can be bonded and the construction work started. [June 26, '15.]

United Railways & Electric Company, Baltimore, Md.—This company proposes to construct an extension on Liberty Heights Avenue and the old Liberty road to Villa Nova.

Twin City Rapid Transit Company, Minneapolis, Minn.—Work has been begun by this company on the extension of its Franklin Avenue line from Twenty-seventh Avenue to Seabury Avenue south. This extension will bring the line to the western end of the Franklin Avenue bridge and ultimately the track may be extended across that structure to a connection with the Rondo line of St. Paul.

Kansas City (Mo.) Railways.—A contract has been awarded by the Kansas City Railways for the construction of four miles of extensions in Kansas City, to Littlefield, Fry & McGough, Chicago, at an estimated cost of about $220,000. The work is in five sections.

New York Municipal Railway, Brooklyn, N. Y.—The Public Service Commission for the First District of New York has awarded to the Degnon Contracting Company, New York City, a contract at $810,265, for the construction of Section 1-B of Route No. 12, a part of the Fourth Avenue Rapid Transit Railroad. The section in question lies in part underneath the Atlantic Avenue station of the Long Island Railroad in Brooklyn. It is part of the Brighton Beach Connection between the Brighton Beach Railroad and the Fourth Avenue Subway. A contract was also awarded by the commission for the installation of tracks on the main portion of the Culver Rapid Transit Railroad in Brooklyn to Kaufman & Garcey, New York City, at $103,680. The new Culver line now under construction is an elevated railroad and will replace the present surface extension of the Fifth Avenue Elevated line extending to Coney Island, and known as the Culver Line. The new line will become an extension of the Fourth Avenue system. The contract awarded to Kaufman & Garcey covers track installation over practically nine-tenths of the line. The portion of the line from near Avenue X to the Coney Island Terminal will be constructed later. It is expected that the line will be completed and ready for operation some time next year.

Charlotte (N. C.) Electric Railway.—This company is building a 1½-mile extension in Dilworth.

Cleveland, Alliance & Mahoning Valley Railroad, Alliance, Ohio.—It is reported that during the coming year this company will construct an extension to Hudson.

Hamilton, Ont.—The City Council of Hamilton, at a special meeting on Sept. 19 approved the proposal to construct a hydroelectric railway line from Port Credit to St. Catharines, via Hamilton.

Toronto (Ont.) Suburban Railway.—This company plans to construct an extension of its line from Bathurst Street east along Davenport Road and down Poplar Plains Road.

Southern Pacific Company, Portland, Ore.—Work will soon be completed by this company on the installation of a new safety device on its Oswego-Portland line. The system over this stretch of track will have seventeen signal lights and sixteen foundations, two for relay purposes. There will be a signal on each side of every curve between Oswego and Jefferson Street station. The company has spent considerable money in the reinforcement of its trestles by means of concrete pedestals and general overhauling of the roadbed. The total cost of improvements is estimated at $40,000.

Southern Pennsylvania Traction Company, Chester, Pa.—Joint installation of a new pole line in the business district of Chester will be made by the Southern Pennsylvania Traction Company and the Beacon Light Company. The poles will be iron of ornamental design.

Hershey, Pa.—Preliminary surveys have been completed of the proposed line between Manheim and Hershey. It is planned to connect with the Elizabethtown line of the Hershey Transit Company. It is reported that the Hershey Transit Company will supervise the construction of the line. [June 17, '16.]

Irwin-Herminie Traction Company, Irwin, Pa.—An application will be made before the Public Service Commission of Pennsylvania on Oct. 3 for an extension of the Irwin-Herminie Traction Company's line north to Export.

Womelsdorf, Richland & Myerstown Street Railway, Womelsdorf, Pa.—Grading has been practically completed between Womelsdorf and Newmanstown by the Lebanon Valley Construction Company for the proposed line of the Womelsdorf, Richland & Myerstown Street Railway. It is expected that the line will be placed in operation before winter. The road will be completed to Myerstown early next summer. Leroy R. Valentine, Womelsdorf, president. [Sept. 2, '16.]

Canadian Pacific Railway, Montreal, Que.—It is reported that this company contemplates the electrification of its line between Kingston and Renfrew. It is stated that a power plant will be installed on the Mississippi River back of Sharbot Lake to develop power for the project as well as to supply current to Kingston and vicinity.

Chattanooga Railway & Light Company, Chattanooga, Tenn.—The East Chattanooga Chamber of Commerce has revived a movement instituted several years ago, seeking to have the construction of a street car line on Oak Street south and Ocoee Street. The Chattanooga Railway & Light Company will be petitioned to make the extension.

Nashville & Gallatin Interurban Railway, Nashville, Tenn.—Extension of this company's line from Edenwold to Springfield, Tenn., 19 miles, is expected to be undertaken shortly. Whether the line will be extended from Springfield to Adairville, Ky., 10 miles further, will depend on a survey of conditions now being made to show the probable traffic on such a line. Stockholders of the Nashville-Gallatin Interurban Railway have approved the extension to Springfield, for which Springfield will raise $150,000, to which $50,000 would be added in case of an extension to Adairville.

Dallas (Tex.) Electric Company.—A new street car line, about a mile long, extending from the vicinity of Fair Park to Parkview, a new addition to the city of Dallas, has just been placed in operation by this company.

Northern Texas Traction Company, Fort Worth, Tex.—With the nearing of completion of the new paving on Main Street from the Courthouse to the Union Station, Mayor Tyra has served notice on G. H. Clifford, general manager of the Northern Texas Traction Company's lines, that the company must complete its line on Commerce Street and redistribute its traffic over Commerce, Main, Houston and Throckmorton Streets, instead of operating all cars over Main and Houston Streets as at present.

Petersburg & Appomattox Electric Railway, Petersburg, Va.—It is reported that work has been begun by the Vaughan Construction Company of Roanoke on this company's proposed extension between Hopewell and City Point, 2½ miles.

Grays Harbor Railway & Light Company, Aberdeen, Wash.—The City Commission has instructed the Grays Harbor Railway & Light Company that unless it paves between the rails of its right-of-way on Riverside Avenue within thirty days it must surrender its franchise to operate its electric cars in Hoquiam.

Tacoma Railway & Power Company, Tacoma, Wash.—Officials of Tacoma Railway & Power Company report cars of the company will be operating on Pacific Avenue, as far as Forty-eighth Street, about Nov. 1. Work on the extension of the Pacific Avenue line began recently.

SHOPS AND BUILDINGS

Ware & Brookfield Street Railway, Ware, Mass.—Work has been begun by the Ware & Brookfield Street Railway on the construction of a new brick carhouse. The structure will be 125 ft. deep by 75 ft. wide and will be near the site of the old carhouse.

Detroit (Mich.) United Railway.—Work is now under way by the Detroit United Railway on the construction of a new office building and carhouse at West Jefferson Avenue and Mecca Street to replace the carhouse located at Fort Street and Clark Avenue. The carhouse will be 209 ft. x 116 ft., of brick construction, and will contain a boiler room, compressor room, employees' wash and locker room and a stock room. The office building will be 64 ft. x 70 ft., of pressed brick construction. The lower floor will contain offices for the line superintendent, carhouse foreman and cashier, an assembly room for motormen and conductors and a restaurant for employees. The second floor will be used for a locker room and dormitory for night crews. The construction cost is estimated at about $65,000.

New York Municipal Railway, Brooklyn, N. Y.—The Public Service Commission for the First District of New York has awarded to the Serber-Stander Company, New York City, the contract for the construction of station finish on three stations of the Broadway-Fourth Avenue Subway in Manhattan, namely, those at Canal Street, Twenty-third Street and Twenty-eighth Street on Broadway. The amount of the contract awarded was $149,325.

Tarrant County Traction Company, Fort Worth, Tex.—A contract has been awarded to H. D. McCoy, Cleburne, for remodeling the old Raymond Hotel property into a station for the Tarrant County Traction Company. The company expects to occupy the new station by Oct. 15.

Tacoma Railway & Power Company, Tacoma, Wash.—Work will be begun immediately by this company repairing its carhouse at South Thirteenth and A Streets. The cost is estimated at $6,000.

POWER HOUSES AND SUBSTATIONS

Iowa Railway & Light Company, Cedar Rapids, Iowa.—This company will erect a high-tension transmission line from Iowa City to Iowa Junction.

Des Moines (Iowa) City Railway.—A contract has been awarded by the Des Moines City Railway to A. H. Neumann & Company, Des Moines, for the construction of an addition to the company's power plant on the Des Moines River. The addition will cost about $55,000.

Ohio Service Company, Cambridge, Ohio.—Work is nearly completed on this company's power plant at Coshocton. A 5000-kw. turbo-generator and auxiliary equipment will be installed.

Montreal (Que.) Tramways.—It is reported that work has been begun by this company on the construction of an extension to its St. Denis power station. The cost is estimated at $20,000.

Pacific Northwest Traction Company, Seattle, Wash.—This company contemplates the immediate extension of its electric transmission lines to the district south of Conway. Plans have been prepared for the installation of a power-station at Conway. The cost of the line to Conway is estimated at $15,000.

Manufactures and Supplies

MOTOR AND CONTROL INQUIRIES INCREASING

Largest Buying in Eastern States—Orders Comparatively Small—Deliveries and Prices Warrant Prompt Consideration of 1917 Requirements

Inquiries for railway motors and control are reported as fairly active for this season of the year. During July and the first of August the inquiries were slow, but since that time the market has picked up noticeably and inquiries are out for quite a number of medium sized orders. Usually, just before convention time, inquiries are scarce and sales in motors and railway motor control are comparatively few. Now, however, there are inquiries for more than 150 quadruple equipments.

It is interesting to note that for a number of years there were spring and fall peaks in the buying of railway motors and control. In 1907, however, the Chicago Surface Lines, then just starting their three-year rehabilitation period, made some very large purchases of equipment in the middle of the summer. That year seemed to be the turning point, and since then orders for railway motor and control equipment have been more evenly spread over the year. This balancing of the placing of motor orders also may be due to the quite general abandonment of the old practice of shifting motors between winter to summer car bodies.

During the past two months there have been very few large railway motor or control orders, except that recently placed by the Boston Elevated Railway. This company purchased from the General Electric Company 100 four-motor equipments and forty two-motor equipments and pneumatic train control for all equipments. The Boston order is said to have amounted to about $500,000.

Referring to the general trade situation for railway motors and control, it is found that most of the activity lately has been, and now is, in the Eastern States. The Interborough at New York and some other large properties placed comparatively large orders earlier in the year.

There are practically no large inquiries on hand from roads in the Central States. In the spring the properties at Kansas City, Detroit, Milwaukee and Minneapolis placed orders for railway motors, which no doubt accounts for the scarcity at this time of large Western inquiries. But it should be noted that the size of the orders just referred to did not favorably compare in the aggregate with those placed by the same companies in former years. Neither was the total large when one remembers that comparatively few motors were ordered in 1915. The 1916 motor orders from the smaller roads in the Central States also are small, if compared with the orders of 1912 and 1913, notwithstanding the fact that many small roads ordered almost no motors during 1915.

The activity in the East during the summer as contrasted with the apparent inactivity in the Central States, may be ascribed to the lag in the return of normal business in the agricultural districts and the consequent lateness in the arrival of good street and interurban traffic in the Central States. Only a few roads in the Central States have yet been forced to increase their equipment to handle the growth of business.

Or, looking at the situation from the purchasing standpoint, it may be that inquiries have been withheld during the summer because of the belief that prices would be reduced before long. Prices now are high as compared with previous years, but in other divisions of the electrical industry, such as in the turbo-generator division, there have been recent price increases, while for motors and control the prices have remained constant since the first of August. Because of the dearth of raw material and because of the labor situation, the manufacturers state that they can offer no hope for any reduction in prices. This, of course, is a situation which now confronts only those roads which are in actual need of additional equipment for extension of service or for replacing obsolete equipment.

But the increase in business that many of the smaller and

most of the larger roads are enjoying will shortly make the purchase of motors and control, as well as cars, a live topic for all roads. The result will be an increased volume of business and consequently the question of delivery will become most important.

Deliveries now on the popular types and sizes of railway motors are quoted at about six months. Eight months is quoted on specials. The delivery of motors and control is almost wholly contingent upon the deliveries to the manufacturer of the raw materials necessary for the construction of the equipment. Copper deliveries are now about five and one-half months, and the motor manufacturers are making heroic efforts to meet even the present comparatively small demands for railway equipment.

Many of those roads which are showing traffic increases are actively considering their future motor equipment needs. Forehandedness in ordering for next year's requirements may beget ample returns. It will certainly result in better delivery than otherwise would be obtainable. This will be true particularly for the smaller orders. Small lot motor orders must take their place in the line of travel through a manufacturer's plant. Exception, of course, can sometimes be made, but rush deliveries are now impossible, and the motor manufacturers, with practically no reserve stocks of parts and raw materials, have to make every order from the ground up, and so are forced to handle their orders on schedule and on the basis of the raw materials available. Thus those roads which will need new equipment during 1917 are crystallizing their requirements into inquiries, as evidenced by the recent activity earlier mentioned.

LARGEST COPPER ORDER PLACED

On Sept. 23, the copper producers closed at New York an order for 448,000,000 lb. of copper to be delivered during the first half of 1917. This large order is for export, and the price has not been made public, but the total order is said to amount to about $125,000,000. During the present week there have been no very large inquiries but prices are firm and indications are said to point to increased prices during October. Copper manufacturers are operating at top notch capacity yet none can make prompt deliveries. The demand for bare and insulated wire is in excess of the enlarged output of the wire manufacturers. This condition indicates the need for forehandedness in making specifications and considering purchases for any railway work to be done next year. The manufacturers are not in position to quote on orders for more than ninety days in advance and deliveries cannot be expected under four or five months. The reasons for restricting quotations to ninety days are: unstable prices for bulk copper, copper for manufacturing cannot be delivered before March, 1917, and the manufacturers cannot afford to tie up their facilities for long in advance.

The enormous size of the foreign order is realized when it is known that the total copper purchased for electrifying 440 miles of the Chicago, Milwaukee & St. Paul Railway was about 8,000,000 lb. as compared with this foreign order for 448,000,000 lb.

BIG TIE CONTRACT

The biggest contract for ties in the history of the Southern lumber industry is announced by the National Lumber Manufacturers Association, which states that a railroad tie contract amounting to several million ties a year for a long term of years, has been placed by a group of Eastern railroads with the Kirby Lumber Company of Houston, Tex. In order to facilitate the handling of this contract the Kirby Company has opened branch offices in New Orleans, Mobile and Hattiesburg. The ties will be produced in Louisiana, Texas, Mississippi and Alabama.

ROLLING STOCK

St. Petersburg & Gulf Railway, St. Petersburg, Fla., is reported to be in the market for four cars.

Ohio Electric Railway, Springfield, Ohio, has purchased ten trail freight cars, 38 ft. 6 in. over all from the Cincinnati Car Company.

City Railway, Dayton, Ohio, has purchased from the Cincinnati Car Company ten light-weight, double-truck, all-steel cars, 43 ft. 5¼ in. over all, to seat forty-eight passengers. These cars are exact duplicates of the all-steel cars placed in service several years ago with the exception that there is one additional window in the car body.

West Penn Traction Company, Pittsburgh, Pa., has ordered one 45-ft. baggage express car from the Cincinnati Car Company.

Fort Wayne & Decatur Traction Company, Fort Wayne, Ind., has purchased from the Cincinnati Car Company one 40-ft. baggage express car.

Citizens Railway, Clarksville, Tenn., is considering the purchase of two or three single or double-truck closed cars, with or without trucks, with a seating capacity of from twenty-five to forty.

San Francisco-Oakland Terminal Railways, Oakland, Cal., is planning to order twelve new cars for use on the Key Division. It is reported that they probably will be ordered from the American Car Company.

South Covington & Cincinnati Street Railway, Covington, Ky., noted in the ELECTRIC RAILWAY JOURNAL of July 29 as being in the market for twenty-five cars has ordered twenty-five all-steel, single-end, double-truck motor cars from the Cincinnati Car Company. These cars are to be low-floor, monitor deck, mounted on 24 in. wheels, will seat fifty-two passengers and will weigh about 29,000 lb. completely equipped.

TRADE NOTES

General Electric Company, Schenectady, N. Y., has received an order from the Public Service Railway, Newark, N. J., for fifty four-motor equipments, GE 200 type, with new PC control, and fifty air-brake equipments.

McKeen Motor Car Company, Omaha, Neb., has recently shipped to the Ferrocarriles del Norte de Cuba, a type "C" engine, 200 hp. motor car. The length over all is 72 ft. 9¾ in.; width over all, 10 ft. 2¾ in.; total seating capacity, eighty. The length of the first class passenger compartment is 14 ft. 4⅜ in. and seats twenty people. The third class passenger compartment is 32 ft. 5⅝ in. long and seats sixty people. The length of the baggage compartment is 8 ft. 6 in. and the mail compartment 2 ft. 6 in. The total weight is 74,000 lb. This is the 148th motor car turned out by this company, and upon arrival at its destination will go into service in place of the present steam passenger service between Jucaro and Moron. The car is electrically lighted by the Stone axle system.

John L. Fay, formerly superintendent of electrical distribution for the Union Electric Light & Power Company, St. Louis, Mo., has become associated with the Paducah Pole & Timber Company and the Southern Pine Manufacturing Company as sales manager. Mr. Fay was president of the company section, National Electric Light Association, and was actively engaged in company activities. He was chairman of the executive committee and a director of the Employees' Mutual Benefit Association, a director of the Utility Employees Savings & Loan Association, and chairman of the Central Safety Committee. Mr. Fay was also a member of the Engineers Club of St. Louis, the American Institute of Electrical Engineers, the St. Louis Jovian League of Electrical Interests, the committee on rules and regulations governing construction and maintenance of poles, wires, cables, etc., for the Missouri Association of Public Utilities; and a member of the committee on overhead lines and inductive interferences for 1916-1917 of the National Electric Light Association.

ADVERTISING LITERATURE

Sprague Electric Works of the General Electric Company, New York, N. Y., has issued Bulletin No. 48,707, which describes and illustrates direct-current motors and controllers for job presses, folders and bookbinding machinery.

Lord Manufacturing Company, New York, N. Y., has issued the "Lord Hand Book" describing hand brakes for all types of equipment. This book will be of considerable value to engineers and railway master mechanics, as it shows by diagram the various methods of installing brake rigging and computing brake pressures.