

Electric Railway Journal

Published by the McGraw-Hill Publishing Company, Inc.
Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

Vol. XLIX

NEW YORK, SATURDAY, JUNE 2, 1917

Number 22

PUBLICITY AND THE SKIP STOP

By means of a well-planned, persistent and frank method of publicity, the United Railways & Electric Company has secured public support for the adoption of the skip stop on two of its lines in Baltimore. Electric railway officials ought to be greatly interested this week in Mr. Burroughs' story of how this result has been secured. In the main, the skip-stop idea has been sold to the conservative Baltimore public upon the basis of time-saving. There have been objectors, of course, but it has been apparent that the motive in practically all cases was pure selfishness, and the serious-minded part of the public, we imagine, has not been slow to see this point. The success of the plan in Baltimore, which already has resulted in faster schedules, more service and a saving in operating costs, should encourage other electric railways to try to adopt this skip-stop plan. There will be, in almost any city, a certain amount of public inertia or unreasoning hostility, but if the advantages of the plan are thoroughly and frankly explained, we believe that public interest will be aroused and that most of the arbitrary opposition will be overcome. Without doubt the present moment is the psychological one for pressing the point, for the admitted need of conservation of national resources of all sorts may well make the public look more sensibly upon efforts to use improved methods of operation.

GOVERNMENT OWNERSHIP IS NOT A SOLUTION

Of late the burdens of railroad and utility operation have grown to such volume that it has become evident that, if private corporations serving the public are to progress, they must have more revenues. In some cases, however, the old cry has been raised, why not government or municipal ownership and operation? The inference, of course, is that with given rates the publicly managed corporation can attain prosperity and a state of full development much more easily than can the private company. Nothing could be further from the truth. In support of this contention we wish to cite the opinion of W. M. Acworth, the noted English authority, as recently expressed before a special hearing of the Newlands joint committee on interstate commerce. In his opinion, history conclusively refutes the idea that government ownership promotes development. If, under existing rates, private capital is not being found in sufficient quantity for extensions and improvements that are urgently necessary, to suppose that "serious statesmen" would for this reason decide on government ownership is to suppose the impossible. To compare the burden on the public of such a step, Mr. Acworth believes, with the alternative of allowing

the existing companies to raise their rates by a small amount, which would make all the difference between poverty and affluence, would be almost "farcical." Thus speaks a man who knows.

MAKE IT 100-PER CENT CAMPAIGN

The present movement for higher fares on electric railways to compensate, in part, for increased cost of operation should not mean a cessation on their part, or on the part of the commissions, to introduce all possible economies which will not impair the service. A 6-cent fare instead of a 5-cent fare is equivalent to only a 20 per cent increase, and this is small compared with the increase in cost of many, if not most, of the factors which go to make up the cost of electric railway operation. Constant effort for economies, therefore, is just as necessary now as ever before. Indeed, it should be pressed even more vigorously. Skip stops, as introduced in Baltimore and elsewhere, will help some. There should be continuous effort to introduce one-man cars on those lines which are suitable for such service. Economies possible through schedule rearrangement and rerouting of cars should constantly be studied, as should all minor economies in railway operation. Railway companies have had more liberty of action with these minor economies and have paid so much attention to them during the past ten years that it is certain that only slight gains are possible there. But with conditions as they are, and as they promise to continue for some years, the 6-cent fare will have to be supplemented by every device and method toward economical operation and efficient service which is not only within the power of the companies to adopt but within the power of the communities to grant.

POPULAR BOND SUBSCRIPTIONS ARE NECESSARY

We pointed out two weeks ago ways in which the electric railways could help in the sale of the Liberty Bonds. The size of the issue makes new methods of flotation necessary. Of course, as most if not all of the money raised by the loan will be spent here, the net financial effect in this country will be a redistribution of money rather than a loss of it. The chief problem is so to distribute the subscriptions that the strain will not fall too severely in any one place. This would be the case if the banks or those interested in large enterprises should take up the entire amount, as it would limit their ability to use their credit in necessary industrial and financial operations. But if the small investor participates, the load will be easily carried. And there is every reason why he should. If the war continues and other bond issues at a higher rate are neces-

sary, the present bonds are convertible to those issued at the higher rate. On the other hand, if the war should come to an early close, the bonds will undoubtedly go to a considerable premium. In addition, there is the patriotic feeling which every subscriber will have, that he is helping his government to win the war. Many railways during the past week have entered subscriptions for these bonds and have offered them for resale to their employees on easy terms. This plan allows the men to pay for the bonds, wholly or in large part, out of future earnings.

EFFECT OF THE CONSCRIPTION ACT

Now that the conscription law has finally been passed by Congress it becomes possible to speculate on the approximate effect upon the electric railway industry. The age limits of twenty-one to thirty, inclusive, for those subject to registration for the draft include roughly one-third of the employees on the average electric railway, although on one large property the fraction is given as only one-fourth. Of these registrants, only part will be made subject to actual draft, the proportion depending both upon the relative number of exempted registrants among the electric railway employees (this covering men relieved because of physical and other defects and because of having dependents) and upon the ratio of the number of men engaged in exempted and in non-exempted occupations. The effect of the former factor may be nullified by assuming that the electric railways are similar to all other industries in regard to the proportion of men supporting dependents and in regard to the relative number of employees that are fit for military duty. This latter is not strictly true owing to the high physical standard required of railway men, but the assumption would properly apply if the physical requirements for the army were made low enough.

The other factor—that of the relative number of men employed and exempt in the industries throughout the country—is difficult to estimate. Agriculture and seafaring are the two principal industries “necessary to the maintenance of the military establishment, or the effective operation of the military forces, or the maintenance of the national interests” mentioned in the act as being causes for exemption, but this does not necessarily mean that all men nominally in these lines of work will be exempted. On the other hand, undoubtedly many now engaged in munitions manufacture, shipbuilding and certain other lines of work will be kept at their present employment. As the Census Bureau has estimated that agriculture, manufacturing, public service and mining occupy 64 per cent of the men within the military draft age limit and that the total number of registrants will be 10,000,000, approximately two-thirds may be exempted. There would then be left only 3,300,000 from which the first draft of a half million can be made. On this basis the first draft, which will come in September, must include 15 per cent of the registrants from the non-exempted industries, and if the electric railways are to be included in that category

they must prepare to face a loss of at least 15 per cent of the registrants that they employ. Since the registrants, as before mentioned, constitute about one-third of the total number of electric railway employees, the loss will probably be not less than 5 per cent of the whole force and possibly more, depending largely upon the strictness of the army physical examination and the exemptions granted in other industries.

THE 6-CENT FARE MUST COME

The 6-cent fare movement is gathering momentum. It is true that in some cities, notably New York, the companies are seeking only to obtain the right to charge 2 cents for transfers. But the conditions in New York are radically different from those in most other cities. A charge for transfers will meet the need of the companies in New York, but it will not give the necessary relief in other cities.

That was a very interesting letter which President Shonts of the New York Railways Company wrote to Mayor Mitchel. The Mayor had suggested in a public statement that there was no reason why public utilities should be exempt from the sacrifices which had to be universally borne in such a national emergency as that now confronting the country. Mr. Shonts very properly pointed out, however, that not only were public utilities not exempt in any sense from the burdens of taxation, high cost of living, etc., which the entire community had to bear, but that so far the public utilities constituted practically the only industry which, because of public regulation, had not been permitted to adjust itself to the changed economic conditions which confronted it. Mr. Shonts added: “It has been the long continued practice of the United States government to charge 2 cents for letter postage, but in the current revenue bill it is proposed to increase the postage to 3 cents. The steel companies have heavy burdens, and they raise their prices. Bakers must pay more for their flour, and they raise the price of bread. The old-fashioned ‘dollar’ watch now sells for \$1.35. The 5-cent package of biscuit now retails at 8 cents. The newspapers pay more for their paper, and there is a very general movement to increase the price of newspapers from 1 to 2 cents.”

A number of the New York papers are urging that the 5-cent fare has been established so long as to have the sacredness of a public institution. That point of view is the only barrier to the sensible solution of this problem. As an economic proposition it is of course too absurd to argue, but as a political shiboleth it has undoubted importance. It is one of the most unfortunate facts of the situation that apparently it cannot be dealt with without reference to political considerations.

It is, however, undoubtedly true that if the rule of the 5-cent fare is to be regarded as inviolable, a great many states are going to be compelled to undertake municipal ownership whether they want it or not. When they do that, the deficit is likely to be passed on to the taxpayer, who will pass it on to the rent-payer, and eventually it will make the burden of the public heavier

than ever. Certain it is that 6 cents worth of service cannot be given for 5 cents. Somebody has got to pay in the long run whatever the service costs. Municipal ownership would mean extravagance, corruption, and pork-barrel methods.

But this fact ought not to be forgotten: The American people are fair, even if they do want to be shown. Every company in the country should make it its business, without a moment's delay, to see to it that the public is shown exactly what the situation is now. It would be difficult to charge 6 cents for passengers in Rochester, N. Y., if people in Boston were riding for 5 cents. The state of the industry and the only prospect for a real development of the street railroading art rests upon raising the basis of street railway fares from 5 to 6 cents. Some companies will not need it. But such companies should offer to put the increased revenue into improving their service.

Every company in the country without delay should take steps to increase its fares. This act is justified by existing conditions and the prospects which confront us. It is an act primarily in the interest of the public service, because the public service is sure to suffer unless the companies can earn enough money to enable them to pay for a service of the highest quality. And such payment must involve not only adequate wages to employees and the market prices of commodities; it must include, as an indispensable charge, a fair return upon the capital invested.

COMMISSIONS AND UTILITIES ORGANIZE FOR NATIONAL DEFENSE

Public utilities throughout the country should follow the lead of those in New York City in forming a Committee on Public Service. Acting upon the initiative of Oscar S. Straus, chairman of the New York Public Service Commission of the First District—and in line with a suggestion made some time ago in the *ELECTRIC RAILWAY JOURNAL*—various street railroad companies, electric light companies and telephone companies have formed such an organization. It is unique in character and of great possibilities for usefulness. Commissioner Travis H. Whitney of the Public Service Commission is chairman of the executive committee, with Ivy L. Lee as secretary.

The scheme is to co-ordinate for effective service, during the war, all these various kinds of companies. One of the first problems considered has been that of co-operation with the Government to secure proper registration of all employees available for military duty. It will be necessary to secure the exemption of many such employees, but it has been felt that this problem should be considered by all of the utilities, so that, in the event of any of the companies suffering unusual hardship through the loss of men, the various companies could co-operate. Companies are to file with this executive committee a complete statement of all their facilities and materials on hand. This is to provide for emergencies. In case a power house or a plant of one of the companies should be blown up, for example, it is planned that the resources of the other companies will be immediately

available to insure the continuous performance of the public service.

The executive committee is to meet once a week at the office of the Public Service Commission. These meetings are expected to bring about the suggestion and development of many plans not immediately related to operation of the individual companies. It has been suggested that each of the companies take steps at one of the early meetings to make it possible for their employees to subscribe, on easy terms, to the Liberty Loan.

It is believed that these weekly meetings, by bringing the leaders of the different companies together and encouraging the informal consideration of any matter which may come up, related to the welfare of the companies, their employees or the public they serve, will be of great helpfulness.

WE MUST STOP WASTING COAL

In a statement just issued to the press Francis S. Peabody, chairman of the National Coal Board, Council of National Defense, appeals to the people of the country to conserve the supply of fuel so that a sufficient quantity may be available for battleships, railroads, and munitions factories and all other enterprises that are making materials for use in the war. As large coal consumers the electric railways will take this appeal promptly to heart and plan for practical co-operation with the National Coal Board. Coal is to some extent wasted by electric railways both in generating electrical energy and in utilizing it. Incomplete combustion in the boiler furnace produces smoke and permits other combustibles to go up the chimney. Excess of air through the furnace also lowers economy. In the engine or turbine room waste goes on due to uneconomical loading of machinery and failure to maintain the best operating conditions of superheat, vacuum, etc. Electrical losses are probably not excessive on railway properties although they might be reduced in many cases, but after the energy gets to the car there is a splendid possibility of saving coal by wasting less energy in the brakeshoes. Cars can be operated with more coasting and, with the co-operation of the public, stops can be eliminated.

By careful attention to all possibilities in the line of energy, and therefore coal saving, any road which has not given the matter reasonable attention before could undoubtedly save from 10 to 20 per cent in the coal pile. Assuming that something like 9,000,000 tons of coal are used per annum in driving electric cars, a 10-per cent saving, or 900,000 tons, would furnish no small contribution toward the solution of the coal conservation problem. Then, too, electric railways purchase considerable energy from central stations. More economical car operation would reduce the amount of this, and the central station coal consumption could thus be reduced by possibly 500,000 tons. In the power plant we cannot expect yet to approach the ideal of 1 lb. of coal per kilowatt-hour referred to in a recent issue of the *ELECTRIC RAILWAY JOURNAL*, but we can certainly try for it. Neither can we expect to operate a car without wasting some energy in the brakeshoes, but we can certainly waste less than we have been doing.

Putting Across the Skip Stop in Baltimore

How the United Railways & Electric Company After Thorough Preparation Has Sold the Skip-Stop Plan to Some of Its Patrons on the Basis of Time-Saving—Reasoning Men Appreciate Its Advantages When Properly Explained

By DWIGHT BURROUGHS

Publicity Manager United Railways & Electric Company, Baltimore, Md.

IN its search for ways and means of bettering its service in Baltimore, the United Railways & Electric Company was impressed with the practicability of the skip-stop method of operation in certain other cities. The company decided, therefore, that this was worthy of consideration with a view of determining its applicability to the local car lines. It had in mind from the first, however, the question as to whether the people of the community would want the skip stop, even though better and more modern service should result.

CONSERVATISM TO BE OVERCOME

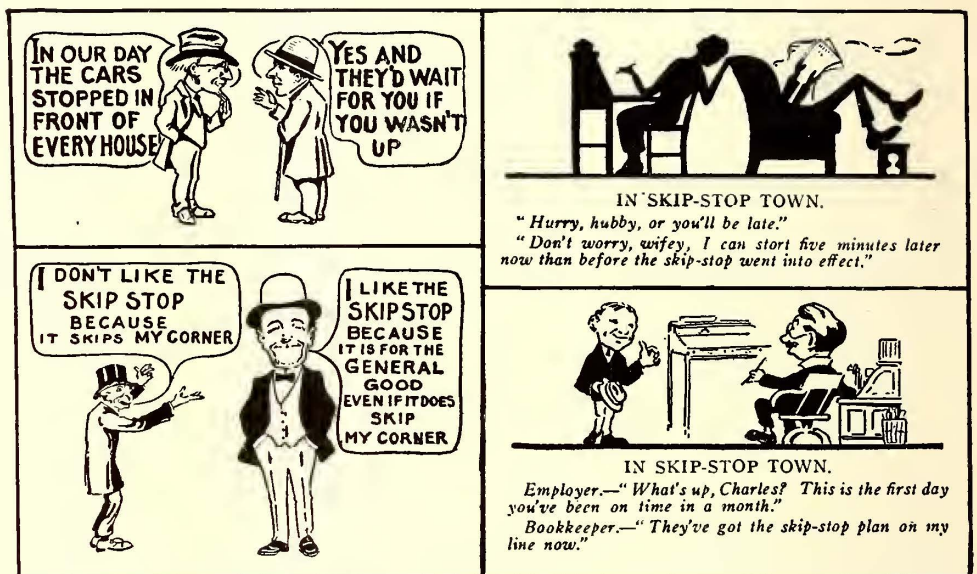
Baltimoreans are known for their conservatism. Almost sixty years ago the proposition to establish a line of horse cars in the city met with such strenuous opposition from the merchants of the principal thoroughfare that the asked-for privilege of laying tracks was not granted. Many years later, when electricity was introduced on the city lines, this method of car propulsion met with opposition, and one of the foremost citizens denounced the electric cars as "roaring, rattling, screeching juggernauts." Moreover, at some points there was opposition to the substitution of smooth pavements for the time-honored cobblestones with which the streets were paved.

Hence, in deciding to study the advantages of the skip stop, the United Railways & Electric Company decided likewise to feel the public pulse. To do this fairly it was deemed necessary to inform the public thoroughly

of the nature of the skip-stop method of operation by placing in its possession all relevant data and information that the company could amass.

STUDYING UP ON THE SUBJECT

To serve these ends there was undertaken what was probably a much more thorough investigation of the skip-stop method than had been carried on anywhere



SKIP-STOP PUBLICITY—HOW THE CARTOONIST IN "TROLLEY NEWS" DROVE POINTS HOME

else. All the resources of the company were employed to secure the very latest data concerning the working of the plan elsewhere. The American Electric Railway Association on request supplied all the information it had in its very extensive files relative to the experience of other cities. This information was very carefully digested, the principal features charted and all figures tabulated.

READ
TROLLEY NEWS
 FOR DETAILS OF THE
SKIP STOP PLAN
 THE UNITED RAILWAYS & ELECTRIC CO.

IF TIME
 IS OF ANY
 THE VALUE
SKIP STOP
 IS A SUCCESS!
 THE UNITED RAILWAYS & ELECTRIC CO.

SKIP STOP
 IN EFFECT
ON THIS LINE
APRIL 15th, 1917
LIST OF STOPS IN TROLLEY NEWS
 THE UNITED RAILWAYS & ELECTRIC CO.

Card Placed in All Cars of System Ten Days Before Skip-Stop Plan Became Effective, and Left There for a Week After the Plan Went Into Operation

Card Placed in Cars Two Weeks After Skip-Stop Plan Became Effective

Card Placed in All Cars of North Avenue and Edmondson Avenue Lines a Week Before the Skip-Stop Plan Went Into Operation in Baltimore

SKIP-STOP PUBLICITY—CAR CARDS USED TO ATTRACT PATRONS' ATTENTION TO THE SKIP-STOP PLAN

Representatives of the company were sent to various skip-stop cities to make a first-hand inspection of the mode and the success of operation, and to determine which of the features could properly be applied to Baltimore. At the same time a general survey was made of several lines in Baltimore to ascertain the practicability of the skip stop on them.

The result of this painstaking work was that all the good points of the several systems used elsewhere were adopted. Those features which it was felt had detracted from the success of the idea in other cities were discarded. Local conditions in Baltimore were always borne in mind, and an effort was made throughout to cater to the greatest convenience of the public.

BROACHING THE TOPIC

Satisfied after this study that the plan could be advantageously adopted in Baltimore, and that the people would be much benefited by its adoption, it was decided to present the entire plan to the people themselves and to invite them to decide whether they wanted a more progressive method of railway operation.

Before any announcement was made that the company had the adoption of the plan in view, however, the successful operation of the system in other cities was described in a brief article in the company's car pamphlet, *Trolley News*. This first article, which was entitled "Skip-Stop Plan—It Seems to Be Solving Difficulties," appeared on Feb. 1. The next issue, dated Feb. 16, contained a short article on "Value of Time—How the Public Can Help Save It." In this there was an illustration of a mule-drawn car and this comment: "When You and I Were Young, Maggie," this car stopped anywhere for us." The tenor of the article was that just as people outgrew the stop-in-the-middle-of-the-block horse car, so they have now progressed to a point where they could consider the stop-at-every-corner plan obsolete.

Thus the skip-stop idea was first suggested to the people in a casual manner, in order to interest them and have them discuss it as a possibility before the company unfolded any plan. In this way the company erected a firm foundation for the work that was to follow.

ASKING THE OPINION OF THE PEOPLE

Then came inquiries from the newspapers as to whether the company was seriously considering the skip stop. The company said that it was, and that it would like to know what the people thought of it. To secure this information the accompanying advertisement, emphasizing the time-saving under the skip-stop plan and asking for an expression of opinion from patrons, was published on the front page of every newspaper in Baltimore.

A great many letters were received in reply to the advertisement. Some persons objected to the plan, but they were in the minority. Nine out of ten writers heartily approved. Some were very enthusiastic, and urged that the skip stop be adopted as soon as possible.

On March 16 the company published in *Trolley News* an article entitled: "Skip Stop for Quicker Service—Many Are in Favor of Trying the Plan." This was accompanied by the reproduction of about two dozen of commendatory letters.

To aid in securing the opinion of patrons, the company distributed card ballots, as reproduced herewith, at the meetings of various organizations of business men. In a short time the skip-stop plan had been indorsed by the City Club, the Rotary Club, the Advertising Club, the Northeast Baltimore Improvement As-

SKIP STOP PLAN BALLOT

(Place your X mark in box at the right.)

FOR A TRIAL OF THE SKIP STOP PLAN	
AGAINST	

Comment _____

Name _____

Address _____

SKIP-STOP PUBLICITY—CARD BALLOT DISTRIBUTED AT MEETINGS OF BUSINESS MEN

sociation, the East Arlington Improvement Association, the North Baltimore Improvement Association, the Confederated Improvement Associations of Baltimore County, the Woodlawn Improvement Association, the Hamilton Improvement Association and various others.

The vote of the City Club, taken at one of its luncheons, resulted as follows: For skip stop, 161; against, 16. The vote of the Rotary Club was: For, 78; against, 3. The vote of the Advertising Club was: For, 73; against, 0. Representatives of the company visited some of the organizations and explained the skip-stop plan personally to the members. This personal touch helped greatly to foster a kindly feeling toward the innovation.

The public appeared to be very much interested by this time, and it was thought advisable to issue a "skip-stop catechism." Accordingly on April 1 200,000 four-page pamphlets, one of which is reproduced on page 995, were distributed in the company's cars and by other means. This pamphlet, entitled "The Skip-Stop Plan of Street Railway Operation," endeavored in a series of questions and answers to cover every possible point which might arise in the public's mind relative to the skip-stop method of operation. The general idea of the whole scheme of publicity was that "the cards should be laid on the table face up," so that every one would be perfectly acquainted with what the company proposed to do.

PREPARING FOR A TRIAL OF THE PLAN

Having issued this catechism and having learned the sentiment of the community as expressed in letters and by ballots, the company felt it was not only justified in, but definitely committed to, making a trial of the skip stop in Baltimore.

A preliminary general survey of certain lines was followed by a thorough survey to establish skip stops, and it was decided to put the plan into effect on the North Avenue and the Edmondson Avenue lines. Immediately this was announced in *Trolley News* and in the newspapers by advertisement and news articles.

It should be stated that the selection of the two lines named was due largely to the fact that they serve both city and country, one of them passing very close to the business center of the city and actually through the

SKIP STOP SAVES TIME

in other cities

Why Not Baltimore?

If the people want to save 5 to 10 minutes on the cars in reaching their destinations we want to help them to do so.

The plan is simply to skip some of the innumerable stops now made and give a form of

EXPRESS SERVICE

It is not contemplated that any person will have to walk more than one block from any present stopping place.

We would like an expression of opinion from patrons of the company.

What Do You Think Of It?

WRITE AND TELL US
**UNITED RAILWAYS AND
ELECTRIC CO.**

SKIP-STOP PUBLICITY — NEWS-PAPER ADVERTISEMENT ASKING OPINION OF PATRONS

retail shopping district. No stops were eliminated in the business section.

There was a great deal of detail work to be done, including the marking of poles to show stopping places and non-stopping places. This in itself required a small army of painters, as it was necessary to do this within a very few days in order that there should be no confusion in the public's mind concerning the date upon which the plan was to go into effect.

In announcing April 15 as the date of beginning skip-stop operation, much literature was prepared and distributed in the cars. The following announcement was published in *Trolley News*:

On Sunday, April 15, Baltimore will have its introduction to the modern skip-stop method of street railway operation, which has been found to work so successfully to the public's good in other large cities.

The effect of the skip stop is to save time for the riding public. To-day, as never before, time is valuable. The saving of five minutes on a trip is of great importance. Wherever there has been progress it has been with the aid of saved minutes.

Saved minutes on each car's run enable that car in the course of a day to make other runs, so the public gets better service as well as faster service.

The lines upon which the plan goes into effect April 15 are the Edmondson Avenue and the North Avenue lines. The company asks the public to give the plan a fair and unprejudiced trial. The stopping places have been selected with a great deal of care that they might be those that would best cater to the public convenience.

The man who has to walk a block farther than heretofore should not lose sight of the fact that he is even then saving many minutes on his trip to his destination.

Poles nearest the present stopping places all along the two lines have been marked. Those at which the stops are retained are painted "CAR STOP."

Since all stops are to be retained in the down-town district it has not been necessary to mark any poles.

Those which are skipped are painted "NO CAR STOPS."

Watch for the white painted poles with the black lettering and there need be no confusion.

The same issue of *Trolley News* contained a list of the stops and non-stops on the two lines, and the little folder concluded with this significant suggestion: "The biggest factor in making this movement for quicker and better service successful will be the co-operation and assistance of the progressive public-spirited citizens of this community."

The advertisement shown above was printed in all the daily papers for several days before the beginning of skip-stop operation. Large cards bearing a similar announcement were posted in the cars of the whole system. Other car cards that were used are shown in the illustration on page 992. Besides those reproduced, there were similar cards used on the cars of lines interlacing the two skip-stop lines for short distances.

On the day before the plan was put into operation the company advertised the entire list of stops and non-stops on the front pages of all the local newspapers.

Then the skip-stop plan went on trial.

ONLY OPPOSITION WAS SELFISH

The company awaited the riding public's verdict. It felt that it had exhausted every effort to acquaint its patrons fully with the plan and its purposes, and it was

extremely gratified at the favorable expressions of opinion that had followed the suggestion of the idea. But how would the people take the skip stop in actual practice?

Several days passed and only favorable comment was heard. Patrons of the lines spoke in the most glowing terms of the bettered service, and persons using other lines asked that skip stop be applied to these.

As expected, however, some objection was soon raised. Many letters were sent to the company, and many to the Public Service Commission, and still others to the newspapers, "roasting" the skip stop. The company was charged with sins conceivable and inconceivable. Its motives were assailed and its integrity questioned.

The basis of the complaints? In almost every case it was the fact that the writer objected to walking one block to get his car. Out of 174 objecting persons 122 indicated that they were not opposed to the skip-stop principle, but seriously resented "their" corner being skipped. Almost every one of these suggested, either directly or by inference, that he would accord the plan his support if his corner was restored as a stop and the other fellow's corner, a block away, was cut out.

CONTINUING THE PUBLICITY WORK

In the meantime the company's publicity work was continuing. During these days the management endeavored to show by figures and statements based on actual operating results

how the public was being benefited by the skip-stop operation on the two lines.

Three days after the plan became effective the accompanying advertisement was used to show the time saving under skip-stop operation. Cards giving the same figures were placed in the cars, and after these the general card shown in the middle of the group on page 992 was used.

At intervals of two or three days other advertisements were used. One of the first of this series, for example, included the following introduction:

MILLIONS OF MINUTES SAVED

The skip-stop method of street railway operation has been in effect on the North and Edmondson Avenue lines of the United Railways eight days. It has proved successful in giving the patrons of the two lines a quicker and a better service, and these patrons have signified in letters to the company, in telephone messages and in personal conversation their hearty approval of the new and improved running schedules.

On these two lines approximately 125,000 persons are carried every day, so that in eight days about one million passengers have enjoyed the benefits of the skip-stop plan. Millions of minutes of valuable time has been saved them.

Then came advertisements headed: "People Approve—Its Advantages Are Obvious," etc. A brief introduction sufficed for each of these, the body of the ad-

Quicker Service Better Service

North Ave. Line

	Woodlawn- Washington St.	Walbrook- Milton Ave
Former running time		
round trip.....	102 Min.	70 Min.
Skip-Stop time.....	90 Min.	60 Min.
Saving in time...12 Min.	10 Min.	

Edmondson Ave. Line

	Electric Pk. to Luzerne St.	Windsor Hills to Loney's Lane
Former running time		
round trip.....	120 Min.	108 Min.
Skip-Stop time.....	106 Min.	96 Min.
Saving in time...14 Min.	12 Min.	

On a round trip from Electric Park to Charles and Saratoga Streets there is A SAVING OF 10 MINUTES.

On a round trip from Liberty Heights Avenue to Charles Street and North Avenue, there is A SAVING OF 8 MINUTES.

SKIP STOP A SUCCESS

SKIP-STOP PLAN

Will Be In Effect On
**EDMONDSON AVENUE &
NORTH AVE. Lines**
Sunday, April 15, and Thereafter

List of stops and non-stops will be printed in this paper Saturday, April 14, and in TROLLEY NEWS.

The Company bespeaks the co-operation of the Public in making a success of this plan for better and quicker service, and asks that it be given a fair and unprejudiced trial.

United Railways & Electric Co.

SKIP-STOP PUBLICITY — NEWSPAPER ADVERTISEMENT ANNOUNCING TRIAL OF PLAN

SKIP-STOP PUBLICITY — ADVERTISEMENT USED THREE DAYS AFTER OPERATION BEGAN

vertisement being letters of commendation received by the company.

HOW "TROLLEY NEWS" SUMMARIZED THE RESULTS

Two weeks after the plan went into effect Trolley News contained an article on "What Has the Skip Stop Accomplished?" This contained the following statement:

Baltimoreans have had an opportunity to see the skip stop in actual operation for two weeks.

In this period about two million passengers have been carried on the two lines. There have been a few objections, but the number of persons who are pleased by the quicker and better service seem far to outweigh those who have not yet come to a realization of the benefits of the plan, but who at present object because they are personally inconvenienced by having to walk a block.

Of the many who are heartily in favor of the skip-stop plan a considerable number have written the company commending the improved service and testifying to the good results it has accomplished.

Patrons of the line who have benefited by the change in the system of operation declare they would consider it a real hardship to return to the old method through which much more time was consumed in journeying from point to point.

This issue of Trolley News also contained an illustration graphically portraying the advantage of the skip stop. With its accompanying explanation it is reproduced herewith.



SKIP-STOP PUBLICITY—"TROLLEY NEWS" GRAPHIC REPRESENTATION OF TIME SAVING

The accompanying illustration very graphically presents the saving of time by the skip-stop plan.

Here are shown cars leaving a terminal under the old schedule and under the new skip stop.

They start at the same hour, noon, and have to run the same distance, nine miles.

At 12.45 the skip-stop car has reached its destination. At 12.45 the old schedule car has still more than a mile to run to its destination. It will be six minutes later before it reaches the point at which the skip-stop car has already completed the run.

PUBLIC IS BETTER SERVED

Since Baltimore has been trying the skip stop, representatives of the United Railways & Electric Company have visited many organizations which were interested



SKIP-STOP PUBLICITY—EXAMPLES SHOWING HOW "TROLLEY NEWS" HELPED TO EDUCATE THE PUBLIC—IN THE CENTER IS THE SKIP-STOP CATECHISM

in the subject, and have explained the plan and answered questions concerning it. The attitude of some of these organizations was not altogether favorable at the beginning, but it has been found that when the matter was properly presented to a body of reasoning men the chances were largely in favor of their appre-

ciating the advantages of the plan, and of our winning their indorsement and support.

Briefly summarized, the advantages of skip-stop operation are manifest through a perusal of the advertisement printed on page 994, which shows the saving of time. Forty-five more round trips per day are being made on the two lines, with an added mileage exceeding 500 miles. And with this our figures show there is a saving in cost of operation.

It has been proved that the public is better served, and that while giving a better and a quicker service the company can save its energy and equipment.

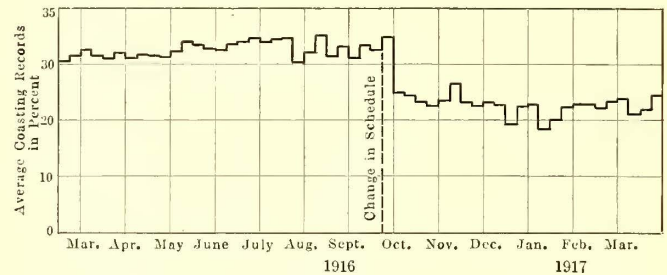
Whether or not the skip stop, which the United Railways & Electric Company regards as a distinct advance in modern railway operation, is to be a permanency in Baltimore, it is felt that the company has presented a trial to the people under the fairest terms possible.

Coasting Recorders at Fort Worth

Point the Way to Higher Schedule Speed—Five Cars Do the Work of Six

ALTHOUGH coasting is usually considered chiefly from the economies it effects in energy and brakeshoes, intelligent analysis of the coasting records can lead to still greater benefits. A recent example is afforded by the Northern Texas Traction Company, which has all of its cars equipped with Rico coasting recorders.

This company operates in Fort Worth the Polytechnic-Belknap line, whose round trip length is 12.28 miles.



COASTING PERCENTAGES ON POLYTECHNIC-BELKNAP LINE BEFORE AND AFTER SCHEDULE SPEED WAS INCREASED

The headway is fifteen minutes. In analyzing the coasting records, it was observed that the average performance of all men was about 33 per cent and the maximum above 35 per cent. Roadway conditions were such that some of this slack in the line could be taken up by using a higher schedule speed to such advantage that one of the six cars could be eliminated.

The change was made on Oct. 1, 1916, the schedule speed being raised from 8.19 m.p.h. to 9.82 m.p.h., or 16 2/3 per cent. This cut the round trip running time from ninety minutes down to seventy-five minutes, or seven and a half minutes each way.

Thus the company not only gets five cars to do the work of six, but also makes travel more attractive. While the coasting percentage now ranges from 24 per cent average to 26 per cent maximum, the actual energy and brakeshoe savings will probably be greater since there are only five cars to run instead of six.

The E. H. Harriman memorial medals have been awarded by the American Museum of Safety as follows: The gold medal to the Alabama Great Southern Railway, Cincinnati, Ohio; the silver replica to the Illinois division of the Illinois Central Railway, Chicago, Ill.; and the bronze replica to James A. McCrear, general manager Long Island Railroad, New York, N. Y.

New Kansas Interurban Line Serves Central Cities

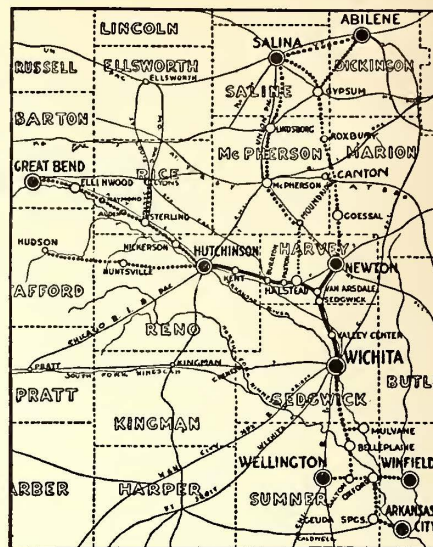
Arkansas Valley Interurban Railway, Connecting Wichita, Hutchinson and Newton, Forms Central Section of Contemplated Extensive System

THE final section of an interurban line, connecting Wichita, Newton and Hutchinson in the central part of Kansas, was completed last year and through service has been inaugurated between these points. The property comprises at present a total of 62.8 miles of electric railway, serving an unusually rich section of the Arkansas River Valley. At the Hutchinson end of the line there is a population of 20,000, and enormous salt production, soda ash manufacturing and flour mill industries. At Wichita, the present south terminus of the line, the milling, packing and stockyard industries flourish and there is here a population of 70,000. The first section was built from Wichita to Halstead, a town of only 2500 population, and the following year the branch into Newton, a town of 8000 inhabitants, was completed. The final construction was the section from Halstead to Hutchinson. When this began operation the passenger traffic increased 100 per cent almost immediately and the earnings reached an amount for the first time which left some surplus above operating expenses.

which the line runs very little difficulty was encountered in its construction. It is on a private right-of-way, varying in width from 66 ft. to 100 ft., with a roadbed 16 ft. wide on top and sloping 1/2 in 1 on fills and 1 in 1 in cuts. The maximum

curvature on private right-of-way is 6 deg., and the maximum grade of 1 1/2 per cent is encountered at an overhead crossing with the Santa Fé Railroad near Newton. The maximum curvature on the newer Hutchinson end of the line is 2 deg. The rail on this end of the line is 80-lb. and 85-lb. A. S. C. E., while that on the older section at the Wichita end is 70 lb. At present approximately 20 miles of the line is ballasted with 6 in. to 10 in. of gravel ballast from a pit on the company's right-of-way, but the entire line is well ditched on either side of the track so that there is excellent drainage and the track has remained in unusually good condition for non-ballasted road. The rails are laid principally on 8-ft. x 6-in. x 7 1/2-in. oak ties and the joints are bonded with No. 0000 twin-terminal bonds in open track and crown bonds in the city streets. Cross-bonding between rails is installed at all lightning arresters. These arresters are of the Garton-Daniels type installed every 990 ft. on the overhead pole. Duquesne rail joints were used on the Hutchinson end of the line, while angle bars were used on the earlier construction.

Temporary wood structures were installed in the original construction work, but are being replaced as rapidly as possible with permanent concrete bridges.



— Interurban lines now operating and under construction.
 Interurban lines proposed.
 - - - Railroads.

NEW KANSAS INTERURBAN—MAP OF PRESENT AND PROJECTED LINES

OPERATING FIGURES SHOWING EFFECT OF COMPLETION OF LINE INTO HUTCHINSON IN 1916

	1912	1913	1914	1915	1916
Gross earnings	\$136,442	\$132,546	\$137,454	\$140,261	\$271,107
Operating expense ...	86,702	79,756	79,612	82,150	140,684
Net earnings	\$49,740	\$52,790	\$57,842	\$58,111	\$130,423
Interest and taxes...	47,965	53,553	58,387	59,691	83,222
Net revenue	\$1,775	*\$763	*\$545	*\$1,580	\$47,201

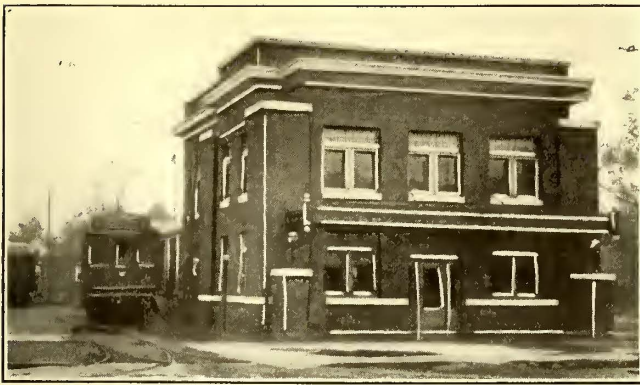
*Loss.

Further extensions of the system are definitely contemplated, and President George Theis, Jr., states that the proposed extension to the north to the cities of Salina and Abilene will be constructed just as soon as materials prices return to somewhere near normal. Later extensions to the south and west are contemplated, looking toward a comprehensive system to serve the agricultural, manufacturing and oil industries of this rich section.

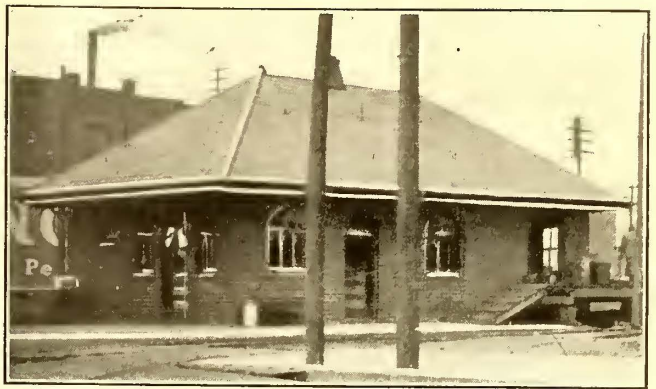
Owing to the level character of the country through



NEW KANSAS INTERURBAN—BURTON DAYLIGHT SUBSTATION



NEW KANSAS INTERURBAN—HUTCHINSON TERMINAL STATION



NEW KANSAS INTERURBAN—NEWTON TERMINAL STATION

Ten of these have already been completed and the abutments for four more installed. This will leave only four wood trestles on the entire property. The longest concrete bridge, shown in an accompanying photograph, is 240 ft. long. There are two trestles 230 ft. in length which probably will not be replaced this summer.

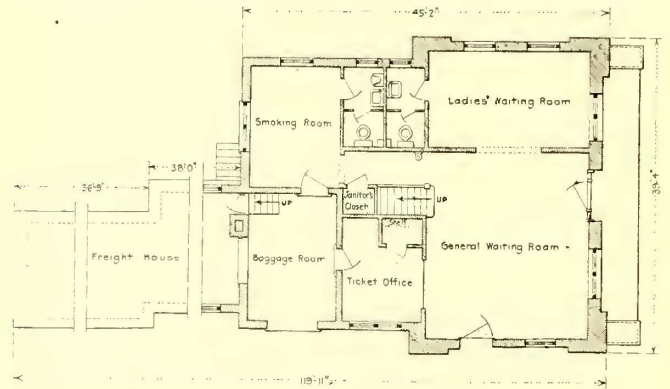
OVERHEAD CONSTRUCTION AND POWER SUPPLY

Energy for the operation of the line is purchased entirely from the Kansas Gas & Electric Company at Wichita, except for 7½ miles out of Hutchinson, where the supply is direct current without transformation from the power plant of the United Water, Gas & Electric Company in Hutchinson. There has been constructed a 66,000-volt, 60-cycle, three-phase line along the right-of-way to supply the three railway substations, one at Valley Center, 10 miles from the Wichita power house, the second at Van Arsdale Junction, 13.5 miles beyond the first, and the third at Burrton, 14 miles beyond the second. The electric company maintains its line and sells energy to the railway company metered on the 2300-volt side of the transformers in the substations.

The high-tension circuit of the electric company is carried on Idaho red cedar poles adjacent to the tracks, and the brackets for the railway overhead construction are mounted on these same poles. The No. 0000 trolley is paralleled over much of the line by one or two No. 0000 feeder cables which are carried on the lower cross-arms on the high-tension poles. The railway company's telephone circuits are also installed on these crossarms. The overhead fittings and insulators are of Ohio Brass Company manufacture throughout. From Halstead west the trolley is insulated for a pressure of 1200 volts, looking toward the ultimate operation of the entire system at this voltage instead of 600.

The Valley Center and Van Arsdale Junction substations are equipped with Allis-Chalmers motor-generator

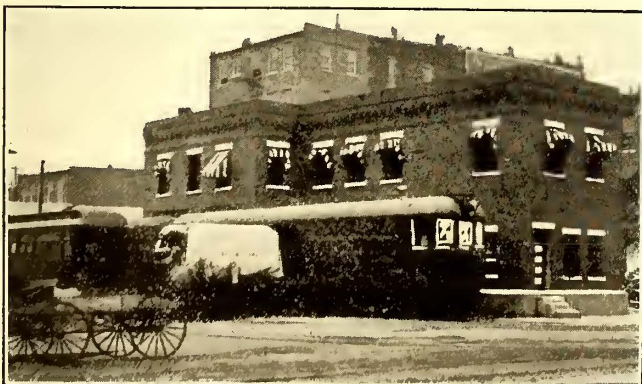
sets, with one 200-kw. unit and one 300-kw. unit in the former and two 300-kw. machines in the latter. These substations are of the usual type of construction. Living quarters are provided on the second floor for the station operator and family, and outdoor high-tension switching equipment is used. The newer Burrton substation on the Hutchinson section of the line is rather unusual, its construction being almost entirely of glass.



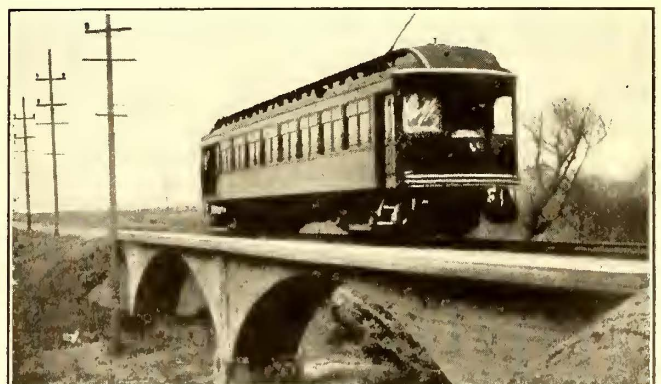
NEW KANSAS INTERURBAN—FLOOR PLAN OF HUTCHINSON STATION

This is called a "daylight-type" substation. In this case a four-room cottage at the rear is furnished for the use of the operator and his family. The front end of the substation is partitioned off to make a waiting room for passengers. This substation is equipped with one 200-kw. and one 300-kw. General Electric motor-generator sets, and the high-tension switching apparatus, also of the outdoor type, is installed at the rear of the substation.

An unusually attractive terminal station in Hutchinson has recently been completed. This is a two-story dark red tapestry brick building with waiting rooms

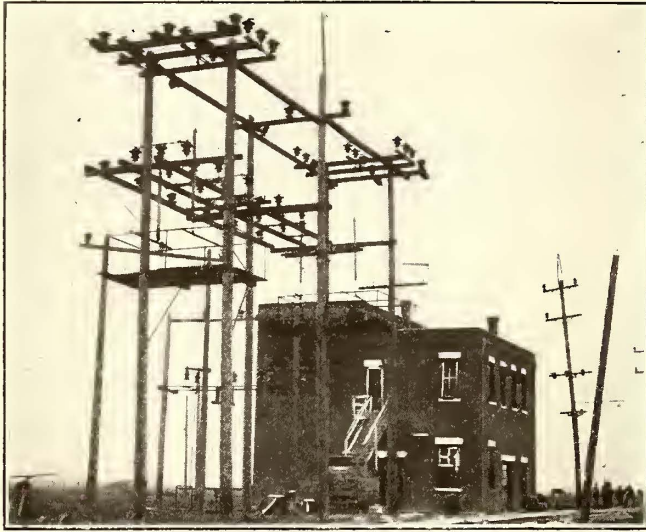


NEW KANSAS INTERURBAN—FREIGHT AND GENERAL OFFICE BUILDING AT WICHITA



NEW KANSAS INTERURBAN—TYPICAL CONCRETE BRIDGE AND PASSENGER CAR

for men and women, baggage room, smoking room, ticket office, etc., on the first floor, and offices on the second floor, which at the present time are rented out to another company. At the rear of the station is a long, narrow express and freight shed, which is constructed with brick columns and with the sides closed off by



NEW KANSAS INTERURBAN—VAN ARSDALE JUNCTION SUBSTATION AND OUTDOOR SWITCHING EQUIPMENT

seven Kinnear rolling steel doors on either side, and one at the extreme end. This long, narrow platform, with the cars on one side and teamway on the other, makes possible the handling of freight and express with a minimum of labor.

Two types of small shelters have been erected at the principal cross-road stops along the line. In one of these the partitions are placed in a right-angle cross and set at an angle of 45 deg. to the track. These are constructed of wood with shingle roof and cost approximately \$70 each. The other type of shelter used is built in the form of an H, with seats installed on either side of the crossbar. These were also made of single-board partitions with shingle roof and erected at a cost of \$30 each.

TRAFFIC POSSIBILITIES

The property is equipped with various freight and express cars for handling l.c.l. and carload business. While this is not developed to any extent at the present time, it is expected that arrangements will be completed in the near future which will place the company in position to haul a considerable quantity of the north and south freight movement through this district. Through its connections the line taps the principal wheat-producing territories of the State, which in 1914 raised and shipped 335,000,000 bu. of wheat. The flour mills of Wichita produced 1,750,000 bbl. of flour last year, and more than 50,000,000 lb. of salt were shipped from the State of Kansas in 1916, more than from any other state in the Union. Some of the carload freight from the soda-ash manufacturing plants at Hutchinson, which is one of the largest in the country is also ex-



NEW KANSAS INTERURBAN —
TYPE OF SHELTER USED
ALONG LINES

pected to move in a southerly direction over the electric line. Franchise rights have been secured for a private right-of-way entrance into Wichita, which will cut down the running time within the city from ten to fourteen minutes, and also make possible certain interchange connections with steam railroads and provide for the hauling of carload freight.

Fare Case to Be Reopened

Bay State Street Railway Is Compelled by Rapidly-Increasing Costs to Ask Further Relief Before End of Trial Period

Seeking the reopening of its fare case on behalf of the establishment of a 6-cent unit throughout its entire system, the Bay State Street Railway appeared before the Massachusetts Public Service Commission on May 25. S. H. Pillsbury and S. E. Wardwell represented the company, and a numerous array of counsel registered on behalf of municipalities in the company's territory. Features of the hearing were the testimony of C. R. Rockwell, treasurer; H. F. Fritch, statistician, and R. S. Goff, vice-president and general manager, bearing upon the company's imperative need of additional revenue. As the result of the testimony presented, the commission has decided to reopen the case.

In opening the case, Mr. Pillsbury stated that since the rate decision on Aug. 31, 1916, which in general authorized a 6-cent fare on country but not on city lines, the company had done its best to put into effect the recommendations of the board with respect to securing greater economy of operation, as far as this could be effected without additional capital expenditure. Special attention had been given to the recommendations in the report of B. J. Arnold to the commission pointing out ways in which further economies might be attained. Rapidly-increasing costs, however, averaging more than 66 per cent in representative materials since 1914, the burdens of higher wages and poor credit had led the company to ask for a reopening, despite the intimation of the board in the 1916 finding that such action would not be taken until a year's trial of the rates then authorized had been made.

Mr. Rockwell said that the company is now in a position where it cannot market new securities, a 6 per cent \$2,000,000 note issue having failed in December, 1916. In the year ended June 30, 1916, the net operating revenue decreased 15.97 per cent as compared with 1914, and for the nine months ended March 31, 1917, it decreased 19.64 per cent from the net of the corresponding period in 1914. The year 1914 was the one whose figures were used by the commission as the basis for its decision in the rate case of 1916. The 1916 operating expenses were 14.16 per cent greater than in 1914, and for the nine months' period ended March 31, 1917, they were 27.04 per cent greater than for the corresponding 1914 period. Gross earnings increased but 3.97 per cent in 1916 over 1914, and 11.9 per cent in the 1917 nine months' period. Net income was 37.68 per cent less in 1916 and 52.86 per cent less in 1917, compared with 1914.

The witness then introduced the table on page 999 showing the increased cost of about thirty important items of material used by the equipment, operating, line and track departments since 1914. The table shows the approximate average annual consumption of each class of materials used, the total costs being those figured upon the assumption that the company had purchased these average amounts in the periods named. Other items not listed, according to the company's purchasing agent, show about the same general run of in-

creases, the tabulated items being typical and not specially selected to emphasize the rising costs.

Mr. Rockwell said that the increase in wages since Sept. 30, 1914, was due to an arbitration award effective from Oct. 1, 1914, to Sept. 30, 1916, and to a working agreement dated Oct. 1, 1916, and running to May 1, 1920, with successive increases between those dates. The total additional wage cost from Oct. 1, 1914, to May 1, 1917, over the 1914 rates, if no allowance is made for increased service, was \$855,600. The increased cost per year, after May 2 last, with no allowance for increased service, compared with 1914, is \$768,000. Touching upon the coal situation, Mr. Rockwell said that the advantageous contracts of the company are now expiring. About 20,000 tons are on hand, or one-eighth of the year's requirement. The recent and prospective coal cost of the company, which calls for more than double the outlay of 1917 for 1918, is shown below for the years ended June 30, 1914, to 1918:

1914, at \$3.70 per ton	\$601,000
1915, at 3.55 per ton	583,000
1916, at 3.80 per ton	618,000
1917, at 4.55 per ton	728,000
1918 (estimate)	
35,000 tons, at \$7.50 per ton	\$262,000
125,000 tons, at \$10 per ton	1,250,000
160,000 tons	\$1,512,000

Mr. Fritch stated that since the decision of the commission last summer a complete traffic study had been made for the entire system. About 25 per cent of the stops had been eliminated. In some cases service had been curtailed along lines suggested by the board, and about \$90,000 per year was being saved in this way. The recommended changes, however, which call for capital outlay had been deferred on account of the lack of funds. These involved the purchase of new special and other track work in particular. The company had purchased a one-man car which would shortly be placed on trial service, and was rebuilding another single-truck car for one-man service. Service had been discontinued on the Lynn (Mass.) belt line, and the abandonment of certain other track was under consideration.

Mr. Goff said that he had been specially assigned to apply as many of the Arnold recommendations as possible to the economical operation of the road. The repair force had been largely increased and the reconstruction of 200 cars for prepayment service had been undertaken in the company's shops. About 50 per cent more cars had been painted in the fall than in the corresponding period a year ago. The rising cost of labor and materials, however, had increased the estimated cost of remodeling per car from an \$800 base to \$1,200 in sixty days. This meant that the cost of rebuilding would be \$240,000 instead of \$160,000. When the company found itself unable to issue new securities last winter, it became necessary to suspend the work, after thirty-seven cars had been completed. In part the car shortage had been met by equipping open cars with canvas curtains and electric heaters, and running them express to and from munition and other war material plants in the rush hours. Mr. Goff said that the problem of transfers was being studied with reference to the one-man car. The concentration of shop and carhouse facilities recommended in the Arnold report, he remarked, had been impracticable under the financial condition of the company.

Mr. Goff said that studies of the Maplewood, South Braintree and Somerset carhouses show that the advantages of consolidating the service of these stations with that of other operating centers appear insufficient to warrant the change, despite the intimation of the Arnold report that substantial economies could be ob-

APPROXIMATE COST OF MATERIALS USED DURING CALENDAR YEARS 1914, 1915 AND 1916 AS COMPARED WITH THE COST AT THE PRICES OF MAY 1, 1917

Material	Approximate Annual Consumption	Approximate Costs for Years			1917	Per Cent Increase from 1914
		1914	1915	1916		
<i>Equipment Department</i>						
Axles	250	\$3,980	\$3,989	\$5,689	\$8,000	101.01
Babbitt	65,000 lb.	20,000	21,300	25,185	33,300	66.50
Brakeshoes	35,000	14,000	12,250	12,250	20,825	48.75
Car wheels, iron	5,000	18,750	18,750	21,250	37,500	100.00
Glass	1,600 boxes	6,096	7,080	9,024	12,640	107.35
Magnet wire	175,000 ft.	28,437	33,906	55,344	64,750	127.70
Machine steel	200 tons	6,400	7,840	12,960	19,400	203.13
Register cord	175,000 ft.	3,193	3,325	4,243	5,338	67.20
Segments	300 sets	6,543	6,615	8,265	14,064	114.95
Tape, insulating	18,500 lb.	3,615	3,615	3,700	5,010	38.60
Trolley wheels	8,500	5,525	5,525	6,490	9,435	70.77
Waste	70,000 lb.	3,066	3,430	5,250	7,000	128.32
White lead	16,000 lb.	1,040	1,028	1,350	1,680	61.60
<i>Operating Department</i>						
Salt	10,000 bags	8,000	8,200	8,600	9,400	17.50
<i>Line Department</i>						
Feeder wire	75,000 lb.	10,256	13,567	20,647	27,000	163.27
Pole paint	2,000 gal.	1,740	1,740	1,820	2,100	20.70
Poles, chestnut	2,500	14,547	15,667	17,974	19,112	31.38
Poles, steel	300	4,950	5,346	5,830	15,620	215.56
Span wire	525,000 ft.	3,591	3,808	5,342	6,510	81.30
Splicing sleeves	1,800	1,620	1,575	3,105	3,510	116.70
Trolley cars	20,000	3,075	3,400	4,700	5,400	75.62
Trolley wire, 97 per cent	-85 miles	25,650	32,094	52,920	66,600	159.65
<i>Track Department</i>						
Bonds	30,000	21,150	25,248	28,710	37,200	75.89
Channel plates	115 tons	5,106	5,106	5,106	9,016	76.58
Paving blocks	400,000	24,000	22,600	22,700	27,200	13.34
Rails, tee	700 tons	19,600	19,600	19,600	28,000	42.86
Rails, girder	2,500 tons	97,000	97,000	97,000	134,500	38.66
Spikes	1,800 kegs	5,400	5,044	7,200	13,860	156.70
Track bolts	700 kegs	4,200	4,025	4,380	11,550	175.00
Ties	150,000	94,500	94,500	94,500	112,500	19.05
Tie rods	25,000	8,058	6,712	10,000	20,000	148.21
Total		\$473,088	\$493,885	\$581,204	\$788,020	66.57

tained by reducing the number of operating houses. The desirability of installing additional feeders is recognized by the company, but with copper at 38 cents per pound the purchase of wire beyond absolutely necessary requirements is prohibitive. Glen Forest Park, Lawrence, has been sold and other parks have been put up for sale, but the market for this class of property is at present unsatisfactory.

Regarding the 6-cent fare on the country lines, Mr. Goff said that this has fairly met expectations with regard to increasing revenue. On the Gloucester lines, the best territory of this class, there was a 12.8 per cent increase in revenue in a recent three months' period. Taunton showed about the same increase, and on the Woburn lines the gain was 8 per cent. The abolition of tickets in Fall River, resulting in the establishment of a 5-cent fare in place of the former six tickets for 25 cents, has not resulted in any permanent decrease in traffic. The jitney menace in Fall River, the witness said, has mainly subsided into a cab service at higher rates. Jitneys operating between New Bedford and Fall River charge relatively high fares. About \$300,000 a year, however, it is estimated, is lost by the company through jitney competition. Closing, Mr. Goff said that the company may have to curtail service next winter on account of the fuel situation. About 120 men have been dropped from the maintenance department, and only work necessary for safety is being done at present. The company has endeavored to economize in all possible ways, and needs about \$2,000,000 additional annual revenue.

The subway system of the Interborough Rapid Transit Company, New York, N. Y., has carried 2,958,200,205 passengers, about twice the population of the world, in ten years. Each year it carries more than a third of the total number of passengers carried on all the railroads of the United States. Only one passenger has been killed in a subway train accident in ten years.

Springfield Company Wants 6-Cent Fare

Need of Massachusetts Company Explained by President Wood at Board of Trade Meeting
—Professor Richey in Special Report States That Revenues Must Be Increased in Some Way

A 6-CENT FARE as the alternative to bankruptcy or public ownership faces the Springfield (Mass.) Street Railway, according to a statement of President C. V. Wood at a Board of Trade meeting on May 24, attended by local city government officials and prominent business men. Mr. Wood said that in the near future a petition on behalf of a 6-cent fare unit will be filed with the Massachusetts Public Service Commission.

During the meeting there was a discussion of a report just completed by Albert S. Richey, professor Worcester Polytechnic Institute, upon street railway traffic conditions in Springfield. Professor Richey, as stated more in detail later, predicted that increased fares must come if needed improvements are to be

The amount expended for power ranged from 11.3 per cent in 1913 to 13.6 per cent in 1915. The 1916 expenditure for power was 12.2 per cent of the total expenditures. The cost of conducting transportation showed a most steady increase, not only in the amount expended but in the per cent of total expenditures. During the six-year period in which the total receipts of the company increased about 28 per cent, the expense of conducting transportation increased about 56 per cent, and the percentage of receipts paid out for conducting transportation increased about 20 per cent. In 1911 and 1912 less than 27 cents of each dollar of receipts was spent for this item, and in 1916 more than 32 cents.

The general and miscellaneous expenses ranged from

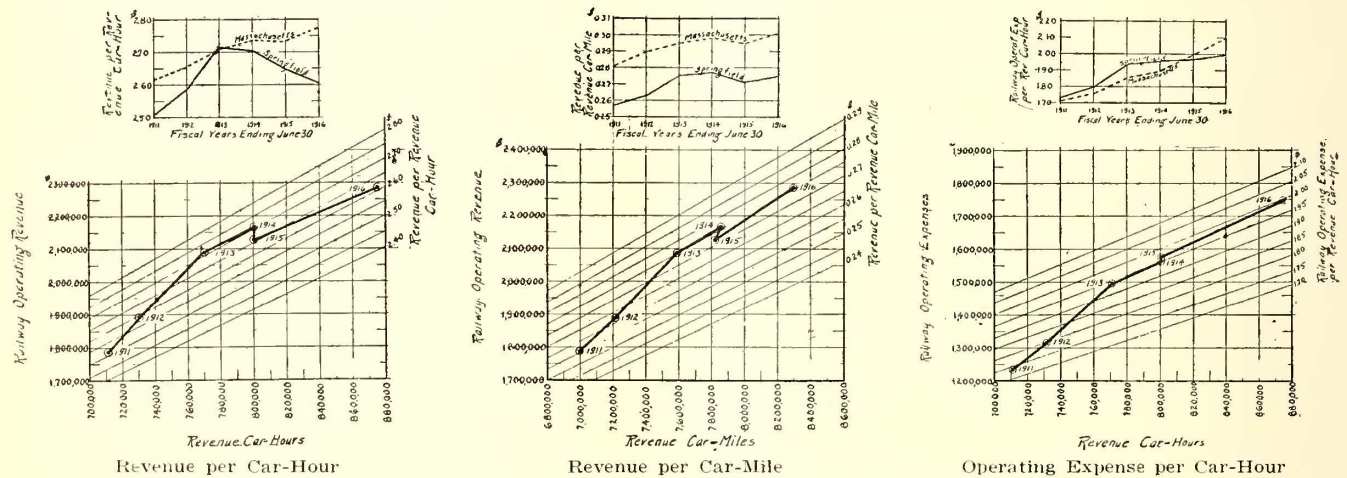


FIG. 1—SPECIMEN CHARTS USED TO EMPHASIZE OPERATING DATA

made and a reasonable return is to be paid upon the investment at present made and authorized.

GENERAL STATISTICAL DATA

According to Professor Richey's report, the expenditures of the Springfield Street Railway for the fiscal years ended June 30, 1911 to 1916, inclusive, increased from about \$1,800,000 in 1911 to \$2,300,000 in 1916, this increase being gradual and constant except that the amount for 1915 is less than that for 1914. In the four years (1912-1915) which showed a surplus, it was in each case considerably under 1 per cent, the maximum being in 1913 and amounting to 0.61 per cent of the total expenditures. The deficit in 1911 amounted to 0.37 per cent and in 1916 to 1.23 per cent of the total expenditures.

The operating expenses, amounting to a little more than \$1,200,000 or 68.6 per cent in 1911, increased steadily until in 1916 they amounted to about \$1,750,000 or 75.5 per cent of the total expenditures. Maintenance of way and structures fluctuated between a maximum of a little more than 11.2 per cent in 1912 to a minimum of 7.1 per cent in 1916. Maintenance of equipment showed its smallest percentage value in 1914, when it was 8.7 per cent, and its largest in 1913 and 1916, when in each case it was 11 per cent. The total of the two maintenance accounts is at present slightly more than 18 per cent, having been at the maximum in 1913, at which time it was 22 per cent.

a minimum of 9.4 per cent in 1913 to a maximum of 12.7 per cent in 1916. The average percentage is about the same as that of other railways in Massachusetts, excluding the Boston Elevated Railway. Taxes varied from 9.4 per cent of the gross in 1911 to 5.4 per cent in 1916. The average for all Massachusetts street railways, except the Boston Elevated Railway, is about 6 per cent for the six years, 1911 to 1916. The return on investment, consisting of interest and dividends, was \$396,433 in 1911 and \$443,864 in 1916. The sum is equivalent to 22 per cent of the total expenditures in 1911 and 19.2 per cent in 1916.

CHARTS SHOWING OPERATING DETAILS

Fig. 1 and Fig. 2 contain charts which illustrate those prepared by Professor Richey to emphasize various operating data. The "revenue per car-hour" chart shows that the number of car-hours operated was increased at a slower rate than the revenue for the first three years considered, while for the last three years more car-hours have been operated than were warranted by the increase in revenue. The small chart above indicates that only in 1913 did Springfield have as high a revenue per car-hour as the rest of the State. In 1916 the Springfield revenue per car-hour had become 6 per cent less than for the rest of the State. The "revenue per car-mile" chart shows that evidently an effort has been made to adjust the car-miles run to the business. In 1913, 1914 and 1916 the revenue per

car-mile was practically the same at about 27½ cents. The revenue per car-mile in Springfield was from 2 to 2½ cents less than in the rest of the State throughout the whole period.

The "operating expenses per car-hour" chart shows that for the last four years this item has been held fairly uniform, being \$1.94 in 1913 and about \$2.00 in 1916. The Springfield operating expense per car-hour was from 2 cents to 8 cents higher than for the State until 1914, but a few cents lower for the succeeding two years. The "operating expense per car-mile" chart points out that the operating expenses are increasing faster than the car-miles, but at about the same rate as for the State. From the "car-miles per car-hour" chart a slight increase in speed will be noted between 1911 and 1912, that of the later year being nearly 9.9 m.p.h. It has been steadily falling off, however, until in 1916 the average speed was less than 9.5 m.p.h., the greatest decrease being between 1915 and 1916.

The "wages of conductors and motormen" chart

of seventy-seven passengers for the ordinary forty-four-seat car during rush hours. Such a standard, however, should be applied as the average of the number of cars in the same direction on the same route in any one fifteen-minute period for five successive week days, in order to provide against the contingencies of irregular travel.

Fig. 3, prepared by Professor Richey, compares the loading time per passenger of the various types of cars for various numbers of passengers boarding at one loading point, and brings out the fact that, compared with the standard prepayment cars, the cars converted from open cars require from one-quarter to three-quarters of a second more time per passenger in loading. While it might be considered a serious error to purchase new cars with such step and platform arrangement, on account of the considerably longer loading time required, the Springfield Street Railway, it is said, cannot be censured for so reconstructing these open cars, as it makes a large portion of the equipment available for all-year-round use, which formerly was limited

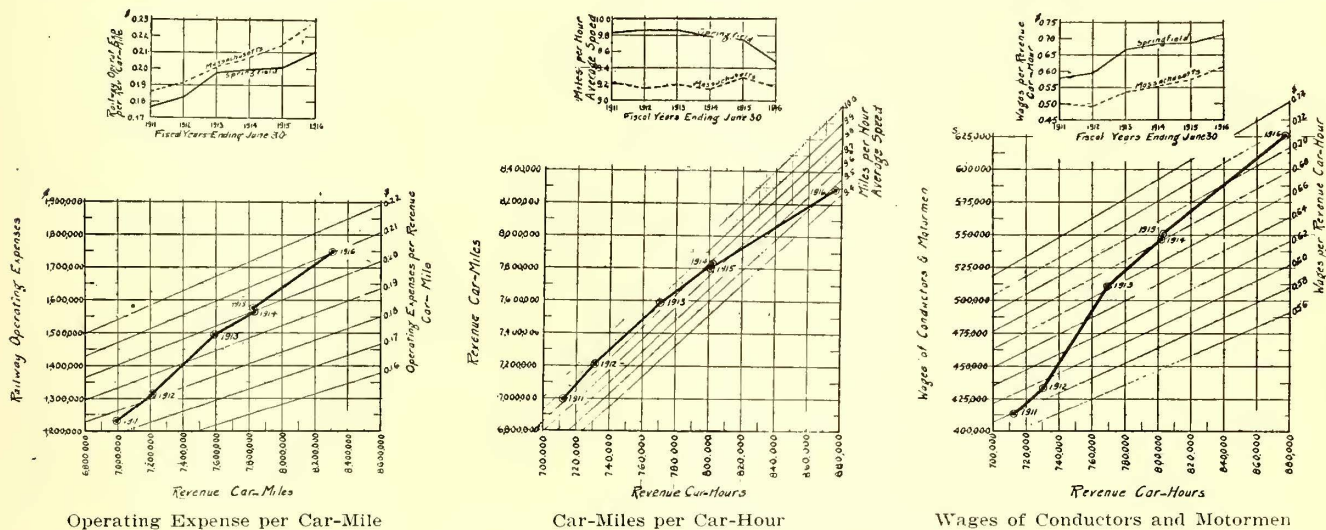


FIG. 2—ADDITIONAL CHARTS USED TO EMPHASIZE OPERATING DATA

shows the wages per car-hour increasing from 58 cents in 1911 to more than 71 cents in 1916. The average wage paid to the individual conductor or motorman was one-half of that amount, namely, 29 cents per hour in 1911, increasing to nearly 36 cents per hour in 1916. This represents an increase in wages per hour, time actually worked, of nearly 25 per cent between 1911 and 1916. This, it is said, is probably the highest average rate per hour paid to conductors and motormen of all street railways in Massachusetts or New England. The wages per car-hour in Springfield were 8 cents greater than those for the State in 1911 and 10 cents greater than those for the State in 1916. In other words, the average individual conductor or motorman in Springfield is now receiving 5 cents per hour more than elsewhere in the State, excluding Boston.

TRAFFIC SURVEY AND SERVICE STANDARDS

A comprehensive survey of the movement of cars and passengers in the first 5-cent fare zone (Springfield Division) was made during the period from Jan. 22 to Feb. 13, 1917. The principal items of information obtained through this survey have been plotted by routes and form a separate volume of 350 pages as a supplement to Professor Richey's report.

In the present consideration of data from the traffic survey, the proper total capacity of the Springfield cars is considered to be 75 per cent in excess of the seating capacity during rush hour periods. This allows a total

to a few months' use each year during the summer season.

All closed cars which have been purchased since 1914 have been equipped with about 65 per cent of the seating capacity in cross seats, so that the passenger faces the front of the car. This is considered to be a more comfortable position for the passenger, but on account of the short haul on many of the Springfield city lines, it is doubtful whether the policy of equipping all cars with so many cross seats is advisable, owing to the fact that such construction materially reduces the available standing area. It would seem that for routes where the haul is short and the rush hour loads large, economy would dictate the use of a car with longitudinal seats throughout its length.

ADEQUACY OF PRESENT SERVICE

Data of a general nature resulting from the traffic survey are included in the table on page 1002. The rush hours between 5.30 and 8.30 a. m. and between 4.30 and 6.30 p. m. comprise only five of the nineteen hours considered in the table, or about 25 per cent of the time. During this period, however, more than 65,000 passengers, or nearly one-half of the total, are handled. The figures indicate a much larger use of the facilities offered during the evening rush hour than at any other period of the day. It shows also the very limited use of the facilities offered during the hours between 8.30 a. m. and noon and after 6.30 p. m. If it were possible

GENERAL TRAFFIC DATA FOR CENTRAL 5-CENT ZONE OF SPRINGFIELD STREET RAILWAY

Period	Total Passengers	Total Passenger-Miles	Total Seat-Miles
5.30 a. m.—8.30 a. m.	32,155	82,605	132,958
8.30 a. m.—noon	17,299	41,219	131,106
Noon —4.30 p. m.	34,582	81,771	175,717
4.30 p. m.—6.30 p. m.	33,216	82,474	111,074
6.30 p. m.—12.30 a. m.	32,482	75,290	225,136
Entire day	149,734	363,359	775,991

	Pass. per Hour	Pass.-Miles per Hour	Seat-Miles per Hour	Load Factor Per Cent	Av. Miles per Pass.
5.30 a. m.—8.30 a. m.	10,718	27,535	44,319	62.2	2.57
8.30 a. m.—noon	4,943	11,777	37,459	31.4	2.38
Noon —4.30 p. m.	7,686	18,171	39,048	46.5	2.36
4.30 p. m.—6.30 p. m.	16,608	41,237	55,537	74.3	2.48
6.30 p. m.—12.30 a. m.	5,414	12,548	37,523	33.4	2.32
Entire day	7,881	19,124	40,842	46.8	2.43

to take service out of these light hours and put it into the rush hours, especially between 4.30 and 6.30 p. m., to the same amount and at the same cost, the net result would be a much improved service.

Especially during the evening rush hours, however, the railway has in service all of its available equipment, so that in order to transfer any car-miles from the slack periods into the evening rush period, it would be necessary to provide additional equipment. Enough addi-

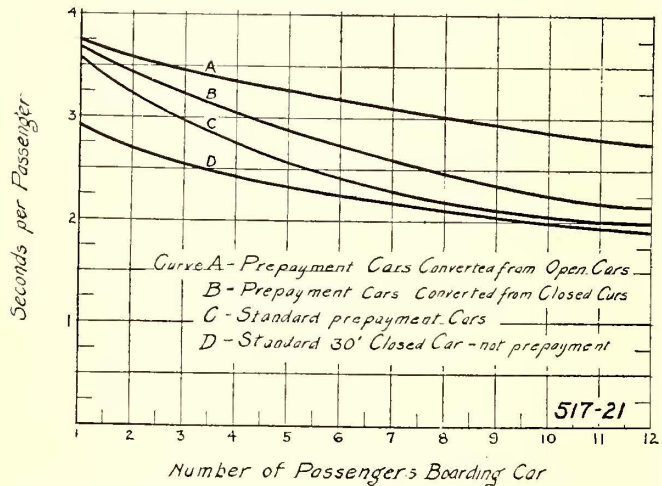


FIG. 3—COMPARATIVE LOADING TIME PER PASSENGER FOR DIFFERENT CLASSES OF CARS

tional return must then be earned in the short evening rush hour period to pay not only operating expenses, but the fixed charges incident to the additional investment. Moreover, Professor Richey adds, the evening rush hour service, if increased, must pay a very much larger per cent of operating expenses than is required by non-rush-hour service, owing to the peculiar form of agreement between the Springfield Street Railway and its conductors and motormen.

The company's wage scale is on the daily basis, a definite amount being paid for each day, irrespective of the time worked, up to nine hours, after which overtime is paid. On all other roads in the State (and practically all other roads in the country) wages are paid on the hourly basis. The addition of a considerable amount of short rush-hour service in Springfield would therefore mean that the wages of the carmen concerned would amount to three to five times the sum paid for such services per hour during the normal hours. If such short-period cars were operated by men who had already done a day's work on an all-day car, the "intervening time" and overtime required by the wage agreement would likewise make the average wage per hour actually operated three to five times the average normal hour rate. Whatever interchange of service is made,

Professor Richey says, must be with due regard to the comparative expense of operation in the two periods.

VARIOUS CHANGES RECOMMENDED

In a detailed consideration of routes, Professor Richey makes a number of recommendations relative to decrease of non rush-hour service and increase of rush-hour service. Non-rush service may often be decreased to advantage, he states, by a cutting off of non-productive service furnished to the outer ends of long routes. A large portion of such service might well be converted into service on short-haul routes through the center of the city where jitney competition is most active. It is especially recommended that service in these sections be increased during the evening rush hours. It would then be possible and desirable to operate "express" or "limited stop" cars through the downtown sections concerned, thus more nearly confining the short haul passengers to the short haul cars.

With the present one form of transfer for all lines, Professor Richey says, the privilege may quite easily be misused, either with or without the co-operation of the issuing or receiving conductor. Good practice demands that a separate form be used for each route and preferably a separate form for each direction on each route. A further protection against misuse consists in using a color scheme for transfers issued on cars bound in the same general direction. A considerable reform should also be made in requiring that the time be more accurately punched and that transfers be refused after a certain definite short interval, allowing for use only on the first car of the receiving line.

It is recommended that the spacing of white-pole stopping places throughout the settled residence districts be made to conform as closely as possible to a 400 ft. minimum and a 500 to 600 ft. maximum. Such a campaign would result in the elimination of 20 to 25 per cent of the stopping places. As for jitneys, they should be required to have licenses, and the operators should be bonded. To help in relieving congestion on Main Street, Professor Richey recommends "multiple berth passenger stops" on the near side. When more than one car is stopped at a traffic intersection all passengers should be required to board or alight at the point of stoppage, so that when the signal is given to proceed the cars may proceed without any making a second passenger stop.

The rates of acceleration and braking seem to approximate 1 m.p.h.p.s. in Springfield, being especially low in the Main Street section during rush hours. In this section, however, average rates of 1.50 to 1.75 m.p.h.p.s. should be used, and in other parts of the city it should be possible to use average rates of 2 m.p.h.p.s. At no time should parking of automobiles be permitted opposite the loading places, and during rush hours no automobiles should be permitted to stop opposite such places except at the bidding of traffic officers.

The limit of paying passenger haul on the Springfield division is around 2.75 miles, with the 1916 allowances for return on investment and depreciation. With the proper allowances for these items, the paying haul is in all probability less than 2.25 miles. The average ride for all passengers is 2.43 miles. The average ride of the cash passenger, including the ride on transfer when used, is 2.88 miles. The difference between the present average ride and the probable paying haul represents the distance over which the average passenger is carried at a loss to the company.

INCREASED REVENUE IS NEEDED

The Springfield division (the present central five-cent fare zone) failed during the fiscal year 1916 by about

\$225,000 to earn enough to make a proper return on investment, and set aside a proper amount for depreciation and a proper contingency fund. Approved improvement requisitions, not yet completed, call for the addition of about \$750,000 to the investment, and estimates shown of the cost of improvements which will further be required call for an additional expenditure of about \$1,000,000. These expenditures cannot be made unless some measures are taken to increase the net income of the company.

Some of the recommendations, Professor Richey says, look toward reductions in operating expenses, but these probably will be more than balanced by increased prices of labor and materials. It is evident, therefore, that it will be necessary to increase the revenue. A fair method seems to involve the placing of the additional burden on the traffic which originates in the outside districts. This might be accomplished by establishing an inner 5-cent fare zone with a radius of about 2 miles and making an additional charge of 2 or 3 cents to riders beyond that zone, with the transfer privilege only slightly modified. A second plan might provide a 5-cent ride with free transfer between any two points within the central 2-mile radius zone and a 5-cent fare without transfer between the downtown district and the outlying limits of the present 5-cent fare zone.

A zone system, Professor Richey states in conclusion, will involve a number of difficulties in the proper collection of fares and use of transfers. It is not impossible to develop a system of fare collection and transfers which would reduce such difficulties to a minimum. However, such a development may require some considerable time, and in view of the apparent necessity for some immediate relief, it may be deemed advisable to obtain it by a flat increase to a 6-cent fare. Such a fare might later be replaced by a zone system after detailed studies had been completed.

Public Ownership Discussed

Public ownership was the chief topic before the regular monthly meeting of the Massachusetts Street Railway Association at Young's Hotel, Boston, on May 23. The speaker was Benjamin C. Marsh, secretary of the League for Municipal Ownership and Operation of New York. Mr. Marsh was requested to address the association in order that the members might obtain the viewpoint of government ownership advocates in connection with existing street railway financial difficulties. Mr. Marsh contended that the private ownership of public utilities was undesirable. In advocating public ownership he urged that the present operating officials and staffs be retained. G. S. MacFarlane, editor of the *Boston American*, spoke in similar vein. On behalf of the railways, Bentley W. Warren, Boston, addressed the meeting after the advocates of government ownership had been heard. He pointed out the sound capitalization of the roads in Massachusetts under the regulatory policies of the State and endeavored to show that the present return was far below that necessary to attract capital into the industry for anything like adequate development. Mr. Warren said that present rates of fare were ruinous. He set forth the fundamental points in relation to cost of service which the public must meet by decreased taxes or by higher rates.

The lines of the Portland Railway, Light & Power Company, Portland, Ore., afford access to many of the trout and salmon streams and fishing grounds in that district. The company has issued a folder entitled "The Trout Route," which gives information on fishing laws, the best streams and how to reach them by trolley.

New York City Hearings to Start on June 6

Third Avenue Railway's Application for 2-Cent Transfers to Be Considered First—Mayor Mitchel Opposes Revenue Increase

THE Public Service Commission for the First District of New York has set June 6 as the date for beginning hearings upon the applications of the street railways in New York City for action by the commission which will give them financial relief. The three main systems concerned are the Third Avenue Railway, the New York Railways, and the surface lines of the Brooklyn Rapid Transit Company. In general terms, each of these companies desires that the commission's existing order directing that transfers be exchanged upon the lines of each system be abrogated or that a charge of 2 cents be permitted for transfers, with no charge for retransfers.

The commission on June 6 will take up first the application of the Third Avenue Railway, and at public hearings press the case to as rapid a conclusion as possible. It will then take up in turn the application of the New York Railways and that of the Brooklyn Rapid Transit Company lines.

As stated last week in these columns, an application was also received by the commission from the New York & Queens County Railway, but this company did not ask for any specific form of relief. The application has been returned to the company with directions that it be made more specific.

This week an application for relief was filed by the Second Avenue Railroad, which asked the commission to "establish such new regulations in regard to rates, fares and transfer privileges, or otherwise so to exercise its authority as to make possible the earning of a more adequate return upon the capital invested." This application completed the list for New York City.

MAYOR MITCHEL OPPOSES INCREASED FARES

Mayor Mitchel announced on May 25 that he would insist that the city be represented at all the negotiations and hearings before the commission on the applications of the companies for increased fares. The Mayor sent a letter to Chairman Straus, asking him to notify Corporation Counsel Hardy when such proceedings were to be held. In a letter to Mr. Hardy, the Mayor directed him to appear at the hearings and "strenuously and constantly oppose the requests of the companies unless and until they show that the need for increased rates is imperative, permanent, absolutely necessary and cannot be met in any other way."

The Mayor's letter to Mr. Hardy follows in part:

"The policy of a uniform 5-cent fare with free transfers between all subsidiaries controlled by a single street railway has been the recognized policy of the city and State for many years. It should not now be upset merely because the companies may have encountered temporary difficulties, or because the war into which we have entered demands unusual sacrifices.

"Every citizen will be called upon to make money contributions which will be a hardship, and thousands will surrender not only their property, but their lives. Is there any reason why public utilities should be placed in an exempt class and allowed to increase their rates so as to preserve their earnings intact?

"If the companies had been sharing their profits with the public during the years when they were making large returns, their claims might be considered more favorably. But it will be recalled that in past years these companies have made large profits and the

city's claims for readjustment or municipal purchase of their property were opposed.

"The companies pleaded that they had contracts with the city, and claimed that their rights to the earnings were protected by the United States Constitution. Hence, if the companies are now encountering unusual difficulties, is it just that the public should be required to bear their burdens when it has been denied any share in their profits?

"Certain of the companies about to petition the Public Service Commission have only recently been reorganized, and their petitions for the approval of large issues of securities were opposed by the commission on the ground that neither the value of their property nor their prospective earnings justified such capitalization. The companies contended that the commission had no jurisdiction over these matters, and they were upheld by the courts, not upon the value of their property, but upon the ground that the law gave them the right to issue any amount of stocks and bonds which did not exceed the total capitalization of the old companies. Consequently, neither the commission nor the public is under any obligation to recognize the claim of the companies to earnings upon excessive capitalization."

REPLY OF PRESIDENT SHONTS

Theodore P. Shonts, president New York Railways, on May 26 sent a letter to Mayor Mitchel, replying to the Mayor's letter to Corporation Counsel Hardy. President Shonts said in part:

"You are quite right in saying that the war demands universal sacrifices and the universal sharing of burdens. The public utilities which I represent, and, I am sure, all others, are only too willing to bear their share of all such burdens. But is there any reason why public utilities should be compelled to bear more than their share?

"You state very correctly that it 'has been the recognized policy to charge a uniform 5-cent fare, with free transfers.' But those of the present are very new conditions—conditions which must be met, unless the public service is to suffer. It has been the long-continued practice of the United States government to charge 2 cents for letter postage, but in the current revenue bill it is proposed to increase the postage to 3 cents.

"The steel companies have heavy burdens, and they raise their prices. Bakers must pay more for their flour, and they raise the price of bread. The old-fashioned 'dollar watch' now sells for \$1.35. The 5-cent package of biscuit now retails at 8 cents. The newspapers pay more for their paper, and there is a very general movement to increase the price of newspapers from 1 to 2 cents.

"Street railways are paying more for their labor, more for their materials, and higher taxes, as their share of the burden of government expenses. All of these are burdens imposed by the war. Is it fair, then, that the public utility, and especially the street railway, should be singled out as the only kind of corporation which should not be permitted to raise its price in order to enable it to pay its tremendously increased expenses for rendering its service?"

President Shonts also took exception to the Mayor's remark that "if the companies had been sharing their profits with the public during the years when they were making large returns, their claims might be considered more favorably." He added:

"The facts are that the properties comprising the present New York Railways have, during the last ten years, either been in the hands of receivers or operating without any profits to share. Yet during that same

period the properties have paid the public more than \$1,000,000 a year in taxes or more than 10 per cent a year of their gross earnings.

"This is the first time we have heard any proposition by the city for municipal purchase. I may say, however, that our company is in an extremely receptive mood toward any proposition contemplating a partnership between our company and the city, whereby the service to the public may be protected and the burdens of giving that service equitably adjusted in the public interest."

Working to Prevent Automobile Accidents

THE Aurora, Elgin & Chicago Railroad is making an especial attempt to impress upon automobile drivers the great need for caution on their part to help in preventing collisions between automobiles and street cars. As a direct appeal to motor drivers to co-operate with the company's motormen in avoiding this class of accidents which has come to be so numerous, the company has had 20,000 cards printed, as shown herewith, and

COLLISIONS between Automobiles and Street Cars

FRIEND DRIVER: Our Motormen are doing their best to prevent this class of accidents, *but cannot be wholly successful without your aid*, and we appeal to you for your co-operation in this matter of such great mutual importance.

Allow us to make a few friendly suggestions, of some ways in which you can do your part in this good work, which are called to mind by collisions which have occurred in the past.

First: Before crossing a track at a Street Intersection, look both ways and have your auto under control, so that you can surely stop before reaching the track, if there is a street car coming from either way.

Second: Always stop, look and listen before crossing any track on a country highway.

Third: When driving alongside a street car track, never turn onto the track, or close to it, without first looking back for a street car which may be coming behind you.

Be particular about this when passing a vehicle which is standing near the curb.

Fourth: Use more than ordinary care when driving out of Buildings, Yards or Alleys onto streets where there are car tracks.

Fifth: Remember that an automobile can be stopped in much less distance than a street car can be stopped, if both are going at the same speed, and bear in mind also that a Street Car cannot turn off from its tracks to avoid a collision.

Sixth: A few seconds' delay may prevent a severe personal injury or costly property damage.

Seventh: The law requires as high a degree of care on your part as it requires of the Motorman.

Safety First Is Thinking First

By thinking and working together, we can be of great mutual benefit; and together can make safety the first consideration, in fact as well as in name.

THE AURORA, ELGIN & CHICAGO R. R. CO.

Boost for Safety

Pass This Word Along

INDUCING THE AUTO DRIVER TO CO-OPERATE IN AVOIDING COLLISIONS

distributed in the automobiles and garages throughout the territory served by the railroad. This has met with very favorable comment on the part of the automobile owners and drivers, and in several instances applications to the company have been made for additional copies to give to certain friends who were characterized as particularly careless drivers.

The Chicago, North Shore & Milwaukee Railroad, Highwood, Ill., is advertising its service to Fort Sheridan and the Great Lakes Naval Training Station from Chicago and Milwaukee and intermediate points.

Editors Hear Department Heads

Cabinet Officers, Members of the Council of National Defense and Others Connected with the Government at Washington, Explain War Problems to Technical Papers

AN editorial conference of the business papers of the country was held in Washington on Friday, May 25, in the cabinet room of the New Willard Hotel. Its purpose was to allow the editors to obtain information first-hand from the heads of important departments of the federal government on the problems which the government is facing in connection with the present emergency. Abstracts of the various addresses follow.

NO SHORTAGE OF COAL

The first address of the conference was by Francis S. Peabody, chairman committee on coal production, Council of National Defense, who explained the relation between the civilian bodies in Washington and the federal departments, and said that the civilian helpers had found the departments most efficient and not hampered with red tape. It was a great pleasure, he said, for these civilians to realize that age is no barrier to service for the government. He explained that there was no shortage of coal but only a coal panic, brought about by householders believing that it was necessary to fill their bins immediately for next winter's consumption. The production was larger last year than ever before, and if people would wait all would be supplied. The chief trouble at present was in transportation, not in production. Priority in shipments should be given first to the urgent needs of the government, second, to those of manufacturers of munitions, third to roads carrying coal, and fourth to roads carrying grain and other food products.

THE AGRICULTURAL SITUATION

The second speaker was Dr. Raymond A. Pearson of the Department of Agriculture, who said that in 1916 there was a reduction in crop yield throughout the entire world, due to a shortage of labor, a shortage of fertilizers and to climatic conditions. The speaker urged that all corporations encourage their employees to participate in gardening, particularly of foods that can be kept for next winter's use. It is also desirable for each section of the country to produce the food that it will need for its own use. In this way the transportation facilities of the country will be relieved for war needs. The co-operation of business concerns in allowing their employees to assist is especially important during harvest time in getting in the crops, as that is the peak of the load. A great many business men have agreed to pay their men at this time the difference of wages, if any, between that which the farmer can pay and what they would have been earning in the factory or wherever they have been employed. The speaker estimated the shortage of farm labor at the present time to be from 1,500,000 to 2,000,000 men.

ADDRESS OF SECRETARY REDFIELD

Hon. William C. Redfield, Secretary of Commerce, then spoke about various lines of work in which the department was engaged, notably in developing the supply of fish for food, and, through the Bureau of Standards, of creating the industries of optical glass and dyestuffs. Secretary Redfield urged the editors to

impress upon their clientele the reasonableness of any export limitations which the government may impose, as well as the value of the co-operation which the government departments are receiving from volunteer civilian assistants.

FRANK A. VANDERLIP ON FINANCIAL NEEDS

Mr. Vanderlip spoke of the necessity of organizing the nation for the business of war, which meant organizing all of the industrial powers of the nation. The present authorized loan of \$7,000,000,000 was the biggest financial operation which any government has ever undertaken. All of the money in all of the savings banks of the country is \$5,000,000,000. All of the stocks of all of the railroads of the country are \$8,700,000,000. All of the money in all of the bank vaults of the country is less than \$2,000,000,000. The country is rich and its wealth is estimated at \$250,000,000,000, but it is in farms, homes, railroads and factories. The money on deposit in banks is not idle but is out on loans and cannot be called in to pay for the first issue of \$2,000,000,000 without causing great distress and business depression. Instead, the loan must be placed by an expansion of individual banking credit and financed out of the savings of the future. The savings of the past are not available because they have been invested. This country has a more difficult job in one way than England had, as it is absolutely self-contained now—that is, there is no place to go to for money. Whatever is done, we must do it by anticipating the savings of the future. This will be a lesson of tremendous importance in thrift to the whole nation. This policy of thrift does not mean that general business is going to be bad.

On the contrary, business is going to be more active than ever before, but it will be a business in necessities. People cannot give the government \$7,000,000,000 of purchasing power and expect to have as much purchasing power themselves as before. It will be an absolutely unpatriotic thing to spend money on an unnecessary thing, no matter how much money one has, not only because of the money spent but of the labor diverted from national purposes. Persons will be thrown out of employment by this change in conditions, but not into unemployment, as there will be two jobs waiting for every person now engaged in unnecessary business. The speaker urged his auditors to impress on their clientele that we are in a real war, a war that must measure our whole co-ordinated forces, our moral forces, our industrial forces, and our financial forces. Undoubtedly we shall see inefficiency developed, but the experience of that inefficiency is going to make every citizen see that he has duties of citizenship, and more clearly than ever before.

ADDRESSES OF SECRETARIES DANIELS, LANE AND BAKER

Hon. Josephus Daniels, Secretary of the Navy, declared that those who established the navy provided wisely that its officers should come from every section of the republic, and many of the greatest admirals in the navy are from inland states and had never seen salt water before going to Annapolis. The first need of the navy

is for men, and the recruits now coming in are of a very high grade and many have engineering knowledge. The second need of the navy is for ships. Those too old to serve can assist in financing the government.

Hon. Franklin K. Lane, Secretary of the Interior, outlined the issues of the war and declared that it was one for democracy and that "government by the soldier is not consistent with government by the people."

Hon. Newton B. Baker, Secretary of War, was the next speaker. He expressed the belief that the German ruling mind had become so upset with the grandeur of industrial supremacy that it had lost complete sense of the existence of moral standards. The Secretary also said that in its mobilization of the resources of this country for war purposes, the government would necessarily break in upon the long-established habits of great numbers of people. This is inevitable. Everyone will be asked to do something or to give up something, but this sacrifice is necessary in the national interest. In conclusion the speaker said that the government would not ask the papers to forebear criticism of the government, but urged that it be constructive.

ADDRESS OF SECRETARY WILSON

The conference then listened to an address by Hon. William B. Wilson, Secretary of Labor. He said that in the co-ordination and reorganization for war our industries must go through a process of mobilization, and this means also the mobilization of labor and a change from one industry to another. Such changes mean changes in working conditions, and it is the function of the departments of labor of the federal government and of the state governments to assist so that these changes will be made with the least possible friction. This mission is to be performed not judicially, but by finding a common ground between employers and employees which will be mutually acceptable, even though it may not be mutually satisfactory. The speaker illustrated the services which can be rendered by the Department of Labor by quoting the results obtained from recent mediation in the coal business. Another hope of the department is to assist the farmers at harvest time by arranging so that employees in other industries will be released during those weeks to assist in harvesting the crops. At such times the owners of factories can arrange to close down the plants and make necessary repairs.

THE PETROLEUM AND GASOLINE SITUATION

The production and consumption of petroleum and gasoline in the United States were discussed by Van H. Manning, director of the United States Bureau of Mines. Mr. Manning said that of the 54,000,000 barrels of gasoline now being produced in the United States, between 55 per cent and 60 per cent is used in the automobiles of the country, 20 per cent to 25 per cent is exported, and the balance is used in stationary engines, motor boats, and tractors and for various purposes of minor importance. In the speaker's opinion the call for gasoline will not be reduced from these figures—in fact, a much larger amount seems needed. There is an equal demand for other products of petroleum, such as the use of lubricating oils, and radical steps should be taken to conserve the use of this material. One of these is the substitution of coal for crude petroleum as a fuel under boilers for the generation of steam. The increased demand because of the war is difficult to estimate. The Bureau of Mines is studying more efficient methods of production of gasoline, as by the so-called cracking process, the extraction of vapors from natural gas, and the utilization of liquid fuels from other than petroleum bases. Substitutes for gasoline, such as the production of distillation of

coal, are being used at present in Europe for motor fuels and may in time be used for that purpose in this country, as many by-product coke ovens are now being constructed.

ADDRESS OF HERBERT C. HOOVER

The next speaker was Herbert C. Hoover, food administrator, who thought we should prepare for a war of attrition, and that meant a long war and one in which this government will have to bring to bear every possible national resource. Most of the food for Europe during the coming year will have to come from North America, because there has been a harvest failure in the Argentine, and Australia and India are practically cut off from the shipping point of view. We must have a lower level of prices and greater stability of prices than during the last year. If prices can be stabilized the margin between producer and consumer will diminish materially. Another necessity is the reduction of waste, both national and in the household. In the latter there are four directions in which the women can accomplish an enormous amount of saving. One of these is substitution, by the use of local products for those from distant fields and vegetables for staples, another is a reduction in actual consumption, as most people eat 40 per cent more than they need. Then there is the question of household waste and the doctrine of the "clean plate."

ADDRESSES BY OFFICERS OF THE COUNCIL OF NATIONAL DEFENSE

The conference then listened to addresses by several officers of the Council of National Defense. Walter Gifford, director, outlined the organization and aims of the board and gave a sketch of the scope of the work of the important committees. Frank Scott, chairman of the munitions board, quoted examples of some of the recent work assigned to that board, including the erection of cantonments for more than 1,000,000 men. He said that the board would be obliged to build what amounted to thirty-two cities in the United States to house approximately 30,000 men each. This is the equivalent of the housing capacity of Buffalo, Syracuse and Rochester together, with sewage system and water system, heating facilities and lighting system, laundries and water systems, and this must be done between the present time and the middle of September. Dr. Franklin H. Martin, in charge of Red Cross work, medicine and sanitation, described how surgical instruments had been standardized and gave an account of the work undertaken by that department.

COMMITTEE ON PUBLIC INFORMATION

George Creel, chairman of the committee on public information, then explained to the editors the system adopted by the government of giving out information and the rules which the government would like to have the papers follow in referring to military operations.

ORGANIZATION OF THE STEAM RAILROADS

Howard Elliott, formerly president of the New York, New Haven & Hartford Railroad and now a member of the executive committee of the Council of National Defense, then described the organization of the steam railroads. There is a main committee of five, with subordinate committees in each of the departments of the country, committees on car service, military equipment standards, military transportation accounting, military passenger tariffs and military freight tariff. The Washington organization has sixteen experienced railway officers, sixty-nine general employees and eighteen inspectors. The committee on car service has twenty-three sub-committees distributed geographically, with

an experienced railroad officer as head of each and representatives of all the railroads of each division territory on the committee. The expense of this entire organization, not counting the salaries of officers who are devoting a large amount of their time to this work and carrying on their regular activities as railroad officers as well, is about \$500,000 a year, and this expense the railways contribute. The so-called car shortage, Mr. Elliott explained, is not so much a shortage of cars as a lack of terminals, sidings, modern appliances, etc., for handling traffic. These have not been added to the railroads during the last five or ten years to the extent that they should have been added, owing to lack of funds. The so-called shortage amounts to 150,000 cars, and there are about 2,500,000 cars in the country. By more prompt action by the shipper and by all railroad employees, it is hoped that the lack of these cars will be overcome. The railroads are planning to make some changes in their passenger schedules, not with the idea of saving money but to save man power, fuel and motive power, all of which should be applied to the transportation of essentials. The railroads, to have their maximum efficiency, must have the help of every man within as well as outside their organizations who has anything to do with shipping or handling of equipment.

REPORT OF THE GEOLOGICAL SURVEY

A statement of some of the recent work of the United States Geological Survey was presented by George Otis Smith, director. He said that of the four most important metals—iron, copper, zinc and lead—the nation's resources of ore have been found sufficient to meet the rapidly-increasing demands of ourselves and of our allies, although for the present year this means increases of from 50 to 90 per cent above the average output for the years just preceding the war. One of the purposes of the United States Geological Survey is to bring consumer and producer together, and its field geologists are to-day in the West and South seeking to add to the known supply of such other varied minerals and ores as pyrite, glass sand, tin, platinum, graphite, manganese, potash, tungsten, petroleum and nickel. As regards iron, the basis of America's industrial development, the new discoveries of ore are practically keeping pace with the heavy production. On the subject of coal and iron, Americans can be optimistic. The Geological Survey is also studying possibilities in new hydroelectric developments.

ADDRESS OF LOUIS B. FRANKLIN

The final address of the meeting was by Louis B. Franklin and related to the methods being followed in floating the Liberty loan bonds.

Mr. Franklin said that while the other departments of the government were asking for man power, the Treasury Department was asking for money power. The banking resources of the country are handling a record-breaking business from month to month, and their resources should not be strained by the purchase of Liberty bonds to the extent of \$2,000,000,000. These bonds should go instead into the homes of people. The banks can help by extending credit to purchasers, but the government does not want to put the load directly on the banks. Some have said that the loan would have a bad effect on business, but if we do not raise the money to finance our armies, our navies, and our allies, there is going to be very little business left in this country. It will be the salvation of business if the war is carried through to a successful conclusion at the earliest possible moment, and money is going to put it through quickly. The funds raised by the present loan will remain in this country and will make the wheels of

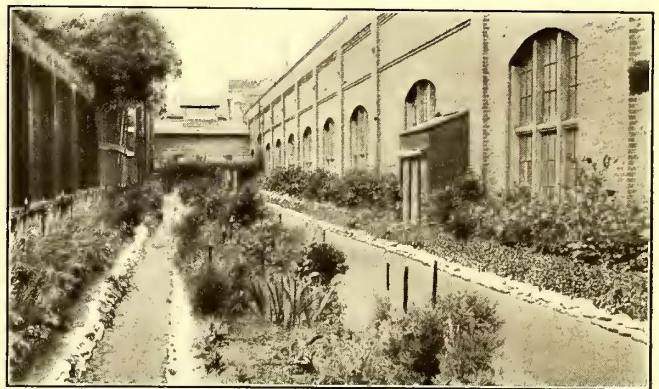
commerce here revolve faster than they ever have before. The gross income of the country is \$50,000,000,000 a year, and at the present rate the government wants 10 per cent of this amount, or \$5,000,000,000 a year. Hence, every man, woman and child should devote 10 per cent of their income to the service of the government loan. As already explained, this amount must come out of current savings. Employers should arrange to purchase bonds for their employees and let them pay for these bonds at the rate of 10 per cent of their weekly or monthly pay. In this way the employees will not have to sign checks or go to a bank. If the loan is going to depend on Wall Street, our enemies on the other side who are hoping that the loan will fail will be pleased. The effect of the loan should be to encourage thrift throughout the country, and this quality, if acquired, should stimulate business in years to come. The loans in France and Great Britain have been of a popular character. For instance, the first loan in Great Britain was taken up by 150,000 subscribers, but the last loan was taken up by 8,000,000 subscribers out of a population very much less than ours. With our population of 100,000,000 people, it would be a shame if we could not do as well.

Changing a Carhouse Scrap Pile to a Farm and Garden

Long before the cry "To farms! To farms!" threatened to make every stay-at-home a new kind of embattled farmer, at least one far-seeing railroad man had taken Sir High-Cost-of-Living by the throat and choked him on potatoes.

The railroader in question is J. W. Davies, foreman of the Turk and Fillmore carhouse of the United Railroads of San Francisco who, for the past three years, has been running a combination farm and garden alongside the carhouse.

The suggestion for this plantation came from Jesse M. Yount, master mechanic of the company, who



POTATOES IN THE GROUND AND FLOWERS IN THE AIR AT A SAN FRANCISCO CARHOUSE

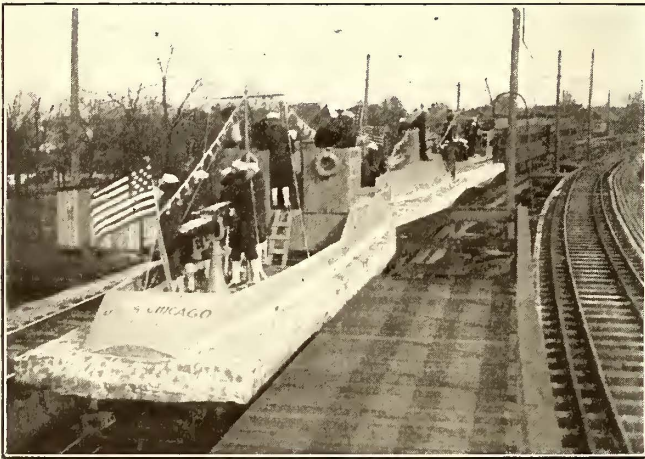
thought that greenery would look better than a repository of scrap iron and other goat provender. At first, the area was simply cleaned up and some climbing nasturtiums were trained to keep their eyes on the shopmen.

It is the 1916 growth which is shown in the accompanying halftone. The sticks are not for the intoxicating beer hop, but for the cheerful dahlia. Mr. Davies may be termed a dahlianist as he has raised some 300 varieties. For this season he has divided the plot into two sections—176 ft. x 9 ft. and 183 ft. x 11 ft.—which are devoted exclusively to the delightful dahlia and the justly popular potato.

Electric Railways Co-operate with War Department

Recruiting Train Operated by Chicago Elevated Railways—Help from Railway Industry Discussed by New England Street Railway Club

A FEATURE of the recent reports on war-time activities of electric railways has been the effort to bring about the most effective degree of co-operation between the industry and the government. To this end, Britton I. Budd, president of the Chicago Elevated Railways and of the Chicago North Shore & Milwaukee Railroad, has placed in service a "recruiting train," this being designed to stimulate enlistments in the naval service. The train, which has been operated at frequent intervals around the downtown loop in Chicago, is made up of one of the North Shore line's new dining cars, a steel passenger car which serves as a recruiting office, and three flat cars that are fitted out as replicas of a battleship, a submarine and a submarine chaser.



ELECTRIC RAILWAYS IN WAR TIME—RECRUITING TRAIN OPERATED BY CHICAGO ELEVATED RAILWAYS

The latter are manned by about thirty marines. A full-sized torpedo is carried on the top of the submarine, and two small guns are mounted on the car that is fitted up to represent the submarine chaser. One of these guns, a one-pounder, is fired at intervals during the travel around the loop, and this, together with a navy band, serves to attract a great deal of attention.

Recruits are picked up by the train as it passes the "L" stations and while it is standing in the Fifth Avenue terminal between trips. In the evening the train takes recruits that have signed up to the Great Lakes Naval Training Station, which is located on the Chicago, North Shore & Milwaukee Railroad. This procedure will probably be continued for one or two weeks. Meantime plans are being formulated for operating the train over some of the electric railway properties outside of Chicago. The three flat cars have standard M. C. B. equipment, so the train can be taken over practically any electric railway system in the central western territory, and it has already been loaned to the Aurora, Elgin & Chicago Railway for use on that company's lines.

NEW ENGLAND STREET RAILWAY CLUB DISCUSSES WAR-TIME PROBLEMS

Co-operation with the government was the keynote of the meeting of the New England Street Railway Club, in Boston, Mass., on the evening of May 24. President A. H. Ford occupied the chair, and among the guests were many army and naval officers of dis-

inction, including Brig.-Gen. Clarence R. Edwards, U. S. Army. In an address General Edwards made the point that railroads and street railways can help at this time by arming section gangs and carhouse forces, giving a revolver to about 25 per cent of the men and providing the rest with clubs for patrol work, thereby releasing guardsmen for intensive training or first-line work.

President M. C. Brush of the Boston Elevated Railway was called upon by the chair to speak on behalf of the electric railway interests. With regard to his company about 1800 blue-uniformed men are between twenty-one and thirty-one years of age, and in other branches of the company's work 1500 men. To the extent that older men and women can be substituted, enlistment from electric railway service is to be encouraged, but the importance of electric railway transportation is so great that it should be maintained intact so far as possible. "Not for weeks," said Mr. Brush in this connection, "have we hired a man under thirty-one. As the war continues, we plan to use women in every conceivable capacity. I have no fear of the treatment which will be accorded women in Boston or New England. We have selected a uniform including overskirt, jacket, cap and badges for women conductors."

Mr. Brush said that manufacturers should co-operate by being willing to close their establishments at different hours, thereby reducing the peak demand on the street railway system, which is the great problem of the company. Mr. Brush agreed with General Edwards that the time has come for electric railways to take up the burdens of bridge and other protection, so far as required to release soldiers for intensive training and active field service. On the Boston Elevated Railway 850 special police have been sworn in for war-time service.

The speaker said that whereas the entire facilities of the Boston Elevated Railway are at the free disposal of the military authorities in any emergency, he believed that the normal service of the company should be rendered to the government at the regular cost. In other words, men in military uniform under normal conditions should be transported at the expense of the government and not free of charge. "The newspapers came to me about this matter, and I took the position you do," interjected General Edwards at this point.

Closing, Mr. Brush said that there never was a time when the electric railways were so poorly prepared financially to be of the maximum service as to-day but that the country can count upon their doing the utmost within their power to help win the war.

MISCELLANEOUS NOTES

In Chicago the railways have been prominent in connection with the Red Cross campaign for members. The Chicago Surface Lines turned in 11,000 names as new members and paid \$11,394 in cash to the society as the result. About 8000 of the new members were from the company's transportation department, and about 85 per cent of the total number of employees of the Chicago Surface Lines have joined the society. As names are still coming in, the total membership within the traction company's organization is expected to exceed 12,000.

Public utilities uniting for war service is a feature of the recent developments in New York City. Here the power, light and traction companies will co-ordinate their efforts to aid the government, as mentioned in the *ELECTRIC RAILWAY JOURNAL* for May 19. Recently this organization, which has been formed at the behest of the Public Service Commission, First District, has announced that it will be represented by a permanent executive committee, of which Travis H. Whitney, pub-

lic service commissioner, is chairman and Ivy L. Lee secretary. The membership includes also George Keegan, Interborough Rapid Transit Company; Edward A. Maher, Jr., Third Avenue Railway; John J. Dempsey, Brooklyn Rapid Transit Company; Wilbur C. Fisk, Hudson & Manhattan Railroad, and Frank R. Ford, representing the American Electric Railway Association.

On the Berkshire Street Railway the employees have been organized into syndicates for working unused land belonging to the company. Under this arrangement the company supplies the land, plowing, harrowing and the seed all being financed directly through the general manager and the cost being returnable at the time of gathering the crops. Each syndicate takes about 2 acres and its general supervision is under one of the officials of the company. Four of these syndicates have been organized, each made up of twenty employees, and they have planted 4 acres to beans and 4 acres to potatoes and cabbage.

COMMUNICATION

What Causes Double Wheel Treads?

MELBOURNE, BRUNSWICK & COBURG
TRAMWAYS TRUST

COBURG, AUSTRALIA, April 25, 1917.

To the Editors:

I shall be pleased to hear from any of your readers if in investigating the trouble of "double treads" on car wheels they have arrived at a satisfactory explanation of the cause.

We use Brill 21-E trucks with wide-winged axle boxes and M. C. B. journals. The truck wheelbase is 7 ft., and rolled-steel disk wheels, 33 in. in diameter are used. We use British standard 90-lb. flanged girder rail on tangent track and 96-lb. standard rail on curves. Curves in opposite directions in the permanent way balance each other. All wheels are pressed on at equal distances from the ends of the axles with the aid of a special gage and a center pop in the middle of the axle.

On several of the equipments there is no sign of this trouble; on one or two only one wheel out of the four shows it, accompanied by a thin flange on the mate; on other equipments two wheels, both on the same side, show the double tread, the mate showing thin flanges, and in still other cases one wheel on one side of the truck and the wheel on the other pair on the opposite side had developed the trouble.

There was one instance in which I took a pair of wheels on their axle, in perfect order, after they had made 21,000 miles under one car, and placed them under another car to replace a set where a bad double tread had developed. The new pair immediately started to develop a double tread, and the pair which replaced the good pair on the original car, although freshly turned, also started to develop a double tread. In another instance I turned up both pairs of wheels for double tread and replaced them under the same car. These wheels have so far given no sign of double tread. Since this matter has been given attention great care has been taken to see that all trucks are assembled perfectly square, but this apparently has had no effect.

I do not see how any track defects can produce such irregular defects in the wheels and therefore am of the opinion that the cause is confined to the trucks, axle boxes and journals.

STRUAN ROBERTSON, Engineer and Manager.

AMERICAN ASSOCIATION NEWS

Bulletins of Committee on National Defense

In addition to its activities in compiling data for the government the American Association committee on national defense is sending out a series of bulletins to member companies. Of these the first was reprinted in the issue of the ELECTRIC RAILWAY JOURNAL for May 26.

The second bulletin related to co-operation with the Secretary of Commerce in his efforts to increase food production. It was suggested that companies can make their co-operation valuable: First, by awakening, through car and other forms of advertising, and by personal efforts of their agents, the interest of farmers and truck raisers along their lines to the importance of bending every effort to carry out the President's injunction as to food production; and, second, by carefully studying and putting into effect methods of assisting such farmers and truck raisers in the marketing of their product. Companies are urged to get into touch with government departments of agriculture and other agencies which are concerned in increasing food production; and to encourage employees to raise garden products sufficient at least for their own needs.

Bulletin No. 3, issued May 26, suggested plans for assisting employees to purchase "Liberty Loan" bonds, particularly by arranging for installment payments. Bulletin No. 4, sent out on Tuesday of this week, covered the subject of next Tuesday's registration, particularly with reference to requests for exemption from active service for men considered essential to the maintenance of good service.

Patriotism the Keynote at Toledo Section Meeting

Judge Daniel J. O'Rourke of the Toledo city court made a patriotic address before 300 members at a meeting of the local company section held on May 25. His talk dealt with the importance of the central station in the great war, and with the co-operation which must exist between the producing and distributing army and the fighting army. A. C. Rogers explained a partial payment plan under which employees could buy "Liberty Loan" bonds, and to this talk has been credited much of the alacrity with which subscriptions poured in during the following day. Motion pictures of the Toledo troop of the National Guard in service on the Mexican border were also shown.

The election resulted in the return to office of the following, who were elected last February for a partial term. The respective departments appear after the names: T. J. Nolan, chairman, production; G. E. Snider, vice-chairman, electric; H. Friede, secretary, engineering; A. G. Van Driesen, treasurer, executive. Directors: James Doheny, Central Avenue shops; Duff Poirer, transportation; W. C. Cramer, gas; A. C. Rogers, heating; R. A. Eck, accounting; H. J. Kunz, new business; B. R. Donovan, claim; H. E. Wheaton, railway.

The Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., has conducted two excursions recently from Fort Wayne to St. Louis, Mo., via Bluffton, Ind., and the Toledo, St. Louis & Western Railway (Clover Leaf).



Fig. 1—Granite block paving all the way across between rails. Fig. 2—Installing special work at West Ninth Street and Grand Avenue. Fig. 3.—City paving work under way in conjunction with track construction. Fig. 4.—Pouring concrete base, leaving space

for granite nose blocks. Fig. 5.—Double track reduced to single track at intersection to save space and cost. Fig. 6.—Residence track construction. Note temporary flanges on traction wheels of concrete mixer.

Typical Track Construction Scenes in Des Moines (Iowa) Streets

Practical and Economical Solutions of Problems in EQUIPMENT AND ITS MAINTENANCE

Every live shop, track, line and power plant man is doing something that others would like to know about. Such men have a splendid opportunity to assist the industry by notifying the editors of this paper of new things that have been done. Information may be sent in the form of rough notes or short articles, and special rates will be paid for all accepted material.

Track Construction in Des Moines

Entire Downtown Track Layout Rebuilt Without Stopping Traffic—Types of Construction Described

BY W. L. WILSON

Chief Engineer and Engineer Maintenance of Way, Des Moines (Iowa) City Railway

During last summer the Des Moines City Railway re-laid a large part of the track in the downtown or loop district of Des Moines. This included 15,147 single-track feet of new construction and almost 6000 ft. of special work, including fourteen layouts. In addition some 8 miles of track was constructed or rebuilt in the residential districts. An interesting feat in connection with this work was the fact that at least one side of the downtown streets was kept open to vehicular traffic at all times and street car traffic was continued on every line during construction work. All special-work layouts were installed under traffic with the exception of one double-crossing and four-curve layout. Working under these conditions of course greatly obstructed the free progress of the work, but it was imperative that every facility possible be given to vehicular traffic. The necessity of keeping all tracks under service also imposed certain limitations on the type of construction used.

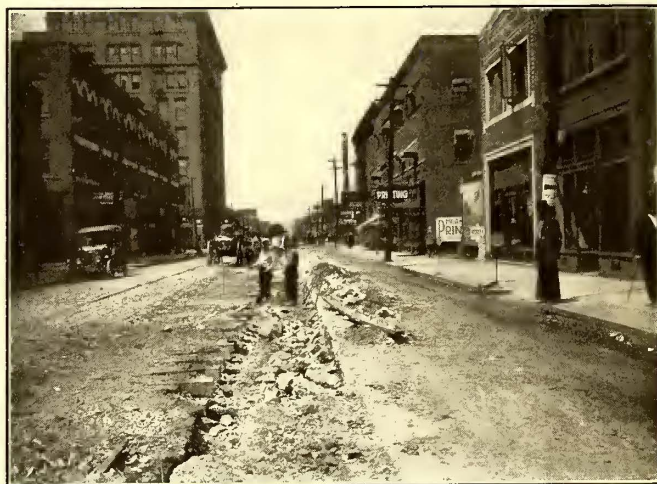
The occasion for so general a change at one time was the complete rerouting of cars and the very bad track conditions, the latter being the result of many years' operation without a franchise and consequent lack of new funds to put into the property. Previously all cars had been routed from outlying points into the business district and there looped around and back over the same line. Under the revised plan, several lines were through routed, eliminating a lot of the congestion in the downtown section and giving better service to the public, but necessitating several new special work installations. The construction work in this downtown area was done on contract basis by the North American Railway Construction Company, while that in the residence district was done by the railway company itself.

DOWNTOWN CONSTRUCTION

A concrete base, 6 in. thick underneath the ties, was laid for the business district track, of which a cross-section is shown in one of the accompanying drawings. Weathered white oak hewn ties, spaced 2 ft. centers, were seasoned naturally as thoroughly as possible and used without treatment. The 93-lb. section No. 419 Lorain 7-in. grooved rail was fastened to the ties without tie plates by 5½-in. x 9/16-in. ordinary drive spikes, and the concrete base was carried 2 in. above the base of the rail. Over this a 1-in. layer of 1:4 cement and sand, mixed dry, was spread as a cushion for the granite paving block. This dry cushion was allowed to set naturally under the action of the elements, since by this means it rather cakes and sets less hard and less brittle. Underneath the head and groove of the rail the spaces

were filled with 1:4 mortar, just stiff enough to be plastered in with a shovel before the nose blocks were placed.

The nose blocks were then set against this mortar and long and short blocks alternated on the inside of the track to avoid a straight line joint and a tendency for rut wear at the edge of the stone in the asphalt pavement. The same arrangement of granite nose blocks on the outside of the rails was attempted, but the Mayor of the city would not approve it, and hence the straight-line joint here was unavoidable. On part of the streets and in all special work the granite block pavement was carried all the way across between rails and 5 in. outside. These granite blocks were quarried in Sioux Falls, S. D., and were specified to come within the limits of 4½ in. to 5½ in. wide, 14 in. to 7 in. long and 4 in. to



TAKING UP OLD CONCRETE IN DES MOINES (IOWA) BY PRYING AFTER DRILLING ROW OF HOLES 6 IN. APART WITH STEAM JACK HAMMER

5 in. deep. After they were laid in place they were grouted in with a 1:2 mixture poured wet and allowed to settle. Tie rods of 2½-in. x 5/16-in. bars with ¾-in. terminals were installed 10 ft. apart. The rail joints were of the continuous rail type, 26 in. long and held in place by six heat-treated bolts. These bolts being of high tensile strength will not allow any stretch and hence their use practically eliminates this cause of loose joints. All joints were carefully finished with a Vixen rail planer or a reciprocating grinder and each was double bonded with Erico 500,000-circ.mil electrically welded bonds.

SPECIAL WORK CONSTRUCTION

The special work layouts, of which there were fourteen new or rebuilt sections, were constructed in an unusual manner owing partly to limiting conditions and partly because of the advantages the construction offered. The steel was laid on oak ties tamped up on 8 in. of crushed 1½-in. stone. Reasons for using this type of foundation were that it permits operation over

it during construction work without injury to the foundation and it serves as a sort of cushion, which rather deadens the noise. It also has a tendency to increase the life because of the more flexible construction. It is easier to renew parts of special work in this type of construction than when it is necessary to dig it out of solid concrete.

The special work used was the Lorain iron-bound hard-center insert type made up with section No. 480, 114-lb. rail, which joins with the 93-lb. section, No. 419 grooved rail without a compromise joint. The inserts in this construction are bolted in place on beds

trench, which had been previously rolled. This foundation material was used in preference to crushed rock, because it has been our experience that it makes a better base and takes less skill to get a solid tamp, and also permits of a more perfect alignment. A layer of concrete 8 in. thick was laid over the sub-base after the tamping and alignment work had been completed, and then the 1-in. layer of 1:4 sand and cement dry mixture was used as a cushion under the paving brick.

The Lorain section No. 335, 80-lb. 7-in. T-rail without tie rods or braces was used on residence track, a cross-section of which is shown. Continuous rail joints were used in the residence track as in the loop district, and also the electrically welded bonds, except that a single 500,000-circ. mil bond per joint instead of the double bond necessary for the heavy traffic area was used. Each joint was ground with a reciprocating grinder before cars were allowed to operate over the rail.

The 7-ft. paving strip for each track laid by the company was paved with brick of local manufacture and locally made brick nose blocks 8 in. long were used. The space between these and the rails was filled in with the same 1:4 mortar and the whole area waterproofed with 1:2 cement grouting. A 1/4-in. crown between rails was provided, with the pavement at the center on the same level as the rail top.

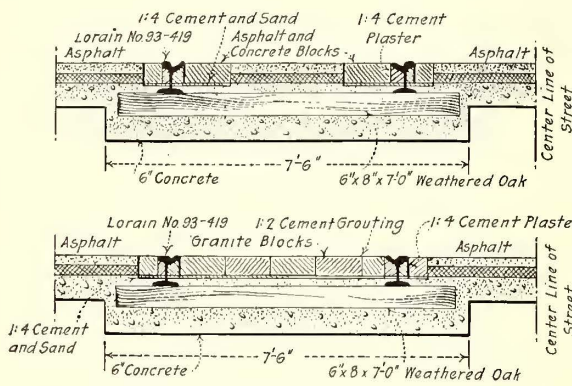
All track except that in the loop district with the concrete sub-base was constructed with a French drain, one for each track and under each curve of all special work. This drain consists of a trench 6 in. wide x 12 in. deep and filled with crushed stone. The base slopes slightly to drain to the sewer. In the gravel-ballasted residence track, a 4-in. drain tile was installed in the bottom of the trench.

In rebuilding one 2000-ft. stretch of old track, the foundation and ties were left in place and the new 7-in. 80-lb. rail put down in place of the old 6-in. 70-lb. tram rail. This raised the crown of the street to a grade 1 in. higher, and the balance of the pavement was sloped off to take care of the difference, but the work was done at a good saving over the cost of tearing up the old foundation.

The loop district tangent track was installed at a cost to the company of approximately \$7 a foot of single track, this figure not including any special work or bonding cost. The residence track cost approximately \$6 a single track foot. The fourteen special work layouts installed in the downtown district cost the company approximately \$80,000.

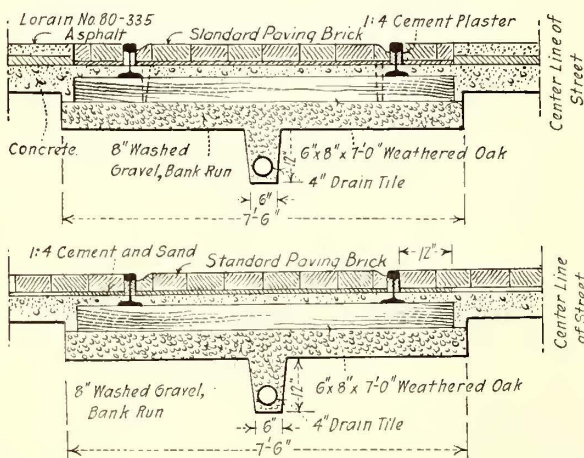
Galvanized-Iron Wire for High-Tension Lines

Even before copper reached its present high price the Georgia Railway & Power Company installed a number of galvanized-iron high-tension lines where small quantities of power were transmitted. It was planned to replace them with copper when the load reached a certain size. The first installation, 6 miles in length, was in the nature of a test and as no exceptional troubles from reactance and the like were noted further installations were made. To-day about 100 miles of such lines are in use. The longest single line is 10 miles at 11,000 volts, three-phase, 60 cycles, and the power transmitted in 200 kw. The high price of copper has led to copper lines being replaced by galvanized iron in several instances where it was profitable to use the copper elsewhere. A potent reason for this practice is the fact that copper wire now costs about 36 cents per pound, whereas the galvanized-iron wire is obtainable at 93 cents per 100 ft. (13 lb.) or about 7 cents per pound.



STANDARD TRACK CONSTRUCTION FOR DES MOINES (IOWA) BUSINESS STREETS

machined to make a perfect bearing and with spelter poured around the edges. Solid manganese tongue switches were used and wherever these were installed as facing switches they were equipped with spring lock boxes. The flangeways over the intersection were made 3/4 in. deep. This carries the weight of the city cars, which have a 3/4-in. flange, equally on the tread and flange. The Interurban Railway, which also operates over these tracks, has a wheel flange 7/8 in. high, and hence the car weight is carried over the special-work in-

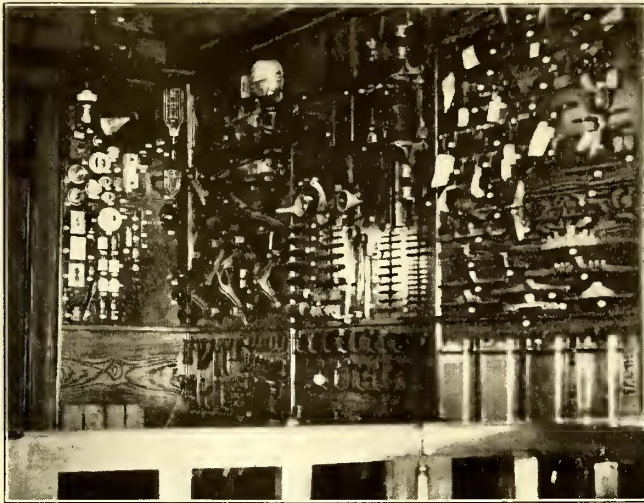


STANDARD TRACK CONSTRUCTION FOR DES MOINES (IOWA) RESIDENCE DISTRICTS

tersection on the flange alone. The negative return circuit was carried around all special work by a 1,000,000 circ. mil. cable for each rail, connected to the rail by cast copper weld.

RESIDENCE TRACK

The type of residence-district track construction in Des Moines is much the same as that already described as installed in the loop district, except for the sub-base construction. Here, instead of 6 in. of concrete below the bottom of the ties, 8 in. of bank-run washed gravel of a sandy nature, taken from a pit on the Beaver Valley Division of the Interurban Line, was laid in the track



STANDARDS MOUNTED IN ENGINEERING DEPARTMENT

Boards for Equipment Standards

The walls of the small reception room of the Denver Tramway Company engineering department have been utilized for mounting samples of the different standards of the company. It has been found that questions constantly arise as to dimensions and general details of the various devices, and by having at hand a sample which may be seen and measured and studied without going out on the work, considerable time is saved and fewer mistakes in plans made.

On this sample board are mounted sections of all the standard rails used by the company, and also the various sections of rails of all other railways with which the company has crossings. There are also angle bars used with the various rail sections, track spikes, special bolts for manganese insert work, various types of wood and stone paving block, sections of ties treated and untreated with both pressure and open-tank systems of penetration; samples of paving sand and car sand, pit-run gravel, screened gravel, various sizes of crushed slag and crushed basalt rock, etc. Covering the overhead work there are various types of hangers, ears, wire sections, return feeder cables, crossing frogs and spring frogs, various bonds, lightning arresters, pole

brackets, insulators, all types of switches and sockets for indoor wiring etc.; standard signs used about the system, the moldings used in the various buildings, etc.

Inexpensive Apparatus for Registering Power House Vibration

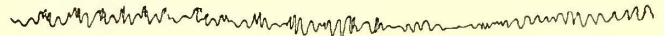
Vibrations Are Traced on Smoked Glass, from Which Blueprints are Made for Permanent Record

BY S. R. JONES

Structural Engineer J. G. White Engineering Corporation

The writer had occasion recently to determine with a fair degree of approximation the severity of vibration in a power plant. As the apparatus used for delicate measurements of this kind was too expensive and unnecessarily complicated for the purpose, the simple but effective apparatus described below was devised and constructed. For the comparisons desired it proved to be amply accurate, and its portability appealed to us also. The apparatus can be made of materials available around any power plant at very slight expense.

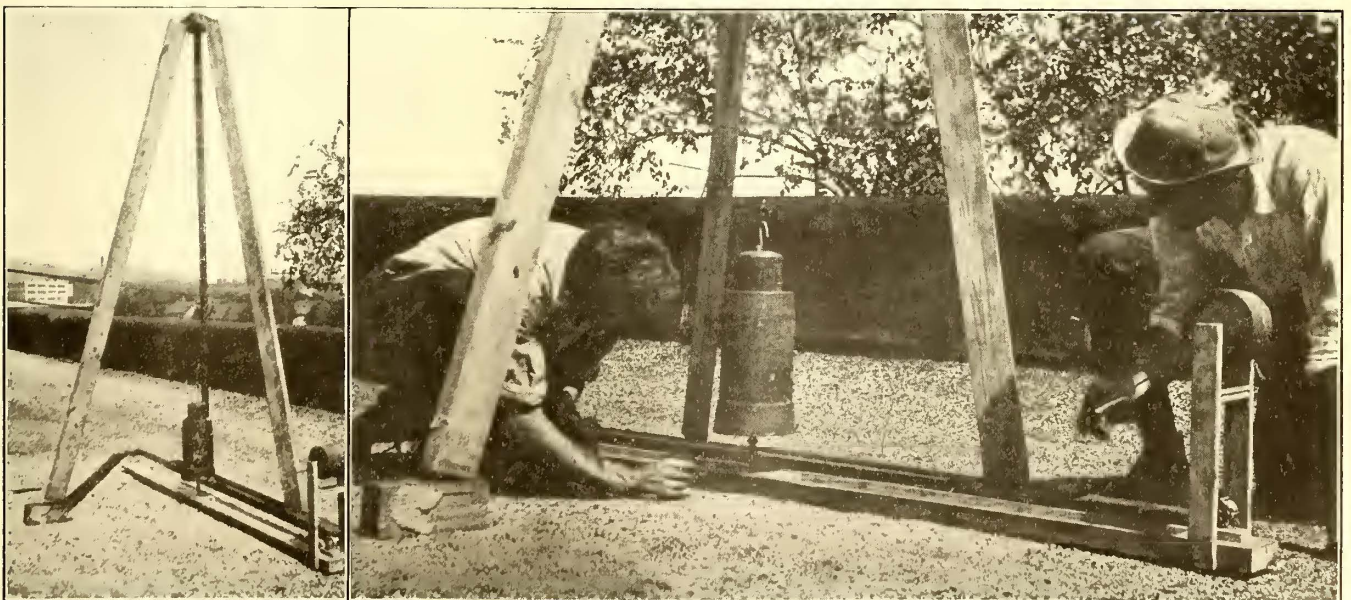
After some experiments to determine the best weight



TYPICAL SEISMOGRAPH CURVES SHOWING DIFFERENT INTENSITIES OF VIBRATION. SCALE APPROXIMATELY ONE-HALF SIZE

of bob, and finding that one of 60-lb. weight was unsteady, we settled on about 120 lb. as the minimum weight which should be used. The construction of the home-made seismograph is as follows:

The apparatus consists of a tripod about 8 ft. high made of 2-in. x 4-in. lumber hinged at the top to a triangular block. Suspended from this block on a piece of piano wire is a 117-lb. weight. At the bottom of the weight is attached a piece of gage-glass tubing in which a stylus of small-diameter tool steel is fitted. This stylus is so accurately fitted that with a lubricating film of oil between it and the glass tubing there is no lateral play. The vertical motion, however, is perfectly free. A trough is placed underneath the weight and



GENERAL VIEW OF SEISMOGRAPH ON POWER HOUSE ROOF AND NEAR VIEW SHOWING VIBRATION RECORD BEING TRACED ON SMOKED-GLASS PLATE

on the foundation the vibration of which is to be measured. This trough consists of a board 6 ft. long by 6 in. wide with strips on either side. The trough contains a slide about 3 ft. long by 4 in. wide which can be drawn along slowly by means of a winding reel. To this slide is attached a strip of smoked glass 3 ft. long by 3 in. wide on which the stylus scratches a record.

The principle of the apparatus is that the weight suspended by the fine flexible wire has sufficient inertia to be unaffected by rapid vibrations and it therefore remains steady, while the smoked glass plate underneath moves with the vibrations of the ground on which it rests. Thus we get a fixed marker writing upon a moving surface. The curves represent the result of two motions, that of the vibration causing the plate to move back and forth across its main axis, and the forward movement caused by moving the smoked-glass plate along its main axis by the reeling device. Of course if there is no vibration a smooth line is obtained, while if there is vibration it is recorded by a wavy line, the maximum and minimum of which give a measure of the amount of vibration.

It is well to take the curves over periods of four minutes in order to portray any extremes which might occur due to the synchronous movement of the machines in the power house. The accompanying curves are typical of the records made with this apparatus. Both curves were taken at the same location, but more engines were being operated when the lower curve was recorded.

Effect of Laying Tracks to Follow Crown of Street

BY D. P. FALCONER

Engineer Maintenance of Way, New York State Railways, Rochester, N. Y.

Having one rail 1/2-in. higher than the other in an attempt to follow the crown of the street has been tried out in Rochester, N. Y., and found to be injurious to the pavement as well as the car equipment.

The effect on the pavement is clearly shown in the accompanying illustration, the paving block adjacent to the outer or lower rail being very uneven after being laid only one year. The wear on the side bearings, journals and wheel flanges was also found to be unusually large. After the wheel flanges became a little worn the car would run down to the low side and then abruptly be shifted back again. This nosing of the car made it rough riding and it also tended to make a

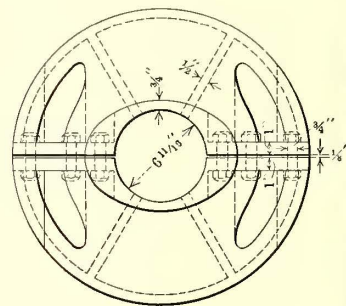
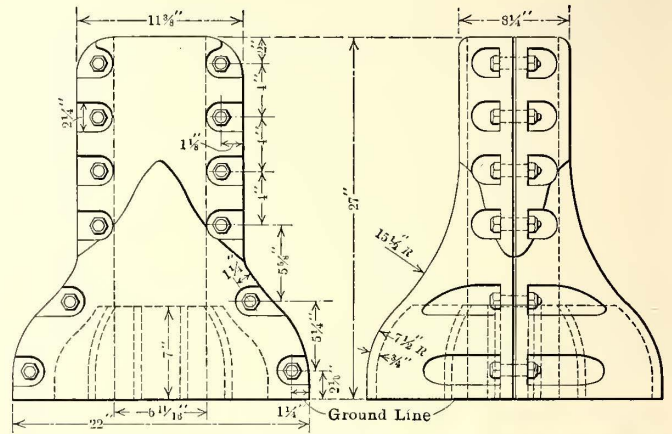


UNEVEN PAVING ALONG OUTER RAIL DUE TO ATTEMPT TO HAVE TRACK GRADE FOLLOW CROWN OF STREET

wide gage track. When the attention of the city authorities was called to the disadvantages of this construction no opposition was raised to making the track level.

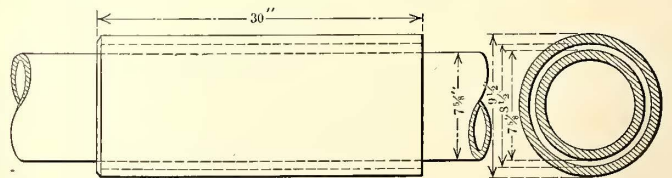
Two Ways of Reinforcing Corroded Iron Poles at the Ground Line in Richmond

In 1909 the Virginia Railway & Power Company found that a large number of its center poles on Broad Street had corroded badly about 8 in. above the ground line, to wit, at the junction of the pole and a cast-iron wheel guard. To overcome this trouble without sacrificing the poles the company devised a cuff or sleeving made up of two cast-iron reciprocal yokes. Each pair



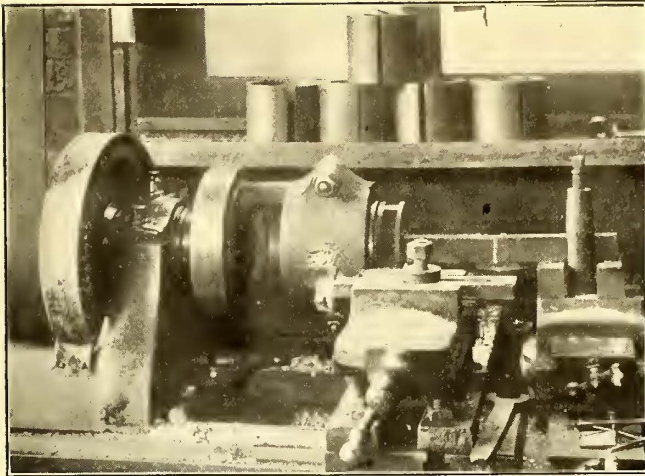
CAST-IRON SLEEVES TO PROTECT AND REINFORCE CENTER TROLLEY POLES AT GROUND LINE

STEEL TUBE REINFORCING FOR POLES SET IN SIDEWALKS



of yokes was furnished with six gripping bolts on each side, as shown, so that the yokes when joined grasped the pole firmly at points well above and below the corroded section. The efficiency of this sleeving, both as a protection against corrosion and as a wheel guard, is proved by the fact that it is still in use to-day.

The second drawing shows a simple pole sleeving for sidewalk use, particularly for brick sidewalks. To install this it is first necessary to remove the span wire. This plain sleeving of steel tubing has also proved satisfactory as a protection against corrosion.



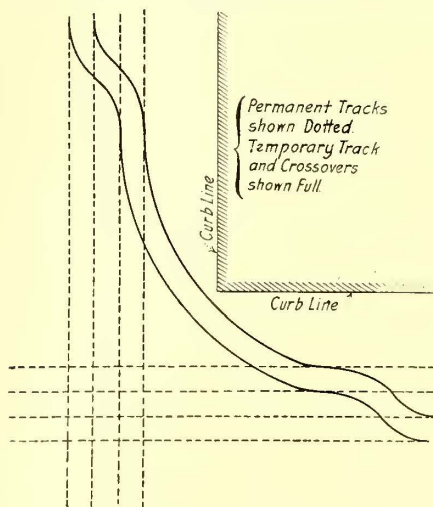
UNIVERSAL BEARING CHUCK USED IN COLD SPRING SHOP, INTERNATIONAL RAILWAY, BUFFALO, N. Y.

A Universal Bearing Chuck

In the accompanying illustration is shown a chuck used for boring bearings of different sizes. This chuck was built by the International Railway, Buffalo, N. Y., and has proved very useful in its shops. The split chuck bushings shown all have the same outside diameter, but the inside diameters are made to fit the different sizes of bearings. The bearing to be bored is inserted in the bushing of the correct size and the whole is then placed in the chuck proper. This is tightened on the bushing by means of the bolts and nuts shown. The photograph shows the two tools used in the boring operation.

Two Portable Cross-Overs and Temporary Track Around Corner Make Car Detour Possible

During the construction of the approaches of the new viaduct in Cleveland, Ohio, it became necessary to divert some of the car lines from their regular routes and this, of course, was planned so as to avoid additional expendi-



TEMPORARY TURNOUTS AND CROSS-OVERS

tures in special work which would be required only during the construction period. In one instance two lines intersected with no means of interconnection between them, and it was desired to shunt the cars off the one line and turn them onto the other. This was accomplished by an unusual installation of temporary

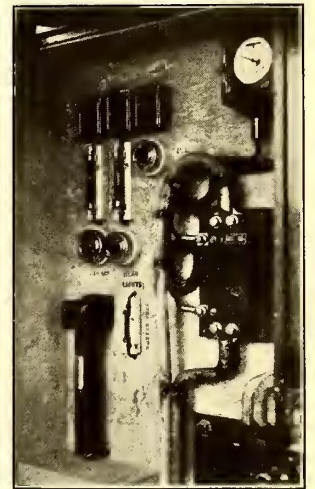


VIEW OF PORTION OF TEMPORARY TRACK WORK

track. It comprised the installation of a left-hand double-track cross-over on one street and a right-hand double-track cross-over around the corner on the other street. The two portable cross-overs were then connected by a temporary track laid on the surface at the side of the street and curving around the corner to interconnect the two lines. Traffic was thus handled in either direction around the corner on the single track with the help of a flagman. A temporary trolley was strung over the curve and the detour arrangement thus made complete with a small permanent investment.

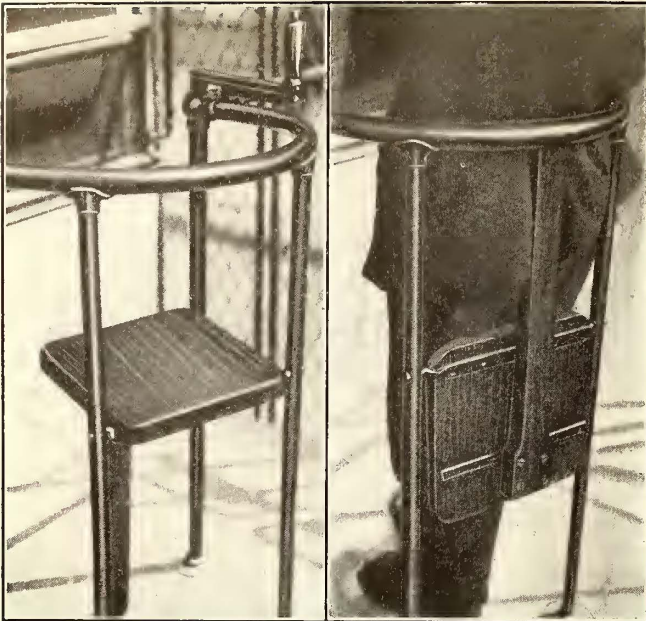
Neat Layout of Fireproof Car Control Cabinet

The control panel on the new cars of the Chicago, North Shore & Milwaukee Railroad is placed in a recess in the front bulkhead immediately behind the motorman. As shown by the accompanying illustration, the cabinet is completely lined with transite board and houses the main trolley-third-rail throw-over switch, the buzzer resistance, the switches for the compressor, headlight, car lights and sign and the Sangamo "Economy" ampere-hour meter and ammeter shunt. This cabinet extends into the car interior about 6 in. and is closed off on the platform side by a steel door lined with transite board. This makes an absolutely fireproof cabinet conveniently located relative to the position of the motorman, and makes a particularly neat layout for the fuses and switching equipment.



FIREPROOF SWITCH AND FUSE CABINET

Stone & Webster interests in Seattle have leased approximately 50 acres of upland and about 25 acres of harbor area on the north end of Harbor Island in Seattle, which, it is stated, will be the site of the proposed ship-building plants to be erected in the Northwest as a part of the corporation's plans to aid in government ship-building. The company is represented locally by the Puget Sound Traction, Light & Power Company. It is also considered probable that the plant will be located in Bellingham, where the corporation owns holdings. It is stated that the company plans to construct fifty ships at one time.



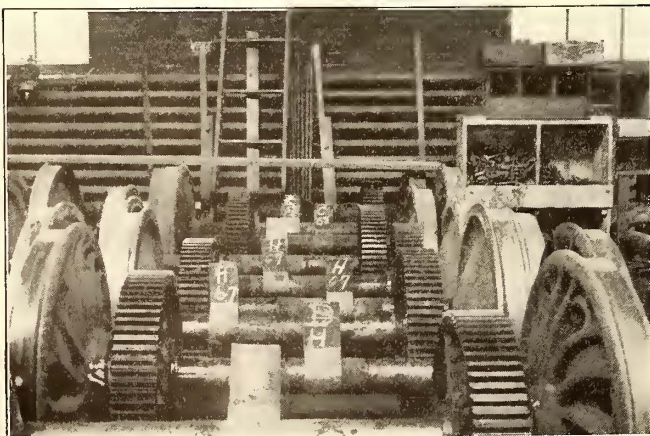
LOUISVILLE RAILWAY CONDUCTOR'S SEAT
IN TWO POSITIONS

Conductor's Folding Seat

Folding seats have been installed on pay-as-you-enter cars of the Louisville Railway for the use of the conductors. The seat is of wood pivoted between two vertical members of the prepayment railing and supported at the front by a wooden leg hinged to the seat. When not in use the seat folds down between the vertical stanchions, and the supporting leg folds upward, as shown in the illustration. The seat thus occupies no platform space when not in use.

Marking Spare Axles to Save Time

A means of quickly selecting the proper spare axle and wheels without the necessity of stopping to measure journals, gears, etc., has been used to advantage in the shops of the Colorado Springs & Interurban Railway. The man who has turned the journals or done other work on the wheels and axle knows for what type of truck, motor, etc., that spare axle is fitted, and when he has finished his work on it he marks with white chalk one or two symbols on a steel spring clip which is sprung over the axle, as shown in the accompanying photograph. For instance the first tag with the letters "LB" designates this axle and wheels for a low-g geared motor on a Brill truck, while the "BH" tag indicates a



SPARE AXLES TAGGED TO FACILITATE PROPER SELECTION

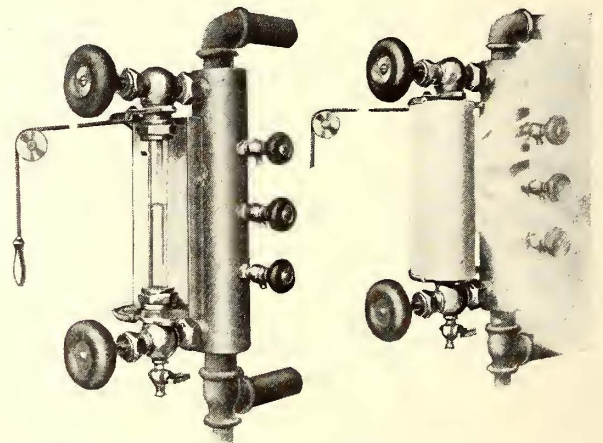
spare axle fitted for a Brill truck and high-g geared motor; and "H-67," one for high-g geared axle for use with GE-67 motors, etc.

Thus when a car comes in for axle repair, or renewal of gears or wheels, the proper spare axle and wheels can be taken from the stock and put on the car without any time being lost in measuring the proper set for replacement.

Guard for Use in Replacing Broken Water Gage Glasses

To protect the operator from escaping steam when changing a broken gage glass the Simplex Safety Boiler Gage Glass Company, Springfield, Mass., has placed on the market the guard shown in the accompanying illustration.

It consists of a sheet-metal semi-cylindrical shutter mounted so that it can be rotated by pulling a cord at a distant point. In case the gage glass breaks, the operator pulls the cord, thus moving the shutter through half a turn. This deflects the escaping steam and makes it possible to shut off the gage valves without danger to the operator. This done another pull of the rope removes the shutter from the tracks on which it runs and it drops out of the way so that the gage glass can be changed. The shutter is replaced in the guarding



TWO VIEWS OF GUARD FOR WATER GAGE GLASSES

position to protect the operator in case the new glass should break when the gage valves are opened again. When not in guarding position the shutter acts as a reflector.

Method for Removing Tight Wheels

A ring gas burner has solved the problem of removing extra tight wheels in the shops of the Knoxville Railway & Light Company. By means of this burner, which is 8-in. in diameter and has a double row of holes, it is possible to heat wheels sufficiently in about five minutes to make them easily removable. Before this method was used a wheel press of 80-ton capacity at times failed to remove a wheel that had been put in place at a pressure of 45 tons. In these cases it was necessary to send the wheels to a railroad shop for removal.

F. L. Hinman, master mechanic New York State Railways, Syracuse Lines, reports that the portable A-shaped shop ladders, described in the issue of the ELECTRIC RAILWAY JOURNAL for March 17, 1917, page 507, have become so popular that a dozen additional ones are being made for the carhouse inspection pits.

London Letter

The Tramway Notes This Month Are Concerned Largely with Increasing Costs and the Growing Need of Additional Sources of Revenue

(From Our Regular Correspondent)

The growing difficulty of municipal finance owing to enormously increased cost of materials may be gathered from the experience of Manchester. There, as in Sheffield, the trams have been earning more money than ever before in their history, but the amount available for rate relief has had to be cut down by one-half. The total revenue for the year was £978,000, the largest sum in the history of the undertaking. The contribution to the rate-relief fund, however, falls from £100,000 to £50,000. It is anticipated that it will necessitate an increase of 6d. in the pound on the rates. Materials of all kinds are costing very much more than formerly, and labor was never before so dear. War bonuses and allowances are taking from the Manchester trams £103,000 a year. Sheffield, thanks to very careful management and a constantly growing income, which now is the largest on record, has to a certain extent been more fortunate. Still, the expenditures there have mounted so much faster than the revenues that they are face to face this year with a deficiency of about £6,000, and with a probable considerably higher deficiency next year, so that some change in the scale of fares in the near future would appear to be inevitable.

With respect to tramway fares in Dundee it was decided at a recent meeting of the tramway committee that no alteration be made. The convener stated, however, that it would be necessary to consider the whole position of the tramways especially as the accepted tenders for stores for the coming year were at much higher figures of cost than the present ones. It was proposed that under the present war conditions the interest received on investments to the credit of the tramway department should, for this year and next year, be available to help to pay the interest on the remaining debt on the undertaking, any balance not required to go to the renewal fund.

The Nottingham tramways committee contemplates the adoption of several restrictions in the hope of enforcing economy. Increases of wages, the war bonuses, and the enormously enhanced cost of administration and maintenance are stated to have rendered it absolutely necessary to retrench. It has been suggested that the system of transfer tickets be suspended during the period of the war (thus apparently to stop the halfpenny fares); that the half-fare age of school children be reduced from fifteen years to twelve years and that the hour at which workmen's tickets are available be limited to 7 a. m. It is expected that these changes will meet with considerable opposition, but the finances of the undertaking have been so seriously affected by war conditions that some curtailment of facilities is deemed to be inevitable.

A special meeting of the Belfast City Council has been held to receive the recommendation of the tramways and electricity committee with regard to fares and stages for the ensuing year. The minutes of the committee contained a statement of the revenue account of the tramway undertaking for the year ended March 31, 1917. This showed that the receipts amounted to £301,245, the largest revenue on record, but that the working expenses of £189,665 were also a record. The capital, depreciation, and other charges amounted to more than £119,000. This was also a record. The net result of the year's working was a deficit of £6,892. The estimate of the city accountant for the next financial year based on present fares and expenses placed the revenue at £303,000 and the deficiency at the end of the year at £23,000. The committee recommended the abolition of all privilege tickets and free passes, with the exception of those issued to tramway employees going to and returning from duty, the withdrawal of return tickets, the limitation of work-people's tickets to before 8 a. m. and to the special workmen's cars in evening and at midday on Saturdays, and the readjustment of children's fares.

At a meeting of the Newcastle Corporation tramways committee, the application from car workers for an increase of 5s. a week in wages was considered. After discussion, the

committee granted an advance of 4s. a week to motormen, male conductors, male cleaners, and others, and an advance to women conductors of 1s. per week extra pay at the end of six months and another 1s. twelve months hence. The women car cleaners on night duty are to have their wages advanced by 2s. per week. It was decided that the additional war bonus of 2s. per week to men who have worked seven days a week, and of 1s. to women who have worked six days, shall be continued. The increases represent an annual charge of £4,967. A further sum of £3,770 will be required to meet the advances granted to other employees as a result of the recent award of the committee on productions.

Between 4000 and 5000 women tramway workers including conductors, trolley girls and cleaners, employed by the Lancashire and the Cheshire corporations and private tramway companies have been awarded a war bonus of 3s. 6d. for workers eighteen years and over, and 2s. for girls under eighteen, by the committee of production. The claim made by the Lancashire Districts Council, a body representing the workers, was for a bonus of 6s. 6d., the amount of bonus now paid to the men employed. It was contended that this claim was reasonable, because the women, on whose behalf it was made, were doing the work of men who receive the higher bonus. On behalf of the corporations and the private tramways it was urged that while the majority of the men engaged were married and had dependents, the women workers were for the most part unmarried.

The tramway committee of Edinburgh Town Council has received a letter from the Admiralty stating that it is in favor of the proposed construction by the Corporation of Edinburgh, after the war, of a tramway between Edinburgh and South Queensferry. This will be beneficial to Rosyth, and the Admiralty will support the corporation in any application for a provisional order or bill, provided there is no actual construction carried out during the war.

The London Electric Railway has applied to the Board of Trade for an extension of time in which to construct the surface railway from Golders Green through Hendon to Edgware. This line is to link up with the Charing Cross and Hampstead Tube.

Sir Albert Stanley, who in consequence of his appointment as president of the Board of Trade resigned from the companies forming the London Underground group, including the General Omnibus Company, has been succeeded by C. W. Burton, who will act as managing director. The properties include the Underground Electric Railways of London, Ltd., the Metropolitan District Railway, the London Electric Railway, the Central London Railway and the City & South London Railway.

Now that the tramways committee of the Birmingham City Council is under the necessity of still further curtailing the omnibus services in the city, owing to the shortage of petrol, a question has arisen as to the effect this reduction will have on the provision made for the conveyance of wounded soldiers. The tramway department has carried wounded soldiers free of charge on all the tramway and omnibus routes of the city, but as the vehicles were so much in demand for the convenience of persons employed in the manufacture of munitions, as well as for the ordinary traveling public, appeal was made to the authorities at the war hospitals with the result that the wounded soldiers were asked not to travel in batches of more than six.

The report concerning the working of the Liverpool Corporation electric tramways for the year 1916 shows that the total revenue was £766,577. The total operating costs were £518,037 and the gross profit, £248,540. The net profit, after making provision for interest—£49,834—and sinking fund and repayment of loans—£52,735—was £145,971. This is an increase of £22,777, as compared with that of the year 1915. The feature of the tramways is the extremely cheap system of fares. In the industrial portions of Liverpool passengers are allowed to travel 3 miles 207 yards for 1d. at all periods of the day, without restriction. During the period under review the staff was seriously depleted. Out of a total of 2700 no fewer than 1900 have left to join the forces. The vacancies thus created were as far as possible filled by men incapable of military service, or by women. This class of labor has, states the report, performed the duties as well as could be expected under the circumstances.

A. C. S.

News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

Boston Elevated Obtains Some Relief

\$500,000 Fund Returned by State—Bond Issue Authorized—Cambridge Subway Purchase by State Voted Down—Commission to Investigate Further

Partial relief for its financial needs was assured the Boston (Mass.) Elevated Railway by an act passed during the closing hours of the Legislature on May 25. The act provides for the return of \$500,000 by the State to the company within ten days, this being a guaranty fund maintained by the railway since the early days of its rapid-transit construction. The company is authorized, subject to commission regulation, to issue bonds or notes not exceeding 20 per cent of the cash paid in by its stockholders to buy new cars, to replace or retire equipment, and to provide for the first three years' rental of the Dorchester tunnel. Such bonds or notes must be retired within fifteen years of their issue date. Land may be taken by the company for the establishment of prepayment areas, subject to the jurisdiction of the commission. An extension or rearrangement of the East Boston tunnel outlet at Maverick Square to provide for the establishment of a prepayment area is also provided for by the Legislature in this act.

PUBLIC OWNERSHIP PLAN FOR SUBWAY FAILS

A few hours before the prorogation of the session Governor McCall sent a special message to the Legislature urging that the section of the relief bill providing for the purchase of the Cambridge subway by the State be eliminated, and that the Public Service Commission be authorized to regulate the fares of the company. This involved the repeal of the 1897 act establishing a 5-cent fare unit on the Boston system. After a vigorous contest the Governor's proposed amendment was lost, the opponents contending that more time should be granted for investigation of the necessity for abrogating the company's contract with the State. As finally passed, the act provides that the Public Service Commission shall before the 1918 session investigate the advisability of granting higher fares and study the possibilities of further economies in operation.

Governor McCall pointed out that the relief bill contained a provision for the State purchase of the Cambridge subway for about \$9,000,000. This obligation was to have been met by the issue of bonds bearing interest at a rate of not more than 4 per cent. At the time when the special commission on Boston Elevated financial needs reported in favor of the purchase conditions were normal. In Governor McCall's opinion, however, it might well be doubted whether the commission would have recommended the purchase if it had known that the country would be involved in a great war, with the first duty upon citizens of conserving the high credit of the commonwealth for use, if necessary, in the common defense.

GOVERNOR AGAINST PUBLIC OWNERSHIP

Quite aside from considerations growing out of the present crisis, however, Governor McCall felt that it would be an unwise policy to use the credit of the commonwealth to purchase any property of the Boston Elevated Railway. The purchase of the subway, instead of settling the difficulties of that company, would, it is likely, only involve the commonwealth, and, unless further legislation were had, might force it to take over the whole Boston Elevated Railway System. Furthermore, said the Governor, the policy upon which this bill would lead the commonwealth to embark would almost inevitably be followed by similar ventures, by an enormous increase in the public debt, and by the creation of conditions which citizens would not care to contemplate.

Regarding the extension of Public Service Commission control over the fares of the Boston Elevated Railway, Governor McCall said:

"The commission is a body created for the express purpose of supervising our transportation systems and of doing justice between those who operate them and the public. The transportation companies should be required to give rates that are just and reasonable and equal to the public. On the other hand, they should be permitted to receive rates which would enable them to pay reasonable wages to their employees, to operate their property efficiently, and to yield a return upon investments honestly made. Less than that would not pay for the fair cost of the service.

"The substantial elements in the cost of transportation upon this system can be quickly determined. There is no necessity for an inquiry long drawn out to determine the cost to the minute fraction of a mill. If the commission is equipped with full authority in the premises, I believe it will take seasonable action, and action which will receive the public approval. The maintenance of this system is of very great public importance. It has a body of highly-trained employees, led by a man who is recognized throughout the country as one of the foremost men in his calling. It gives a very good service now; it should be enabled to give even better service in the future, and I believe that it will be able to do that under the efficient management which it now has and the full regulation of the Public Service Commission."

Short Municipal Elevated Suggested

Ordinance Introduced in Seattle Council Would Provide for an Elevated Line, a Ferry Terminal and Common User Rights

An ordinance introduced by Oliver T. Erickson in the City Council of Seattle, Wash., provides for the construction by the city of an elevated railway in order to connect Division A and the Lake Burien municipal railway lines, and provide a street railway terminal for the Port of Seattle's proposed ferry line from the West Waterway industrial district. The ordinance directs the city engineer to furnish an estimate of the cost of the line suggested.

In the resolution Councilman Erickson recites that the transportation facilities on the East and West Waterways are hampered and checked in activity and growth because of inadequate transportation for their employees; that an elevated on Whatcom Avenue would be profitable because of the enormous traffic on that street and the speed which could be made in handling cars.

In announcing his plans for a greater municipal railway system for the city of Seattle Councilman Erickson stated that he favored making arrangements with the Seattle & Rainier Valley Railway whereby the cars of that system might run in the rush hours of the morning and evening along the elevated line into the heart of the shipbuilding district. He said that the municipal elevated line could be constructed at comparatively little expense provided the port commission granted permission for use of its right-of-way. The use of the Seattle & Rainier Valley Railway will cost the city \$1,000 a month.

Mr. Erickson's plan is for the city to exercise common user rights over the Seattle & Rainier Valley line. Along Whatcom Avenue the plan calls for the construction of the elevated line above the right-of-way granted the Port Commission for a belt line railway. At the foot of Washington Street the plan proposes a public terminal, a slip for the West Waterway ferry, and the exchange of transfers between city lines and the Port ferry.

Salt Lake Labor Questions Settled

War-Time Adjustment Reached—Recognition of Union Waived

The differences between the Utah Light & Traction Company, Salt Lake City, Utah, and its trainmen have been adjusted. The negotiations had been in progress for weeks. The old schedule was 28 cents for the first year and 33 cents thereafter. The men demanded 37 cents the first year, 42 cents thereafter and recognition of the union. The company refused to meet either of these demands. A strike seemed imminent. Two weeks ago the county commissioners of Salt Lake County called both sides together and urged them as a patriotic duty to settle the differences by arbitrating all arbitrable matters and waiving the others during the war. Both sides accepted this principle and negotiations were renewed. On May 24 a one-year agreement was made. The wage schedule was fixed at 28 cents for the first year, 34 cents for the second year and 37 cents for the third year. The question of union recognition was waived. Both sides have agreed for one year and during the pendency of the war to refer the other differences between them to arbitration. If they are unable to agree on the question of what are arbitrable subjects, then the State Industrial Commission is to decide the matter. The labor situation has thus been satisfactorily settled for the period of the war. The question of recognition of the union may, however, come up for adjustment thereafter.

South Bend Mediation Fails

Arbitrary Stand of Men Prevents Adjustment by Board Appointed by Governor

The board of mediation in the South Bend wage matter has announced its failure to bring about any settlement. The board was appointed on May 22 by Governor Goodrich of Indiana at the request of Mayor Keller of South Bend, to try to bring about an agreement between the company and those of the striking trainmen of the South Bend city lines of the Chicago, South Bend & Northern Indiana Railway who refused to return to work under the new wage schedule and working conditions which were accepted by 80 per cent of the employees.

The board began its work at South Bend on May 23, behind closed doors. Many of the trainmen, both union and non-union men, were called and testified before the board. Charles M. Murdock, Lafayette, vice-president of the Chicago, South Bend & Northern Indiana Railway, spent several hours with the board of mediation on May 24 and informed it that the company was willing and intended fully to live up to its contract with the employees. The company's position in the controversy was that the men should return to work as individuals, and that the company could not recognize any negotiations with the union.

It was reported that the men had indicated their willingness to go back to work on a wage scale of 23 cents to 28 cents an hour graduated over a five-year period. This is 3 cents an hour higher than the wages paid before the strike of April 28. The company granted an increase of 2 cents an hour to all its employees shortly after the strike call. This was accepted by the majority of the South Bend trainmen and all the city trainmen in Elkhart, Michigan City and Goshen. The last mediation board meeting was practically a continuous session lasting from noon of May 25 to about 5 p.m. on May 26. At almost the last hour, amended demands were presented by the union men. These were rejected by officials of the company.

An attempt to bring pressure to bear on the company was seen in an order issued by Mayor Keller that the city would no longer provide special policemen for the protection of the cars and employees of the company. Cars are being operated on schedule on all lines in South Bend, and the patronage is now practically normal.

The board announced after its adjournment that the striking employees had conceded that the company should not recognize the union, but still demanded an increase of 1 cent an hour over the new schedule of 22 to 27 cents an hour which has been adopted by the company.

Hearing on Philadelphia Bills

P. R. T. Presents Its Case Before Joint Legislative Committee—Further Conferences Suggested

A hearing was held at Harrisburg, Pa., on May 29 before the joint legislative judiciary general committee to afford the Philadelphia Rapid Transit Company interests an opportunity to reply to the arguments made a week ago by the city of Philadelphia and others in favor of the pending rapid-transit measures. There are three bills before the Legislature in the interest of the city. Their purport is to give the city the power to take over the lines of the Philadelphia Rapid Transit Company by exercising the right of eminent domain, compensation to be fixed by the Public Service Commission; a constitutional amendment increasing the city's borrowing capacity so as to provide this compensation, and the so-called Salus bill to provide through routing of the city's lines on the Philadelphia Rapid Transit Company's lines and also to empower the commission to decide the question of fares and transfers.

The opinion seemed to prevail after the meeting that the measures are doomed to be defeated. Mayor Smith is reported to have urged both Senator Vare and Senator McNichol of Philadelphia to advance the Salus bill in accordance with promises which he claimed were made by the Senators to him. As opposed to this, Senator McNichol suggested that the representatives of the city and the company get together and reach an agreement. Subsequently E. T. Stotesbury, Thomas E. Mitten and Ellis Ames Ballard, of the Philadelphia Rapid Transit Company delegation at Harrisburg, made overtures to William Draper Lewis, Joseph P. Gaffney, chairman of the finance committee of the Councils of Philadelphia, and Transit Director William S. Twining of Philadelphia to the effect that the plan of Senator McNichol be put into practice.

Mr. Stotesbury opened the discussion with a statement in which he reviewed his connection with the company. He then summarized the terms of the 1907 contract and said that after ten years of operation under that contract it now became necessary as a result of the city's decision to construct additional transit facilities to amend in some respects the relation between the parties to the contract. Apart from any contractual rights in the matter, the citizens could best be served if the new city lines were operated in conjunction with the present system of the Philadelphia Rapid Transit Company. With this object in view negotiations were begun by the parties to the 1907 contract for an amendment to that contract. While these negotiations were pending bills were introduced in the Legislature to relieve the city from the obligations of the 1907 contract. The unfairness of this proceeding was obvious. He considered the breaking of one contract a poor foundation on which to build a new one.

BILLS A GROSS ABUSE OF POWER

Mr. Trinkle of counsel for the company said that it would be a gross abuse of power for the Legislature to abrogate the 1907 contract. He predicted that the passage of the bills now pending and any attempt on the part of the city to act in pursuance of the provisions of the bills would mean years of litigation leading up to the Supreme Court itself. He also attacked the feature of the bills by which the Public Service Commission is made an agency to determine valuation in a proceeding in which the city attempts to condemn transit facilities.

Mr. Schaffer for the company also opposed the eminent domain bill. He questioned, first, the constitutionality of the legislation and, second, the means by which the lines could be condemned in townships. Mr. Schaffer declared the bills to be a violation of a contract between the city of Philadelphia and the Philadelphia Rapid Transit System. The Legislature was asked to pass bills which would force the company to take conditions which the city wanted to give and none others.

It was at this point that Senator McNichol made his suggestion for further conferences. To this proposal Mayor Smith, who was not at Harrisburg, later said that any time a new proposition which looked toward an agreement between the city and the company was offered to him he was ready to receive it. He had interpreted Mr. Stotesbury's re-

marks made at the public hearing in Philadelphia, to which reference was made in the *ELECTRIC RAILWAY JOURNAL* of May 26, page 971, as purporting to mean that the present contract was the only one which the company was willing to consider.

The bills were defended for the city by Dr. Lewis. He expressed the opinion that they were constitutional and replied briefly to each of the objections raised by opposing counsel.

Detroit Arbitration Award

New Wage Scale Fixed—Representative of Men on the Board Refused to Sign the Finding

The arbitrators considering the differences between the Detroit (Mich.) United Railway and its men over the question of wages and working hours handed down their decision on May 31. The new wage scale is 30 cents an hour for the first three months; 35 cents for the next nine months, and 40 cents after the first year. The old scale was 27½ cents for the first six months; 32½ cents for the succeeding eight-months and 35 cents after two years' service. Very slight changes were made in the working hours. The agreement was signed by John Russell, representing the company, and Judson Grenell, the umpire. Judge E. J. Jeffries, representing the men, refused to sign. The pay increase amounts to practically \$600,000 a year. The advance in the wages, the increased cost of supplies and the expanding maintenance charges, etc., mean a very large increase in the expenses of the company and indicate that the days of seven-for-a-quarter tickets in Detroit are numbered.

Illinois Storm Damage

Public Service Properties in Mattoon and Vicinity Only Slightly Damaged

The recent tornado in the Central West spent considerable of its force in the city of Mattoon, Ill., and vicinity in which the Central Illinois Public Service Company, a subsidiary of the Middle West Utilities Company, operates. The president of the Central Illinois Public Service Company is M. E. Sampson, Chicago, and he was in Mattoon continuously for several days following receipt of the news of the storm as received in Chicago. The Mattoon papers of May 28 said nothing about the damage to the railway or electric properties at Mattoon operated by the Central Illinois Public Service Company. Mr. Sampson was not expected to return to Chicago until Decoration Day.

A telegram received on May 28 by Martin J. Insull of the Insull interests in Chicago, which control the Middle West Utilities Company, contained the only information had in Chicago at that time about the effect of the storm on the Middle West properties. This telegram said that only a very small percentage of the territory or business of the Central Illinois Public Service Company was in the storm area. In Mattoon the damage was very slight. The Mattoon plant has been operating since shortly after the cyclone. All transmission lines of the Kincaid plant west and also east of Mattoon were then in operation, and repair work had been started on the line from Mattoon to Charleston. The plant in Charleston was damaged, but it was expected to restore electric service in the Charleston plant that night (Monday). The telegram said that considering the severity of the storm, the properties of the Central Illinois Public Service Company in the storm center were very fortunate in their escape from any serious damage.

Providence Labor Conferences Continue

The agreement between the Rhode Island Company, Providence, R. I., and its employees expired at midnight on May 31, but it is asserted by union officials that the negotiations now being conducted will be continued and that a decision may be reached by July 1. In the meantime there will be no strike, it is stated, and no attempt to force a quick decision.

In the draft of a new agreement submitted by the union officials there are 130 separate sections, each taking up some

point of the controversy over wages, hours, runs, working conditions, overtime, and other matters. The agreement which has now expired contained only thirty sections.

Two sessions of the conferees are held at the company's office every day except Saturday. By mutual agreement the old agreement will be continued in force until the conferees reach a decision.

Fire in Lexington.—Fire which destroyed two-thirds of a city block of property at Lexington, Ky., on May 21, entailing a loss of \$500,000, in no way affected the traction, light and power service of the Kentucky Traction & Terminal Company.

El Paso Employees Admit Strike Failure.—The strike of conductors and motormen on the El Paso (Tex.) Electric Company has been called off. This was merely a formality, as the strike had long since passed into history so far as the company was concerned.

Pay of Cumberland Employees Increased.—The Cumberland (Md.) Electric Railway has entered into an agreement with its employees under which they will receive an increase in pay of 3 cents an hour. The contract is to run for two years and is to date back to May 1.

Help Difficult to Secure.—Such extreme difficulty is being experienced by the Portland Railway, Light & Power Company, Portland, Ore., in securing candidates for positions as trainmen that the offices of the employment examiner will be kept open until 9 o'clock p. m., to receive applications.

Kansas City Shopmen and Others Receive Wage Increase.—The Kansas City (Mo.) Railways has recently awarded wage increases of 2 cents an hour to many workmen in the plant, substations and shops, chiefly those who had not shared in the previous advance in wages made by the company.

Increase in Wages in Harrisburg.—The Harrisburg (Pa.) Railways has announced an increase in wages of 2 cents an hour effective on June 1 for all motormen and conductors. The company will also readjust the wages of its other employees. The maximum wage of the Harrisburg Railways for motormen and conductors is 30 cents under the new order.

Municipal Ownership Inopportune.—That the present time is inopportune for Windsor, Ontario, to adopt municipal ownership and buy the system of the Sandwich, Windsor & Amherstburg Railway, a subsidiary of the Detroit United Railway, is the opinion offered by officials of the Ontario Hydroelectric Commission to Mayor Tuson and a delegation of Windsor aldermen.

Illinois Home Rule May Not Be Passed.—There has been no news of importance on the local Chicago traction situation as it now stands before the State Assembly as reviewed in the *ELECTRIC RAILWAY JOURNAL* of May 19, page 927, except accumulating evidence to indicate that the home rule bill will probably not be passed. As pointed out previously, further progress in the solution of the Chicago problem depends upon the action of the Legislature.

Increase in Wages in Elmira.—The trainmen in the employ of the Elmira Water, Light & Railroad Company on its lines in Elmira, N. Y., Horseheads and Elmira Heights have had their wages increased 10 per cent at an additional yearly expense to the company of between \$17,000 and \$18,000. In the past the men received from 21½ cents an hour the first year to 25½ cents for the fifth year. The new scale provides for the payment of 24 cents the first year and 28 cents the fifth year.

Tripper Controversy Settled.—The differences between the New York State Railways and the Amalgamated Association over the question of tripper operation have been settled. Hereafter men on extra runs will receive a minimum of six hours' pay a day, and regular men on short runs will receive a minimum of nine hours' pay a day. The agreement covered by these conditions was reached between James F. Hamilton, general manager of the Rochester lines of the company, acting as arbitrator for the company, and James E. Roach, general organizer of the American Federation of Labor, arbitrator for the men. Messrs. Hamilton and Roach settled the matter in conference between themselves without the need of a third member, as provided in the arbitration agreement.

Wage Increase, Insurance and Pensions Announced.—Notice was posted on May 20 in the carhouses of the Duluth (Minn.) Street Railway that wages will be increased, life insurance furnished free of charge, and pensions granted to the employees. All employees who have been with the company one year or more will receive the life insurance policies. Each policy will be equal to one year's salary of the employee insured. All employees of the company of more than one year's service will be granted an extra war bonus check each pay day in the future, the amount to be equal to 5 per cent of the employee's regular check. Employees of less than one year's service will receive extra pay equal to 10 per cent of their salary. The increase in pay will continue during the present era of extraordinary prices. The details of the pension plan will be announced later.

Test of Validity of Cincinnati Grant Proposed.—On request of the Cincinnati (Ohio) Rapid Transit Commission, Prosecuting Attorney John V. Campbell of Hamilton County will bring quo warranto proceedings in the Ohio Supreme Court to test the validity of the act and ordinance under which the commissioners are to operate in leasing the proposed rapid-transit loop to the Cincinnati Traction Company. This step was taken to eliminate once for all the legal attacks that have been made from time to time. Mr. Campbell notified the board that he will make the commission, the Cincinnati Traction Company and the Cincinnati Street Railway parties defendant in the proceedings. He also requested that attorneys for the commission notify counsel for the railways so that they may be prepared to present their side of the case when a hearing is called, presumably some time in June.

Wage Increases on I. T. S.—The Illinois Traction System has voluntarily granted an increase in wages amounting to 10 per cent to city trainmen employed on its local street railway lines in Danville, Decatur, Champaign-Urbana and Bloomington, Ill. The present contracts with employees in these cities were not to have expired until Aug. 1, 1918. The new schedules are for a term of two years. They provide for a nine-hour day, and the wage is divided into six steps, increasing year by year until after the fifth year of service. In granting the increase the company urged the men to observe greater economy and care than ever in the operation of cars. The Peoria, Ill., trainmen have made a new agreement with the same company, effective from May 1, 1917, as follows: First-year men, 28 cents an hour instead of 23 cents; second-year men, 29 cents instead of 26 cents; and third-year men and those in succeeding years, 33 cents instead of 29 cents.

Emergency Increase in Wages in Louisville.—Effective as of May 16, the Louisville (Ky.) Railway has granted a special advance of 7½ per cent in wages to carhouse foremen, their assistants, line inspectors, motormen and conductors, who work on the hourly or daily basis or whose salaries are less than \$100 a month. This will be in the form of a bonus on wages earned and will be payable on each of the semi-monthly pay days. The step is purely an emergency measure to help the employees named to meet the high cost of living. In making the announcement Samuel Riddle, superintendent of transportation, said: "While the company is itself burdened with an operating cost that has risen to unprecedented heights by reason of increased price of practically every commodity that figures in its business, it has authorized this emergency bonus in consideration of the equally pressing living problem that confronts its employees. It is hoped to continue the bonus during the war or so long as the business of the company will permit. Therefore it is highly important to have the hearty co-operation of every employee in protecting the interest of and reducing expense for the company."

Programs of Association Meetings

Railway Signal Association

A stated meeting of the Railway Signal Association will be held on June 12 and 13 at the Hotel McAlpin, New York City. At this meeting committee reports will be presented on the subjects of signaling practice, standard design, and

electric railways and a.c. signaling. A special committee will report upon the harmonizing of existing specifications, and a progress report will be presented by another special committee on the subject of signaling requirements of electric railways, the latter committee having been organized to co-operate with a committee from the American Electric Railway Association.

American Institute of Electrical Engineers

Discussion at a meeting of the board of directors of the American Institute of Electrical Engineers, held in New York on May 18, showed that on account of the national situation many of the active members who usually attend the annual convention would not be able to spare the time this year to go to the proposed four-day meeting at Hot Springs, Va. In view of this fact the directors decided that it would not be feasible to hold the proposed convention at Hot Springs. It has been decided, however, to hold a special two-day meeting in New York on June 27 and 28, for presentation and discussion of papers that were to have been presented at the annual convention.

Central Electric Railway Accountants' Association

The thirty-first meeting of the Central Electric Railway Accountants' Association will be held at the Hotel Anthony, Fort Wayne, Ind., on June 8 and 9. The session on June 8 will be called at 10 a. m. The following reports will be presented: Report of executive committee, report of standing committee on passenger and freight accounts, and report of clearing house committee. At the afternoon session the following addresses will be made:

"Proper Classification for Light and Power Accounting," by A. E. Dedrick, auditor of the Youngstown & Sharon Street Railway, Youngstown, Ohio.

"Work Order Systems, Railway and Light and Power," by A. C. Van Driesen, chief accountant of the Toledo Railways & Light Company, Toledo, Ohio.

The report of the committee on electric light and power accounting will also be presented at this session.

The session on June 9 will be called at 9.30 a. m. The following addresses will be made:

"Maintaining a Light and Power Construction Department," by Karl A. George, auditor of the Indiana Railways & Light Company, Kokomo, Ind.

"Need of Raising the Standard of Qualifications of Men Employed in the So-called Minor Positions of Railway Organizations," by B. H. Jacobs, assistant auditor of the Cleveland (Ohio) Railway.

Central Electric Railway Association

The letter of C. N. Wilcoxon, president of the Central Electric Railway Association, to the members canceling the summer meeting of June 22-25, was dated May 24. His statement was concluded in part as follows:

"In conformity with the pledge made by the association to the President at the annual meeting of the association in March, it devolves upon the electric railways in these times of stress to devote their endeavors to the preparation of their systems for the increased demands, both military and industrial, which in all probability will be made upon them.

"The government is likely at any time to call upon the manufacturers, whose representatives are members of this association, in the furtherance of its military plans, and require their expert assistance in the great struggle which we are now facing.

"The executive committee in canceling the summer meeting does not contemplate that the Central Electric Railway Association will be of any less value to its members in the future than it has been in the past, but that its energy and resources will be applied to the various problems which the present crisis has given and will give rise to.

"Meetings of the executive committee will be held from time to time, upon proper call, to consider subjects of value to the association and to direct its affairs. Whether a business session of the association will be held later will depend upon the trend of events and the opinion of the executive committee."

Financial and Corporate

Annual Report

Portland Railway, Light & Power Company

The comparative income statement of the Portland Railway, Light & Power Company, Portland, Ore., for the calendar years 1915 and 1916 follows:

	1916		1915	
	Amount	Per Cent	Amount	Per Cent
Gross earnings	\$5,483,109	100.0	\$5,511,345	100.0
Operating expenses	2,521,606	46.0	2,542,278	46.1
Taxes	516,648	9.4	531,351	9.6
Total	\$3,038,254	55.4	\$3,073,629	55.7
Net earnings	\$2,444,855	44.6	\$2,437,716	44.3
Interest	2,131,287	38.8	2,160,603	39.2
Bridge rentals	46,970	0.9	47,752	0.9
Total	\$2,178,257	39.7	\$2,208,355	40.1
Surplus	\$266,598	4.9	\$229,361	4.2

The gross earnings of the company during 1916 decreased \$28,236 or 0.5 per cent, but the operating expenses and taxes dropped \$35,375 or 1.2 per cent, this being due to decrease of \$20,672 or 0.8 per cent in operating expenses and \$14,703 or 2.8 per cent in taxes. As a result the net earnings gained \$7,139 or 0.3 per cent. Interest decreased \$29,316 or 1.4 per cent, and the surplus for the year showed a gain of \$37,237 or 16.2 per cent.

In the annual report for 1915 an increase in earnings was predicted, based upon the strong indications of better business conditions which prevailed at the time of making the report. Immediately following the disastrous storms of January and February, 1916, there was a noticeable improvement in earnings of both the railway and electric departments. This improvement bore every indication of permanency, but in May the business depression settled down again and the company showed further decreases in earnings throughout the summer. Because of the long-continued depression Portland lost not less than 10 per cent of its population during the year ending with August, 1916.

In the autumn, however, conditions began to improve. This improvement has continued. The surplus for January, 1917, was \$47,704, as compared with \$15,494 for January, 1916, and for February, 1917, the surplus was \$35,749, as compared with a deficit of \$24,926 for February, 1916.

Jitney competition still exists in the railway department, although the number in operation has been considerably reduced. The maximum number of jitneys operating in Portland was 363 on Dec. 15, 1915. During the last twelve months the greatest number counted on any one day was 272 on Feb. 9, 1916. Excluding two days when there were heavy snowfalls, the smallest number was 152 on Jan. 31, 1917. Notwithstanding the continued presence of the jitneys, the increase in passenger earnings of the city railway lines for the three months ending Jan. 31, 1917, amounted to \$70,585, or almost 10 per cent above the same months of the previous year.

The annual report states that there is every reason to believe the earnings of the city railways will continue to increase, chiefly because of the resumption of general business activity, the practical elimination of the non-employment problem, the steady increase in population commencing last fall, and the prospect of further reduction in the number of jitneys due to regulation and the demand for labor. Freight traffic is showing a decidedly healthy increase and promises a much better showing for 1917. This is due to the development of carload freight of a class not easily handled by motor trucks.

Expenditures for extensions and betterments to property during 1916 were as follows: Railway extensions and improvements, \$136,158; cars, \$8,174; power plants, substations, etc., \$36,635; customers' installations, \$266,945; Salem gas plant \$2,705; real estate and buildings, \$30,045, and miscellaneous, \$7,059. Total, \$487,721.

Merger of New Jersey Companies

The Board of Public Utility Commissioners has approved the application of the Jersey Central Traction Company and the Central Jersey Traction Company for permission to merge as the Jersey Central Traction Company. The capital stock of the Central Jersey Traction Company will be canceled as a result of the consolidation. The Jersey Central Traction Company operates the electric railways in Monmouth County between South Amboy, Keyport, Red Bank and Atlantic Highlands.

In order to conform to the general wishes of the Utilities Commission, by divorcing, so far as possible, the traction from the lighting business, the new company proposed to that body that it give its permission to the company to sell to the Monmouth Lighting Company the power station, transmission lines and substations, and also the stocks, bonds and construction debts of the Middlesex & Monmouth Electric Light, Heat & Power Company. The total value to be transferred in this manner would amount to \$701,200. This permission has been granted, upon the condition that the Jersey Central Traction Company will use the proceeds from the sale to retire outstanding securities.

Finally the Board of Public Utility Commissioners announced that it had decided the application of the consolidated company for approval of a mortgage amounting to \$5,000,000, the issuance of bonds of a par value of \$800,000, and the issuance of preferred stock to the amount of \$600,000 and common stock to the amount of \$1,000,000, by approving the creation of the \$5,000,000 mortgage; the \$800,000 bond issue; \$600,000 in preferred stock, and common stock to the amount of \$531,400.

In another report the board decided it would approve the application of the Monmouth Lighting Company and the Middlesex & Monmouth Electric Light, Heat & Power Company to merge and consolidate. The result will be to divorce the electric lighting business from the traction business and put the control of the generating plant and the substations in the hands of the lighting company.

Reduction in Light and Power Rates

The Public Service Commission of Oregon on May 21 issued an order affecting residence lighting and commercial power rates of the Portland Railway, Light & Power Company, to become effective within twenty days. One important feature of the rate reduction lies in the fact that while the minimum lighting charge stands at \$1, as at present, the consumer of residence lighting will receive 1½ kw.-hr. more service for the minimum charge than he now does. Franklin T. Griffith, president of the company, said that the probable effect on the revenues of the company had not been estimated, but that the loss certainly would be not less than \$50,000 a year.

On April 30 the commission, after valuation proceedings lasting more than three years, handed down its decision fixing the value of the railway, electric utility and gas utility divisions of the company for rate-making purposes. The total, as fixed for all three, was \$46,862,972. As noted in the ELECTRIC RAILWAY JOURNAL for May 12, page 885, this was divided as follows: Railway, \$27,159,021; electric utilities, \$19,492,152; Salem gas utility, \$211,798.

"No Par Value" Bill Signed

Governor Whitman of New York has signed the Walters-Pratt bill, which affords an easy and effective method of changing the shares of stock of an existing corporation from stock having a fixed par value to shares having no par value. The bill adds five new sections to the stock corporation law. Sections 19 to 23, inclusive, of the stock corporation law, enacted at the instance of the New York State Bar Association in 1912, permitted the inclusion in the original charter of corporations thereafter formed or reorganized of a provision for the issuance of shares without par value. It failed, however, to provide any method by which a corporation that had already been formed could be reorganized so that it could obtain the full benefits of the new law without first going through the process of

dissolution. The popularity of the "no par value" features of New York's corporation law is shown by the revenues which have been derived from fees and taxes on the organization of corporations of this particular type, already reaching a sum in excess of \$1,500,000.

Bonds to Purchase Street Railway

Toledo Committee Wants to Put Purchase of Railway Property Before Voters

The committee on rules and by-laws of the City Council of Toledo, Ohio, has approved a resolution which provides for submission to the voters at the August primaries of an amendment to the city charter that proposes to legalize the issuance of negotiable bonds and pledge the taxing power and general credit of the city as security. It also contains a provision for asking the voters to approve a bond issue of \$3,000,000 at the November election, the proceeds to be used in the purchase of the street railway property of the Toledo Railways & Light Company.

Boston (Mass.) Elevated Railway.—As noted on page 1018 elsewhere in this issue partial relief for its financial needs was assured the Boston Elevated Railway by an act passed during the closing hours of the Legislature on May 25. The act provides for the return of \$500,000 by the State to the company within ten days, this being a guaranty fund maintained by the company since the early days of rapid-transit construction.

Buffalo, Lockport & Rochester Railway, Rochester, N. Y.—A. S. Muirhead, W. H. Nesbitt and R. C. Vaughan, Toronto, Ont., have been elected directors of the Buffalo, Lockport & Rochester Railway to succeed E. R. Wood, F. A. Dudley and C. D. Beebe.

Cape May, Delaware Bay & Sewell's Point Railway, Cape May, N. J.—A dispatch from Cape May to the Philadelphia *Public Ledger* of May 30 said that the Cape May, Delaware Bay & Sewell's Point Railway, extending along the beach front from Sewell's Point to Cape May Point, which was sold at receiver's sale in April, has been taken over jointly by the Pennsylvania Railroad and the Philadelphia & Reading Railway. The road has not been operated since last September, when the receiver was appointed. It is expected to resume service about June 15.

Hagerstown & Frederick Railway, Frederick, Md.—The Maryland Public Service Commission has approved the readjustment of the finances of the Hagerstown & Frederick Railway, recently sanctioned by the stockholders and referred to in the *ELECTRIC RAILWAY JOURNAL* of May 19, page 934, and May 12, page 891.

Interborough Rapid Transit Company, New York, N. Y.—The New York Public Service Commission for the First District has adopted an order permitting the Interborough Rapid Transit Company to sell \$11,436,000 face value of 5 per cent gold bonds under that company's first and refunding mortgage. The proceeds of the bonds are to be utilized toward meeting increased expenditures over estimates of 1913 in connection with the third-tracking of the elevated railroads in Manhattan and the Bronx. The original application of the company was for \$16,436,000, but \$5,000,000 of this sum was not allowed at the present time for reasons advanced at length in the opinion approved by the commission.

Interurban Railway & Terminal Company, Cincinnati, Ohio.—Common Pleas Judge Cushing, at Cincinnati, Ohio, has authorized the abandonment of the Interurban Railway & Terminal Company's line between New Richmond Pike and Three-Mile Road, near Cincinnati and the village of Bethel in Clermont County, and has ordered Receivers Charles M. Leslie and Charles S. Thrasher to sell the tangible assets of this portion to the Clermont Construction Company, which owns a controlling interest in the Cincinnati, Georgetown & Portsmouth Railway. Bondholders had agreed to the sale, as several years' operation by the receivers had been unsatisfactory in the way of income. Business interests and residents along the line threatened to appeal to the higher courts, but Judge Cushing announced that the appeal bond would be \$25,000 in case it was desired to take such action. The court advised

that the matter of another line be taken up with the Cincinnati, Georgetown & Portsmouth Railway. Under the terms of the purchase payment is to be made by the transfer of \$240,000 of the first mortgage bonds and \$433,000 of the common stock of the Cincinnati, Georgetown & Portsmouth Railway, taken at par.

Jefferson County Traction Company, Beaumont, Tex.—An election will be held at Beaumont on July 10 to vote on the proposed merger of the Beaumont Traction Company, the Beaumont Electric Light & Power Company and the Jefferson County Traction Company, to which reference was made in the *ELECTRIC RAILWAY JOURNAL* of April 28, page 799.

Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan.—The application of the Kansas City, Kaw Valley & Western Railway to issue \$66,000 in first-mortgage bonds, \$41,500 in general mortgage bonds and increase its capital stock \$58,000, has been denied by the Kansas Public Utilities Commission. The Kansas City, Kaw Valley & Western is building from Kansas City to Topeka. It was discovered, after the utilities commission had given it permission to issue bonds with which the line from Bonner Springs to Lawrence was to be constructed, that the line was 3½ miles longer than was supposed. The application for an increase in the amount of securities applied for originally was asked because of this and for the building of sidetracks and switches. The company wanted the same amount for sidetracks as for the main line. The commission considered this requested increase excessive and denied it.

Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.—The stockholders of the Mahoning & Shenango Railway & Light Company will vote on June 14 on the question of ratifying a proposition looking toward the consolidation of certain subsidiaries for the purpose of eliminating unnecessary taxation. The proposal is entirely in the interest of intercorporate simplicity. The companies to be merged into the Mahoning & Shenango Railway & Light Company are the Mahoning Valley Southeastern Railway, the Poland Street Railway, the Youngstown Park & Falls Street Railway and the Youngstown & Sharon Street Railway.

Mansfield Public Service & Utility Company, Mansfield, Ohio.—New officers for the Mansfield Public Service & Utility Company have been elected as follows: S. N. Ford, president; Fred Hertenstein, formerly president, vice-president; P. Barnhart, secretary-treasurer. Mr. Barnhart will also act as manager, in which capacity he will succeed S. A. Foltz, formerly secretary, treasurer and general manager. The elected officers and Reid Carpenter and Henry Hoppe are the directors.

Monongahela Valley Traction Company, Fairmont, W. Va.—The Fairmont *Free Press* of May 17 said: "A new plan for the consolidation of the Kanawha Traction & Electric Company and the Monongahela Valley Traction Company was adopted at the annual meeting of the latter corporation held yesterday afternoon. It was discovered that differences existing between the West Virginia and Ohio laws would not permit of the consolidation of the companies under the first plans. The Parkersburg properties will probably be taken over by the Monongahela Valley Traction Company on July 1 instead of June 1, as was first planned." The terms of the merger as proposed originally were published in the *ELECTRIC RAILWAY JOURNAL* of March 31, page 615.

New York, New Haven & Hartford Railroad, New Haven, Conn.—The bill authorizing the New York, New Haven & Hartford Railroad to issue not more than \$50,000,000 of 7 per cent preferred stock at not less than par to pay indebtedness has passed both houses of the Connecticut Legislature and is now before the Governor. The company has also been authorized by the Massachusetts Legislature to continue to own and control the securities of certain companies now in its treasury, provided it performs certain duties imposed by the act. Among the companies so included are the New York, Westchester & Boston Railway and the Providence, Warren & Bristol Railroad. Under the act any Massachusetts street railway which connects with any one of four roads mentioned as owned by the New Haven and situated in Connecticut may purchase or lease such line

of railway with which it connects under conditions set down in the present act.

Northern Electric Railway, Chico, Col.—The reorganization committee of the Northern Electric Railway has declared the amended plan of reorganization operative inasmuch as it had been agreed to by a majority of all of the deposited bonds. It was further decided that a penalty of \$10 a bond would be exacted from all bondholders who failed to deposit their bonds on or before May 25. Charles M. Levey, president, and John F. Bowie, attorney for the Western Pacific Company, told the committee on May 10 that their company was prepared, if the Railroad Commission should approve, to enter into negotiations for the purchase of the Northern Electric Railway. The reorganization committee has appointed the following sub-committee to consider the proposal: Frank B. Anderson, John S. Drum, John D. McKee, James K. Moffitt and Philip I. Manson.

Port Arthur (Tex.) Traction Company.—The Port Arthur Traction Company has filed in the county clerk's office at San Antonio a first mortgage deed of trust covering all of its property, in favor of the Dayton Savings & Trust Company, Dayton, Ohio, to secure the issuance of \$400,000 of first mortgage sinking fund 5 per cent gold bonds. According to the San Antonio *Express* it was announced that the filing of the deed was merely the recording of a transaction made several years ago, which was not properly recorded.

Public Service Railway, Newark, N. J.—The New Jersey State Board of Public Utility Commissioners has approved an equipment trust agreement between Arthur E. Newbold, Philadelphia, Pa., and the Public Service Railway, controlled by the Public Service Corporation of New Jersey. The agreement is for the leasing to the company of 150 trolley cars. The company was to pay \$248,500 advance rental on June 1, with a specified semi-annual rental thereafter, beginning on Nov. 30 next. The Philadelphia Trust Company is the trustee under the mortgage securing the cars.

Standard Gas & Electric Company, Chicago, Ill.—The Standard Gas & Electric Company has redeemed, through its sinking fund, an additional \$975,500 of convertible sinking fund 6 per cent bonds of an issue of \$10,300,000 dated Dec. 1, 1911, and due in 1926. The total amount of these bonds canceled to May 19 is \$4,369,500, leaving outstanding a balance of \$5,930,500.

Trenton & Mercer County Traction Corporation, Trenton, N. J.—The New Jersey Board of Public Utility Commissioners has authorized the Trenton & Mercer County Traction Corporation to issue \$66,000 of 5 per cent notes to the Mechanics' National Bank, Trenton, to provide funds to be applied to the purchase of ten new cars.

Washington Water Power Company, Spokane, Wash.—The New York Stock Exchange has added to the list \$1,700,000 of first refunding mortgage sinking fund 5 per cent thirty-year bonds of the Washington Water Power Company due July 1, 1939, with authority to add on or before Jan. 1, 1918, \$539,000 of additional bonds of that issue, making the total amount authorized to be listed \$7,974,000. The funds covered by the new bonds were used for permanent improvements, extensions and additions.

Waycross Street & Suburban Railway, Waycross, Ga.—H. H. Burnet, receiver of the Waycross Street & Suburban Railway, is advertising the property of the company for sale under foreclosure on June 5 to the highest bidder, subject to confirmation by the court. Ten per cent of the highest bid made is to be deposited with the receiver in cash or in the form of a certified check. The property is described by the receiver as consisting of 9 miles of electric railway, nine cars, a carhouse and lot located in Watrusco, Winona Park pavilion and appurtenances and all the rights and privileges under the unexpired term of the fifty-year franchise of the company.

West End Street Railway, Boston, Mass.—The Massachusetts Public Service Commission has approved an issue of thirty-year 6 per cent bonds of the West End Street Railway to an amount not exceeding at par \$1,581,000. The proceeds of the new issue will be used to refund a similar amount of bonds which will mature on Aug. 1.

Dividends Declared

American Railways, Philadelphia, Pa., \$1, common.
Frankford & Southwark Passenger Railway, Philadelphia, Pa., quarterly, \$4.50.
Indianapolis (Ind.) Street Railway, 3 per cent.
Northern Ohio Traction & Light Company, Akron, Ohio, quarterly, 1½ per cent, common.
Public Service Corporation of New Jersey, Newark, N. J., quarterly, 2 per cent.
Rochester Railway & Light Company, Rochester, N. Y., quarterly, 1¼ per cent, preferred.
Second & Third Streets Passenger Railway, Philadelphia, Pa., quarterly, \$3.
United Railways & Electric Company, Baltimore, Md., 2 per cent, preferred.
Washington Railway & Electric Company, Washington, D. C., quarterly, 1¼ per cent, preferred; quarterly, 1¾ per cent, common.

Electric Railway Monthly Earnings

ATLANTIC SHORE RAILWAY, SANFORD, ME.						
Period		Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Apr., '17		\$27,158	*\$24,269	\$2,889
1 " " '16		23,575	*20,703	2,872
CITIES SERVICE COMPANY, NEW YORK, N. Y.						
1m., Apr., '17		\$1,609,012	\$30,887	\$1,578,125	\$225	\$1,577,900
1 " " '16		638,491	20,670	617,821	41,631	576,190
12 " " '17		14,361,932	278,810	14,083,122	86,510	13,996,611
12 " " '16		5,303,883	181,231	5,122,652	459,333	4,663,319
CLEVELAND, PAINESVILLE & EASTERN RAILROAD, WILLOUGHBY, OHIO						
1m., Mar., '17		\$38,254	*\$24,322	\$13,932	\$11,389	\$2,543
1 " " '16		32,533	*19,987	12,546	11,046	1,500
3 " " '17		107,053	*68,047	39,006	34,262	4,744
3 " " '16		93,355	*56,469	36,886	33,158	3,728
COMMONWEALTH POWER, RAILWAY & LIGHT COMPANY, GRAND RAPIDS, MICH.						
1m., Mar., '17		\$1,558,538	*\$971,164	\$587,374	\$431,079	\$156,295
1 " " '16		1,353,713	*723,071	625,642	423,203	202,439
12 " " '17		17,545,338	*9,939,686	7,605,652	5,084,279	2,521,373
12 " " '16		15,192,163	*8,095,324	7,096,839	4,659,042	2,437,797
GRAND RAPIDS (MICH.) RAILWAY						
1m., Mar., '17		\$112,738	*\$75,658	\$37,075	\$17,456	\$19,619
1 " " '16		107,618	*67,418	40,200	14,086	26,114
12 " " '17		1,310,494	*855,330	455,164	196,711	258,453
12 " " '16		1,200,414	*829,505	370,909	167,168	203,741
KANSAS CITY (MO.) RAILWAYS						
1m., Apr., '17		\$597,399	*\$443,804	\$153,595	\$129,769	†\$23,826
1 " " '16		575,707	*381,296	194,411	116,375	†78,036
10 " " '17		6,151,930	*4,125,703	2,026,227	1,300,870	†725,357
10 " " '16		**	**	**	**	**
LAKE SHORE ELECTRIC RAILWAY, CLEVELAND, OHIO						
1m., Mar., '17		\$132,542	*\$90,386	\$42,156	\$34,369	\$7,787
1 " " '16		114,646	*78,281	36,365	36,356	9
3 " " '17		380,290	*273,502	106,788	103,125	3,663
3 " " '16		334,522	*231,759	102,763	108,791	†6,028
LEHIGH VALLEY TRANSIT COMPANY, ALLENTOWN, PA.						
1m., Apr., '17		\$217,984	*\$139,570	\$78,414	\$50,935	†\$27,479
1 " " '16		198,635	*118,243	80,392	51,637	†28,755
12 " " '17		2,604,278	*1,676,655	927,623	625,685	†300,938
12 " " '16		2,256,081	*1,328,133	927,948	645,725	†281,223
PHILADELPHIA & WESTERN RAILWAY, UPPER DARBY, PA.						
1m., Apr., '17		\$45,645	\$22,683	\$22,962	\$12,517	\$10,444
1 " " '16		42,802	20,156	22,646	12,525	10,121
12 " " '17		529,604	256,999	272,605	150,479	122,126
12 " " '16		481,668	230,790	250,878	148,480	102,398
PHILADELPHIA (PA.) RAPID TRANSIT COMPANY						
1m., Apr., '17		\$2,456,300	\$1,382,948	\$1,073,352	\$813,746	\$259,606
1 " " '16		2,272,272	1,244,460	1,027,812	816,043	211,769
10 " " '17		23,457,395	13,162,272	10,295,122	8,142,214	2,152,908
10 " " '16		21,135,004	11,810,169	9,324,835	8,161,907	1,162,928
REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO						
1m., Apr., '17		\$368,029	*\$250,176	\$117,853	\$80,425	†\$37,428
1 " " '16		327,672	*199,281	128,391	67,411	†60,980
12 " " '17		4,183,402	*2,565,525	1,617,877	861,749	†761,128
12 " " '16		3,445,206	*2,029,746	1,415,460	729,856	†685,604
TWIN CITY RAPID TRANSIT COMPANY, MINNEAPOLIS, MINN.						
1m., Apr., '17		\$839,072	\$534,447	\$304,625	\$145,402	\$159,223
1 " " '16		816,181	506,703	309,478	140,299	169,179
4 " " '17		3,480,984	2,333,906	1,147,078	580,471	566,607
4 " " '16		3,307,167	2,115,877	1,191,290	568,181	623,109

*Includes taxes. †Deficit.

‡Includes addition of miscellaneous income, and deduction of Kansas City surplus reinvested in plant. **During the fiscal year to Feb. 14, 1916, the property was operated by the receivers under the old securities, and the figures for this period, being without value in a comparative statement, are not shown here.

Traffic and Transportation

Copper-Zone System to Be Tried

Massachusetts Commission Authorizes Six Months' Trial of Copper-Fare Zones—Company to Issue Commutation Books

In a formal decision issued on May 25 the Massachusetts Public Service Commission authorized the Concord, Maynard & Hudson Street Railway, Maynard, Mass., to establish for a six months' trial a copper-zone system of fares, based upon a charge of 2 cents per mile for the distance actually traveled, with a minimum charge of 6 cents. The hearing on this case was reviewed in the *ELECTRIC RAILWAY JOURNAL* for May 5, page 846.

The previous fare unit, 6 cents, has been in vogue since February, 1908. Under the new tariff the maximum increase will be from 6 to 12 cents, between Stow Center and Hudson. Under the former arrangement with connecting roads, transfers were interchanged, with a subsequent settlement at the rate of 3 cents each. Under the new arrangement, transfers from other companies at either end of the line will be accepted for a ride in one zone, while transfers to other railways will be issued as before. Books of coupons will be sold at the 2-cent rate, with the usual half-fare provision for school children.

In an exhaustive analysis of the company's financial condition the commission found that the depreciation reserve is wholly inadequate and that additional revenue is justified. Dividends have averaged 2.48 per cent per year since 1910. The gross income for 1916 was \$83,080, and operating expenses \$56,499. The capitalization on Dec. 31, 1916, was \$515,000. The road is controlled by the Massachusetts Consolidated Railways, and the commission found that the management expenses are reasonable. Improved methods of power-plant operation and rolling-stock maintenance were suggested as desirable.

WHY THE INCREASE WAS JUSTIFIED

The commission was of the opinion that the company is entitled to a return of 6 per cent upon the investment represented by its stock and bonds outstanding and by one-half of the floating debt. On this basis the company is entitled to a return of \$29,400 per year, which is about \$8,620 below the 1916 figures, without allowing for a more adequate provision for depreciation and maintenance. At the hearing the company presented much evidence regarding recent increased costs of operation, laying special emphasis upon the advanced price of coal. In the three months ended March 31 operating revenue decreased \$273 while operating expenses increased \$3,247 over that period in 1916.

From the evidence it was estimated that the proposed advance in fares will not increase passenger revenue more than 16 per cent, or \$12,761. The commission said that if the property is to be maintained in first-class operating condition, with adequate provision for depreciation, a greater increase would be permissible. From the standpoint of net financial results no objection can be made to the new schedule. The new system of charging, as applied to a street railway interurban in character, and operating through a somewhat sparsely settled territory with a fairly uniform density of population, seemed to be reasonable.

As a practical matter, however, the new schedule somewhat disarranges a method of charging which has been in vogue for a long period, and falls with unequal weight upon the patrons of the road. The commission felt that in the interest of the habitual rider the commutation-ticket principle should be utilized, and after conference the company has agreed to issue commutation-ticket books upon the basis of fifty-two rides for a period of one month, which will enable the purchaser to ride between any two designated points, if he uses all the coupons, at a rate equal to 75 per cent of the regular fare, where that fare is more than 6 cents.

Decisions on Free-Ride Law

Supreme Court Upholds Law in New Jersey Case—Indiana Commission Enjoined from Enforcing Order

A case brought by the Public Service Railway, Newark, N. J., against the legality of the New Jersey law enacted in 1915, covering free rides for policemen and firemen on street railway lines, was decided on May 21 by the United States Supreme Court. It was declared that the law is valid and within the exercise of the police powers of the State. This case was heard by the State Supreme Court and the Court of Errors on the company's motion that the law providing for the free transportation of such municipal employees was taking "private property without just compensation." Both of these courts decided that the law could be enforced and they are now sustained by the higher tribunal. The State holds that the free rides for policemen and firemen are part of its plan to insure for the public the greatest operating efficiency. The law provides for the free transportation of policemen and firemen while on duty, as well as plain-clothes men.

In the matter of the suit filed by the Indianapolis Traction & Terminal Company against the Public Service Commission of Indiana to enjoin the commission from enforcing an order providing for free transportation to city firemen and policemen, three federal judges in the District Court at Indianapolis issued a temporary injunction against the commission on May 25. W. H. Latta, attorney for the traction company, set forth in his argument that the law passed by the State Legislature during the last session, upon which the order of the commission was based, is unconstitutional and its enforcement would violate the franchise rights of the company. The State, represented by Attorney General Stansbury, in its argument relied principally upon the recent decision of the United States Supreme Court in the New Jersey case. The filing of the application for this injunction was reported in the issue of the *ELECTRIC RAILWAY JOURNAL* for May 26, page 979.

The court at Indianapolis, composed of Judges Francis E. Baker and Samuel Alschuler of the Circuit Court of Appeals, Chicago, and Judge Arthur B. Anderson of the Indiana District Court, did not pass on the constitutionality of the Indiana law, but based its decision in issuing the injunction on the question of the violation of the company's franchise contract with the city. The order of the court does not prevent the enforcement of the "free-ride" order in other cities of the State.

Ten-Cent Fare Proposed

The Danbury & Bethel Street Railway, Danbury, Conn., has announced that, owing entirely to increased operating costs, it has become necessary for it to double the present 5-cent fare for a ride from Danbury to Bethel and to Lake Kenosia. Strips of tickets will be sold at the rate of five tickets for 35 cents. These, however, will not be honored during the week of the Danbury Fair. John Sanders, president and general manager of the company, issued a comprehensive statement when the increase was announced, a part of which follows:

"The company regrets very much that it is compelled to raise its rates. This increase has been under consideration for some time, but has never been put into effect, in the hope that conditions both locally and nationally would improve. However, instead, the cost of operating has steadily increased by reason of the great advance in the price of coal, materials and labor. Coal has advanced in price from 100 to 125 per cent, and is of a quality so inferior that it is at times almost impossible to keep up steam in the power plant. Assuming that the quality of the coal is 50 per cent of what it was formerly, the operating expense for coal alone has increased 200 per cent."

Mr. Sanders enumerated the several other materials of similar high price which are used in the electric railway business, and added: "We trust that the public will realize the reasonableness of the step the company has decided upon, which was made necessary by prevailing conditions throughout the country."

Changes Proposed for Buffalo

Traffic Committee Recommends Trial of Skip-Stop Service and Other Plans to Reduce Congestion and Accidents

In a preliminary report submitted to Mayor Fuhrmann of Buffalo by the special traffic committee appointed some time ago to investigate traffic conditions in that city, the skip-stop system has been recommended for trial on Elmwood Avenue and Main Street. The committee conferred with authorities of the International Railway and found them willing to make a trial of this or any other proposition that would tend to relieve the congested condition. It was suggested that a plan be followed similar to that in other cities and that a vote be taken to ascertain the opinion of the patrons on the two lines regarding the proposed change.

The report recommended also that the railway company be requested to lay an additional track in Shelton Square to facilitate the handling of more cars there, that the island be increased in size and a shelter be erected over it. A single-track connection between Broadway and Clinton Street and other rerouting plans to reduce the traffic congestion on Washington Street south of Broadway were also recommended. In order to insure greater safety to pedestrians, it was suggested that crossing places be marked on the highways and that midway crossings be designated for long blocks.

The committee also made some suggestions pertaining to automobile traffic. It was proposed that trucks should not be allowed to carry loads projecting ahead of the front wheels, that siren whistles should be prohibited on all except vehicles used by the fire department, the police, the sheriff and authorized public utility vehicles for emergency calls, that parking privileges be denied on certain streets and that all approaches to schoolhouses, playgrounds, hospitals and firehouses be plainly marked.

California Jitneys Ask Increase

The first jitney case brought before the Railroad Commission of California under the legislative act passed recently which places the jitneys of that State under the control of the commission was heard in Los Angeles on May 25. The hearing was on an application filed by the White Bus Line, the Crown Stage Line and the Valley Stage Line which asked for authority to raise passenger rates from Los Angeles to Anaheim, Santa Ana and intermediate points. The companies say they are losing money on the present rates, which were filed with the commission when the new legislative act was passed, and which include single and round-trip fares and ten-ride commutation ticket books.

More than 500 jitney companies have filed rates with the commission to date. This is not an indication of the number of automobiles engaged in such traffic, however, because in many cases a single tariff was filed for an association of 100 or more jitney men. It is estimated that about 1000 lines are under the commission's jurisdiction, in which the proportion of passenger lines to freight lines is about eight to one.

Portland Wants Jitney Regulation

Two measures affecting jitney regulation will be on the ballot at the municipal election in Portland, Ore., June 4. One requires the jitneys to furnish a \$2,500 bond for protection of passengers and pedestrians, and the other, proposed by the jitneys, eliminates all regulation and turns the streets over for free and indiscriminate use for commercial purposes. As the jitney situation stands in Portland now, there not only is no bond required, but there is virtually no regulation. The jitney men pay a license fee of \$2 a month.

In the 161 jitney accidents in Portland in the last two and a half years, three persons have been killed and 191 injured. The injuries have ranged from minor cuts and bruises to permanent injuries, including broken limbs and fractured skulls. In many cases the accidents have been to people financially unable to pay doctors' bill or to lose time from work. There is no record of anyone ever having

collected damages from jitney owners on account of accidents, as the drivers in general are financially irresponsible. It was largely on account of these conditions that the Progressive Business Men's Club initiated the measure to be voted on to require jitneys to furnish bonds.

Further Hearing on Closed Vestibules

On May 29 a hearing was held by the Public Service Commission of New York, First District, in connection with a provisional order requiring all surface cars operating in Greater New York to be equipped with vestibule doors, control-interlocks and folding steps by Oct. 1, 1918. The proposed order was opposed by the Second Avenue Railway on the grounds that its closed cars were already equipped with folding doors and that, of the few boarding and alighting accidents occurring on the company's closed cars, none was traceable to the existence of the fixed steps, while the value of the control-interlock appeared to be doubtful. With regard to open cars, the expense of conversion would be prohibitive, approximating \$2,400 per car.

W. G. Gove, superintendent of equipment Brooklyn Rapid Transit Company, suggested that the order be held in abeyance because of the abnormal conditions now existing, labor and material for the work of conversion being practically impossible to obtain. He estimated the cost of conversion for closed cars at about \$650 per car with \$50 more if a bigger signal system were installed. It was a physical impossibility to equip all cars by the date mentioned in the order, not only because of shop conditions but also because of the need for protecting the service. E. A. Maher, Jr., vice-president Third Avenue Railway, opposes the extension of the order to cover all of his company's cars. Those cars on Manhattan Island are all equipped with inclosed vestibules, but the older cars and open cars on the outlying lines could be remodeled only at a prohibitive expense.

All of the witnesses testified that in buying new cars, vestibule doors with control interlock and folding steps, as outlined in the proposed order, might properly be specified. Opinion was also unanimous that open cars were not likely to be purchased on any future orders for city equipment, notwithstanding their popularity with the public and their increased earning capacity.

Trolley Car License Fee Doubled.—The City Commissioners have voted to increase the license fee of trolley cars in Atlantic City, N. J., from \$50 to \$100 each. An ordinance to that effect has been passed and will soon be made effective.

Roads Contract for Picnic Crowds.—The Louisville & Southern Indiana Traction Company, New Albany, Ind., and the Louisville & Interurban Railroad, Louisville, Ky., have begun filling dates for the summer picnic season. The Louisville & Southern Indiana controls an important amusement park and, in addition, has fitted up a picnic ground on Silver Hills.

Seven and Eight-Cent Fares Proposed.—The Middlesex & Boston Street Railway, Newtonville, Mass., has filed with the Public Service Commission of that State new rates showing increases from 6 cents to 7 and 8 cents which will be effective on June 25. The sale of strip tickets at the rate of nine for 50 cents will be discontinued. Fares for school children are set at one-half the new rate on the respective lines.

Hearing on Grade Crossing Order.—A hearing will be held on June 6 by the Public Service Commission for the First District of New York on a motion of Commissioner Charles S. Hervey to inquire whether an order shall not be issued to all steam railroads operating within the city of New York, and having grade crossings protected by crossing gates, directing them to keep the gates lowered from midnight to 5 a. m., except when raised to permit the passage of automobiles and other vehicles. It is believed that such an order would tend greatly to prevent grade crossing casualties inasmuch as all vehicles would be brought to a full stop.

Higher Fares Asked in Easton.—The Northampton, Easton & Washington Traction Company, Easton, Pa., operating between Phillipsburg and Port Murray, has applied to the Public Service Commission of Pennsylvania for permission to increase its rates from 35 cents to 42 cents for

a single trip. The hearing on the proposed increase will be held at the State House on June 4. The company proposes to increase the rate by adding 1 cent to the fare in each of the seven zones in which the present rate is 5 cents. The distance in each zone varies from a little less than 1½ miles to nearly 4 miles, making the seven zones cover a distance of more than 17 miles.

Decision on Louisville Grade Crossing Accident.—Criminal court proceedings growing out of the grade crossing disaster in Louisville, Ky., on Feb. 12, which was reported in the *ELECTRIC RAILWAY JOURNAL* for Feb. 24, page 367, have come to an end. A plea of guilty to the charge of involuntary manslaughter was entered in the Criminal Court at Louisville by H. T. Jeffries, engineer on the Southern Railway train which struck the Broadway street car, this resulting in the death of four persons and the injury of more than thirty. An indictment charged Jeffries with driving his engine recklessly and without a headlight. The prosecuting attorney stated that two important witnesses were out of the jurisdiction of the court and could not be reached. He recommended that the defendant's plea be accepted.

Officials Confer in Duluth Fare Case.—The controversy involving the Duluth (Minn.) Street Railway and the city of Duluth was discussed at a conference of representatives of both sides on May 16. President A. M. Robertson of Minneapolis stated that the company would build the extension to New Duluth if assurance could be had that agitation against the present 10-cent fare to Morgan Park would be discontinued. The rails for the new extension had been ordered for delivery this year and all preparations were made on the basis of the double fare on the line to be extended. Since that time a test suit has been brought to prove the company's right to charge the double fare, as reported in this paper for May 26, page 981. In case the company receives a favorable decision in this suit before Oct. 1, it promises to have the new line in operation before the end of the year. The city commissioners declined to pledge the city to any definite action pending this decision, but it is understood that the city will prosecute the fight for the single fare.

Near-Side Stops Opposed.—An ordinance providing for near-side stops for all cars of the Colorado Springs & Interurban Railway, Colorado Springs, Col., has been passed by the City Council and was to come up for final passage on June 1. There was no opposition to the passing of the ordinance but it was the belief of officials of the company that the public, when fully informed on the subject, would make opposition. Although the company did not oppose the passage of the ordinance officially, it proposed to conduct a campaign to show inconveniences of the near-side stop system. Placards, giving reasons why the proposed change would result in unsatisfactory service, were prepared to be displayed in all the cars. An official of the company is reported to have said: "The company does not contemplate making any changes with its cars, as the near-side stop will not interfere with operation. We can stop on either side of the street, with the patrons entering the cars from the rear entrance, but considerable inconvenience will result to the patrons of the company."

Motormen to Get Bonuses for Saving Power.—The Connecticut Company has announced a plan whereby motormen on its lines in New Haven will receive cash prizes for the best power-saving record. The men are requested to cooperate in the scheme, which is intended to promote economy during the war. The announcement read, in part, as follows: "The company will award quarterly cash prizes of \$3 to \$10 to the motorman whose record for saving power indicates he has used the best judgment in running his car. To determine which motormen are the most efficient the cars have been equipped with power-saving recorders. Twice a month a statement will be posted in the different carhouses showing the standing of each man for the preceding two weeks. Only men on the same run or under the same conditions will be compared and all comparisons will be made on a per mile basis. Make the stops as short as possible but have regard for the safety and convenience of the public. Economy must begin only when safety has been assured. When necessary, assist the passengers in and out of cars. This is a good policy and will save time and power."

Legal Notes

FEDERAL COURT.—*Right to Use Highway Bridge—Compensation.*

Any legal right of a street railway company to use highway bridges without the county's consent and without making compensation was destroyed by the execution of a formal contract between the county commissioners and the street railway company in order to settle the controversy between them as to their respective rights in the matter, whereby the county granted, subject at all times to revocation, the right to use the bridges in consideration of the street railway company's promise to pay a specific sum per annum for the use of each bridge.

To require such a company, under such a grant, to pay one-third of the actual cost of removing the old bridges and erecting new ones before such company should be permitted to use the new structures, was within the power of the county authorities, under Ga. Laws 1914, p. 487, providing that all existing permits and franchises to operate over any of said bridges are revoked and repealed "so far as the same applies to any future bridges hereafter constructed under this or any other law," unless the street railway company will conform to the reasonable terms and conditions prescribed by the county authorities, giving the latter exclusive right and jurisdiction to grant franchise to operate over new bridges, and to prescribe terms for such grants, and empowering them to require, as a condition precedent, that any grantee shall pay to the county "one-third of the actual cost of the building of said bridges . . . but any corporation now having a franchise shall have the right to use any new bridge upon complying with reasonable conditions imposed" by the county authorities and the terms of the act. (*Rome Railway & Light Co. v. Floyd County*, 37 Supreme Court Rep., 291.)

NEW YORK.—*Penalty for Defective Transfer Enforceable Even When Defect Was Due to Carelessness.*

Under public service commission law (Consol. Laws, chap. 48) sec. 49, subd. 7, requiring street railway companies to carry any passenger desiring to make a continuous trip between two points for a single fare, to give him a transfer entitling him to such trip, and providing a penalty of \$50 for refusal, where a passenger paid his full fare but received a transfer not punched so as to entitle him to ride in the car to which he transferred, so that he was required to pay another fare, the company was liable for the penalty, though the refusal to comply with the statute was the result of carelessness or inadvertence of its employees to carry out instructions. (*Osborne v. International Railway*, 164 New York, Sup., 226.)

NEW YORK.—*Mandamus of Commission Requiring Company to Build Road Denied by Court—"Duty Compelled by Mandamus Must Be Plain and Unmistakable."*

An electric light company acquired the property and franchises of a street railroad, and the Public Service Commission applied, under public service commissions law, Sec. 57, for mandamus to compel it to construct and operate a street railroad on certain additional roads and between certain additional points. The original railroad company's franchise from a town to operate on the road in question had been forfeited for non-user by the express terms of the franchise and the provisions of the railroad law. It was doubtful whether any legal obligation rested on the defendant to operate any road beyond that already constructed and operated at the time of its purchase of the street railroad in 1902. There was no proof that the city or the property owners had given their consent, or would give it, to the new railroad construction and operation. *Held*, that the Public Service Commission's application for mandamus would be denied, since the operation and duty compelled by mandamus must be plain and unmistakable and not subject to doubt. (*Public Service Commission for First District v. Richmond Light & Railroad Co.*, 163 New York Sup., 64.)

Personal Mention

E. C. Howard has been appointed traveling freight agent of the Toledo & Western Railroad, Toledo, Ohio, to succeed W. J. Chisholm.

W. J. Chisholm has been promoted to the position of traffic manager of the Toledo & Western Railroad, Toledo, Ohio, effective June 1, to succeed A. C. Wegner, who resigned.

F. P. Gutelius has been elected vice-president of the Delaware & Hudson Company, in charge of the operating and traffic departments, with headquarters in Albany, N. Y., to succeed C. S. Sims.

F. W. Smith, who has been general storekeeper to the Ogden, Logan & Idaho Railway, Ogden, Utah, has resigned to accept a position with the Phoenix Construction Company, with headquarters at Ogden.

Henry L. Doherty was the guest at an anniversary dinner recently, the occasion being his forty-seventh birthday. The tribute to Mr. Doherty was attended by 117 members of the Doherty organization. Frank W. Frueauff presided.

John F. Wessel was recently elected a vice-president of the United Gas & Electric Engineering Corporation in charge of the Northern properties succeeding S. J. Dill, who will devote his time to the oil interests of the corporation.

L. J. Hirt, formerly vice-president of the Pearson Engineering Corporation, has been appointed consulting engineer for the United Gas & Electric Engineering Corporation and will supervise the construction and engineering work of the subsidiary companies.

H. C. Berry, heretofore superintendent of the Salem district for the Electric Company of New Jersey, will enter high-tension construction work for the American Railways, Philadelphia, Pa. L. Scott Schilling has been appointed to succeed Mr. Berry at Salem.

L. J. Miller, formerly roadmaster and superintendent of substations of the Chicago, South Bend & Northern Indiana Railway, with headquarters at South Bend, has resigned to accept a similar position with the Boston & Worcester Street Railway, with headquarters at Framingham, Mass.

A. B. Paterson, formerly manager of the Meridian Light & Railway Company, Meridian, Miss., operated by H. L. Doherty & Company, who resigned to become bond department representative of the Doherty organization at New Orleans, was the guest of honor at a farewell banquet given recently in Meridian.

F. P. Will has resigned as superintendent of the Burlingame (Cal.) Electric Railway to accept a position as general agent and warehouse foreman of the Modesto & Empire Traction Company, Modesto, Cal., effective June 1. Mr. Will has been superintendent of the former road since 1913, when it was built.

Charles Brown, who for several years was superintendent of the Dover-New Philadelphia and the Dover-Uhrichsville divisions of the Northern Ohio Traction & Light Company, Akron, Ohio, has been promoted to superintendent of the Akron City and Akron-Barberton-Wadsworth divisions. He has been succeeded by Roy Kennedy, formerly a conductor on the Tuscarawas Traction division.

George H. Storms, who for many years has been associated with the Fort Smith Light & Traction Company, Fort Smith, Ark., has been promoted to the position of auditor for the Ottumwa Railway & Light Company, Ottumwa, Iowa. Both companies are operated by H. M. Bylesby & Company, Chicago.

C. Nesbitt Duffy, vice-president of the Manila Electric Railroad & Light Company, Manila, P. I., who recently returned to the islands from the United States, has been elected president of the Friendly Sons of St. Patrick. He also had the honor of presiding at a dinner tendered some weeks ago to the visiting "American Honorary Commercial Commission."

Stephen E. Dillon, who was elected president of the Arkansas Association of Public Utility Operators at its annual convention, held on May 16-18, has been general manager of the Public Utilities of Hot Springs, Ark., since October, 1911. The water, gas, electric light and street railway properties are under his management. Previous to that time Mr. Dillon had twenty-nine years of service with steam railroads. He entered the service of the Burlington system as a messenger boy in 1881.

C. S. Sims, vice-president of the Delaware & Hudson Company, at Albany, N. Y., has been transferred to Montreal, Quebec, as resident vice-president. Mr. Sims is also vice-president of the United Traction Company, Albany, N. Y., the Cohoes (N. Y.) Railway, the Hudson Valley Railway, Glens Falls, N. Y., and the Troy & New England Railway, Troy, N. Y., all controlled by the Delaware & Hudson Company and of the Schenectady (N. Y.) Railway and the Plattsburgh (N. Y.) Traction Company.

E. J. Blair, electrical engineer of the Chicago (Ill.) Elevated Railways, who was recently commissioned captain in the Engineers' Reserve Corps, has gone into training at Fort Sheridan. Mr. Blair has been with the elevated companies since his graduation from Cornell University in 1905. Before the consolidation of these companies in 1911 he was employed in various capacities by the Metropolitan West Side Elevated Railway, for the last two years of its separate existence as electrical engineer. Mr. Blair is active in the American Electric Railway Engineering Association, and is president of the local section of the American Association this year.

Charles J. Laney, heretofore traffic manager of the Cleveland, Southwestern & Columbus Railway, Cleveland, Ohio, has resigned to accept a similar position with the Northern Ohio Traction & Light Company, Akron, Ohio, effective June 11. Mr. Laney was formerly employed in the freight department of the Toledo & Ohio Central Railway and of the Wabash Railroad. In 1907 he became connected with the Toledo Urban & Interurban Railway, and later with its successor, the Toledo, Bowling Green & Southern Traction Company. He served this road for two and one-half years as assistant general freight agent, and in 1909 was appointed traffic manager to succeed H. H. Stephenson. Mr. Laney had been traffic manager of the Cleveland, Southwestern & Columbus Railway since March, 1913.

Waldo G. Paine, vice-president and traffic manager of the Spokane & Inland Empire Railroad, Spokane, Wash., has been appointed assistant general freight and passenger agent of the Spokane, Portland & Seattle Railway, in addition to his other duties. Mr. Paine is a native of Minnesota, but has been identified with interests in Spokane since 1889. After a period in the real estate business, and a subsequent connection with a mercantile company, he became one of the incorporators of the Coeur d'Alene & Spokane Railway. This company, with others, was later consolidated as the Spokane & Inland Empire Railroad, and Mr. Paine was made general freight and passenger agent. He was appointed vice-president and traffic manager in 1910, following a reorganization of the company. In his position with the Spokane, Portland & Seattle Railway he succeeds A. B. Jackson, formerly general agent for that road and the Chicago, Burlington & Quincy in Spokane, who remains freight agent for the latter road, while Mr. Paine will handle the passenger business.

Obituary

J. C. Woodsome, local manager of the Tampa (Fla.) Electric Company, died recently at his home in Tampa at the age of forty years. Mr. Woodsome was born in Boston, Mass. He was graduated from the Massachusetts Institute of Technology in 1901 and during the year following was an assistant instructor in that institution. For the next four years he was employed in the office of the Stone & Webster Management Association and was connected with that organization until his death. In 1906 he was appointed superintendent of the Houghton County Electric Light Company, Houghton, Mich., and the same year was transferred to the Dallas Electric Light & Power Company, Dallas, Tex., as general superintendent. Mr. Woodsome had been manager of the Tampa Electric Company since 1911.

Construction News

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

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

RECENT INCORPORATIONS

*Fiscal Agency Company, Jackson, Miss.—Incorporated to purchase and control public utilities. Capital stock, \$15,000. Incorporators: C. E. Moritz, W. A. S. Wheeler and W. D. Mounger, all of Natchez.

*Lehigh Valley Realty Company, Allentown, Pa.—Chartered by officials of the Lehigh Valley Transit Company to take over and operate the various subsidiaries, consolidating under one head for more efficient control. The company will handle the realty interests of the company, with power to acquire lands for extensions and rights-of-way. H. R. Fehr, Allentown, president.

FRANCHISES

Hollywood, Cal.—The Pacific Electric Railway has asked the City Council for permission to substitute a single-track line on Franklin Avenue for the portion of the line which is now double-track.

Visalia, Cal.—The Visalia Electric Railroad has received permission from the Railroad Commission of California to construct its tracks at grade across three public highways in Tulare County.

Hartford, Conn.—The Connecticut Company has asked the Public Utilities Commission of Connecticut for its approval of the proposed method of reconstruction of its lines on Main Street between Church and Village Streets, Hushope Avenue, Albany and Blue Hills Avenues and Windsor Avenue and the construction of a connecting curve on State and Market streets.

Lawrence, Kan.—The Kansas City, Kaw Valley & Western Railway has asked the City Council of Lawrence for a new franchise, the same in effect as that passed by the Council last summer and which the company failed to accept. The ordinance as proposed gives the company the right to operate its cars along the present routes and also to construct an extension east on Levee Street to New York Street.

Lawrence, Kan.—The City Council of Lawrence has passed an ordinance granting the Kansas City Railways permission to construct an extension from Eighteenth Street to Twentieth Street.

*Kansas City, Mo.—The Clinton Construction Company has asked the County Court for permission to construct an electric railway crossing any county road from the eastern end of Thirty-first Street to Leeds and thence to Blue Ridge Boulevard. Willard E. Winner, president.

Buffalo, N. Y.—The Public Service Commission for the Second District of New York has approved the construction of an extension by the International Railway on Elmwood Avenue from Hertel Avenue to the north city line.

Westerville, Ohio.—A franchise prepared by the Columbus Railway, Power & Light Company has been rejected by the Franklin County commissioners, who objected to the scale of fares proposed and the provision for the appointment of a commissioner to look after the county's interest for ten years and then give way to a company official after that time. The commissioners now propose to prepare a franchise which will provide for the creation of three zones with a fare of 5 cents each. Under this franchise the company will be required to pay a portion of the cost of any road or bridge improvement work.

Tacoma, Wash.—The Puget Sound Traction, Light & Power Company has received a fifty-year franchise from the Council to maintain a transmission line along certain public highways in Pierce County.

TRACK AND ROADWAY

Little Rock Railway & Electric Company, Little Rock, Ark.—A communication from the Little Rock Railway & Electric Company states that the proposed extension on Pike Avenue from Eighth to Eighteenth Street will be built by the Inter-City Terminal Railway and not by the Little Rock Railway & Electric Company, as stated in the *ELECTRIC RAILWAY JOURNAL* for May 19.

Visalia Electric Railroad, Exeter, Cal.—Plans drawn up by the surveying engineers of the Visalia Electric Railroad for the further extension of its lines through the Porterville district and south of Porterville have been approved and it is expected the actual construction of the line will be carried through without delay.

Indianapolis Traction & Terminal Company, Indianapolis, Ind.—This company has received permission from the Board of Public Works to construct an additional track in Martindale Avenue from the tracks of the Indianapolis Union Railway Company to Twenty-fifth Street, to facilitate the handling of troops to Fort Benjamin Harrison.

Kentucky Traction & Terminal Company, Lexington, Ky.—This company is reconstructing its track on Georgetown Street. The company has been required by the city to change its track for a distance of about $\frac{3}{4}$ mile from the south side to the middle of the street, and the plan is to build an entirely new track in the center of the street and not disturb the old track until it is completed and ready for use. Then the old track will be removed and cars routed over the new link.

*South Newcastle, Me.—Burgess, Lang & Company, Boston, are promoting the construction of an electric railway from South Newcastle to Boothbay Harbor. The company has acquired a controlling interest in the Portland Power & Development Company at Damariscotta Mills. It is reported that the company may acquire the Wiscasset, Waterville & Farmington Railroad, a narrow-gage steam road.

Worcester (Mass.) Consolidated Street Railway.—This company proposes to construct an extension of its Hamilton Street line down through Lake Park.

Laurel Light & Railway Company, Laurel, Miss.—This company proposes to construct an extension to the Pettibone addition if the city will make certain changes in streets near the plant of the Texas Oil Company. The proposed line would be extended from the present Wausau line at the intersection of Central Avenue and Maple Street, east in Central Avenue to Pine Street, to Meridian Avenue and Joe Wheeler Avenue, ending at the northeastern city limit.

Trenton, Lakewood & Seacoast Railway, Trenton, N. J.—The right-of-way of the Trenton, Lakewood & Seacoast Railway in Lakewood township will be sold at a foreclosure sale to satisfy three judgments, two in the Supreme Court and one in the common pleas court. Two of the judgments were obtained against the Trenton, Lakewood & Seacoast Railway and one against the Vandergrift Engineering Company. Wilfred H. Jayne, Lakewood, and Frederick S. Wack, Point Pleasant, are the attorneys. [May 19, '17.]

Brooklyn (N. Y.) Rapid Transit Company.—Operation has been begun by the Brooklyn Rapid Transit Company between Crescent and Eleventh Streets on the extension of its elevated line from Cypress Hills to Clifford Avenue. Jamaica. At present it is a two-track line, but it will be enlarged when traffic conditions warrant. It is expected that the entire line to Clifford Avenue will be completed by the end of the year.

International Railway, Buffalo, N. Y.—A movement has been started in North Tonawanda to force the International Railway to elevate its new line through North Tonawanda and not permit it to operate at grade from Payne Avenue through Gratiwick.

Interborough Rapid Transit Company, New York, N. Y.—The Public Service Commission for the First District of New York has awarded a contract to J. H. Burton, Jr., & Company, Inc., New York, at \$54,913 for supplying order No. 4, consisting of untreated ties and timber for use on new rapid-transit railroads. The commission has declared forfeited the contract made with it by the Flick & Manuell Construction Company, New York, for the construction of

the elevated portion of the Pelham Bay Park branch of the Lexington Avenue subway. This action was taken on May 23, upon which day Governor Whitman signed the Lockwood bill giving the commission the power to take over and complete with its own forces any rapid-transit construction contract which the contractor is unable for any reason to prosecute satisfactorily. A report has been made to the commission that all work had ceased on the Flick & Manuell contract and that the company was unable financially to carry the contract further. The commission, now being in possession of the work, has appointed Joseph H. Flick as manager for the city to push the work to completion.

New York State Railways, Syracuse, N. Y.—Work has been begun by the New York State Railways double-tracking its line on Euclid Avenue. The company is also replacing the brick pavement along its tracks in North Salina Street from Butternut to Catawba Street with groove-cut stone blocks. The two improvement jobs involve an expenditure of about \$62,000.

Ohio Traction Company, Cincinnati, Ohio.—The city officials of Wyoming have asked the Ohio Traction Company to construct new track in Wyoming to cost about \$60,000.

Port Colborne, Ont.—The Niagara District Hydro-radial Association has forwarded a resolution to the Provincial Government, asking that body to permit the construction of the proposed trolley line from Port Colborne to Bridgeburg and from Dunnville to Port Colborne immediately, instead of waiting until after the war.

Southern Pacific Company, Portland, Ore.—Announcement has been made by J. H. Dyer, assistant general manager of the Southern Pacific Company, that electrification of the company's line from Whiteson to Corvallis, 30 miles, will be completed between June 15 and July 1.

Southern Pennsylvania Traction Company, Chester, Pa.—This company plans to double-track its Chester-Darby line on Chester Pike.

Gettysburg (Pa.) Railway.—The rights-of-way of the Gettysburg Railway to Battlefield Park have been sold to the United States, appropriation for which was included in the Army bill recently passed. It is expected that the wire and rails of the company will be for sale shortly, and any inquiries along that line should be addressed to C. Taylor Leland, 414 Harrison Building, Philadelphia, Pa.

Hershey (Pa.) Transit Company.—This company reports that it is completing surveys for its proposed extension from Hershey to Manheim, but construction work on the line will not be begun for the present.

Columbia Railway, Gas & Electric Company, Columbia, S. C.—This company plans to construct an extension between 5 and 10 miles long to the prospective United States Army camp east of the city.

Chattanooga Railway & Light Company, Chattanooga, Tenn.—Work has been begun by this company on the construction of an extension from Rossville to Chickamauga Park. It is expected that the line will be in operation by June 15.

SHOPS AND BUILDINGS

Pacific Electric Railway, Los Angeles, Cal.—This company will construct a new station at West Chapman and Lemon Streets, Orange.

Chicago & Joliet Electric Railway, Joliet, Ill.—The directors of the Chicago & Joliet Electric Railway have authorized the erection of a new office building, at a cost of \$35,000, to replace the structure destroyed by fire in January.

Interborough Rapid Transit Company, New York, N. Y.—The Public Service Commission for the First District of New York has awarded a contract for the construction of station finish for nine stations on the Eastern Parkway subway and the so-called Brighton Beach connection in Brooklyn to Snare & Triest Company, New York, at \$464,540.

Piedmont & Northern Railway, Charlotte, N. C.—Fire recently destroyed the freight station of the Piedmont & Northern Railway at Greenville, S. C., causing a loss of about \$4,000.

Trenton & Mercer County Traction Corporation, Trenton, N. J.—It is reported that final details are being arranged by the Trenton & Mercer County Traction Corporation for the erection of its proposed new station at University Place and Dickinson Street, Princeton.

Valley Railways Company, Lemoyne, Pa.—Preliminary plans have been prepared by the Valley Railways for the construction of a terminal station at Walnut and River Streets, Harrisburg, in connection with the double-tracking of its line on Walnut Street, connecting with the Harrisburg Railways system. The proposed plans are being considered at a series of conferences with the City Council and City Planning Commission.

West Chester (Pa.) Street Railway.—Increased terminal facilities for West Philadelphia and a station almost twice the size of the present Sixty-ninth Street terminal are projected by the West Chester Street Railway and the Philadelphia Rapid Transit Company. A new station that will handle twice the number of people, eight tracks for the West Chester Street Railway in place of the five now in use, expansion and extension of the Philadelphia Rapid Transit terminus and moving the West Chester turnpike 60 ft. to the south are some of the improvements contemplated to handle the increasing growth of traffic at the point where Delaware County adjoins the city.

POWER HOUSES AND SUBSTATIONS

Union Traction Company of Indiana, Anderson, Ind.—A substation power plant has been moved from this company's power house at Anderson to Fort Benjamin Harrison, near Indianapolis. The station will be set on a siding and will handle power to be used in hauling the large crowds going to and from the fort.

Centerville Light & Traction Company, Centerville, Iowa.—This company has purchased a number of small central station companies in the vicinity of Centerville and expects to erect 13,200-volt transmission lines to connect these plants with its power station.

Tri-City Railway & Light Company, Davenport, Iowa.—Improvements involving an expenditure of about \$400,000 to its local system are contemplated by the Tri-City Railway & Light Company. The work will include the installation of a 20,000-kw. turbine, rebuilding of electric transmission lines, installation of new equipment, etc. Energy will be transmitted from the power station at 13,200 volts instead of 4800 volts, as at present, when the improvements are completed.

Manhattan City & Interurban Railway, Manhattan, Kan.—This company is in the market for 200-kw. rotary converters.

McComb & Magnolia Light & Railway Company, McComb, Miss.—This company, which is constructing a line between Summit, McComb, Fernwood and Magnolia, will erect a power-plant at Fernwood. S. M. Jones, Laurel, president. [April 29, '16.]

Pittsburgh, Harmony, Butler & Newcastle Railway, Pittsburgh, Pa.—This company has awarded a contract to the Faber Engineering & Construction Company of Pittsburgh for the construction of a new storage dam and addition to its power plant at Harmony Junction.

Montreal (Que.) Tramways.—A contract has been placed by the Montreal Tramways with the Canadian General Electric Company for a 12,500-kw. steam turbo-generator, to be installed in the new power station at Hochelaga. The proposed improvements include a new substation, additional equipment and a conduit system linking up the various plants.

West Virginia Traction & Electric Company, Morgantown, W. Va.—Four Taylor stokers have been ordered by the West Virginia Traction & Electric Company for its power house at Morgantown to take care of the increased load. Two of these stokers will be installed under the new 500-hp. boilers now being erected and two will be installed under the present gas-fired boilers.

Wisconsin Electric Railway, Oshkosh, Wis.—It is reported that the Wisconsin Electric Railway contemplates the erection of a power plant.

Manufactures and Markets

Discussions of Market and Trade Conditions for the Manufacturer, Salesman and Purchasing Agent
 Rolling Stock Purchases Market Quotations Business Announcements

Reducing the Selling Cost

Pointed Suggestions to Long-Winded Salesmen—
 Costs Increased by Uncertainty as
 to Who Really Buys

BY W. MCK. WHITE
 Holden & White, Inc., Chicago, Ill.

Much interest attaches to the discussions in the Manufacturers and Markets department of the ELECTRIC RAILWAY JOURNAL with reference to the possibilities of reducing the selling cost and thereby benefiting the purchasers. But it appears to me that the purchasing department of a railway is not totally responsible for the high selling costs and that to a marked degree both the executive and technical departments share the responsibility.

As Mr. Johnston intimates in his article published on page 899 of the May 12 issue, the law of averages prevails, but it is only through the reduction of one individual cost after another in the selling system that the general average will ultimately be reduced.

THESE FACTORS RAISE THE COST

There are a number of poignant causes that contribute to the high sales cost of electric railway commodities. Consider, for example, the cost induced by the long-winded salesman, or the purchasing agent who permits a salesman to assume that the purchasing department has final decision on a definite deal, when the purchasing agent really should refer the salesman to another department head. Consider also the prevalence of curiosity testers and the inability of some mechanical or electrical departments to "sell" articles to their own executives. But perhaps of greatest importance is the case of executives who could easily reduce the time consumed by manufacturers' representatives in concluding negotiations for the equipment under consideration.

There have been many instances in which the railway men apparently do not realize the vast amount of time and money spent by manufacturers in studying railway conditions and in perfecting apparatus to reduce operating and maintenance costs. While, of course, the success of any particular device of this kind is profitable to the manufacturer, yet it is practically a "fifty-fifty" matter, because the success of a labor or material saving device, or of an article which reduces maintenance or operating costs, is of direct benefit to the railway. Therefore the close co-operation of the railway men and the supply manufacturers is one of the first means of reducing the railway cost of materials.

PEDDLERS AND SALESMEN

For this reason we believe that the term "peddler" is a misnomer and is not always used with a sense of approval on the part of railways. As a matter of fact, it is the so-called "peddler" who is frequently the man responsible for decreasing some railway expense, and if this is the case he should be given consideration. One can point to many electric railways where the high-class supply man is welcomed, or is made to feel welcome, and it is these roads which obtain the first benefits of new articles which reduce operating costs.

The long-winded salesman was mentioned. This is the man who will take up office hours "getting acquainted" and in talking on subjects entirely foreign to the immediate business, when it is apparent that the railway man has other things to do. We do not deprecate the idea of making friends wherever possible, but we do feel that when there are other salesmen waiting for interviews, or when a railway man has some problem under study, that is not the

moment to consume either his time or ours. This cannot be emphasized too emphatically.

TIME WASTED COSTS MONEY

There are frequent cases on record where representatives of manufacturers have been invited to railway properties to negotiate on some specific proposition, but when they arrived they found that the man who made the appointment could not keep it. If the railway man invites a salesman to call, he certainly should notify that salesman of any change in his plans, even if this entails telegraphing. In one case a superintendent of motive power invited salesmen from three distant cities to meet him in a Central Western point on a certain day two weeks later. On that day the sales representatives were at the appointed place, but the railway man left word with one of his associates expressing his regret at not being able to see them as he had to leave town that morning.

A recent similar case is one where a master mechanic took a salesman to the general manager's office to decide finally on a sales proposition. The general manager said to the master mechanic: "Charlie, I am too tired to think of that to-night; come around to-morrow." The salesman had to stay over night. On the next day the general manager asked, "Is this device the one you want?" The master mechanic said, "Yes." Then the manager said: "All right; go ahead and put through a requisition." Now, this is another case where a day's extra expense was added to the sales costs. These are two actual examples, and practically every sales representative can cite similar cases. The lesson to be learned is an important one.

The last statement is partially connected with the former—that some technical men on railways either do not have the courage of their convictions or are unable to convince the executive departments of the possible saving or the possible increased efficiency to be gained by the use of some commodity. This is an every-day occurrence. It is realized that mechanical or electrical departments frequently want equipment expenditure for which the company finances do not justify; but there are also instances where equipment is vitally necessary, where the reduction in maintenance cost warrants the expense and where the company resources make its purchase entirely feasible, but where the department head is afraid of criticism if he places an order for the equipment.

CURIOSITY TESTING

Another habit which increases selling cost is that of curiosity testing. Practically every manufacturer is sending out equipment for inspection or trial installation, and a definite percentage of this goes to railway men who are accustomed to place such orders just to see what a device may be like and with full knowledge that they are under executive orders not to buy anything. At the same time it is known that there are salesmen so insistent on the forwarding of a piece of apparatus that the only way a department head can settle the matter is by having the apparatus come forward. In such instances, if the mechanical or electrical man knows that he cannot purchase, it would be far better to "decline with thanks" such an offer.

Finally (this suggestion is made in all seriousness), if the technical departments, as well as the purchasing and executive officials, would follow closely the advertisements in the electric railway trade journals and then would actually answer the advertisements, they could be more fully conversant with new apparatus at a less traveling and time cost to the manufacturer. Consequently they would co-operate to reduce selling price.

Signal Repair-Part Stocks

Value of Local Stocks Is Great—Steam Roads Ask Manufacturers to Suggest Lists—Author's Company Orders Reserve Parts with Manufacturing Requirements

BY F. K. DAVIS

General Manager Hoeschen Manufacturing Company, Omaha, Neb.

A railroad which either through necessity or wisdom decides to install automatic signals or highway-crossing bells, should realize that the failure of a certain part is very costly when all the facts are taken into account. If the necessary repair part must be ordered, a telegram usually is sent, and even if the manufacturer has the stock on hand, one or two days will elapse before the railroad can receive the much needed part. Also there may be considerable expense involved in making shipment by express.

In a number of places I believe the law requires that when a failure of crossing signal or bell is reported a watchman must be placed on that crossing until the signal is repaired, and if an automatic signal fails, orders must be issued for trainmen to disregard all indications of the signal. Likewise when the signal is again placed in service a new set of orders must be issued. Hence I believe it will be found that the money spent by the railroad in procuring emergency repair parts will more than equal the interest that would be paid if the parts had been purchased and carried in stock.

STEAM ROADS CO-OPERATE ON LISTS OF PARTS

Several years ago, when the General Railway Signal Company completed an installation of alternating-current automatic signals for the Grand Trunk Railroad in the State of Illinois, the railroad requested the manufacturer to make out a list of the parts which would be advisable to have on hand at the signal storehouse nearest the signal installation so that repairs could be made with the least delay possible. This list of material, after being checked by the railroad forces, was ordered and placed in stock. No manufacturer would attempt to crowd in too much on a list of this kind. His pride in his equipment and the prospect of securing future business would act as a sufficient check.

The Grand Trunk Railroad also contracted each year for all the mechanical interlocking appliances required, either for new contracts or for repairs during the term of the contract. It was usually specified that certain parts should be kept in stock by the manufacturer, and that these should be ready for prompt shipment. But during the course of the year, if orders for such a part did not equal the amount specified, arrangements were made to take over into the railroad's stores all or a part of the remainder. I know, however, that each signal supervisor endeavored to the best of his ability to keep on hand at some railroad storehouse in his territory a few of the parts which were most likely to be broken by derailment or other train accident so that repairs could be made without delay.

NO FIXED RULES TO FOLLOW

No set rule can be laid down by the manufacturer in regard to the matter of stock on hand for repair parts. The manufacturer must give his customer the best service possible, but it is also the manufacturer's privilege to invest his funds to the best advantage.

With certain exceptions we take care of our repair-part and new-equipment orders from the same stock. For instance, we will order enough of a certain part to equip 100 crossing bells and then add to this order enough more to enable us to meet all ordinary requirements for repairs.

Occasionally we receive orders calling for a relatively large number of a certain part, when our stock of that particular part is low. Such an order evidently is required for maintenance stock and no great harm can be done if the order is held for a time until we can fill it. It seems to me that this is the ideal way in which to handle the reserve supply stock. The railroad has to pay interest on the capital invested in keeping such a stock on hand, but the money and time saved by being able to make repairs promptly will go a long way toward offsetting the interest charge which attends having the parts ready for instant use.

37,000,000 Ties Treated in 1915

According to the latest figures compiled by the Government Forest Bureau, 37,085,585 cross-ties were treated during 1915. This is about 38 per cent of the total number of ties reported purchased during that year. Of the total number of ties treated in 1915, 25,831,204 were hewed ties and 11,254,381 were sawed ties.

There are many different causes of deterioration which necessitate the renewal of ties, the principal ones being decay, mechanical wear, breakage, insect attack, splitting, etc. In recent years the railroads have been prolonging the life of their ties by the use of preservatives, principally zinc chloride and creosote oils. Most of the cross-ties treated by the steam railroads in the United States are treated in closed cylinders permitting the application of a high pressure and designed to secure a heavy absorption of the preservative.

The schedules furnished to the steam and electric railroads did not request information as to the number of ties treated in 1915, but the Forest Service gathered statistics for this year from all of the treating plants in the United States. The table shows the number of ties treated by the preserving plants during 1915, by kinds of preservatives and kinds of wood.

NUMBER OF CROSSTIES TREATED BY PRESERVING PLANTS DURING 1915, BY KINDS OF PRESERVATIVES AND KINDS OF WOOD

Kind of Wood	Total	Zinc chloride and Creosote		
		Chloride	Creosote	Miscellaneous
All kinds	37,085,585	17,819,284	17,077,069	2,182,712
Oak	16,885,517	7,954,492	7,365,673	1,565,352
Southern pine	8,541,203	3,257,565	5,243,516	40,122
Douglas fir	3,553,854	2,760,952	787,247	5,655
Beech	2,933,737	100,000	2,469,202	364,535
Western pine*	2,007,609	1,702,167	301,581	3,861
Tamarack†	932,038	449,660	390,017	91,496
Gum	277,886	204,653	1,650	71,583
Birch	173,971	55	173,916	...
Elm	50,846	50,846
Maple	36,942	316	36,626	...
All other	1,691,982	1,338,578	307,641	45,763

*Includes lodgepole pine and Western yellow pine.

†Includes Western larch.

NEW YORK METAL MARKET PRICES

	May 3	May 31
Prime Lake, cents per lb.	31	32½
Electrolytic, cents per lb.	31	32½
Copper wire base, cents per lb.	36	36
Lead, cents per lb.	9½	11½
Nickel, cents per lb.	50	50
Spelter, cents per lb.	9½	9½
Tin, Straits, cents per lb.	58½	67
Aluminum, 98 to 99 per cent, cents per lb.	60	63

OLD METAL PRICES

	May 3	May 31
Heavy copper, cents per lb.	24½	28
Light copper, cents per lb.	21½	25½
Red brass, cents per lb.	18½	19½
Yellow brass, cents per lb.	17½	18
Lead, heavy, cents per lb.	7½	9½
Zinc, cents per lb.	7	7
Steel car axles, Chicago, per net ton.	\$41.50	\$42.50
Iron car wheels, Chicago, per gross ton.	\$24	\$30.50
Steel rail (scrap), Chicago, per gross ton.	\$31.50	\$34.50
Steel rail (relaying), Chicago, per gross ton.	\$39	\$39
Machine shop turnings, Chicago, per net ton.	\$11.00	\$14.50

CURRENT PRICES FOR MATERIALS

	May 3	May 31
Rubber-covered wire base, New York, cents per lb.	36½	36½
No. 0000 feeder cable (bare), New York, cents per lb.	36½	36½
No. 0000 feeder cable stranded, New York, cents per lb.	33¾	33¾
No. 6 copper wire (insulated), New York, cents per lb.	33	33
No. 6 copper wire (bare), New York, cents per lb.	36	36
Rails, heavy, O. H., Pittsburgh, per gross ton.	\$40	\$40
Rails, heavy Bessemer, Pittsburgh, per gross ton.	\$38	\$38
Wire nails, Pittsburgh, per 100 lb.	\$3.50	\$3.50
Railroad spikes, 9/16 in., Pittsburgh, per 100 lb.	\$3.85	\$4.00
Steel bars, Pittsburgh, per 100 lb.	\$4.00	\$4.00
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.	\$6.35	\$6.85
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.	\$7.55	\$7.55
I-beams over 15 in., Pittsburgh, cents per lb.	10	10
Galvanized barbed wire, Pittsburgh, cents per lb.	\$4.35	\$4.35
Galvanized wire, ordinary, Pittsburgh, cents per lb.	\$4.15	\$4.15
Cement (carload lots), New York, per bbl.	\$2.12	\$2.12
Cement (carload lots), Chicago, per bbl.	\$2.16	\$2.16
Cement (carload lots), Seattle, per bbl.	\$2.60	\$2.50
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.21	\$1.25
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.22	\$1.26
White lead (100 lb. keg), New York, cents per lb.	10¾	11¾
Turpentine (bbl. lots), New York, cents per gal.	52	45

Copper Market Conditions

The copper market situation, as reviewed in *Copper Gossip*, published by the National Conduit & Cable Company, is improving. It says: "There has been substantial activity in the market for copper lately, with an upward trend to prices. The indication at present is that government purchases in future will be at approximately market prices. With this prospect in view the copper situation has become a more normal and legitimate affair. The trade is perfectly satisfied to let the law of supply and demand regulate the market value of copper. If, however, arbitrary action is exercised for the purpose of forcing prices either up or down the effect cannot but be disastrous. Such a method is certain to prove an unsettling factor to business stability. It is important that there should be an absolutely definite understanding regarding this matter, and a reassuring official statement to the effect that the selling price of copper, to all parties, will be governed by the established laws of trade. An artificially low price will create commercial unsettlement as well as a fictitiously high price. They are both destructive to prosperity.

"The copper situation is therefore one of intense interest and concern for the whole civilized world. The metal is needed in unprecedented quantities. It is also calculated to allay any apprehension regarding a possible shortage in supplies to specially note that mine and refining capacity were never so well equipped to meet demand as at present. New copper producing territory has been opened, smelter and refining facilities have been greatly enlarged, and the prospect is for a new record-breaking production. There is consequently not the shade of an excuse for boosting market prices to any previously unattained limit. Such a scheme would justly deserve to prove an ill-fated experiment."

Human Factor in Industry

The Western Efficiency Society held a national conference at Chicago, May 23 to 26, and presented an active program on the human factor in various phases of industrial preparedness. Addresses were made by C. E. Knoepfel, New York; Harrington Emerson, New York; W. A. Grieves, Columbus, Ohio; Magnus Alexander, West Lynn, Mass., and other authorities on industrial progress. At an evening session Charles R. Van Hise, president University of Wisconsin, presented an address on "Government Control of the Industries." One entire session of the convention was devoted to the discussion of labor problems, at which both employers and union labor representatives were heard. The permanent offices of the Western Efficiency Society are at 327 South La Salle Street, Chicago. This organization is composed of business managers, heads of departments, industrial engineers and experts, and others interested in the most effective means of production and distribution.

A Ton of Sapphires

The statement that a ton of sapphires will be used during 1917 by a manufacturer in the electric railway and central station field arouses interest because of the novelty and value of this material. Yet this is the quantity which will be required during 1917 by the Sangamo Electric Company for jewels for thrust and ring bearings in its electric meters. Sapphires for this purpose are purchased in the rough and must be put through a process of finishing and inspection which in thoroughness and accuracy compares with the methods followed in the watch-making industry.

The Sangamo company reports an increase of 50 per cent so far in 1917 as compared with the corresponding months in 1916 in orders for electric meters for central station purposes and "economy meters" for electric railway car energy-saving service. Nearly 1000 employees are now engaged exclusively in the manufacture of meters in a large new plant at Springfield, Ill. The materials required for meter manufacture are just those which have shown the greatest tendency to increase in price and scarcity during the last two years, but it is stated that a liberal purchasing policy, which anticipated the market, has provided an ample supply of practically all raw materials to meet the demand.

ROLLING STOCK

Manhattan City & Interurban Railway, Manhattan, Kan., is in the market for a number of second-hand double-truck motor cars and trailers, also several 200-kw. rotary converters.

Illinois Traction System, Peoria, Ill., will soon begin the construction of six large electric locomotives in its shops at Decatur, Ill. It is expected that the locomotives will be ready for service early in 1918.

United Railways & Electric Company, Baltimore, Md., noted in the May 12 issue as being in the market for eighty semi-convertible double-truck pay-as-you-enter cars, has placed this order with The J. G. Brill Company.

Salt Lake, Garfield & Western Railway, Salt Lake City, Utah, now being equipped with electricity, will purchase through H. A. Strauss, Harris Trust Building, Chicago, six motor cars and six trailer cars, each 56 ft. long. The Salt Lake, Garfield & Western Railway is the successor to the Salt Lake & Los Angeles Railroad, 17 miles long. The road was recently bonded to provide funds to extend it for 3 miles and to equip it with electricity.

Springfield (Mass.) Street Railway, noted in the May issue as being in the market for cars, has specified the following details on one motor and two trailer dump cars which will have an 18-cu.-yd. capacity:

Number.....1 motor, 2 trailer	Gears and pinions,
Date of order.....May 4, 1917	Forged steel, heat treated
Date of delivery.....July 20, 1917	Headlights,
Builder.....Differential Car Co.	Crouse-Hinds "Melobeam"
Type.....3 compartment dump	Journal boxes.....Symington
Weight (total),	Lightning arresters,
Motor.....52,200 lb.	Westinghouse
Trailer.....37,500 lb.	Motors.....4 West. 306-CV,
Bolster centers, length,	inside hung
19 ft. 8 in.	Paint..Sherwin Williams No.
Length over bumpers.39 ft. 0 in.	4861. Body, grey
Width over all.....8 ft. 2 in.	Sanders.....Murphy
Body.....Steel	Trolley catchers,
Air brakes,	Wilson type "T"
GE. straight and automatic	Trolley base.....U. S. No. 13
Axles.....Forged steel	Trolley wheels,
Control, type.....K-35-G-2	Railway standard
Couplers.....Tomlinson MCB	Trucks.....Wason arch-bar
Fenders or wheelguards.Pfingst	Wheels.....33 in. cast iron

Oklahoma Union Traction Company, Tulsa, Okla., noted in the April 21 issue as placing an order with the American Car Company, has specified the following details on these six cars which made up part of the order:

Single-End One-Man Car	Single-End Passenger Smoking and Baggage Car
Number of cars ordered.....3	3
Builder.....American Car	American Car
Seating capacity.....38	56
Bolster centers, length.....	32 ft. 6 in.
Length over bumpers.....30 ft. 2 in.	56 ft. 2 in.
Length over vestibule.....29 ft. 2 in.	54 ft. 2 in.
Width over all.....8 ft. 0 in.	9 ft. 2 in.
Rail to trolley base.....12 ft. 6 in.	13 ft. 2 3/4 in.
Body.....Steel	Semi-Steel
Interior trim.....Statuary bronze	Bronze with mahogany enamel finish
Headlining.....None, rafter finish	Agasote
Roof.....Arch	Arch
Air brakes.....Safety Car Devices Co.	Brill
Axles.....Brill	G-Co. anti-climber
Bumpers.....American Car—Channel iron	Brill and Dayton Mfg. Co.
Car trimmings.....Brill	GE, type PC.
Control type.....GE. K-10	Tomlinson MCB radial
Couplers.....None, pull bars used	Curtain Supply
Curtain fixtures.....Curtain Supply	Pantasote
Curtain material.....Pantasote	Hunter
Designation signs.....Hunter	Door operating mechanism,
Safety Car Devices—air-operated	Wheelguards.....HB. Life Guards
Gears and pinions.....GE.	American Car—steel pilots
Hand brakes.American Car Co.'s with	GE.
Pittsburgh ratchet drop brake handles	American Car with Pitts-
Heaters.....Consolidated Car Heating	burgh ratchet drop handle
Headlights.....Golden Glow	Peter Smith hot air
Journal boxes.....Brill	Golden Glow T-128
Lightning arresters.....GE.	Brill
Motors, type and number,	GE.
Two GE. 258-A inside hung	Four GE. No. 201
Paint, varnish or enamel.....	inside hung
Sanders.....Keystone air sanders	American Car
Sash fixtures.....O. M. Edwards	Ohio Brass air sanders
Seats, style..American Car Co.'s light	O. M. Edwards
weight reversible	Brill stat'onary uphol-
Seating material..Mahogany wood,	stered in green leather
steel and canvas lined rattan	Brill
Springs.....Brill	Feralun
Step treads.....Feralun	Retrievers Knutson
Trolley catchers.....Keystone	GE.
Trolley base.....GE.	GE.
Trolley wheels or shoes.....GE.	Brill 27 MCB-2
Trucks, type.....Brill 21E	Utility Ventilator
Ventilators.....Brill exhaust	37 in. Davis cast steel
Wheels (type and size).....33 in.	O. M. Edwards steel
Special devices..Faraday high volt-	trap doors
age push button system	

TRADE NOTES

Robert W. Hunt & Company, engineers, Chicago, have offered to the government the services of their entire organization without profit.

Ohio Brass Company, Mansfield, Ohio, has received an order from the Transit Development Company for 3000 straight-line hangers.

Monitor Controller Company, Baltimore, Md., announces that E. Wesley Vaughn has joined the sales organization of its New York offices, of which Joseph Frese is manager.

Western Electric Company, Chicago, Ill., announces that its Seattle (Wash.) branch has moved from 907 First Avenue to 84 Marion Street, where it will occupy a two-story brick building erected especially for the company.

Henry J. Jumonville, certified public accountant, who was formerly general auditor of the American Cities Company and of its subsidiaries, announces the opening of offices for the practice of public accounting in New Orleans, La.

Asbestos Protected Metal Company, Pittsburgh, Pa., announces the appointment of Stanley L. Rau as sub-agent for Grand Rapids and vicinity, working in connection with the Detroit office. Mr. Rau is located in the Powers Theatre Building.

Morgan Crucible Company, New York, N. Y., has moved from 114 Liberty Street to 519 West Thirty-eighth Street. The company's factory is being moved from Brooklyn to New York so that it will not only have larger quarters but also gain the advantage of having factory and office under one roof.

Dunbar Manufacturing Company, Chicago, Ill., is the new name of the company formerly known as the Acme Supply Company. Thomas Dunbar is president, H. U. Morton, vice-president and treasurer, and T. K. Dunbar, secretary. The general offices of the company are at 5133 West Lake Street, Chicago.

Ellsworth L. Mills, formerly head of the track division of the Public Service Commission, First District, has resigned from the firm of Gibbs & Hill, consulting engineers for the commission, and hereafter will be associated with Dilsworth, Lockwood & Company, New York City, in the management of its railway supply department.

Charles A. Schieren Company, New York, N. Y., manufacturer of leather belting, has recently opened branch offices at 72 Congress Street, West, Detroit; 18 South Broadway, St. Louis; 475 South Main Street, Memphis; 272 Marietta Street, Atlanta, in addition to those already established at New Orleans, Dallas, Boston, Philadelphia, Pittsburgh, Chicago, Denver and Seattle.

C. S. Butler has resigned from the Hess-Bright Manufacturing Company, Philadelphia, Pa., after having been associated with it for about seven years, to become sales manager of the Carlson-Wenstrom Company, Richmond Street and Erie Avenue, Philadelphia, a subsidiary of the Carwen Steel Tool Company. Mr. Butler's resignation from the Hess-Bright Company became effective on May 31. The Carlson-Wenstrom Company has a well-equipped plant for making bearings, and intends to manufacture and introduce a new design of high-grade double-row ball bearing and to market a complete line of thrust ball bearings.

Holden & White, Inc., Chicago, Ill., general sales distributors of Hartman centering center plates and Perry anti-friction side bearings, report orders received recently for these bearings from the following railways: Waterloo, Cedar Falls & Northern Railway; Chambersburg, Greencastle & Waynesboro Railway; Philadelphia Rapid Transit Company; Mahoning & Shenango Railway & Light Company; Baldwin Locomotive Company for new cars of the Northern Ohio Traction & Light Company; Denver Tramway Company; Oklahoma Railway; Salt Lake & Utah Railroad; Albany-Southern Railroad; Cedar Rapids & Marion City Railway, and the Oakland, Antioch & Eastern Railway.

Hess-Bright Manufacturing Company, Philadelphia, Pa., announces that it is now and has for some time been booking orders in large quantities for ball bearings which are specified in government contracts with large manufacturers of motor trucks and aeroplanes. Many orders for thrust bear-

ings of the larger sizes specified for use in the building of submarine chasers have also been received. Other contracts, in addition to the annular bearings for battle and training planes, have called for the company's Monarch bearing, which is built under the Conrad patents, recently adjudicated. This bearing will be supplied in quantities for mounting in the hubs, transmissions and steering knuckles of modern high-powered trucks.

Union Switch & Signal Company, Swissvale, Pa., reports a number of recent orders among electric railway companies. Among them is one from the Boston Elevated Railway for material for its Dorchester subway extension. The apparatus will include double impedance bond layouts, track transformers, automatic train stops, Style "L" three-lens light signals and Model 15 vane-type two-position track relays. Another large order is from the Interborough Rapid Transit Company for its Seventh Avenue subway from West Forty-third Street to Wall Street and for the West Farms subway connection and the Pelham Bay Parkway line. This order includes for the Seventh Avenue line two nineteen-lever, two fifteen-lever, two seven-lever and one twenty-three-lever electric-pneumatic interlocking machines, with the attendant automatic stops, alternating current relays, switches, etc. A third recent order is from the United Railway & Electric Company of Baltimore and is to provide signal protection for a drawbridge over Boar Creek in connection with the automatic block installation. A three-lever dwarf machine will be placed at the center of the drawbridge to operate the train stops and the circuit controller for the control of the 600-volt current operating the bridge. Automatic stops will be placed on each track and these will be operated through pipe lines by the dwarf machine on the draw. Home and distant signals of the Model "M" light type will be installed to provide indication. Stick locking operated by a clockwork time release will be installed to insure that the signals indicate stop and that the tripper arms are in the engaging position before the draw can be moved.

ADVERTISING LITERATURE

Association of Manufacturers of Chilled Car Wheels, Chicago, Ill.: Paper on "Chilled Iron Car Wheel" presented before Canadian Railway Club of Montreal, Que., Feb. 13, 1917, by George W. Lyndon.

Remington Typewriter Company, New York, N. Y.: A bulletin on railroad payroll and pay check writing which describes a railroad accounting machine for writing payrolls and pay checks at one writing.

Peter Witt: A bulletin, "The Car Rider's Car." Shows photographs and diagrammatic arrangement of the operation of loading and unloading. The adaptability of this car to a number of cities is discussed and the bulletin contains the opinions of prominent railway men.

American Steel & Wire Company, Chicago, Ill.: Bulletin on preparedness for winter's food supply by Dr. Ernest W. D. Laufer, agronomist. Bulletin is published in hope of making each community as nearly self-supporting as possible in production of food for home consumption.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.: Leaflet 3977 descriptive of electrical speed indicators for use in power stations, industrial plants and similar applications. Also, leaflet 3324 on potentiometers for the measurement of "hot spots" in electrical apparatus.

Lincoln Electric Company, Cleveland, Ohio: Catalog No. 104 on electric arc welding. Comparisons of costs of arc welding with other systems are given. One section devoted to electric railroad shops has numerous illustrations and descriptions of applications of arc welding that have proved successful.

Underwriters' Laboratories, Chicago, Ill.: A bulletin to its staff signed by W. H. Merrill, president, notifying them of definite plans which have been made by the government for utilizing the company's service of inspection at factories turning out munitions. One recent order by the government is for 1,000,000 ft. of No. 14 Duplex leaded wire for immediate delivery, goods subject to the company's inspection and labeling.