

Electric Railway Journal



Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

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Support the Electric Railway War Board!

THE Electric Railway War Board, with its headquarters at the country's capital, is the national focus of the influence of the electric railway industry. It is striving conscientiously and with all of the power that the industry puts into it to discharge its obligations to the country and to the electric railways. It is your representative at Washington whether you are a member of the American Electric Railway Association or not. It needs support; financial, statistical, moral. Send in your subscription to the work; respond to requests for data; let the board know that you appreciate its efforts. Get behind the Electric Railway War Board! Push!

New Cincinnati Franchise Possesses Novel Features

“EVERY commercial enterprise, to be successful, must offer a reward—a reward of merit for efficiency and economical management.” In these words the attorney for the Cleveland Railway pointed out to the War Labor Board recently one of the defects in the much-quoted Tayler ordinance of Cleveland. The defect in question is the absence of incentive to efficiency in the Cleveland franchise, which practically guarantees a return on capital investment and leaves the responsibility for service to others than the company officials.

Members of the City Council of Cincinnati in approving a new ordinance would seem to have profited by the Cleveland experience. The Cincinnati measure follows modern lines in having a cost-of-service basis. It proposes to start with an initial fare of 5 cents with provision for readjustment upward or downward every three months as cost of operation dictates. The novel feature is the section which gives the company a declining rate of participation in the surplus gross receipts as the fare increases. In the case of a 5-cent fare or less, 55 per cent of any surplus gross receipts go to the reserve fund and 45 per cent to the company; with a 5½-cent fare the rates are 70 and 30 per cent respectively, and with a 6-cent fare 80 and 20 per cent. With more than a 6-cent fare the company does not share in the surplus.

It is probably visionary now to expect any surplus from a 5-cent fare, but under more normal conditions the company would at least have this inducement toward economy and efficiency. In this respect the proposed Cincinnati franchise differs from other recent traction agreements, and it is an indication that those who have to do with the making of such contracts have studied results in other cities and are thinking in the right direction.

Planning the Prepayment Loading Station

THE rapid increase in the number of industrial plants employing large forces of workmen is emphasizing to electric railway transportation department officials the many advantages of prepayment loading stations where large numbers of passengers must be interchanged quickly. The use of a loading platform, access to which by the passengers can be gained only by passing a turnstile collection booth is, of course, not a new idea. To a limited extent it has been used for years, particularly in connection with rapid transit lines, ferries and the old-time pleasure parks. Despite the fact that prepayment station design is not an art in its infancy, there are a few recent installations that would serve excellently as good examples of what ought not to be, if we may judge from some recent observations on the subject. To be successful a prepayment station must be so planned that all paths of passenger flow are as direct as possible and under no circumstances should they intersect. Nor, in a well-planned station, should the passenger stream cross operative car tracks. While, of course, space or other local restrictions may prevent the working out of the ideal plan in every case, a few minutes of careful thought and study in the design of such stations will save in the aggregate many hours of operating time and many dollars in claim department allowances, as well as make for a better satisfied riding public.

Let's Vote on the Charge for Milk and Other Supplies

THE experience at Buffalo on Aug. 20 with the popular vote on the fare to be charged on the electric railways in that city was so decisive as to suggest that the same plan could be followed to advantage as regards the price of other necessities. If a referendum is good for determining the charge for transportation, why cannot it be equally effective in regard to the prices at which food and other household supplies are sold? Heretofore, there has been supposed to be some relation between the cost of producing articles of this kind and the price which had to be charged for them. Such a rule, according to the Buffalo theory, may be all right when it relates to a reduction in price for the finished article, but it is a most absurd provision when its effect is to raise prices.

Hence, we strongly recommend that the citizens of Buffalo, having disposed of the question of electric railway fares in their city, take up the price of milk, which presumably in Buffalo as elsewhere was gone up 50 per cent in price during the past two or three years. Probably as many people consume milk as use electric railway

transportation, and a reduction to the charge made before the war would greatly lessen the present high cost of living. If the farmers don't like it they can lump it. They probably made tremendous profits four years ago at the lower price and now will simply forego a portion of their present profits if they return to the former price. Again, statistics recently published by the United States Department of Labor show that the retail price of three different cuts of beef has increased from 65 to 82 per cent since 1913. This is another case where an election should be held to decide whether a lower selling price would not be more popular.

Why not also have a vote to determine the selling price of shoes? And another as to whether it would not be better next winter for the temperature not to go below zero, or to limit the snowstorms to one every two weeks? If a referendum is superior to some of nature's laws, why should it not be superior to others?

Every Issue of the "Journal" a Win-the-War Number

THE ELECTRIC RAILWAY JOURNAL is dedicated heart and soul to the winning of the war, sharing in this vital matter the spirit of the industry. Every article, every news item to be "available for publication" must pass the acid test. Publishers and editors are a unit on this point as on others affecting the policy of the paper. This policy is first to hold up a mirror to the industry so that it can instantly see itself reflected in the events of each week, and second to suggest to the industry and to the public an interpretation of what the mirror shows to be true. We believe that the war-time (as well as peace-time) duty of electric railways is to furnish good service, and that to do this requires co-operation of employees, public and owners. Especially now is it important that these three understand one another and their respective duties. This will be the keynote of every issue of this paper, in the endeavor to make each successive issue a better win-the-war number than the last. Sometimes the editorials and other articles may appear to be severely critical. We hope, however, that judged by the standard mentioned they will prove to be constructively helpful.

While each issue of the paper is, we hope, a patriotic issue there are occasions when a special win-the-war effort is justified. The Liberty Loan and W. S. S. campaigns are cases in point. For example, in last week's issue a new plan for use in preparing for the Fourth Liberty Loan is propounded. There is still time to send in requests for the booklets explaining this plan. This week a number of letters telling about successful plans used in the Third Liberty Loan Campaign are printed. With next week's issue copies of a new poster entitled "Hello! Liberty Speaking" will be distributed and sticker reproductions of this will be available at cost. We expect that millions of the stickers, which are primarily for use on correspondence, will be called for. As for the poster which will be sent with each copy of next week's issue, we suggest that each subscriber put his up in the place where he thinks it will do the most good. The issue of the paper for Sept. 28 will be a special "War-Service and Economy" issue in which some of the national aspects of electric railway transportation will be taken up.

It is a wonderfully inspiring thing to consider the electric railway industry as an integral part of our great national war machine, and the editors of this paper hope that each issue will produce a cumulative effect in intensifying the conviction on the part of all that it is so.

Are Electric Railway Employees Becoming More Courteous?

IN THE CARS of the New York, New Haven & Hartford Railroad the following acrostic is prominently displayed:

Courtesy is a business asset, a gain and never a loss. Officers and employees, above all others, should be courteous. Use courtesy in all dealings with passengers, patrons and one another.

Railroad men help their company by being courteous.

This railroad believes in courtesy.

Even the discourteous like to be shown courtesy.

Smooth away life's difficulties by being courteous.

You will find your value increased by courtesy.

"Life is not so short but there is always time for courtesy."—Emerson.

This acrostic contains a great many suggestions and a perusal of it naturally leads to such questions as these: Is the campaign for greater courtesy on the part of electric railway employees producing results? Can such a campaign be conducted without "preachiness"? What are the conditions which must be overcome in such a campaign? What can be done to make courtesy campaigns on the part of electric railways more effective?

Railway managers who are not as successful as they would like to be in securing courtesy on the platform and elsewhere must realize that there is a general slump in the matter of politeness all over the country. This is due partly to slackness in home training and partly to immigration of men and women who have standards of politeness lower than our own. The class of labor which is available for platform service, particularly, is not as good as formerly. In addition, many of the men in the service are too old to change their ways, and suggestions to the effect that they be more polite do not appeal to them. This is especially true if the suggestions come in a form which looks like preaching.

It must be confessed also that not all managers set a perfect example in the matter of courtesy. In some cases there is one attitude toward peers and another toward subordinates. As the essential of courtesy is considerateness, example rather than precept is the better means for inculcating it.

Courtesy campaigns must begin with the children, and a tremendous work confronts us here. But it will take time to achieve results with the coming generation. In the meantime, when labor conditions permit, men notoriously discourteous should be eliminated from the service. Comments from passengers may well be encouraged, and men who are conspicuously polite should be informed that their work is appreciated. A manager of a large interurban property in the Middle West said a few days ago that one conductor in his employ is worth twice what the company can afford to pay him because passengers will go out of their way to ride with this man. May the time soon come when such men are the rule rather than the exception on electric railway properties!

The Substation Renders the Power System Flexible

AT PRESENT the substation is to many the most interesting part of the physical equipment of the electric railway because its rate of progress is greatest, even though this progress is hampered by war-time conditions. One reason for this is that the substation offers many opportunities for saving in several directions. Railways which have been called upon to furnish more service or to redistribute their service have utilized to the full the flexibility of power distribution made possible by the substation. The managers, possibly even more than the engineers, are following substation developments very eagerly under present conditions.

No matter whether railways generate or buy their power they must transform it, and continue to transform it. Three-phase, high-voltage power is standard for transmission, and low-voltage, usually direct-current, power for utilization. The connecting link is the substation, and it is highly desirable that electric railway men keep themselves posted as to its development. This explains why the *ELECTRIC RAILWAY JOURNAL* gives so much space to substation matters. Several short articles on the subject appear in this issue.

The highly-perfected modern substation is the result of a perfectly logical evolution which is now and then well worth review. The early railways were dependent for power upon small direct-current generators, of low voltage and therefore limited transmission range. Vast quantities of copper in feeders were necessary for even moderate power requirements in a restricted area. As soon as alternating current was a demonstrated success, which was fortunately almost simultaneously with the electrification of horse railways, the railway pioneers were quick to avail themselves of the chance which it afforded to lengthen their electrified lines. Alternating-current motors were employed to drive direct-current generators, as is still the practice under special conditions, but soon the motor and generator were combined into one machine, the rotary converter. This is one of the most perfect and valuable electrical machines which we possess. It renders the electric railway practically independent of distance from a source of power.

The rotary converter has, of course, gone through many metamorphoses. Designers have had to overcome such difficulties as these: (1) To force the machine to keep up or even increase its voltage with load, as was done by the use of compound field winding. (2) To utilize its ability (as a synchronous motor) to control the line power factor, as was done by varying the excitation. (3) To simplify the starting problem, as was done by using a separate starting motor, or arranging for starting from the alternating-current end without field, or finally by putting on special starting windings. (4) To eliminate the "hunting" or pulsating effect in the alternating-current circuit, as was done by using pole dampers. (5) To eliminate "sparking" on overloads, which was partially accomplished by means of commutating poles, and now special flash barriers are being used also. (6) To adopt the machine to high frequency (60 cycles), as has been accomplished through

the combined operation of several principles already mentioned, together with increasing knowledge of design principles. The result of all this has been a machine which will withstand several times full load momentarily and which operates at remarkable efficiency. In fact the total loss in a well-designed rotary substation, including that in the transformers, is almost negligible.

And now comes the automatic substation with its practical elimination of the labor problem, so that a railway system (in normal times) can have as many substations as transmission economy demands. Thus is removed one of the last limitations in power distribution for electric railways, but it must not be forgotten that this is possible only because the rotary converter has been previously so highly perfected.

Only Two Weeks to Prepare for the Liberty Loan Campaign

TWO weeks from to-day the campaign for the Fourth Liberty Loan will begin in this country and will continue three weeks. It is our prediction that the American people will over-subscribe this loan as they did the three previous loans. They realize that the quickest way to defeat the Hun is to overwhelm him with a large military force, and this costs money which the proceeds of this loan will supply.

Just prior to the opening of the Third Liberty Loan campaign, we published an account of the methods used by a number of different electric railway companies to place the prior loan before their employees, and we give this week similar facts on the third loan from ten or more other important properties. This article shows that the railways can assist greatly in the sale of Liberty Bonds by helping their individual employees to finance purchases of bonds, as well as by advertising the merits of the bonds on their cars and in their waiting stations.

The American people realize to a greater extent than ever before that the war with Germany is a conflict in whose outcome each individual in this country is vitally interested. Each, therefore, whether he is rich or poor, employer or employee, has equal responsibility to do all that he can to win the war, and this includes a prompt response to all national calls for funds and man-power. Full appreciation of this fact will prevent a tendency on the part of anyone to shift the responsibility of making subscriptions to someone else, because of the belief that such a person is more concerned in the successful outcome of the war than he.

But employers have in one respect a greater responsibility in the coming campaign than employees—the responsibility which comes from their leadership. They should fulfill this obligation by acting as leaders in explaining to their men the present needs of the situation as well as the necessity for the success of the loan. They can also help in facilitating the purchase of bonds by their employees through a system of easy payments such as has been done by the companies whose practices are described in this week's issue. Each electric railway department can well aim for a 100-per cent record, and the same object could well be the goal of each individual company.

Hauling Shipbuilders to Hog Island—and Home Again

Electric Railways Play a Prominent Part in Solving the Transportation Difficulties at Uncle Sam's Big Plant—The Transfer of 30,000 Persons Each Way Every Day Presents Some Interesting Problems



Before

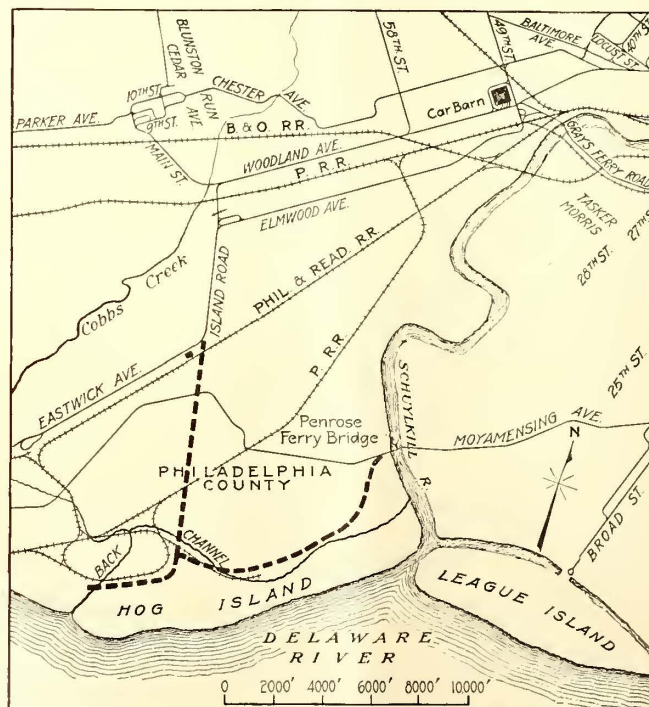


After

HOG ISLAND last September—and now! The change is almost unbelievable and in the peaceful days before the war would have been ranked among the greatest of engineering accomplishments. Hog Island is the name by which a low, marshy bit of land, about 900 acres in extent, lying along the Pennsylvania bank of the Delaware River just below Philadelphia, has been known for many years. It is some 7 miles, as the crow flies, from the City Hall in Philadelphia. As the narrow back water channel which formerly separated it from the main land has been filled in in several places it is no longer an island. At the time the American International Shipbuilding Corporation started work late last September, those portions of the island which were not marsh were covered with undergrowth and small trees. In ten months the land has been graded; some 75 miles of standard-gauge track and many miles of highway have been constructed; sewerage, fire protection and electric power systems have been installed, and buildings, shops, shipways and all the rest of the vast paraphernalia necessary for the greatest shipyard in the world have been prac-

tically completed and put in working order. By the middle of July, thirty-six of its fifty-nine ways contained keels, some of the ships were rapidly nearing the time when they would be launched and towed to the great wet basin where twenty-eight ocean-going ships can be outfitted at one time, and on Aug. 4 the first ship was launched. Truly a remarkable accomplishment! The accompanying illustrations reproduced from photographs furnished by the shipbuilding company convey a good conception of the magnitude of the task.

The yard, when in full operation, will be able to turn out a 7500- or 8000-ton steel ship every two days. It is the largest of the yards under the control of the United States Shipping Board's Emergency Fleet Corporation, the actual construction agent of this plant being known as the American International Shipbuilding Corporation. As might easily be guessed, the problem of transporting the army of employees, now numbering about 30,000, has not been a particularly easy one. Under the present trying conditions its solution has been made possible only by the complete co-operation of the Emergency Fleet Corporation and the electric

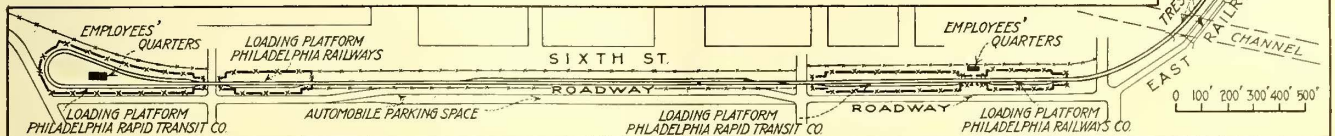


MAP OF ELECTRIC LINES IN HOG ISLAND VICINITY SHOWING NEW EXTENSIONS

railways concerned. Some details of the part which the railways are playing in its solution were published in the *ELECTRIC RAILWAY JOURNAL*, for Aug. 3, 1918, page 186. Details of the formal agreements between the railways and the Emergency Fleet Corporation have been printed from time to time. This article is devoted to the presentation of further details pertaining to the transportation problem.

The problem is fundamentally the same as at any other great industrial plant, namely, the carrying of the workmen to and from the scene of their daily tasks with a maximum of convenience and a minimum of transit

to these districts new housing facilities are being developed by the Emergency Fleet Corporation at two points along Elmwood Avenue (see map), and a number of houses in the vicinity of Sixtieth Street and Chester Avenue have been commandeered for shipyard employees. To transport these workers from their points of origin no direct facilities existed when construction work was started. To house the construction men barracks were built adjacent to the shipyard capable of taking care of several thousand men.



PLAN OF THE PASSENGER PREPAYMENT TERMINAL

time. The complicating circumstances in this case are the large number of passengers to be moved in a short time, the isolated location of the plant with respect to the main avenues of rapid transportation, the widely separated dwelling communities of the workers, the presence of other industrial plants in the territory served by the nearest electric lines and, by reason of war conditions, the difficulty of getting the material "where-withal" of transportation. By this last is meant the equipment, power and labor necessary to establish electric railway lines and to operate them once they are established. In normal times these complicating circumstances would be, in the main, mere trifles. Not so in war times, however. Another idea of the magnitude of the problem can be gained from the statement that the increase in electric railway facilities alone for this one shipyard has cost nearly \$3,250,000.

THE WORKERS LIVE IN WIDELY SEPARATED DISTRICTS

It is indeed fortunate that the workers' hours of labor are not all the same. The staggering is such that the morning rush hour extends from 6 a.m. to 8 a.m. and the evening from 4.30 p.m. to 6.30 p.m. Within these periods sharp peaks occur at 7 a.m. and 5 p.m.

The districts in which the workers live are widely separated, one being almost directly south of the City Hall in Philadelphia, others in the northern, north-western and southwestern parts of the city. In addition

Last autumn the nearest steam railroad and the nearest trolley line were each about $1\frac{1}{2}$ miles distant from the center of the island. The only transport facilities available were boats on the Delaware and one or two precarious marsh roads. As practically all construction material both for plant and ships had to come by rail, steam railway transport received first consideration. The American International Shipbuilding Company built the line shown on the map as connecting its interworks railway with the Philadelphia & Reading Railroad. The lines shown as belonging to the Pennsylvania Railroad are new extensions necessitated by the shipyard and other war industry developments.

While the steam railroad extensions solved the freight-haulage problem, the Emergency Fleet Corporation officials early realized that they did not constitute a solution to the problem of transporting the workmen to and from the plant. Steps were taken to secure such extensions and reinforcements of the near-by trolley systems, the Philadelphia Rapid Transit Company and the Philadelphia Railways as would enable them to take care of the traffic.

THE P. R. T. HELPS BUILD SHIPS

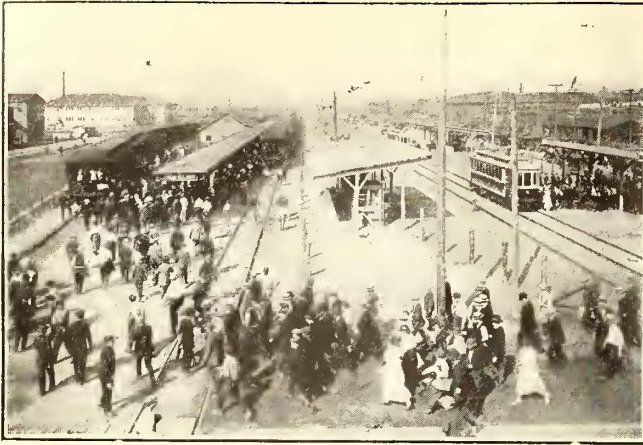
Of the two companies the first-named, with its great interconnected system of surface, subway and elevated lines, is by far the more important. As shown on the map, its nearest tracks were those traversing Eastwick



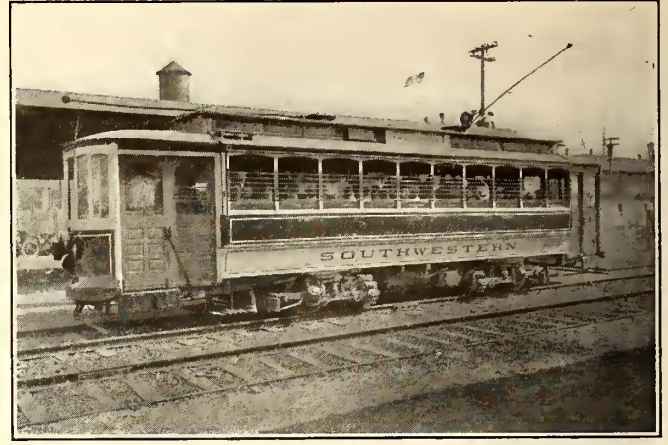
THE STORAGE YARD AT HOG ISLAND



BEFORE THE ELECTRIC RAILWAYS STARTED OPERATION



STARTING ELECTRIC SERVICE AT HOG ISLAND



HAULING SHIPBUILDERS IN PHILADELPHIA

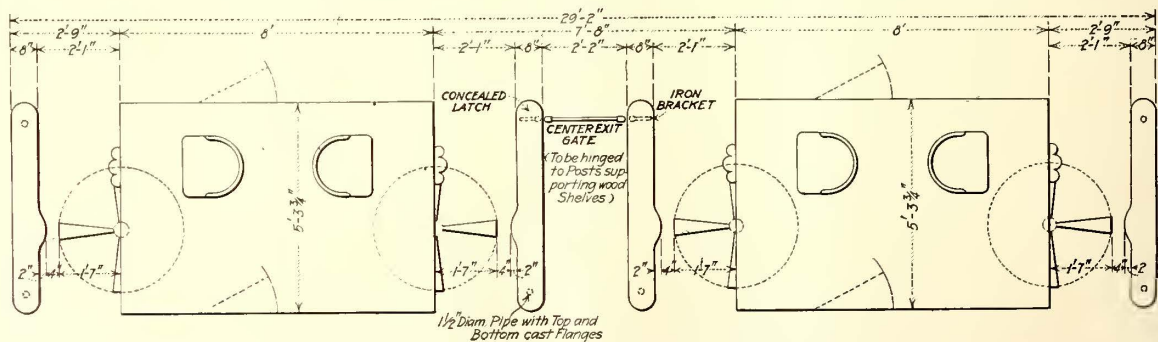
Avenue over which its Chester Short Line cars are operated. This line serves a number of industrial plants in the vicinity of Chester, Pa., notably the Essington works of the Westinghouse Electric & Manufacturing Company, the Eddystone Ammunition Company, the Baldwin Locomotive Works, and the Sun Shipbuilding Company, and even before the Hog Island development started carried a very heavy rush-hour traffic. A number of cars are operated as trippers between the industrial plants named and the carhouse at Woodland Avenue and Forty-Ninth St., the passengers from these cars transferring to some one of the lines intersecting the route of the Chester Short Line near the carhouse.

The new extension to the tracks of this company, which was officially opened on Aug. 3, and is shown by the dash lines on the map, is a double-track way along a newly opened extension of Island Road. The distance from Eastwick Avenue and Island Road to the shipyard property line, where the terminal loop commences, is about 9000 ft. A comprehensive scheme of power distribution system reinforcement, including new feeders, primary power cables, additional converter capacity

With the extension in operation some rerouting of existing lines has been necessary in order to avoid serious overloading of the cars on the Chester Short Line route.

While the extension was under construction the company gave partial service to a large number of Hog Island employees through a shuttle steam line of the Shipbuilding Company which ran to Ninety-Fourth Street and Eastwick Avenue where the electric cars were boarded. The Philadelphia & Reading Railroad and the Pennsylvania Railroad also operated workmen's trains which carried from 8000 to 12,000 people to the terminal stations of these companies, from which about 50 per cent of the riders used the lines of the rapid transit company to reach their homes. It is estimated that the P. R. T. handled thus more or less indirectly some 15,000 employees of the shipyard before the extension was built. This number probably will be increased approximately 50 per cent when full operation of the new extension is reached.

One of the problems imposed by this heavy rush-hour traffic is that of getting sufficient train crews to operate



GENERAL ARRANGEMENT OF THE PASSIMETERS AND BOOTHS

in existing substations and a new substation at the junction of Eastwick Avenue and Island Road, has been worked out. To carry the passengers, 100 new large double-truck, double-end cars equipped with longitudinal seats have been purchased from the J. G. Brill Company. These cars, the main specifications for which were published in the *ELECTRIC RAILWAY JOURNAL* for March 16, 1918, page 552, are equipped with multiple-unit control for two- and three-car train operation. Most of these cars have been delivered, and it is expected that all will be in service by October.

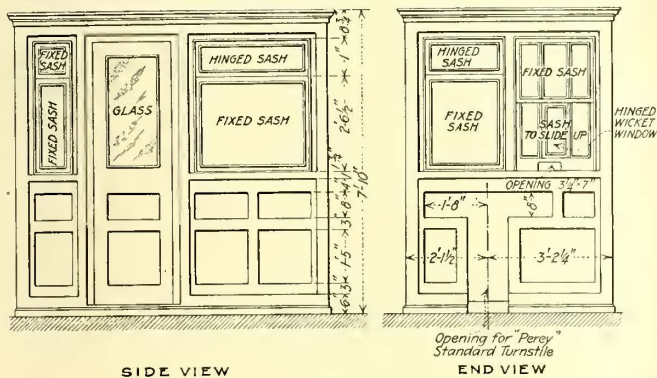
the cars. While the company is fortunate in having for the groundwork of its operating force 50 per cent of the total normal number of trainmen who have been in its employ five years or more, the matter of getting extras for the peak period has been a most serious one. Just now it is using the part-time services of about 150 men who are regularly employed in other industries but who some time in the past have been employees of the railway company. These men give great assistance in caring for the Saturday and Sunday park and pleasure resort peaks. For the other days in the week clerks and

general office employees of the company who volunteer for the work, together with some workmen who are free from their regular duties during the rush-hour periods, take care of the morning and evening peaks.

Until recently all employees at the shipyard not using the steam roads were either within walking distance or were carried by boats on the Delaware, by trucks or by private automobiles.

THE PHILADELPHIA RAILWAYS CARRIES SHIPBUILDERS

As was noted in the news columns of the *ELECTRIC RAILWAY JOURNAL* for July 20, 1918, page 126, the other electric line operating in Hog Island vicinity, the Philadelphia Railways, started to give partial service into South Philadelphia on July 15. This company has a small suburban line with a terminal at Third and Jackson Streets, and thus serves a community in which many workmen live. The line crosses the Schuylkill River at the old Penrose Ferry Bridge. When first constructed



SIDE AND END ELEVATIONS OF COLLECTION BOOTH

the road branched just beyond the bridge, one branch extending in a westerly direction and paralleling for some distance the Chester Short Line of the Philadelphia Rapid Transit Company. The other branch meandered across the marsh to a ferry which crossed the backwater channel to Hog Island. Service on the latter branch was abandoned years ago although the old roadway still remained. This old branch has been rebuilt into a double-track line on a new highway extending from Hog Island to the Penrose Ferry Bridge and the entire line into Philadelphia has been greatly reinforced. The power system has been rejuvenated and thirty second-hand cars have been purchased for the Hog Island service. At Hog Island physical connection is made with the Philadelphia Rapid Transit Company line as both companies use the same terminal loop. When in full operation it is expected that this line will give service to approximately 7000 shipbuilders.

A PREPAYMENT TERMINAL IS USED AT THE SHIPYARD

This terminal is on government property and extends for nearly a mile along the back of the shipyard. Its tracks divide the government property into two parts; one between the river and the terminal containing the yard, the other the section occupied by steam railway terminals, hotels, workmen's barracks and other accessory buildings. As shown on an accompanying line cut, the terminal consists of a loop with two groups of loading and unloading platforms. These platforms are located with reference to the main entrances to the shipyard. The railways, while using the loop jointly, have

separate loading and unloading platforms. The platforms used by the Philadelphia Rapid Transit Company contain each four double-gate passimeter booths, or thirty-two turnstiles in all. Of these one-half are on the loading platforms and the other on the unloading platforms where a post-payment fare is collected. The reason for this is that the line into Philadelphia has been divided into two 5-cent zones, the dividing line being at Eastwick Avenue and Island Road. A 5-cent fare is collected of passengers as they enter the cars going toward the shipyard. As the cars are crowded, a post-payment collection of the other zone fare seemed more advisable than an attempt to go through the car at the zone line. On the return trip a 10-cent fare is collected at the loading platform before the passenger enters the cars. As there are practically no stops between the terminal and the first zone limit any passenger leaving the car within the zone will have 5 cents rebated to him by the conductor. The procedure on the Philadelphia Railways is somewhat similar except that the post-payment fare is 3 cents and the total fare from the shipyard to any point beyond the Penrose Ferry Bridge is 8 cents.

The turnstiles are arranged in pairs, one on either side of the collection booth. From the booth the passengers proceed in two streams, one entering the front end of a car and the other the rear end. The employees, while giving some trouble at the start, keep in line very well. The excellent police system of the shipyard, of course, renders good service in this connection.

Special loading tracks are provided in front of the platforms so that loading cars may not obstruct traffic on the loop. Train sheds protect the turnstiles and platforms.

The terminal, with the exception of the overhead lines which were built by the Philadelphia Rapid Transit Company, was constructed by the American International Shipbuilding Corporation after plans drawn up by the rapid transit company with the co-operation and assistance of the transportation experts of the Emergency Fleet Corporation. It is hoped by the corporation officials that once the terminal is in full operation the steam roads will be relieved of caring for the passenger traffic.

Everybody Can Make Small Savings

S. G. McMEEN, president Columbus Railway, Power & Light Company, issued recently to the company's employees a little folder to enlist their co-operation in making small, as well as large, savings. Among his suggestions were these: "Remember that material is money. There are many ways of making small savings in all departments and these will have a large influence upon operating costs. Consider the following, for savings can be made in the ways suggested:

"A conductor threw away a broom when it was only slightly worn. A new one costing 63 cents had to be given him—a needless waste.

"A motorman dropped a vestibule window and broke the glass, when he might as easily have lowered the sash slowly. The glass cost 91 cents. Scores of them are needlessly broken every year.

"Trolley men repairing the line left a coil of wire, which cost 15 cents a foot, beside the track. They only forgot to pick it up but they might just as well have thrown away several dollars in silver; the effect would have been the same."

Get Behind the Fourth Liberty Loan

Once Again the Electric Railway Industry Has an Opportunity to Show What Team Work Can Do in the Nation's Interest



THE CAMPAIGN FOR THE FOURTH LIBERTY LOAN begins on Sept. 28 and closes Oct. 19. Details as to the amount of the issue or interest or maturity had not been announced at the time this paper went to press, but in all probability the American people will be called upon to pour out more money in a shorter time than ever before. Rapid and efficient work, and prompt and liberal subscriptions, are therefore needed.

The news of the day gives inspiration for a great effort. The cracks in Germany's armor are hourly becoming more apparent, and it is only a question of time until a just and lasting peace can be secured. Germany is not invincible but highly vulnerable. The Huns are not yet defeated, however, and any suspending or even slackening of effort would be folly. Now, even more than before, the nation must stand united and firm.

Hence, push the Fourth Liberty Loan. The thorough, careful organizing of every part of the country to raise five or six billions of dollars is a mammoth undertaking, but it can be done. To help bring this about every electric railway, every employee, must feel individual responsibility. As described in the ELECTRIC RAILWAY JOURNAL of March 30 in the case of many representative companies and again in the following letters from additional leading companies not canvassed before, electric railways have exhibited a patriotic support of the previous loans, and the work will now be continued. But a 100 per cent subscription record for the employees of every company and for the industry—that's the record that should be made in the coming campaign!

United Railways, St. Louis, Mo.

RICHARD McCULLOCH, *President*

Subscriptions to Liberty Loans by the employees of the United Railways have been made as follows:

First Liberty Loan, 788 employees	\$39,500
Second Liberty Loan, 2679 employees	109,500
Third Liberty Loan, 4968 employees	270,800
Total, 8435 employees.....	\$419,800

In the case of the Third Liberty Loan, every employee subscribed for at least one bond.

In some cases the bonds were paid for in full, but in most cases the company subscribed for the bonds in the name of the employees, the employees signing an agreement that they would pay a certain amount each month. The minimum payment was \$2 a month for each \$50 bond. In a number of cases, however, the employees voluntarily agreed to pay more than this minimum.

More than \$60,000 of the bonds of the First and Second Liberty Loans have already been paid in full, and \$35,000 of the bonds of the Third Liberty Loan have been paid for in full.

Where the employees have discontinued the payments, the company has taken over the bonds. There have been few cancellations by employees still in the service of the company.

The method of carrying on the Third Liberty Loan campaign was as follows: Each department and each carhouse appointed a committee to solicit

loans. The advertising furnished by the national government was conspicuously displayed on the premises of the company and on the fronts of the cars. A sign indicating the subscriptions up to date was carried on the fronts of the buildings, and when any department succeeded in getting subscriptions from all of the employees, this fact was conspicuously advertised on the fronts of the buildings. The various committees were very energetic, and a great deal of enthusiasm was displayed.

Pittsburgh (Pa.) Railways

P. N. JONES, *General Manager*

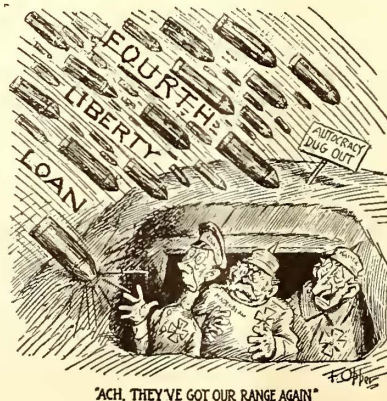
For the former issues of Liberty Loan Bonds we did not carry window notices, posters or display cards in the cars, nor were there any parades held in which the railway could participate

with the use of floats and similar advertising inducements.

In the case of the Third Liberty Loan we got a late start, as we had given some of the women's auxiliaries committees permission to collect the subscriptions of bonds in our several carhouses and in some of the shops. After they had had five days' collecting, we were asked by the central industrial committee, having charge of the loan in Allegheny County, to make a general canvass among the men ourselves. In the remaining time of the campaign we succeeded in obtaining 2500 and odd subscriptions for a total of about \$150,000.

In the coming campaign we will use the same methods as formerly. Each shop and carhouse will have its own committee to take up the subscriptions with the original payment, which will be turned over to the designated banks by a general committee in the office. In this way at the time of the Third Loan we worked up considerable friendly rivalry between the operating, mechanical and way departments and in a great many instances had 100 per cent subscriptions.

We have given some consideration to either a wooden or a cardboard sign on which we will have painted two designs representing thermometers, one giving the number of employees in the department and the other the total amount subscribed. We believe these will induce our men to subscribe through the company and the general



The Nation Needs 100 Per Cent Record

Representative Companies Not Canvassed Before Report that Efforts Made in Preceding Campaigns Will Be More Than Equalled

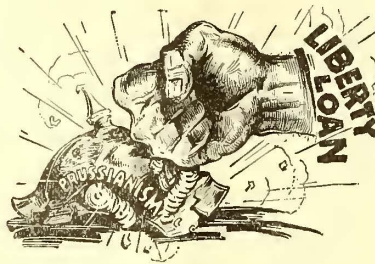
industrial committee, and also keep the interest alive during the entire period of the coming campaign. Naturally, we will have meetings at the larger shops and carhouses with good speakers to explain the progress the nation has made in the war, as was done in the previous campaigns in Allegheny County.

With a company having as many carhouses as we have, we believe that friendly rivalry between the several points is the best method of arousing interest and "keeping all on their toes."

Puget Sound Traction, Light & Power Company, Seattle, Wash.

A. W. LEONARD, President

The Puget Sound companies under the management of Stone & Webster formed a Liberty Loan Club to urge the necessity of subscriptions to the bonds. It was the desire of the club that as



many employees of the companies as possible should avail themselves of the opportunity for patriotic service, and the club made the purchase of bonds an easy matter.

Under a plan arranged by the club payments by employees could be made as follows: Subscription was received from any employee, 10 per cent to be deducted from the next pay check succeeding the receipt of the subscription. Each month thereafter deductions were made at the rate of 10 per cent till the full amount of the subscription has

been deducted. The final deduction included the adjustment of the accrued interest on the bond to the date of final payment.

In subscribing for bonds the employee was required to sign an order on the assistant treasurer to make the necessary deductions on the payroll and also a formal subscription blank authorizing the subscription for the bond in the denomination desired. Both forms could be secured from any department head or Liberty Loan Club director, any of whom were glad to answer any question regarding the plans and purposes of the club. The plan worked out very successfully for the First, Second and Third Liberty Loans and will be followed for the next one.

To interest the public we carried advertising matter inside of all cars. This matter was prepared by the local city Liberty Loan Committee. We also donated space in the local newspapers for the use of this committee.

LIBERTY LOAN CLUB

PUGET SOUND COMPANIES

UNDER MANAGEMENT OF
STONE & WEBSTER

SEATTLE DIVISION

A. W. LEONARD, President A. L. KEMPSTER, Chairman, Board Directors J. M. WILMOT, Secretary FRANK DAGNEY, Treasurer
W. H. McGRATH, Chairman Executive Committee

Seattle, May 28, 1917.

EXECUTIVE COMMITTEE

A. W. Leonard
A. L. Kempster
H. J. Gille
Frank Dabney
W. E. East
E. A. Balfour
A. J. Falgout
W. B. Donaldson

DIRECTORS

O. B. Ayres
L. E. Allen
E. P. Buck
W. A. Burrell
E. W. Clark
W. J. Cochran
A. O. Campbell
J. P. Dabney
W. Dick
J. Fairbank
C. N. Freeman
W. Gordon
L. R. Grant
W. N. Oostlander
H. Bull
O. Huntington
G. A. Hawley
L. E. Horns
D. W. Henderson
C. A. Hedley
F. M. Hamilton
W. L. Harvey
L. W. Jones

To Members of the Organization:

The Liberty Loan Club is formed to urge the necessity of subscriptions to the Liberty Loan of the United States Government and to secure subscriptions to this Loan from every one throughout the Puget Sound Companies under Stone & Webster management.

The United States Government, to meet immediate war needs, has asked the people of this country for subscriptions to \$2,000,000,000 United States Government 15-30 year 3½ per cent. bonds of the Liberty Loan, dated June 15, 1917, and issued in denominations of \$50 and upwards.

In his message to Congress, declaring this war, President Wilson said: "To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured. God helping her, she can do no other."

In placing the first British war loan, the Chancellor of the Exchequer said: "The man, be he rich or poor, is little to be envied who at this supreme moment fails to bring forward his savings for the security of his country"

Our country is at war with the most powerful and resourceful foe that the world has ever known.

This most frightful war of all the ages has devastated Europe for nearly three years and at last it has reached our shores.

We now must fight—not from choice but from necessity.

The result must be decisive; we must by our effort insure success; otherwise the life of no American man, woman or child will ever again be what it has been in the past.

What must we give to this war?

Men and money.

The draft will soon provide a million or more men.

We must equip these men and send them to the front.

EXECUTIVE COMMITTEE

G. A. Richardson
John Harshbarger
M. T. Crawford
George S. Quinn
J. M. Wilmot
J. F. Conway
W. L. Locke
H. S. Elliott
DIRECTORS
S. C. Lindsay
J. Liddle
G. W. Larson
E. V. Murch
G. A. Merrill
E. J. McIlraith
J. V. Messinger
A. W. Mathis
J. D. Rice
D. T. Pierce
A. Pohl
J. Ruppe
A. C. Rizzo
H. Stout
G. C. Sears
W. J. Faustinger
R. E. Thutcher
C. F. Torack
W. J. Verran
E. A. Wiclow
O. N. Wiswell
L. A. Wallon
L. D. Jones

We must raise \$2,000,000,000 now to help ourselves and our Allies win the fight in Europe.

We cannot all fight at the front—some are women, some are boys, and some are disqualified—but if our sons and brothers can fight with their lives, we at least can fight at home with our money. It is our privilege and our duty to do so.

Few can give a million dollars but many millions can give a few dollars.

In Great Britain one in every six subscribed to the last War Loan of \$5,000,000,000—they averaged \$625. One in six in this country would mean 17,000,000 subscribers, whereas it is estimated that there are only 250,000 people who ordinarily buy bonds. This emphasizes the necessity of every American citizen making this business his business.

But subscribing to the Liberty Loan is not giving money.

It is investing in 3½ per cent. United States Government bonds, free from all taxes except estate or inheritance taxes; no security could be stronger. The rate of interest is as great as that paid by many savings banks.

But all considerations of interest rates should be thrust aside. The main facts of necessity, of patriotic duty, of moral obligation, lead to but one conclusion,—

Every one of us is vitally interested that the Liberty Loan should be promptly and fully subscribed for. Willingly, cheerfully, we must help in furnishing the means to win our fight, "that the nation, under God, shall have a new birth of freedom and that the government of the people, by the people, for the people, shall not perish from the earth."

SUBSCRIBE NOW!

Applications should be made on the accompanying blank and sent to the Executive Committee, whose names appear on this circular, from whom further information, if desired, may be obtained. All services are, of course, without charge.

LIBERTY LOAN CLUB,
Puget Sound Companies, under Management of
Stone & Webster,

By A. W. Leonard,
President.

Portland Railway, Light & Power Company, Portland, Ore.

C. N. HUGGINS, *Treasurer*

The campaign for handling the Third Liberty Loan among our employees was supervised by the treasurer. This official appointed a campaign manager, selected for his special ability in such matters, to select committeemen for soliciting subscriptions from employees in the various departments. Committees of three were appointed at each



of our four carhouses, and smaller committees at the various shops, power plants and headquarters buildings for maintenance-of-way, office and other departments.

Prior to the solicitation of subscriptions, these committeemen were brought together and fully instructed by the campaign manager and the treasurer in the methods to be followed, and were made familiar with all conditions of the bonds, manner of payment, etc. Upon the date when subscriptions began, these committeemen devoted their entire time to active solicitation until the job in their particular departments was completed. In most instances this work was finished in twenty-four hours, although at the carhouses, shops, interurban railway points and maintenance-of-way headquarters two or three days was required, it being a part of the plan that every individual employee should be solicited.

In the Third Loan campaign our company made installment terms somewhat different from the government terms in order to spread the payments more conveniently over the period. These terms were cash with subscription, 10 per cent; deductions from May payroll, 20 per cent; deductions from June payroll, 20 per cent; deductions from July payroll, 20 per cent; deductions from August payroll, 20 per cent; deductions from September payroll, 10 per cent. Interest on the deferred balance was charged at the government rate of 4½ per cent. Regular employees so wishing were permitted to make their payments at the treasurer's office in cash instead of by deductions from payroll. All handling of the subscriptions after these were received and turned in has been done by the treasury department. The success in the third and prior drives was very gratifying, and we expect to follow practically the same plan in handling future loans among employees.

In the matter of advertising Liberty

Bonds to the general public, we followed no special program, merely displaying posters and advertising cards furnished by the United States Treasury Department.

Michigan Railway, Jackson, Mich.

J. W. GLENDENING, *Treasurer*

In connection with Liberty Loan campaigns we send out to all the employees a circular, soliciting the purchase of bonds and advising that the company will carry these and make deductions from wages as follows: 10 per cent of the total amount of the bond on the first payday after subscription, and 5 per cent each pay day thereafter until the bond has been paid for.

We have found that the number of bonds purchased by the employees has increased considerably for each issue, and we expect to carry out a similar plan for the fourth issue. We anticipate that subscriptions to this issue by the employees will be considerably larger than for any previous subscription.

In order to reach the public also we carry on our cars and place in our stations posters furnished to us by the Liberty Bond committees.

United Railways & Electric Company, Baltimore, Md.

T. A. CROSS, *President*

The company purposes to conduct an energetic campaign among its employees for the Fourth Liberty Loan, and all the employees have been requested to make their subscriptions exclusively through the company. As shown by the announcement reproduced herewith, the company wants a 100 per cent record among its employees.

THE UNITED RAILWAYS & ELECTRIC
Co., OF BALTIMORE

"WE WANT A 100% RECORD"

Baltimore, Md., September 4, 1918.

TO EMPLOYEES OF THE
UNITED RAILWAYS & ELECTRIC
COMPANY:

As you are doubtless aware, the FOURTH LIBERTY LOAN is about to be launched by our Government to provide the sinews of war. The three Loans previously issued met with glorious success, and it is essential, in order that the German Imperial Government may know that American people are unwavering in their determination to bring about a speedy and successful termination of this world-wide conflict, that every citizen of the United States embrace the privilege of subscribing to the forthcoming Loan.

This Company proposes to conduct an energetic campaign among its employes, and all are requested to make their subscriptions exclusively through the Company. We want every United employe to buy a FOURTH LIBERTY LOAN BOND. WE WANT A 100% RECORD; our country needs a 100% record.

Hundreds of our boys are in the military service "Over There," and it will be of immeasurable comfort to them to know that their fellow-employes "Over Here" are in every respect UNITED behind them.

T. A. CROSS,
President.

New Orleans Railway & Light Company, New Orleans, La.

H. A. FERRANDOU, *Treasurer*

The previous Liberty Loan campaigns were handled by making a canvass of the general offices, carhouses, powerhouses, shops, etc., to obtain subscriptions from employees.

The subscriptions were paid by deducting from the payrolls semi-monthly \$2 for each \$50 bond subscribed for, and the amount so deducted was turned over to the banks through which the subscriptions were placed. As the bonds were paid for they were turned over to the subscribers.

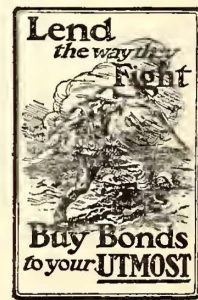
The plan we will follow in the next campaign has not yet been determined, but it probably will be the same as the past one, for this has proved very successful.

Utah Light & Traction Company, Salt Lake City, Utah

H. F. DICKE, *Manager*

As to the method followed in previous Liberty Loan campaigns, we made it a point to have someone solicit a subscription from substantially every person in our employ. The company arranged to purchase bonds for our employees in the sum of total subscriptions and then permitted employees to pay for their subscriptions on the basis of 10 per cent per month. We found that this permitted practically every employee to subscribe for at least one \$50 bond and many of them for two or three of such bonds. We purpose to follow this same plan for the fourth campaign.

With respect to advertising, we cooperated with the advertising committee of this city in sending out a street car several hours during the middle and at the close of each day of the campaign. This car had large posters on each side of it. On several occasions a band was taken out in the car.



Denver (Col.) Tramway

J. C. DAVIDSON, *Publicity Manager*

In past Liberty Loan campaigns tramway employees could subscribe for the bonds either through the company or through one of the banks. The tramway terms were the same as those of the banks—that is, \$5 a month with interest on a \$50 bond, \$10 a month with interest on a \$100 bond, etc. This plan was very successful, and we are

going to handle the Fourth Liberty Loan in the same manner.

Car cards, posters and dashboard cards (large cardboard signs on the front of all cars) were used exclusively. In order to make them more conspicuous the posters were printed in blue ink with a red border on white paper. We also devoted an issue of our bi-weekly publication to the public, *Tram-O-Grams*, to this work.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.

S. B. WAY, *Vice-President and General Manager*

All employees of the company, in previous Liberty Loan campaigns, have been individually canvassed by members of the company Liberty Loan committee. These committeemen were appointed from each department, the number being proportionate to the number of employees in each department. Each employee was canvassed and the advantages of the security offered, as well as the opportunity given to participate in helping the government, were pointed out.

In view of the limited resources of a large proportion of the men, we considered the campaign eminently successful. On the basis of this experience, we presume that the same plan will be followed in the campaign to be undertaken beginning Sept. 28.

We carried dash signs and car cards in the cars, and employed posters on

all company property. We also distributed Liberty Loan literature to our employees.

Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.

ROBERT I. TODD, *President*

In the previous campaigns, on account of the unfortunate conditions prevailing in Indianapolis because of our inability to secure an increased rate of fare and, consequently, to grant increases in wages to our employees which would enable them to subscribe to any great extent to the several Liberty Loans, it was impossible for us to take a very active part in pushing the sale of bonds.

On the interurban lines posters were distributed over the various divisions and placed in all stations and waiting rooms; stenciled signs were used on the windows of the cars and stations;

and committees were formed to secure subscriptions from employees. On the Indianapolis city lines we organized committees of inspectors, carhouse foremen and representative employees, who went out and solicited subscriptions from the trainmen, carhouse, shop and power station employees. Posters were placed on the billboards on the front dash of the city cars, signs were stenciled on the car windows, and space in the Traction Terminal station was utilized for large poster advertising furnished by the government.

We felt that in view of the conditions under which we were operating the amount of subscriptions secured through the company's committees was most favorable. We have made no definite plans in regard to the campaign which will begin on Sept. 28, other than probably to follow very closely along the lines mentioned above.

Ohio Electric Railway, Springfield, Ohio

H. G. GILPIN, *General Manager*

Previous Liberty Loan campaigns have been handled throughout this neighborhood without special offer on the part of this company to its employees of these bonds. We have had a number of men, however, purchase bonds throughout the district covered, buying in their respective localities as the homes of our men are scattered over a large territory. We have had Liberty Loan posters displayed in our stations throughout the entire property.



Lend Him A Hand

Engineers Get Together on Standard Car Design

Significant Meeting of Experts Was Held at Washington at the Request of the United States Housing Corporation

A MEETING of a number of railway car builders and transportation experts was held at Washington, D. C., on Sept. 12 for the purpose of considering the designing of a new type of standard electric railway car. The experts were called together for conference at the suggestion of O. M. Eidlitz, director United States Housing Corporation. He asked E. C. Faber, manager of the War Board of the American Electric Railway Association, to bring the experts together in the hope that they might be able to assist in designing a car which would be interchangeable among the electric railway lines of the country. Such use would be as a war measure.

Following are the names of the men who participated in the conference: A. L. Drum, consulting engineer, Chicago, Ill., at present associated with the Philadelphia Rapid Transit Company; Gardner F. Wells, manager transportation division United States Housing Corporation; Garrett T. Seely, assistant director transportation and housing division United States Shipping Board; H. H. Adams, superintendent of shops and equipment Chicago Surface Lines; J. H. Hanna, vice-

president Capital Traction Company; John Lindall, superintendent of rolling stock and shops, Boston Elevated Railway; C. O. Birney, Stone & Webster and American Car Company; M. B. Lambert, assistant manager railway department Westinghouse Electric & Manufacturing Company, and J. F. Layng, General Electric Company, now serving with the United States Fuel Administration.

At its meeting the conference committee elected Mr. Drum as chairman, and proceeded thoroughly to discuss the requisites in a standard car of the type desired. As a result it was decided to commit the details of the design to a sub-committee shortly to be appointed. This subcommittee will at once take up a thorough analysis of the subject and prepare a report for consideration by the conference committee at the earliest possible moment.

National Safety Council Report

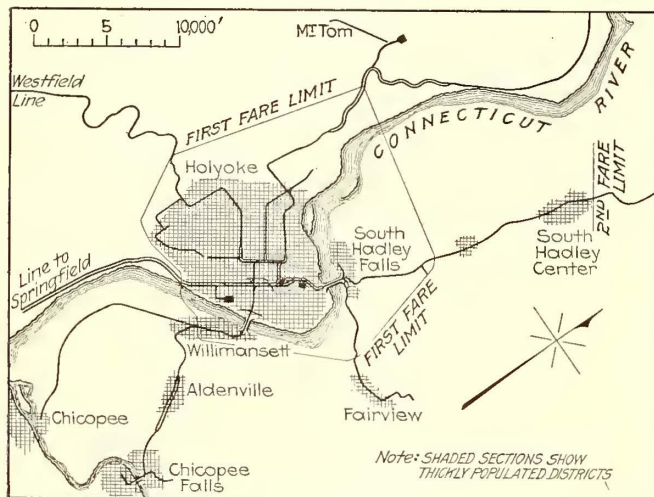
General Manager W. H. Cameron, who directs the activities of the National Safety Council, has presented to the members his annual report. It shows an income for the year of about \$120,000, invested funds of about \$17,000 and cash in bank of \$7,000. During the fiscal year ended July 31 the membership increased by 306 to a total of 3606. This included 16,000 representatives and 6,000,000 employees.

Why Holyoke's Zone Fares Are Insufficient

Commission's Amendment of Company's Request Brings Only \$55,000 Annual Increase—More Revenue Obtainable Without Raising Base Fare of 5 Cents—Important Factory Shut - Down and Loss of Young Men Reduce Riding

ON FEB. 17, 1918, the Holyoke Street Railway inaugurated a fare system based on one 5-cent fare for the inner zone or any one zone with two 5-cent cash fares or six-for-40-cent tickets (6 $\frac{2}{3}$ cents) for two zones for one group of lines, and two 5-cent cash fares or forty tickets for \$3 (7 $\frac{1}{2}$ cents) for another section of the system. The first group consists of the lines to Springfield, Chicopee Falls, Chicopee, Fairview and South Hadley Center, and the second section, the lines to Westfield and Smith's Ferry.

The tickets on the Westfield line are good only between the hours of 5.30 and 7.30 in the morning, and 5 and 7 in the evening and are not good on Sundays and holidays. The six-for-40-cent tickets are purchasable from the conductors on cars. The Westfield and Smith's



MAP OF HOLYOKE SYSTEM SHOWING ZONE FARE LIMITS

The fare from any point to any point within the first fare limits is 5 cents, and that from any point within the first fare limits to any point up to the second fare limit on the Chicopee, Chicopee Falls, Springfield and Fairview lines is two 5-cent cash fares, except that tickets are sold at the rate of six for 40 cents which give the same ride as two 5-cent fares, as described in the article.

Ferry tickets are purchasable at the office of the company. The company also issues tickets in books of 100 for \$5, good in any one zone except on the Amherst and Sunderland division, where the unit of fare is 7 cents. Books containing ten and 100 tickets for school children are sold at 2 $\frac{1}{2}$ cents a ride in any one zone, except on the Amherst and Sunderland division, where they are 3 $\frac{1}{2}$ cents and good for a ride in any one zone. School tickets are purchasable only at the company's office, and children purchasing these tickets are required to have a certificate from the superintendent of schools.

Full details of the old and new Holyoke fare systems appeared in the *ELECTRIC RAILWAY JOURNAL* for Jan. 12, 1918. The zone diagram on page 458 is reproduced from the earlier article.

In making application for a fare increase the company had presented a schedule which on the basis of industrial conditions then existing was expected to in-

crease the gross revenue by 20 per cent or \$135,000 per annum. The changes made by the Massachusetts Public Service Commission reduced the estimated relief to \$110,000, and the actual result has been an increase at the rate of only \$55,000 per annum. This compares with a former normal annual increase of \$30,000 to \$35,000 or about 5 per cent of the gross earnings.

As shown in the zone map, the rates of fare are certainly extremely low. For 5 cents a passenger can ride with or without a transfer anywhere within a 2-mile or greater radius of the City Hall of Holyoke, which means a possible ride of 4 miles. In addition, a ride to Mountain Park, 4 miles from the City Hall, is obtainable for 5 cents. This exception was made so that the people of Holyoke could ride to this park for one 5-cent fare. There are also 5-cent inner zones in Chicopee Falls and other communities but these are of relatively small importance.

In general, about 50 per cent of the riders still pay only 5 cents.

DRAFT AND LABOR LOSSES IMPORTANT FACTORS

For the disappointing showing in revenue there are reasons sound enough and important enough to indicate that it is not due to any dislike of the zone system. In fact, the majority of the people favor it. The few malcontents are to be found chiefly in Fairview where the 6 $\frac{2}{3}$ -cent ticket or 10 cents cash has replaced an 11-mile ride for 5 cents, and also among suburban realty owners who had capitalized the ruinous 5-cent fare for their own benefit.

The principal causes for the decrease in riding as indicated by the accompanying tables are these:

The withdrawal for army service of 5000 to 6000 men out of a population of 100,000. As these men are between the ages of 21 to 30, they were obviously the best spenders, and accounted in that respect for, say, 12 per cent of the outgo of the community. Their absence has been felt not by the railway alone, but by the theaters and other places of amusements.

The increased cost of the longer rides has discouraged pleasure travel, which is quite a feature in this picturesque territory. Of course, the loss of this kind of travel can be borne with some equanimity since it is the short-haul rider, the backbone of the electric railway, who has had to subsidize the long-haul rider.

The voluntary and involuntary economies which the thrift campaigns and the increased cost of living have fostered.

Finally, the reduction of the working force of the Westinghouse factory at Chicopee Falls whose employees, 1200 to 1500 in number, rode back and forth over the lines of the company.

For the first twelve days of the zone system, Feb. 17 to 28 inclusive, the receipts on the Holyoke Street Railway increased \$346.10 over the corresponding period of 1917 or \$28.84 a day. Against this, however, was

TABLE I—SHOWING PASSENGER REVENUE, CAR-MILES AND EARNINGS PER CAR-MILE OF HOLYOKE STREET RAILWAY FOR FIRST THREE MONTHS OF 1918

Lines	January					February					March							
	Passenger Revenue in 1918	Increase Over 1917	Car-Miles, 1918	Increase Over 1917	Earnings per Car-Mile, Cents	Increase Over 1917	Passenger Revenue in 1918	Increase Over 1917	Car-Miles, 1918	Increase Over 1917	Earnings per Car-Mile, Cents	Increase Over 1917	Passenger Revenue in 1918	Increase Over 1917	Car-Miles, 1918	Increase Over 1917	Earnings per Car-Mile, Cents	Increase Over 1917
Route 1.....	\$7,285	d\$550.55	18,570	d1,217.39	23.23	d.37	\$6,334	d\$1,011.85	16,809	d865.37	68	d3.93	\$6,751	d\$1,111.61	19,126	d1,730.35	30	d2.40
Route 2.....	13,217	64.30	33,665	d2,517.39	25.2	2.91	11,880	d1,700.17	31,049	d1,768.38	26	2.06	13,437	203.06	35,148	d2,173.38	23	2.77
Route 3.....	2,518	592.24	8,010	d39.31	44	d2.49	2,345	624.76	7,287	86.32	18	8.29	2,411	488.05	8,105	132.29	75	5.61
Route 4.....	4,429	d868.40	16,960	d6,182.26	12	3.23	4,081	d568.44	15,028	d5,552.27	16	4.57	5,280	141.04	17,065	d6,140.30	94	8.79
Route 5.....	7,808	d735.30	16,698	d6,004.46	76	9.19	7,926	343.26	14,638	d5,888.54	15	17.21	9,989	1,072.40	15,944	d7,610.62	65	24.78
Route 6.....	8,577	d2,111.30	20,340	d1,042.42	17	d7.82	7,746	d1,730.83	19,582	411.39	56	d9.88	9,646	d1,517.84	22,693	d2,610.42	50	d1.61
Route 7.....	2,781	d64.63	13,777	d5,157.20	19	5.16	2,985	416.53	12,948	d5,162.24	78	9.85	4,359	1,201.39	13,493	d5,651.32	31	15.81
Route 8.....	3,303	d326.57	24,199	d3,704.13	65	6.4	2,961	d404.05	19,774	d4,756.14	98	1.26	4,166	110.39	24,190	d3,651.17	22	2.65
Total.....	\$49,922	d\$4,000.21	152,219	d25,902.32	80	2.53	\$46,260	d\$2,328.90	136,215	d23,497.33	96	3.54	\$56,042	\$586.88	155,770	d29,433.35	98	6.04

d Decrease.

Route 1.....	Highland & South Hadley Falls	Route 5.....	Springfield
Route 2.....	South Hadley Center & Elmwood, Chicopee & Elmwood	Route 6.....	Chicopee Falls
Route 3.....	Oakdale & North Pleasant St.	Route 7.....	Northampton
Route 4.....	Fairview and Westfield	Route 8.....	Amherst & Sunderland & Hampshire

the fact that for the first sixteen days of February, 1918, at the old rates the receipts had been \$2,290.90 or \$143.18 a day less than for the same period of 1917. Therefore, the new rates must be credited with both the actual increase (\$28.84) and the probable decrease (\$143.18) or an average daily increase of \$172.02. The earnings for the first six months of 1917 and 1918 are presented in Tables I and II.

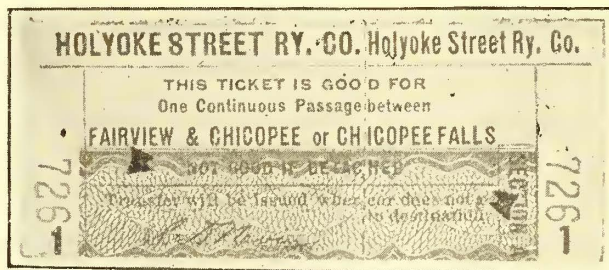
It will be seen that for January, before the zone fare was installed, there was a drop in revenue of \$4,000.21. Partial zone operation cut the February loss to \$2,328.90. In March there was an increase of \$586.88. In April the closing of the Westinghouse works at Chicopee Falls cut the increase to \$168.55 as the Chicopee Falls line fell back \$1,638.48. In fact, if the Chicopee Falls line had but held its own the increases would have been as follows:

	Theoretical	Actual
March.....	\$2,104.72	\$586.87
April.....	1,807.03	168.55
May.....	5,538.10	4,111.88
June.....	2,506.84	1,756.21

The drop in Springfield riding, shown for June, is doubtless due to the heavy increase in fare hereinafter noted.

That careful watch has been given to the car mileage is indicated by the fact that the car-miles were re-

duced on all lines but Oakdale and North Pleasant Streets. In some cases short-haul service has been added while decreasing the mileage as a whole. With approximately a 15 per cent reduction in the car mileage and the loss of between 5000 and 6000 men in the communities served, the gross earnings of the company, it is estimated, will be about 2 per cent more than they were for the year 1917. If the rates asked



TWO-ZONE TICKET USED IN HOLYOKE

for by the company had been allowed by the Public Service Commission, it would have increased the revenue approximately \$40,000.

In regard to the results of the adoption of the zone system for increasing revenue, it may safely be said that if the men who have left for the war, approximately 6000, had remained in the community, assuming that

TABLE II—SHOWING PASSENGER REVENUE, CAR-MILES AND EARNINGS PER CAR-MILE, HOLYOKE STREET RAILWAY FOR SECOND THREE MONTHS OF 1918

Lines	April					May					June							
	Passenger Revenue in 1918	Increase Over 1917	Car-Miles in 1918	Increase Over 1917	Earnings per Car-Mile, Cents	Increase Over 1917	Passenger Revenue in 1918	Increase Over 1917	Car-Miles in 1918	Increase Over 1917	Earnings per Car-Mile, Cents	Increase Over 1917	Passenger Revenue in 1918	Increase Over 1917	Car-Miles, 1918	Increase Over 1917	Earnings Per Car-Miles, Cents	Increase Over 1917
Route 1.....	\$6,269	d\$902.23	18,894	d1,375.33	18	d2.20	\$8,597	\$358.00	23,154	d1,840.32	78	d\$0.19	\$10,529	d\$111.80	28,199	d2,665.37	41	2.98
Route 2.....	13,111	500.93	34,573	d2,001.37	92	3.44	13,775	1,058.24	36,069	d1,370.38	19	4.23	13,619	650.04	35,511	d869.38	43	2.73
Route 3.....	2,107	473.87	7,960	310.26	47	5.12	2,192	521.40	8,294	377.26	42	5.31	2,189	416.99	8,296	597.26	39	3.37
Route 4.....	5,336	53.57	17,262	d5,706.30	91	7.91	6,155	755.46	18,485	d5,889.33	24	11.09	7,173	541.68	19,162	d6,356.37	44	11.46
Route 5.....	9,650	920.97	16,866	d5,792.57	21	19.16	9,773	746.56	18,156	d5,364.53	82	15.45	10,390	d493.13	17,753	4,982.58	50	10.62
Route 6.....	8,755	d1,638.48	22,398	d1,737.39	09	d3.97	9,327	d1,426.23	22,320	d3,215.41	78	d.33	9,404	d750.63	19,621	d5,515.47	94	7.76
Route 7.....	4,132	701.03	13,676	d5,013.30	21	11.86	5,992	1,673.14	15,121	d4,870.39	63	18.03	7,496	1,274.16	15,035	d5,375.49	75	19.25
Route 8.....	3,938	58.89	23,869	d2,628.16	50	1.86	4,053	425.30	23,865	d3,702.16	98	3.82	3,917	228.90	21,877	d6,240.17	89	4.76
Total.....	\$53,302	\$168.55	155,498	d23,942.34	27	\$4.66	\$59,867	\$4,111.87	165,464	25,873.36	18	\$7.04	\$64,720	\$1,756.21	165,454	d31,435.39	18	7.18

d Decrease. See key to routes at bottom of Table I.

each one of these men spent 5 cents per day for transportation, the increase would have been \$300 per day or a total increase of approximately \$110,000, which approximates very closely the figure estimated from the installation of zone system.

It is obvious, therefore, that in order to obtain an increase of revenue sufficient to offset the increase in cost of labor and material, it will be necessary either to increase the rate per zone or decrease the length of the zone sufficiently to make up for the loss, due to the departure of this number of men for the war.

Whatever plan for securing more revenue is approved by the commission, the railway intends to retain the 5-cent base fare as there is ample scope for cutting down the 5-cent ride and still offer no temptation to

beyond their leaving time at this point but will change crews at other points en route. This change will eliminate delays due to layovers.

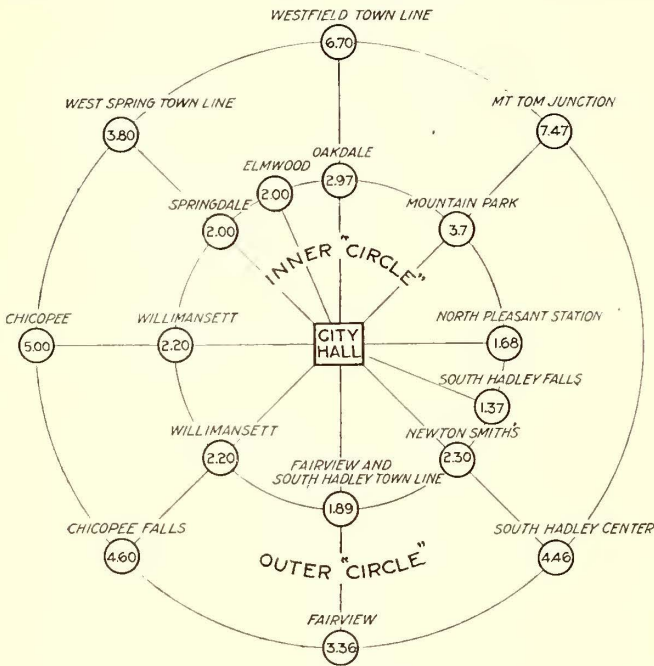
The new service means through cars every thirty or twenty minutes instead of every fifteen minutes in favor of more service for the outlying part of Holyoke and the territory contiguous thereto.

FARE COLLECTION AND TRANSFER PRACTICE

All tickets good for riding in two zones are partially perforated to permit a stub, bearing the same identification numbers, to be torn therefrom. When the passenger presents the complete ticket the stub, which is really a token to permit riding into a second zone, is returned to the passenger. This stub is collected by the conductor in the second zone, but the only registration made by him is when he makes the first collection. This is in accord with the company's practice to register nothing worth less than 5 cents. Hence it eliminates the possibility of registering a lower fare for a higher one. At the end of each round trip the conductor turns in both tickets and stubs to the receivers, who match them so far as possible. A few stubs may be missing in cases where the passenger left the car just before the second collection, but this is not important. Both the body and stub must be perforated by the conductor as a cancellation.

One transfer is given on presentation of a stub. In case of a three-zone ride, the conductor takes up a complete ticket and issues a duplex transfer. One-half of this duplex is collected by the conductor on the second car in the first zone and the other half in the following zone. Transfers are not registered. The number of complete tickets turned in should equal the number of duplex transfers issued, thus securing a check on the mishandling of duplex transfers.

Instead of slowing up fare collection, the zone system appears to accelerate it, since half of the riders pay 5 cents as before while most of the remainder use tickets. It is possible that scrip tickets will be issued later to permit a ride in the first zone with two tickets and thereafter with one ticket for each zone. This will limit the present variety of tickets to the school and adult classifications only.



NEW HOLYOKE ZONE SYSTEM, WITH DISTANCES TO CITY HALL

walk. For example, free transfer riding across the inner zone, constituting a diameter of 4 miles, might be eliminated, the new fare being 5 cents plus a transfer charge.

Modifications of the Holyoke-Springfield service conducted jointly with the Springfield Street Railway are also in hand. On this line the old fare of 10 cents with transfers anywhere has been superseded by four 5-cent fares with transfers within the arrival zone only. It is proposed to inaugurate a "limited service," the running time between the two cities to be reduced from fifty minutes as at present to thirty-five minutes. Only eight stops will be made between the two cities and the cars will run until the crews meet, thus obviating the delay at the Holyoke-West Sheffield line. Limited cars will be run every forty minutes in the morning and every twenty minutes in the afternoon. Ultimately it is intended to make the run in a half hour, when the congestion which now exists in Springfield can be relieved.

Local service will be furnished to the West Springfield town line by each company, and the schedules are made so that under normal condition the cars will meet at the line, but it is not intended that the cars shall wait

Massachusetts Roads Save Coal

MASSACHUSETTS electric railways will save about 200,000 tons of coal this year by improved methods of operation, according to reports in the hands of James J. Storrow, Federal Fuel Administrator for New England. Ninety per cent of the street railway mileage in the State is represented in this campaign, which is being handled by a committee composed of H. Bertram Potter, assistant to the president Boston Elevated Railway; A. E. Potter, general manager Rhode Island Company; C. D. Emmons, general manager Boston & Worcester Street Railway; David A. Belden, president Massachusetts Northeastern Street Railway; and Charles C. Peirce, head of the railway department General Electric Company, Boston office. The fuel saving is accomplished through improved methods of using power, elimination of stops, reduction of traffic loads on "heatless" Mondays and holidays, and power-plant economy.

Philadelphia Co-operative Plan Extended

Success of the Plan for Producing Cordial Relations Between Labor and Capital Is Demonstrated by Eight Years of Experience—Wages Now Raised to Equal the Highest Established by War Labor Board—Several Changes Made in Original Plan

WHEN the co-operative plan of administration was begun on the Philadelphia Rapid Transit System in 1910 by the Stotesbury-Mitten management, it was recognized as a radical departure in electric railway practice. To give to the employees through regularly elected representatives an equal voice with the company in nearly every question concerned with operation in which the comfort and welfare of the employees was concerned was unprecedented. Practically the only matters on which the company retained entire control were those of wages, which were governed by the well-known 22-per cent rule, and discipline. Hence it is not surprising that the plan attracted the

while the resignations of employees from the service during the five years ended May 31, 1910, had averaged 3096 annually and the discharges 1628 a year, these figures had been reduced to an average of 225 and 129 respectively during the two years ended May 31, 1916, the last complete fiscal year of the company at the time the article was written. Equally notable was the record on the system as regards labor difficulties. From a period of almost continual strikes before the inauguration of the system, this method of settling disputes has practically disappeared from Philadelphia. There have been during the past eight years, it is true, two or three attempts of this kind to create trouble by a few dissatis-

It would, therefore, seem that we should now devote our energies to enlarging the scope of the Co-operative Plan to include all employes one year in service, and to increase and improve sick benefits, death benefits, and pensions.

The Stockholders have permitted us to increase wages of trainmen more than \$5,000,000 over the amount which they would have received under the strike settlement scale. The Stockholders themselves received less than \$3,000,000 during the same period, as a return upon their \$30,000,000 of invested capital.

The Government has been good to us in various ways. The War Labor Board has dismissed the case of those who were desirous of destroying our efficiency. Admiral F. T. Bowles, of the Emergency Fleet Corporation, and Director O. M. Eidlitz, of the Bureau of Industrial Housing and Transportation, have advanced us millions of dollars with which to buy new cars and other equipment. The Stockholders have again let us advance wages to meet the needs of the men, and this without knowing where the money is coming from.

The "bounden duty of the Men and the Management" under these circumstances is to do our level best to cut out all wasted effort as, by this means, manpower, fuel, and unnecessary expense can be best saved, thereby keeping the fare at the lowest possible point consistent with the payment of an adequate wage

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and the proper protection of invested capital.

The Co-operative Plan of 1911, redrawn to meet the changed conditions, is now submitted for your consideration.

CO-OPERATIVE PLAN

August, 1918

The Stotesbury Management, as a result of the past seven years' experience, now presents the following statement of policy and practice which it is proposed shall hereafter cover the joint undertakings of the Men and the Management in the way of co-operative effort.

The principles of the Co-operative Plan of 1911, i. e., that employes may belong to any union or other organization without "let or hindrance," are hereby ratified and confirmed; it being understood however that in the interest of service to the Public, the rules of the Company must be obeyed.

CO-OPERATION.

Every employe shall be assured fair treatment and an opportunity to be heard by a committee which shall include the men who have been duly elected as Co-operative Committeemen. Co-operative effort is recognized as being the keystone of all accomplishment in rendering proper service to the Public. Good service is to be recognized by such

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advancement as opportunity offers, but troublemakers who fail to mend their ways will be discharged as having no part in common with a body of men whose sole aim is to give good service in return for a square deal and good pay.

WAGES.

The War Labor Board has established a wage scale effective in four cities of the first class, which are now under their jurisdiction, i. e., Chicago, Cleveland, Detroit, and Buffalo. This Management, in agreement with the Co-operative Committeemen, advanced the wages of its trainmen to a maximum of 48c per hour in accordance with the scale made effective in the aforementioned cities, and is now adjusting the wages of its other employes accordingly.

The wages hereafter paid under this Management will be those which are determined by averaging the wage scales of the four cities of the first class before mentioned. This provides a permanent basis upon which to adjust wages in Philadelphia from time to time as occasion may warrant.

COMPENSATION FOR INJURIES.

The Company now pays certain established compensation as determined under the "Workmen's Compensation Act" for injury to employes, resulting in:

1. Total temporary disability.

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THREE PAGES FROM ISSUE OF CO-OPERATIVE BULLETIN FOR AUGUST, 1918, DESCRIBING IN PART NEW CO-OPERATIVE PLAN

attention of many authorities on the subject of industrial economy.

Among those who have contributed their views upon the workings of the co-operative plan at length to the columns of this paper are Dr. Charles W. Eliot, president emeritus of Harvard, who described it as "remarkably successful" in an article on page 674 of the issue of this paper for Oct. 10, 1914, and Dr. Thomas Conway, Jr., of the Wharton School of Finance and Commerce, University of Pennsylvania, who reviewed the experience with the plan from 1910 to 1916 in an extended article which appeared in the *ELECTRIC RAILWAY JOURNAL* for Nov. 4, 1916. Probably the most significant fact brought out by Professor Conway was that

fired employees, but they were completely abortive, as the great majority of men preferred to remain loyal to the company.

WHAT THE CO-OPERATIVE PLAN HAS DONE

The practical results of the plan have been beneficial to employees, company and public. The maximum wage of conductors and motormen was 23 cents an hour in 1911 when the company agreed, under the co-operative plan, to devote 22 per cent of its gross receipts to the payment of wages to its transportation employees. Under this agreement the wage had risen on July 15, 1918, to 43 cents per hour. In addition, a sick benefit fund of \$1 a day, a pension of \$20 a month to super-

annuated employees, and death benefit aggregating \$650, payable to dependents, had been inaugurated, available for all employees who had been two years in the service and paid 25 cents per month dues to the benevolent association.

The benefits to the public and company were equally marked. So far as the latter is concerned, at the close of 1910, the company was practically bankrupt in cash, and the earnings in 1909 and 1910 had not been sufficient to meet the operating expenses, rentals and interest by more than \$1,500,000. While the capital stock was \$30,000,000 fully paid in, the fixed charges amounted to 46 per cent of the gross receipts. Now, without any increase in the capital stock, the fixed charges have been reduced to 32 per cent of the gross receipts, and dividends have been paid on the stock as follows: 1916, 2 per cent; in 1917, 5 per cent; in 1918, at the rate of 5 per cent per annum. The physical condition of the property has been greatly improved, and the last report of the company showed a surplus of more than \$5,000,000 in the balance sheet.

The public has profited not only by the improved service and equipment but by reduced accidents and a reduced fare, the average fare during the year ended June 30, 1910, being 4.15 cents as compared with an average fare of 3.96 cents per passenger during the year ended June 30, 1918.

WAR-TIME CONDITIONS SUGGEST CHANGES

Changes have been required in the co-operative plan by war-time conditions, but they are changes in detail and not in principle. The labor situation in Philadelphia has been greatly affected by the war as the city has enormously expanded its manufacturing facilities

through extensions to its many existing large industrial enterprises and the addition of others, particularly in the ship building line. All of these have made heavy drains on the labor supply, and it began to be difficult to recruit the right kind of men for the railway, even with the high wages then paid. This led to the revision of the co-operative plan, notably in the wages paid, announced early last month by President Mitten and accepted for the employees by the co-operative committee. In his talk outlining these changes as reported on page 301 of the issue of this paper for Aug. 17, President Mitten described the importance of the war transportation done by the Philadelphia Rapid Transit Company and the necessity of all employees giving their best service. He also referred to the past labor situation on the property, saying that there still existed the Amalgamated Association, a former branch of the Amalgamated Association which seceded from the national body some years ago under the leadership of a man named Pratt, and a local organization known as the Keystone Union. President Mitten referred to the question of wearing buttons denoting the union affiliation in the following words:

Now as to the button question, we remember the condition of things in 1911 when some of us were wearing the Keystone button, the Amalgamated button and the button of the Prattites. Fights on duty were an ordinary occurrence. Accidents by collision of cars increased in number; in fact, the men were so busy trying to convert each other that they had little time left to devote to the performance of their duty.

We still have the Keystone, the Amalgamated and the Prattites, and, therefore, can not consider going back to the old condition of "bedlam let loose" by allowing organization buttons to be worn while on duty—so we will have none of that.

PHILADELPHIA RAPID TRANSIT COMPANY

EXECUTIVE OFFICE

Philadelphia, August 19, 1918.

To All Employees:

I am enclosing herewith a statement of the remarkable results secured by the Men and the Management during the past seven years of Co-operation.

I wish to thank you for the part you have taken in securing such wonderful results and to congratulate you upon the splendid increase in wages now to be made effective.

The improved Co-operative Plan which I enclose for your examination assures a continuation of our Co-operative effort and secures to you:

A LIFE INSURANCE POLICY for \$1,000 is delivered to you and remains your personal property so long as you retain your membership.

SICK BENEFITS of \$1.50 per day.

PENSION of \$40.00 per month.

WAGES as high as the average wage paid on Street Railways in the other cities of the first class, i. e., Chicago, Cleveland, Detroit, and Buffalo.

A SQUARE DEAL and an opportunity to have your troubles heard and adjusted through the agency of the Co-operative Committeeman elected by your own vote.

To secure these conditions the Company will pay a lump sum of \$10,000 into the fund each month, while your dues as a member will be but \$1.00 per month.

I am confident that you will look favorably upon this improvement in the Co-operative Plan and would especially ask the married man to discuss the matter carefully with his Wife, whose endorsement with his own will be highly appreciated.

Yours for Continued Co-operation,

T. E. MITTEN,

President.

P.S.: Return application properly signed in the enclosed stamped envelope.

PHILADELPHIA RAPID TRANSIT COMPANY

EXECUTIVE OFFICE

Philadelphia, August 27, 1918.

To All Employees:

Your response, in endorsement of the amended Co-operative Plan, was so immediate and conclusive that a contract for between seven and eight million dollars, insuring the lives of all employees who become members of the Plan, has been executed with

THE METROPOLITAN LIFE INSURANCE COMPANY OF NEW YORK CITY.

In order that members may become beneficial at the earliest possible moment, this contract has been made effective September 1st, 1918. To be sure that your insurance policy be made effective as of that date, it will be necessary for you to carefully fill out and promptly return the enclosed card. Individual Policies will be issued as soon as received from the Insurance Company.

It is important that you should now determine who is to receive the \$1,000 in case of death. I am therefore enclosing a card which provides for this information, together with certain additional facts required by the Insurance Company for its records and guidance.

Especially would I direct attention to the necessity of your answering each question fully and accurately. Write legibly and in every instance furnish the full name. Wherever possible, the beneficiary should sign the card in the designated space.

The terms of the Policy will entitle any member leaving the service to re-insure for the same amount with the Insurance Company, without medical examination, at rates based upon the member's then attained age. Any member subsequently returning to our employ, will again become eligible for re-insurance under the Co-operative Plan.

Assuring you of my appreciation of your endorsement of our co-operative effort of the past and also of your prompt acceptance of the amended Co-operative Plan, I am,

Yours for Continued Co-operation,

T. E. MITTEN,

President

P. S. Be sure and fill out both sides of card.

disability, any installments remaining unpaid shall be payable as they become due to the beneficiary nominated by him. The acceptance of the plan thus far has been practically unanimous, although the men have until Sept. 15 to signify their consent.

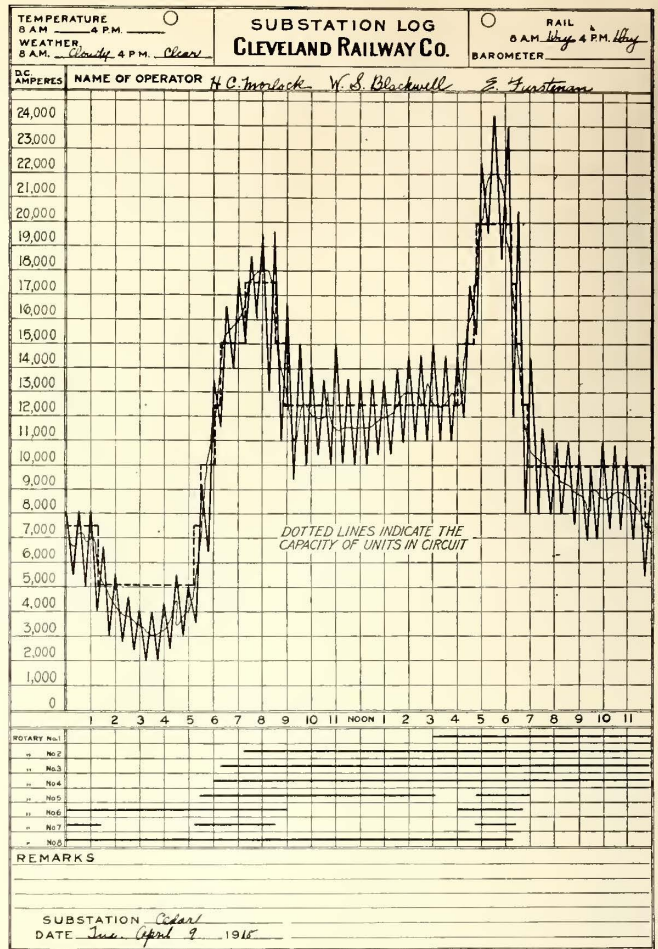
The co-operative plan of August, 1918, differs in a few other points from that of 1910, particularly in the fact that the earlier plan was restricted to the transportation employees. The present plan takes in all of the departments, all of which will now be represented on the co-operative committee.

Adjusting Substation Capacity to the Load Line

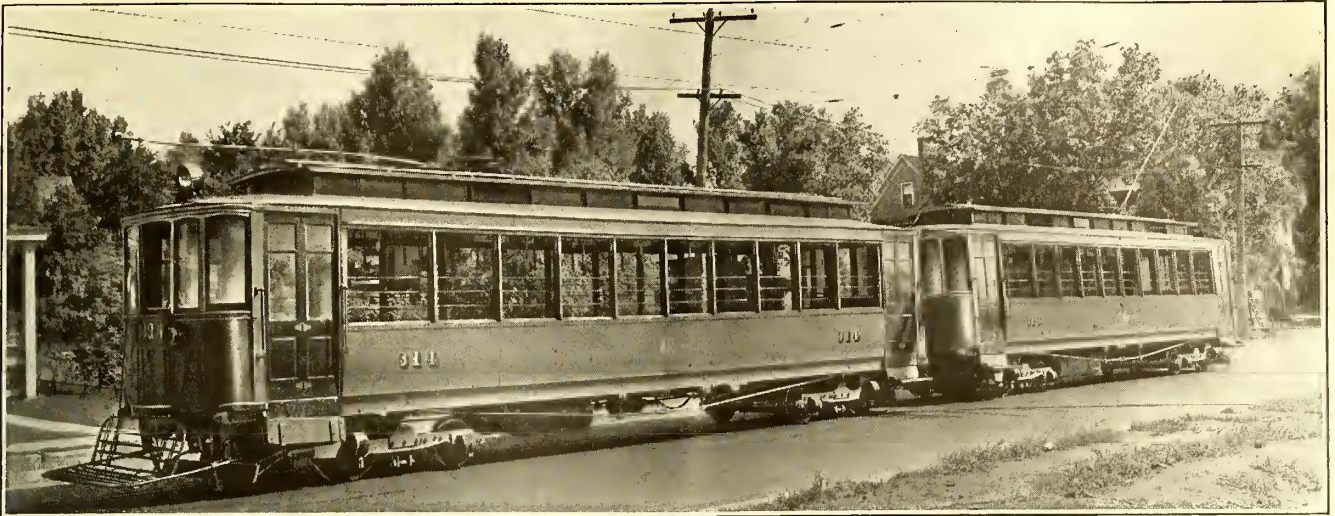
THE Cedar Avenue substation of the Cleveland (Ohio) Railway was described in the issue of the ELECTRIC RAILWAY JOURNAL for April 13, 1918, page 700. In the article the point was made that one of the fundamental principles in the design of the substation was to provide facilities for keeping the capacity of machines in operation closely adjusted to the load line.

A sample power chart for this substation is reproduced herewith. From the diagram it is evident that the combination of facilities and care in operation result in almost perfect co-ordination of load and capacity. The other illustration shows the energy chart for the same day, and also incidentally gives an idea of the record form used in the substations on this property.

At right, typical graphical log for Cedar Avenue substation, Cleveland Railway; below, sample record sheet of energy readings, Cedar Avenue substation, Cleveland Railway.



SUBSTATION Cedar Tue DATE April 9 1918																									
D.C. WATTMETER READINGS																									
A.C. CABLES	WATT-METER	1	2	3	4	5	6	7	8	9	10	11	NOON	1	2	3	4	5	6	7	8	9	10	11	12
No. 1 40	A					2427	2520	2627					2888	127		3361	3465	3582	3672					20	71
	B					2426	2520	2627					2888	127		3362	3466	3573	3673					20	71
No. 2 41	A					4364	4458	4566					4747	127		4876	4982	5109	5148					12	84
	B					4365	4460	4570					4747	128		4878	4984	5112	5152					12	84
No. 3 42	A					9846	9940	0049					0409	128		748	854	982	1078					17	68
	B					9845	9940	0049					0409	128		748	854	982	1080					17	68
No. 4 44	A					2739	2817	2925					3235	130		3618	3725	3855	3952					10	49
	B					2739	2813	2923					3235	129		3618	3724	3853	3951					10	49
No. 5 42	A					7282	7367	7488					7827	129		8145	8249	8378	8477					17	39
	B					7280	7367	7487					7827	130		8145	8248	8378	8477					17	39
No. 6	A													1283										158	22
	B																								10
K.W.HOURS PER HOUR																								158	220
TOTAL A.C. K.W.-HOURS		158,220																							
D.C. WATTMETER READINGS																									
Rotary No. 1		9	00										1248											2	76
" No. 2		16	45										4432											12	27
" No. 3		17	45										5800											17	36
" No. 4		17	45										84											17	88
" No. 5		11	40										4563											25	66
" No. 6		11	40										5338											26	81
" No. 7		6	00										6570											17	90
" No. 8		18	15										2000											25	43
KWHOURS PER HOUR		108	50																					146	07
TOTAL D.C. KW-HOURS		146070																							
EFF. 92-3 %																									
REMARKS:																									



TWO-CAR TRAIN USED AT DAVENPORT, REBUILT FROM TWO OPEN CARS

Two-Car Train Operation at Davenport

Tri-City Railways Rebuild and Buy Fifty-eight Cars to Handle the Large Increase in Number of Employees in Government Arsenal at Rock Island, Ill.

IN 1916, the United States government arsenal, located at Rock Island, Ill., employed about 3000 men. These employees lived in Davenport, Rock Island and suburbs and 40 per cent of them used the cars of the Tri-City Railways to and from work. This traffic was handled by nineteen special cars arriving at the arsenal at 8 a.m. and leaving again at 4.30 p.m.

In the fall of 1917 the work of increasing the facilities at the arsenal began and by Jan. 1, 1918, the number of employees had increased from 3000 to 9000. This made a serious transportation problem for the Tri-City Railways, as more than 60 per cent of these men have to be handled on the street cars.

NEW TRACK COSTS \$75,000

The first change which was made was the relaying of the track on the arsenal grounds. This change is shown in the map on page 464. The heavy dotted line indicates the new track construction from point A up to

Main Avenue, through the heart of the arsenal layout and down to point B where it connects with the former track. This new trackage consists of 2.4 single-track miles of 60-lb. T-rail laid on crushed stone ballast. The No. 00 trolley wire is supported by Bates expanded steel poles with mast-arm construction. Double track is laid between points C and D.

The company installed 1500 ft. of new No. 0000 feeder cable from Rock Island, and 300 ft. of 750,000-circ.mil and 150 ft. of 500,000-circ.mil feeder in the downtown loop district of Davenport. A 400-kw. motor-generator set was transferred from the Rock Island plant to Moline and replaced by a 1000-kw. rotary converter.

All track was bonded by the oxy-acetylene head-weld process, which included the rebonding of track from point B to Rock Island. The cost of this new track construction amounted to approximately \$75,000.

With the completion of the new track layout it was found essential to obtain additional car equipment. On



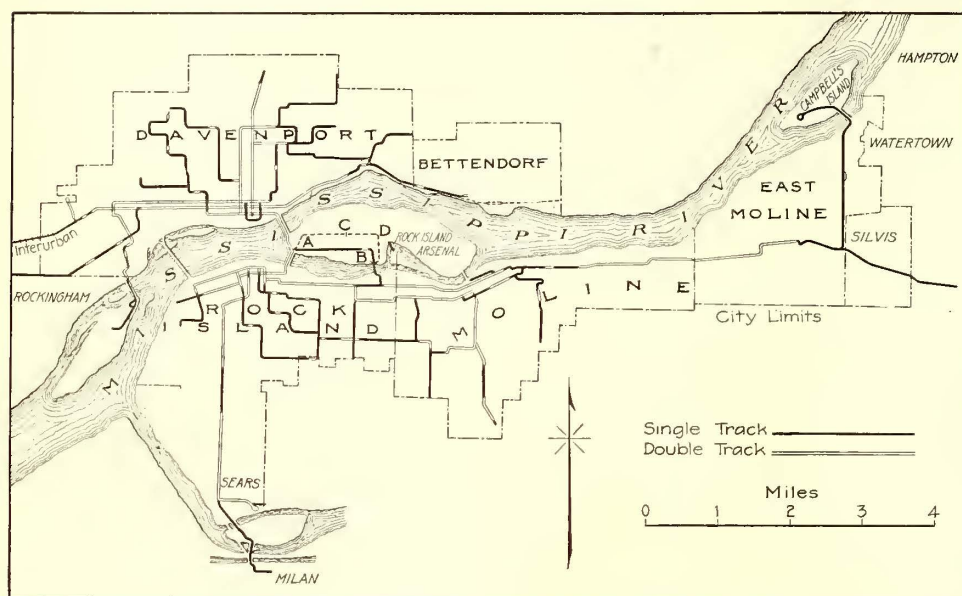
INTERIOR OF CARS USED IN TWO-CAR UNITS BEFORE AND AFTER INTERIOR REMODELING

Nov. 1, 1917, the arsenal traffic was handled by nineteen cars, six from Rock Island and thirteen from Davenport. These carried 1200 passengers, 400 from Rock Island and 800 from Davenport.

By June 1 the arsenal traffic had been so greatly augmented that thirteen cars now leave the arsenal at 4.30 a.m., seven going to Davenport and six to Rock Island, carrying away the night shift. At 7 a.m. forty-three cars arrive, fifteen from Rock Island and twenty-eight from Davenport. Between 7 and 8 a.m. fifteen-minute service is maintained across the arsenal grounds and from 8 until 5 p.m. thirty-minute service. At 4.30 p.m. eight cars leave the arsenal for Davenport, carrying the construction men who are not government employees, and, therefore, work only eight hours. At 5.15 seven cars, five to Davenport and two to Rock Island, carry out the office force of girls only. At 5.30 forty-two cars, fifteen to Rock Island and twenty-seven to Davenport, take

Because of the shortage of trainmen and the crowded schedule necessary, it was decided to operate this equipment in two-car trains. The controllers were removed and one K-35-G-2 controller was placed on each car. Other changes consisted of removing the bulkheads and installing manually-operated folding doors, changing the cross seats to longitudinal slat seats and the lighting system from four 3-light clusters of 23-watt lamps to eight similar lamps in a single line down the center of the ceiling. There is now a compressor on each car, but both compressors are run on a single governor, and all connections for control, lighting, brakes, etc., are carried between cars by a tube fastened to the drawbar as illustrated. An interior of the cars before and after remodeling is also shown in an accompanying illustration. The cost of rebuilding these cars was \$630 per train.

In addition to the rebuilding of the twenty Chicago surface cars, sixteen open summer cars from the Tri-City property are being made over into closed cars with longitudinal seats. This includes the same work as is being done to the Chicago cars, with the addition of removing the running-boards, building up the posts and putting on the body sheathing. Agasote is being used for this in place of steel.



MAP OF TRACK LAYOUT OF TRI-CITY RAILWAY

out the day shift, the same cars bringing in the night shift from 5 to 5.15 p.m.

In the evening the first car leaves the arsenal two minutes after the closing whistle blows and the others follow in rapid succession. It has been a problem to load the men fast enough. Double-end loading of single cars was first tried, but did not prove very satisfactory, and now queue loading has been voluntarily applied by the men. The load varies from eighty-five to 120 passengers per car, averaging 100 per car. This means that 63 per cent of the employees are now using the street cars.

To handle this traffic twelve new standard cars were purchased from the St. Louis and American Car Companies at a cost of \$66,000. These were delivered the latter part of 1917. About February, 1918, thirty cars were purchased from the Chicago Surface Lines at a cost of \$65,800. Twenty of these had formerly been open summer cars. Before delivery the running boards were removed and steel sheathing put on, so that when received at Davenport the cars appeared as shown in an accompanying view, and their equipment consisted of GE-57, 60-hp. motors, two K-11 controllers and Peckham maximum traction trucks with a 5-ft. wheelbase. Overall dimensions are: Length, 37 ft. 7 in., and width, 8 ft.

classes are as follows: (1) First-class 10-cent bridge ticket, which entitles the holder to ride from any point in the three cities to the arsenal. This fare would ordinarily be 15 cents. (2) A special two-coupon ticket purchased only by the government at 5 cents for its employees and good between the arsenal and the loop districts. (3) A ticket good only for transportation across the government bridge and sold at ten for 25 cents. (4) Single-trip arsenal tickets sold for 5 cents to arsenal employees upon presentation of identification card properly signed and good for transportation between the arsenal and certain points in the Tri-Cities. (5) A \$2 monthly ticket which entitles the holder to as many trips from any point in the three cities to the arsenal and return as there are weekdays in the month. Provision is made for thirty-one days, Sundays being punched out when the ticket is sold. (6) Cash fares.

ADDITIONAL POWER EQUIPMENT COSTS \$650,000

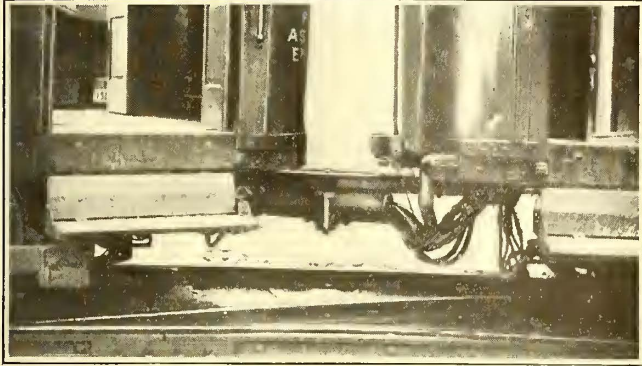
Under former operating conditions, the arsenal took from 400 kw. to 500 kw. from the Tri-City Power & Light Company, while now 2500 kw. is being used. In addition to this there has been an increase of about 1000 kw. as a result of the heavy peak load caused by the

AVERAGE FARE ON ENTIRE PROPERTY IS 4.6 CENTS

Six classes of tickets are being used on the arsenal lines. This non-uniformity has been made necessary partly by government orders, partly because of interstate conditions, etc. The six

arsenal rush-hour service and an increase in commercial consumption, due mainly to the added number of employees at the arsenal, of 25 per cent for the last six months of 1917, and of 25 per cent over that for the first four months of 1918.

To accommodate this large demand for energy, it has been necessary to increase the capacity of the plant



CABLE CARRIER ATTACHED TO CAR COUPLER

20,000 kw. A 20,000-kw. Westinghouse turbine was added, a new boiler room was built and three 1000-hp. Stirling-type boilers were installed, arranged for a 300 per cent rating. The total expense for this increase in plant capacity has been approximately \$650,000.

WAGES AND LABOR

The high wages paid for both skilled and unskilled labor at the arsenal have had a disastrous effect upon the labor problem of the Tri-City Railways, and in spite of the four voluntary raises given by the company during the past year there is a considerable shortage of labor.

LETTER TO THE EDITORS

"Depreciation" Is an Impostor Term

NEW YORK, N. Y., Sept. 11, 1918.

To the Editors:

In an article in your issue of Aug. 24, entitled "Some Pitfalls in Regulating Depreciation," John Bauer, of Princeton University, asks:

Are the reasonable present claims of the investors against the public any different, whatever further depreciation policy may be adopted? Why should investors get more or less whether the sinking fund, or the straight line method be employed? Are they not entitled to a fair return on a fair valuation? Should that not be the same by whatever way depreciation may hereafter be computed?

These words have an impartial sound, but careful reading of the article will disclose that Mr. Bauer holds no brief for public utilities. That he writes from the aloofness of university cloisters is no assurance that he has no interest in municipal ownership.

But what has depreciation to do with municipal ownership? The connection needs to be stated. The greater the amount of depreciation that can be imputed to a property, the less the base of return to the investor, the greater the difficulty in financing maturing obligations and the more likely the bondholders will be to scheme to have the property taken over. The greater

the amount of depreciation, the greater will be the proportion of the utility's property which the municipality will claim already belongs to the public on the ground that some part of it is an invested depreciation fund, or assets owned equitably by the public to the extent of the credit to a depreciation reserve which is, or on some vague theoretical grounds ought to be, equal to "accrued depreciation."

Depreciation theories put public utilities on the bargain counter. They propose that the present generation of patrons shall pay more than the actual reasonable cost of their service through compulsory "depreciation allowances," in order that they may be acquired by the next generation at a substantially lower figure than would otherwise have to be paid. Or the depreciation doctrine more frequently asserts that part of the rates collected in the past were really "depreciation allowances" which have been paid out as dividends, and that consequently from a quarter to a half of the utility's property equitably belongs to the public, because it was bought and paid for by patrons of a past generation.

Mr. Bauer's article is a criticism of an opinion rendered by the Colorado Public Utilities Commission, on Oct. 8, 1917, in *City of Lamar vs. Intermountain Railway, Light & Power Company*, insofar as the commission there ruled that it would make no deduction "for depreciation" from original cost, which was taken as the rate base because original cost and cost of reproduction now would have been practically identical under normal conditions.

To begin with, he is a little unfair to the Colorado commission in questioning the sense of fixing the same basis of return to the investors whether the property is new, up to date and in every way suitable for its purpose, or whether it is old and worn and is extensively obsolete and inadequate. What the commission said is this:

If in inventorying the property of a public utility, only such property as is in use and useful and in good service condition is included, the fair value of that property, for rate making purposes, may be arrived at without any determination of or deduction for accrued depreciation, provided the annual depreciation requirement is determined and set aside on the so-called sinking fund basis.

The one wise thing the commission did was to rule that no deduction should be made "for depreciation." It did not see its way clear to adopt any of the fanciful theories of valuation which involve confiscation of a substantial amount of property on the score of so-called "depreciation."

40 PER CENT DEPRECIATION FUND NOT NEEDED

But, in ruling that "the annual depreciation requirements will be determined and set aside on the sinking-fund basis," the commission erred. If its ruling shall be carried out to its conclusion, the company will eventually have a sinking fund which will approximate 40 per cent of the value of its property. What for? All the utility needs is provision for the maintenance of its property, which is an amount measured by its actual current requirements. By the new approved steam railroad contract, the government agrees to pay out for maintenance, repairs, renewals, retirement and depreciation such sums as may be necessary to keep the roads in as good condition as when received or to credit the roads with a sum equal to the "average an-

nual expenditure" for that purpose. The theory of the contract is that the average annual expenditure will keep the roads in good condition forever. The government does not agree to accumulate a fund for depreciation or to reimburse the roads for any accruing depreciation, except that final "depreciation" which accrues coincidentally with a retirement. The contract does not recognize any obligation to charge for progressive depreciation during the lifetime of railroad units, or any duty on the part of the roads to accumulate such a fund. That idea is right. The government perceives that it is right as soon as it ceases to be a regulator and becomes a manager.

This does not mean that the requirements of each year will always equal the average annual requirements of every public utility. Provision should be made for fluctuations, which will vary in degree among the different companies and will be most pronounced with the smaller companies. Each of the different alleged methods of computing depreciation and of determining amounts to be reserved against retirements, except the replacement method, will result in a greater reserve than necessary for its ostensible purpose. The reserve should be in the nature of a reservoir, into which will flow a uniform annual provision for the maintenance of the property, by renewals and replacements, and against which will be charged the book value of plant and equipment withdrawn from service. The amount of the reserve does not measure depreciation, nor is its function to make good any investment used up in service. It is for retirements, not for depreciation. It is not a partial return of capital, because it is a temporary quantity. There may even be a deficit in years of unusually costly replacements. Because of its transitory nature, the reserve presents to the utility no such hideous opportunity as shocks Mr. Bauer of making a return on more than the investment.

There is but one account in which a public utility can safely (in view of opinions of commissions in other jurisdictions) carry the earnings which it would withhold from distribution, and that is its "Profit and Loss" or "Surplus" account. If it is deemed necessary, for any particular purpose and as a matter of corporate policy, to segregate any of such surplus earnings, care should be taken to identify such segregated amount as a part of the undivided earnings belonging to the stockholders, so that it cannot be construed, on any theory, as a measure of impairment of the investment.

A balance to the credit of the reserve retirement account should not exceed what might be readily demonstrable as necessary for this current purpose. A company which does more than this displays a lamentable grasp of the problem of corporate financing and is in a fair way of having its reserve confiscated on the theory that it is public property. A utility officer who, after reading Mr. Bauer's article, would go ahead accumulating a so-called "depreciation reserve" through his operating expense account, would do so in utter disregard of the interests of the stockholders whom he represents and of the company with which he is but should not be identified.

What Mr. Bauer calls a "depreciation reserve" is actually a guise under which a substantial interest in the property of a utility may be acquired by the public.

In his opinion, whether such a reserve is created on the straight line basis or sinking fund basis, if it be invested in plant and equipment (as he recommends that it should be) it must be deducted, in determining the investment upon which the utility is entitled to earn a return. He is quite frank about it, saying that, unless such deduction is made, "the investors will get a return also on the depreciation funds, contributed by consumers, through the rates paid for the service." He would be only a little more frank if he discarded the term "depreciation fund" and came out flat-footedly for a "partial piecemeal purchase fund."

Certainly, it goes without saying that no public utility cares to engage in the kind of partnership which Mr. Bauer's depreciation reserve involves, nor, for that matter, is there any public sentiment whatever favorable to the piecemeal purchase of public utilities by consumers through the return paid for the service. Such a plan, openly announced, would be rejected forthwith. It is only because of their apprehension that such a fate would befall it, if thus boldly announced, that its proponents camouflage it with the jargon of so-called "theoretical depreciation."

"DEPRECIATION" IS A POOR TERM

The word "depreciation" is too hazy to use in the terminology of a public utility. Without listing the dozen or more meanings which have been ascribed to it by more or less authoritative bodies, it is interesting to note that when the Interstate Commerce Commission tried recently to explain what Congress meant by "depreciation," in the railroad valuation act, it gave the word two different and inconsistent meanings on the same page of its opinion (Texas Midland case, p. 49) viz: "exhaustion of capacity for service," which is something physical, and "decline in value," which is something social and not physical at all.

"Depreciation" is a distorted and meaningless word. It is an impostor term. To the demagogue, it means anything he may wish it to mean, or he may use it as if it meant something when he has no idea of what he means. To one who seeks underlying principles of economics and sound finance, it means nothing at all. It should be discarded altogether.

There should be substituted for it an accounting title which will describe the intent and purpose of an account designed to carry, temporarily, the amounts provided for the maintenance of the property by renewals and replacements. Then, as stated, the provision for this purpose should not, by being excessive, furnish a basis for an attack by professional depreciationists seeking to impair the investment in plant and property devoted to the public service.

LOUIS L. G. BENEDICT.

The Standard Oil Company has issued to its foremen some practical hints for the prevention of accidents, which have been reprinted by the National Safety Council. They are these: (1) Be fair. (2) Make few promises and keep them. (3) Don't waste anger—use it. (4) Always hear the other side. (5) Don't hold spite, forgive. (6) Never show discouragement. (7) Notice good work as well as bad. (8) Watch for special ability. (9) Take your full share of blame. (10) Prevent accidents.

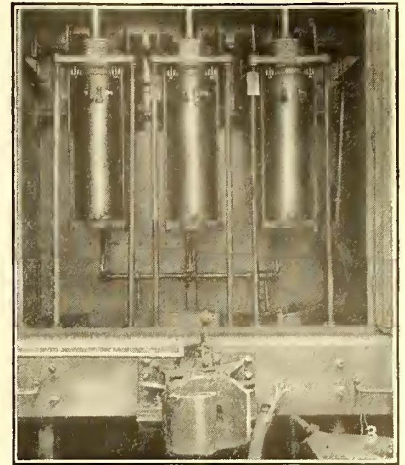
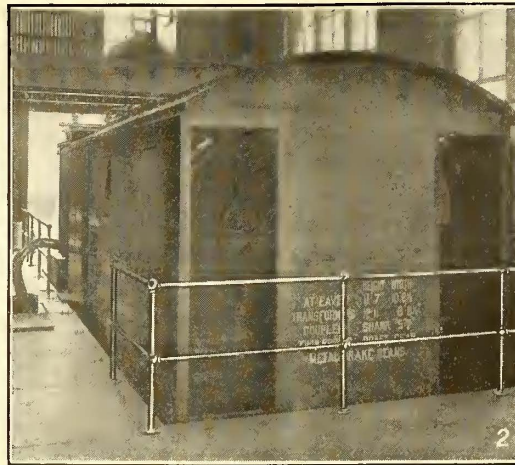
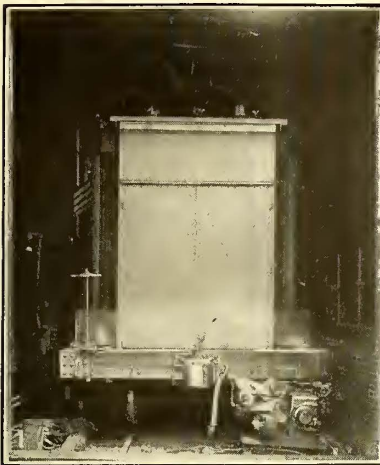


FIG. 1—TRANSFORMER END AND HIGH-TENSION CONNECTIONS. FIG. 2—PORTABLE SUBSTATION IN OPERATION AT HILLSIDE SUBSTATION. FIG. 3—VIEW OF OIL CIRCUIT BREAKER END

Largest Portable Substation Yet Produced

Long Island Railroad's 1500-Kw. Portable Substation Used in Parallel with Permanent Substations to Help with Excessive Loads or as Separate Substation

BY B. H. LYTLE

Power Department, Westinghouse Electric & Manufacturing Company

THE possession of a portable substation places a road in the enviable position of being able to render practically instant relief or assistance to other stations that may be temporarily put out of commission or called upon to carry a load beyond their capacity. Direct current can be obtained from the portable substation on very short notice, as its production involves only transferring the substation to the desired location, and connecting to the high-tension line.

The Long Island Railroad has the largest portable substation yet produced. It has a normal capacity of 1500 kw. and contains a 1500-kw., 650-volt direct-current, 25-cycle Westinghouse rotary converter; three 500-kva. combination oil-insulated self-cooled and air-blast single-phase, 25-cycle outdoor transformers; complete switching equipment and auxiliary apparatus.

The transmission voltage is 11,000, but the substation is arranged for operation on 33,000 volts, which may be used in the future. The car is constructed for both indoor and outdoor service.

Many manufacturing difficulties were encountered due to restriction of the over-all dimensions of the car. The length was limited to 38 ft. since the permanent substations are equipped inside with railroad sidings of this length on which the portable substation is located when operating in multiple with the permanent units. The width and height were restricted by traffic regulations, the maximum width permissible being 10 ft. With these limitations the greatest possible capacity was required; and in addition, the apparatus had to be so distributed as to leave plenty of space inside the car for proper attention to the converter and switching apparatus.

The transformers presented the most difficult problem. In order to bring the height and floor space within the required limits, forced air cooling had to be provided to supplement the self-cooling properties of these units. A small motor-driven fan, housed inside the main cab which also contains the converter and switchboard, supplies the air. This is discharged into a duct surrounding the lower part of the transformers, where baffle plates and guides so direct it that an even distri-

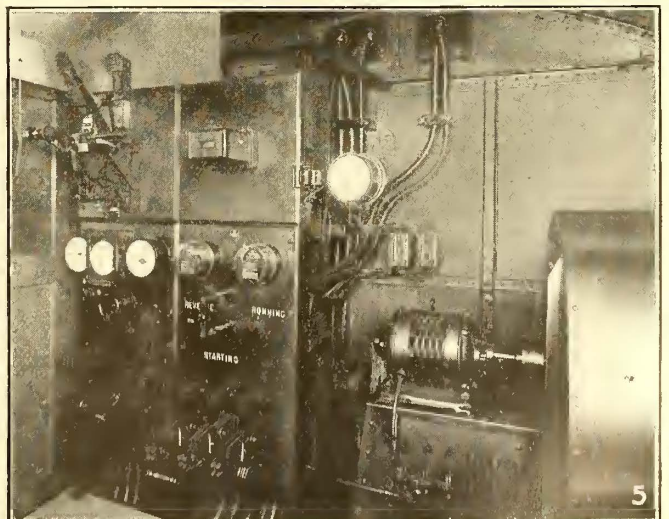
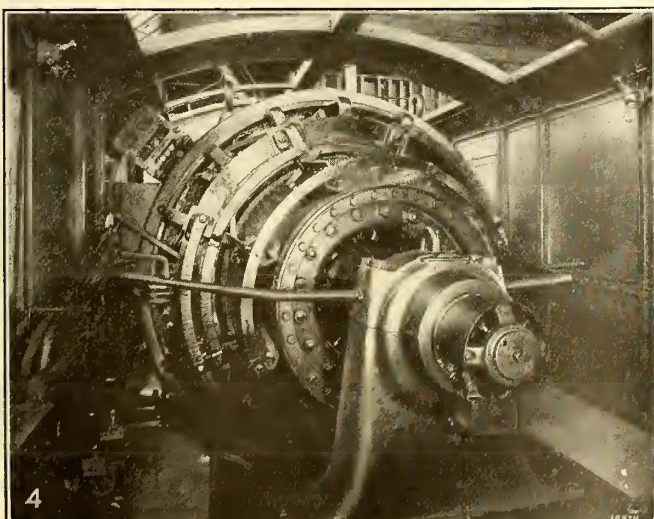


FIG. 4—VIEW OF CONVERTER SECTION. FIG. 5—CONVERTER SWITCHBOARD AND MOTOR-DRIVEN FAN

bution is obtained on all sides. The air is forced from the duct up between the corrugations, and although the duct is only 18 in. high at its lowest point, the air is carried to the top of the transformers. The normal radiation of the cases is thereby increased more than 25 per cent permitting a material reduction in the size of the tanks.

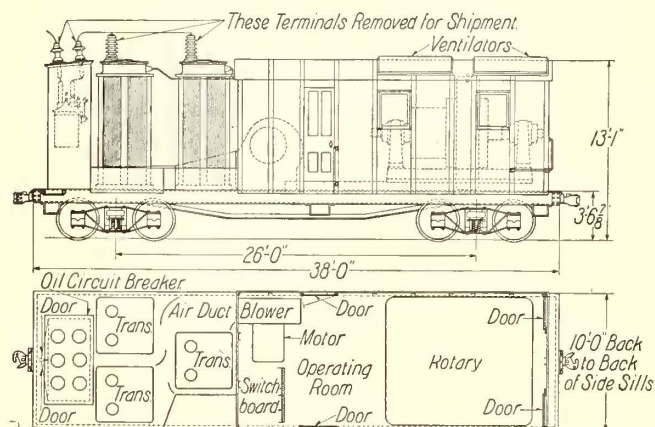
The converter is entirely standard in construction with the addition of a leveling device, the function of which is to keep the machine level in case the car is standing with its floor at an angle. Ventilation is provided by four trapdoors in the roof of the cab, each door being provided with a water-tight removable cover which is kept in place during outdoor operation. When the covers are removed, as they are for indoor service, a total opening of 75 sq.ft. is provided. Holes through

so that four or five men can be with the operator without interfering with his work.

CAR IS OF HEAVY AND RUGGED CONSTRUCTION

The car was built by the Railway & Industrial Engineering Company and is of the most rugged construction. The frame is built with a solid box girder extending the entire length of the car. The girder is reduced to 12 in. over each truck, but at the center is 24 in. deep. The cross-bearers are so located that they relieve the $\frac{1}{2}$ -in. steel floor of the support of the heavy equipment. Although the car is arranged so that jacks can be used at each corner to steady it during operation, it has been found that the method of supporting the equipment and the manner in which it is balanced give operation which is practically free from vibration without the use of the jacks.

The Long Island Railroad has its permanent substations constructed with a railroad siding entering each building. When one of these stations is about to be subjected to a long period of overload which is beyond the capacity of its converting apparatus, the portable substation is conveyed into the building, connections are made to the high-tension line, and the converter is paralleled with the permanent units. In like manner the portable substation is available to take the place of any permanent unit which may be temporarily out of commission. It can also be conveyed to any desired point along the railroad where the high-tension current is available and used as a separate substation during rush hours or holidays.



GENERAL ARRANGEMENT OF APPARATUS IN PORTABLE SUBSTATION

the floor inside the converter bedplate provide ventilation in addition to the air which enters the doors and window.

ROOF OVER CONVERTER IS BUILT WITH REMOVABLE SECTION

To permit the converter to be placed in the car or removed from it, the roof of the cab over the machine consists of a removable section built upon a framework, so that it can be raised without injury. To indicate the closeness of the spacing, it may be noted that there was but $\frac{3}{8}$ -in. clearance on each side between the converter bedplate and the eaves of the car when the machine was being lowered into position.

The switching equipment practically follows the standard used for portable substations, except that instead of using Burke horn-gap high-tension switching, this car is provided with an oil circuit breaker, located in a separate housing at the end of the car opposite from the main cab. This arrangement permits of the high-tension current entering at one end of the substation and passing through the transformers, the final production of direct current by the converter being at the other end. The direct-current terminals are located at each side of the car in order more conveniently to make connections with the direct-current bus of the permanent station.

The apparatus is arranged so as to concentrate all available space near the center of the car to provide room for the operator; thus sufficient space is provided

Collapsible Trolley Pole With Automatic Disconnecting Attachment

WITH the idea of preventing the trolley wheel from striking or catching in the overhead construction when it leaves the wire Jules Redon, engineer of the railway system at Lyons, France, and formerly chief of materials and traction of the Paris railway at Arpajon, has invented a collapsible trolley pole. It is made of two tubes which are held together by two bands or rings. Each tube carries one of these rings permanently fastened to the end of it, and is so mounted that the other tube can slide through this ring. When the pole is in the extended position it is locked by a clutch which acts on the lower ring. A cord connects the trigger of this latch to a collar mounted at the trolley base, and whenever the pole starts to rise this trips the clutch and frees the upper tubular element of the pole. The tubular element thus being released slides down the lower part giving a shorter over-all length so that it will not interfere with the overhead construction. A spring is provided to start the sliding together of the poles and when once started the upper part continues by its own weight. To restore the pole to its normal length it is only necessary to pull sharply on the trolley cord and to reset the clutch.

While a trolley pole of this type would probably not be favored for use in this country, due to its many parts and the liability of pitting action from carrying current, this particular type has been tried for several years on cars of the Paris railway at Arpajon and has given good results.

Line Truck on Ford Chassis Gives Efficient Service

Denver Tramway Builds a Truck with Hand-Raised Tower for \$1,100—The Weight Complete Is 3850 Pounds

ALL of the overhead maintenance work and a large part of the overhead construction on the Denver Tramway System has been taken care of during the past two years by a 1½-ton line truck with a McCardwell tower. It was lately realized, however, that this truck could not handle the work of periodically overhauling all of the overhead lines to insure a safe condition, and in May of this year a 1-ton Ford worm-gear-driven chassis was purchased.

Due to a shortage of labor and the large amount of work being handled in the wood shops of the company, bids were received from outside contractors for the building of a suitable body designed by the company, as shown in an accompanying illustration. It was intended to have wire gates at the rear and to have the tower raised by a set of worm gears located under the body of the truck. About \$125 was saved, however, by having an old set of hoisting gears fitted up and mounted on the rear end of the chassis. The wire gates at the rear were omitted and an iron ladder was mounted for access to the tower. The final cost of the truck complete was as follows:

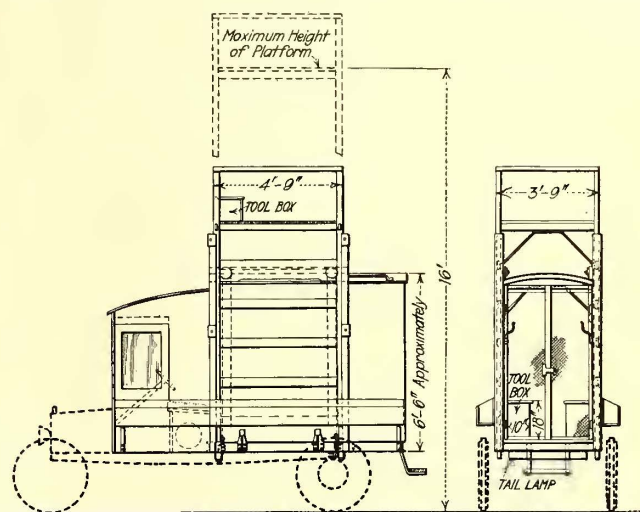
One-ton Ford chassis, f.o.b. Denver	\$648
Designing of body	50
Body complete	265
Painting	75
Miscellaneous	62
Total	\$1,100

The chassis weighs 1500 lb., body 1550 lb., and the weight of the truck complete with tools and materials is 3850 lb. Three men comprise the crew, and as the truck is designed for a capacity of 4500 lb. it is never overloaded.

A 6-volt 80-amp.-hr. battery furnishes current for the side and tail lights, but the main headlights are run from the magneto, thus obviating the chance of having the battery run down and being obliged to travel without lights. A buzzer over the driver's head with push button on the platform for signaling and a receptacle on the platform for plugging in a small portable lamp are also

connected to the battery. These are improvements over the 1½-ton truck which is equipped with an oil torch for night work and a bell cord and motorman's signal bell for signaling. Two small mirrors are provided, one at the side to enable the driver to see traffic approaching from the rear and the other at the top of the wind shield to permit the driver to watch the line-men at work.

A Dayton Universal mechanical starter was installed on the new truck, and will materially cut down on the expense of operation as compared with the 1½-ton equipment. During 1917 an average of 3.38 miles per gallon of gasoline and an operating cost, not including gasoline and driver, of 0.3067 cent per mile were obtained with the 1½-ton truck. The cost is excessive, but may be

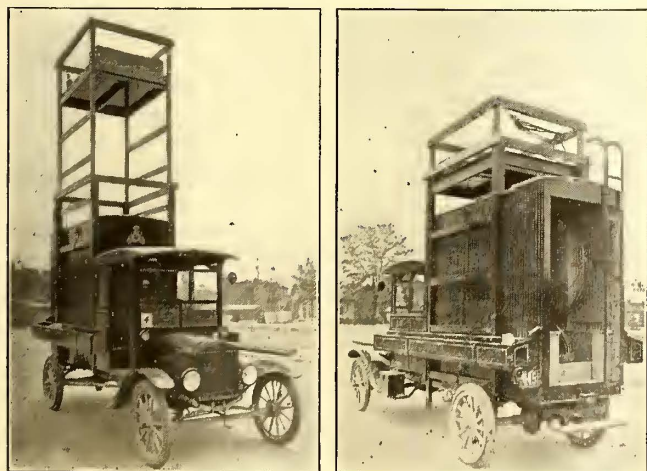


ORIGINAL DESIGN FOR ONE-TON LINE TRUCK ON FORD CHASSIS

explained by the fact that when overhauling lines the driver, not wishing to be cranking the machine all the time, made it a practice to allow the engine to run continuously while the car remained standing, and the total distance traveled might not exceed 2 miles per day. It is expected that with the starter the new truck will give an average of about 7 to 8 miles per gallon of gasoline with an operating cost of not more than 0.15 cent per mile. These figures are based upon the service rendered by several trucks of the same type in other departments.

The new type of line truck has more room for tools and materials than does the 1½-ton truck, and both the tools and the men are kept dry going to and from work during stormy weather. The small cab windows in the front are removable, giving good ventilation in warm weather. A framed blueprint showing what materials and tools are to be carried is mounted in a convenient location in the truck, so that there is no excuse for any shortage of equipment. Broken or defective tools are replaced at the storeroom. Small tools used in changing gears, switches, crossings, etc., are carried in a tool box on the top platform and two pairs of small blocks are also carried on the top hooked into rings fastened to the railing of the platform.

The stability of this truck is much better than might be expected, and while not equal to that of the heavier 1½-ton truck, is a great deal better than the old horse-drawn type of line wagon.



NEW ONE-TON LINE TRUCK FOR DENVER TRAMWAY

News of the Electric Railways

TRAFFIC AND TRANSPORTATION

FINANCIAL AND CORPORATE • PERSONAL MENTION • CONSTRUCTION NEWS

Amalgamated on Women

Ruling of the Executive Board on This Matter Stated in Letter to Local Division

The position of the Amalgamated Association of Street & Electric Railway Employees of America on the question of employment of women as conductors on electric railways was fully defined by the general executive board at the regular semi-annual meeting, held at headquarters, Detroit, Mich., Aug. 19-23, 1918. The policy of the association on this question, as laid down by the general executive board and approved by W. D. Mahon, international president, is defined in the following letter issued to all local divisions of the association:

TEXT OF LETTER

"The members of the general executive board of your association have had before them the question of the employment of women as conductors by the various street railways with which we have contracts. You are aware that the question of employing women as conductors was brought up by some of the companies as soon as the government declared war, and before a man had left our shores for Europe some companies were advocating that women be employed as conductors. Your association opposed this proposition, claiming that the time had not yet come for the employment of women as conductors upon the street and electric railways of America. These early agitations on the part of the companies for the employment of women were, in our opinion, an attempt upon their part to use women in order to reduce wages and demoralize, if possible, our organization. However, the situation has changed and many of the companies are now claiming that it is impossible to continue the operation of their cars unless we allow women to be employed.

CAR NO PLACE FOR A WOMAN

"We still contend that the position of conductor of a street or electric railway car is not the place for a woman, and that she should not be put in that position unless it becomes absolutely necessary. But in order to remove any criticism that may be placed upon our association, or any wrong impression that may be given the government as to the attitude of our association, we hereby instruct all of our local divisions as follows:

"That if it is necessary, during the period of the war, that women be employed as conductors on the cars, they be accepted into employment as follows:

"1. Where women are employed as conductors they shall be employed and enter the service the same as men were employed.

"2. They shall take their seniority, starting at the foot of the extra list and working up the same as men would work up in the employment.

"3. They shall be entitled to the same guarantees, the same wages and conditions that the men are entitled to.

"4. They shall, when employed on systems that require permits to be taken out, take their permits for membership in the organization the same as the men take permits.

"5. That when women do enter the service they shall become members of the organization, being entitled to the same protection, benefits and conditions that men are entitled to, coming under the working conditions and provisions of the agreement in the same manner."

Will Help on Questionnaire

To aid its employees in compiling their draft questionnaires, the Philadelphia (Pa.) Rapid Transit Company on Sept. 10 established a bureau at 1242 Land Title Building, that city, under the supervision of Ellis Ames Ballard, general counsel for the company, with C. B. Fairchild in charge.

In a statement to heads of departments, T. E. Mitten, president, said that the attitude of the transit company toward the new draft law "must be one of highest patriotism."

"The company, as well as its employees, must recognize the fact that the demand for man power to prosecute the war will come before all other considerations," Mr. Mitten stated.

"It will also be in order at this time to inform you that the Philadelphia Rapid Transit Company is an essential industry, the best evidence of which is the fact that the government has, during the past few months, advanced upwards of \$4,000,000 to enable the company to improve and maintain transportation service to the important Government plants located here, and the management of the company will take proper steps to protect its men who are essential to the maintenance of good service from being transferred to other lines of industrial employment.

"Military service must come first. At the same time, essential industries must render effective assistance. Our men who secure deferred classification or are not called into active military service, should not leave their essential jobs with the Philadelphia Rapid Transit Company to seek service in other industries."

Women to Continue

Arbitrators in Cleveland Decide Upon This Course Pending Their Final Report on Question

H. B. Deihlman and Miss Margaret Russanowska, detailed by the Federal Secretary of Labor to investigate the necessity of employing women as conductors on the Cleveland (Ohio) Railway, announced on Sept. 9 that the women employed in this capacity may continue to hold their places during the investigation. One of the demands of the union was that they should be dismissed temporarily pending decision upon the main question.

INTEREST OF PUBLIC FIRST

In announcing their decision, the government agents said that the interests of the traveling public demand that the women shall remain at their posts until the main issue is settled. They said the withdrawal of the women at this time would cripple the service.

J. J. Stanley, president of the railway, announced that 115 women are now employed as conductors and that as many more are in training. The ruling of the government agents, he said, means that the rush-hour trips for the accommodation of the war workers will be continued.

The investigators began their work on the question of the permanent need of employing women on Sept. 10. They said that this subject will be held primarily in view, but at the same time their investigation would include general labor problems. It is expected that a thorough examination will be made of the rights of both the company and its employees, as they relate to the employment of labor.

ARBITRATION AGREED TO SEPT. 4

The agreement to submit the dispute to two representatives of the Federal Department of Labor for adjustment was reached by the company and the representatives of the union on the evening of Sept. 4, and the threatened strike was averted. Secretary of Labor Wilson named H. B. Deihlman and Miss Russanowska to act as mediators. They arrived in Cleveland on the morning of Sept. 5.

A. L. Faulkner, representative of the Federal Department of Labor in the Cleveland district, was instrumental in bringing about this plan of settlement. Mr. Faulkner contended that the question involved did not warrant a strike, as an investigation as to the need of employing women on the cars could be made while they were at work as well as if they were temporarily removed.

In Class Two Under Priority Order

Electric Railways and Manufacturers of Railway Apparatus Placed There by War Industries Board

Electric railways, electric light and power plants and other public utilities and plants engaged principally in manufacturing equipment for railways and other public utilities are all included in Class II in the preferential list of industries and plants compiled by the priorities division of the War Industries Board and made public on Sept. 9.

PREFERENTIAL LIST THE MASTER-KEY

The preference list of industries and plants is the master-key governing the flow of basic industrial elements to the industries essential to the war program. It supersedes all previous listing. It is the basis for industrial exemption from the draft and may be regarded as the governing factor in the distribution of labor, capital, facilities, material, transportation and fuel.

The priorities division has grouped major industries according to their relative importance into four great classes, consideration being given in this grouping to these factors: (1) Intrinsic importance of the product for use during the war and the urgency; (2) necessity for maintaining or stimulating and increasing the total quantity of production; (3) proportion of the capacity of the industry or plant devoted to the production of essential products. Each industry or plant is given a class number.

The inclusion of the industries and plants on this preference list does not operate as an embargo against all others, but the effect is to defer the requirements of all other industries and plants until the requirements of those on the preference list shall have been satisfied. The paramount purpose of priorities is the selective mobilization of the products of the soil, the mines and the factories for direct and indirect war needs in such a way as will most effectually contribute toward winning the war.

In listing industries as such or individual plants, while a number of factors are taken into account, the ultimate test is: To what extent, if at all, will according preference contribute directly or indirectly toward winning the war; and, if at all, how urgent is the need.

ALL PRIORITY RELATIVE

A high priority classification does not always mean that the product of the industry of plant so classified is of greater intrinsic importance than those of industries and plants in a lower classification or not appearing at all on the preference list, but that taking into account the urgency of the demand and the relation of supply to demand, it is in the public interest that the artificial stimulus of priority should be applied. All priority is relative and implies purposeful discrimination.

The decisions of the priorities board

are subject to review only by the chairman of the War Industries Board and by the President.

For the guidance of all governmental agencies and all others interested in (1) the production and supply of fuel and electric energy, (2) in the supply of labor, and (3) in the supply of transportation service by rail, water, pipe lines or otherwise, in so far as such service contributes to production of finished products, preference list No. 2 has been adopted by the priorities board superceding preference list No. 1 adopted on April 6, 1918, and all amendments and supplements thereto.

The industries and plants grouped under Class I are only such as are of exceptional importance in connection with the prosecution of the war. Their requirements must be fully satisfied in preference to those of the three remaining classes.

Requirements of industries and plants grouped under Class II, Class III, and Class IV are to have precedence over those not appearing on the preference list. As between these three classes, however, there is to be no complete or absolute preference. The division into classes is for the purpose of presenting a composite picture of the relative importance of the industries and plants embraced within each group. It is not intended that the requirements of Class II shall be fully satisfied before supplying any of the requirements of Class III, or that those of Class III shall be fully satisfied before supplying any of those of Class IV. The classification does, however, indicate that the industries and plants grouped in Class II are relatively more important than those in Class III and that those in Class III are relatively more important than those in Class IV. It will often happen that after satisfying the requirements of Class I the remaining available supply will be less than the aggregate requirements of the other three classes, in which event such supply will be rationed to the industries and plants embraced within those classes. In determining a basis for such rationing the relative importance of each industry and plant, according to its class rating, must be considered. It has been found impracticable to prescribe for rationing purposes any general and uniform rule or formula, but the priorities board will from time to time, after conference, and in co-operation with each of the several governmental agencies charged with the distribution thereof, determine particular principles, values and methods of application which may be followed in allocating fuel, power, transportation and labor respectively, to the end that proper recognition and weight may as far as practicable in each case be given to the relative importance of Class II, Class III and Class IV.

Each plant listed as such shall not later than the fifteenth of each month file with the secretary of the priorities board, Washington, D. C., a report on P. L. Form No. 3 (a supply of which will be furnished on application) covering its activities during the preceding month. Any plant failing to file such report will be dropped from the preference list.

Priorities in the supply and distribution of raw materials, semi-finished products and finished products shall be governed by Circular No. 4 issued by the priorities division of the War Industries Board under date of July 1, 1918, and all amendments and supplements thereto or substitutes therefor.

No Referendum in Cincinnati

There will be no referendum vote on the revised franchise ordinance granted the Cincinnati (Ohio) Traction Company by the City Council. That was the decision of representatives of the citizens' committee, the city and the company at a conference in Mayor Galvin's office on Sept. 6. The proposition came from W. J. Schultz, chairman of the referendum committee of the citizens' committee. He first agreed to withdraw the committee's plan for a referendum vote on condition that Mayor Galvin issue a proclamation that the rate of fare will not exceed 6 cents during the period of the war and for one year thereafter. The Mayor said he could not issue such a fiat guarantee as that, since he could not tell what conditions will prevail after the war, but that he would issue such a proclamation with the following limitation: "Assuming that substantially normal pre-war conditions will be restored."

W. Kesley Schoepf, president of the Cincinnati Traction Company, urged all parties to get together on an agreement, after this proposition was made. He said: "Don't let us leave the building to-night without arriving at a solution that will be satisfactory to every one. There is no difference in principles between the company and its employees. They maintain that they are entitled to more pay. We admit that their position is justifiable. The only question is what amount of increase shall be granted, and I am sure that we can arrive at an agreement. Mr. Schultz's proposal suggests a solution, and I feel sure that it can be reached before the day is over. Let us recess for an hour and work out something that will be acceptable."

Representatives of the parties interested met during the recess suggested by Mr. Schoepf and formulated an agreement that was later adopted. This, it is believed, will do away with any further delay in an adjustment of the wage scale and it will put the company in a position to take care of its business with a certainty that it will receive proper protection. The revision continues over a period of thirteen years.

Seattle Matter Unsettled

The city of Seattle, Wash., through Mayor Hanson and the City Council has definitely refused to agree to the proposition offered by the United States Shipping Board representatives in Seattle, providing for the unification of the lines of the Puget Sound Traction, Light & Power Company, Seattle & Rainier Valley Railway and the municipal railway system, the operation of the lines by a committee composed of a representative each of the three interests, 6-cent fare for a straight ride, and 7-cent fare where transfers are required.

In refusing the offer, the city states that such a step would be illegal, and also that the joint operation of the cars by a committee in which the city would be the minority is inexpedient. The city, on the other hand, has sent to the officials of the Puget Sound Traction, Light & Power Company, its ultimatum in regard to the traction situation, demanding that the company accept the city's offer to lease its railway lines and equipment during the period of the war, and thus provide satisfactory service to the city.

The Puget Sound Traction, Light & Power Company and the Seattle & Rainier Valley Railway were prompt in accepting the offer of the Shipping Board to operate the railway lines under the plan suggested.

The Mayor and the City Council, in answering the communication of the Shipping Board, state that such a move as proposed would be illegal, and that the city is asked to assume authority which it does not possess, but which rests with the Public Service Commission, such as the granting of permission to increase fares, and delegation of authority to control the affairs of the municipal street railway. The city urges that the Shipping Board direct the railways to accept the solution offered by the city, namely, that of leasing the traction lines.

Wages Increased in New York

Increased wage scales for employees of the Interborough Rapid Transit Company, New York, N. Y., and of the New York Railways were made public on Sept. 10 by Theodore P. Shonts, president of both companies. The total increases granted the 22,900 employees of the companies aggregate \$3,750,000 a year. Of this amount \$2,500,000 goes to the 15,000 employees of the Interborough Company, and the remainder is divided among the 7,500 employees of the Railways Company. The average increase in wages amounts to 20 per cent.

In announcing the higher wages, Mr. Shonts said that they were granted in anticipation of receiving authorization to charge more for fares on all of the lines of both companies, which include the elevated, subway, and surface roads. He added that the expenses of operating railroads this year would probably be one-third more than last year.

News Notes

Next Winter's Snow.—Earl Godwin in his column in the *Washington Times* of Sept. 9 says that next winter's snow is bound to fall and recommends to the local executives that they paste in their hats the second paragraph from the editorial on snow fighting on the first reading page of the *ELECTRIC RAILWAY JOURNAL* for Aug. 31 and that they act on the advice.

Winnipeg to Arbitrate.—In connection with the demand of the union of employees of the Winnipeg (Man.) Electric Railway for increased rates of pay, viz., hour rates of 47 cents for the first three months' service; 55 cents for the next nine; 60 cents after the first year; time and a half for overtime, with the day as at present of nine hours, the committee announced on Sept. 3 that it had no desire to involve Winnipeg in the annoyance and general inconvenience of a strike, and with the object of amicable settlement it was decided by the union and the company to submit the matter to arbitration.

Michigan Men to Arbitrate.—Following a session on Sept. 1 of the joint advisory board of the trainmen of the Michigan Railway at which a proposition to submit the question of the legality of the findings of the arbitration board in the wage dispute to Messrs. Taft and Walsh, of the Federal War Labor Board, was presented by J. F. Collins, general manager of the company, it was decided to accept the plan. The trainmen, dissatisfied with the wage award of the arbitration board, had given notice to the company that unless some action was taken on their demands for more pay they would strike. The men asked that the question be submitted to the War Labor Board.

Capital Traction Increases Wages.—The Capital Traction Company, Washington, D. C., has followed the lead of the Washington Railway & Electric Company and has agreed to raise the wages of the men to a minimum of 43 cents and a maximum of 48 cents an hour. The present maximum is 38 cents. J. H. Hanna, vice-president and general manager of the Capital Traction Company, said a few days ago that the increase had been agreed upon but that the conferees of the union and the company were still considering certain matters of working conditions, which prevented an agreement on the whole. Whether or not his company would join the Washington Railway & Electric Company in a request for an increased fare, he said, was a matter that awaited the complete adjustment of the labor matters.

Wages and Fares Coupled in St. Louis.—A request for more wages made on Aug. 27 by employees of the United Railways, St. Louis, Mo., was refused on Sept. 4 by President Richard McCulloch, who wrote a letter to Anthony O. Piant, president of the employees' union, in which he gave the company's reasons. Mr. McCulloch says it would be futile to submit the wage matter to the National War Labor Board as that body has announced that it has no authority over revenues or rates of fare. He suggests that the association join with the company in presenting all the facts to the State Public Service Commission whenever that commission considers the present application of the company, so that the commission may be fully informed and may be in a position to pass both upon the fairness of the wages and the fairness of the rates of fare.

Short Strike in Champaign.—After a two-and-a-half day strike, precipitated by trainmen in the employ of the Urbana & Champaign Railway, Gas & Electric Company, service was resumed in Champaign and Urbana, Ill., on Sept. 5 pending consideration of a proposition to be submitted by the company within fifteen days from resumption of service. A portion of the employees of the company, which is included in the Illinois Traction System, are members of the Amalgamated Association and made demand on Aug. 28 for a number of concessions, including a "closed shop," nine-hour day, and wage scale of from 44 cents to 48 cents an hour, to replace the current scale from 32 cents to 36 cents an hour. Without notice the members of the organization failed to report for duty on Sept. 3. The company made no effort to run its cars, and Champaign and Urbana were without service for two and a half days.

Lexington Company States Its Case.—The Kentucky Traction & Terminal Company, Lexington, Ky., has given out a statement reviewing the refusal of the union to accept Mr. McElroy, the umpire appointed by Governor Stanley. This statement concludes as follows: "Under the agreement signed three years ago, it was stipulated that at the expiration of the present contract, which expired this July, if the company and the union could not reach an understanding, any controversy arising should be settled by arbitration, the company and the union to select an arbitrator and the Governor to name an umpire in case the representatives of each side failed to agree on the terms for a renewal of the contract. Mr. Sutherland (president of the union) was then a member of the executive committee, which signed that agreement, and the company stands ready to live up to it to-day, but the action of the arbitrator for the union and of President Sutherland in declining to enter into arbitration looks as if the union does not respect the provisions of that agreement."

Financial and Corporate

St. Louis Also Hit

Burdens of Higher Operating Costs Overwhelmed the Revenue Gains in 1917

The United Railways, St. Louis, Mo., is another company whose increases in operating costs in 1917 outran the gains in revenue. As shown in the accompanying statement, the passenger revenue for 1917 showed an increase over 1916 of \$490,167 or 3.92

rate of pay having been increased twice during the year, to the increase in the price of coal, the price averaging 53 per cent higher than in 1916, and to an increase in the price of all materials used in the operation and maintenance of the property. It is roughly estimated that of the increase in operating expenses, \$350,000 was due to increase in rate of wages, \$100,000 to increase in price of coal, and \$200,000 to increase in price of supplies.

COMPARATIVE INCOME STATEMENT OF UNITED RAILWAYS OF ST. LOUIS FOR CALENDAR YEARS 1916 AND 1917

	1917		1916	
	Amount	Per Cent	Amount	Per Cent
Revenue from transportation.....	\$13,038,622	99.3	\$12,548,859	99.3
Revenue from other railway operations.....	86,937	0.7	92,434	0.7
Gross operating revenue.....	\$13,125,559	100.0	\$12,641,293	100.0
Current operating expenses.....	\$7,625,827	58.1	\$6,953,124	55.0
Depreciation.....	1,575,067	12.0	1,516,955	12.0
Taxes.....	853,161	6.5	821,684	5.5
Total.....	\$10,054,055	76.6	\$9,291,763	73.5
Income from operation.....	3,071,504	23.4	3,349,530	26.5
Non-operating income.....	94,702	0.7	82,588	0.6
Gross income.....	\$3,166,206	24.1	\$3,432,118	27.1
Interest and miscellaneous charges.....	2,523,230	19.2	2,544,613	20.1
Net income.....	\$642,976	4.9	\$887,505	7.0

per cent. Other transportation revenue, however, decreased \$403.57 or 1.34 per cent, while revenue from other railway operations decreased \$5,497 and non-operating income increased \$12,113. The gross operating revenue and other income gained \$496,379 or 3.90 per cent.

OPERATING EXPENSES UP \$730,814

The operating expenses (including depreciation) increased \$730,814 or 8.63 per cent compared with 1916. Interest charges decreased \$21,383 or 0.84 per cent, owing mostly to the retirement of \$1,000,000 of St. Louis & Meramec River Railroad 6 per cent bonds which matured on May 8, 1916, and \$299,000 of Southern Electric Railroad 5 per cent bonds which matured on Aug. 1, 1916.

The amount of money paid out in wages was \$4,668,366, or 35.57 per cent of the gross operating revenue. The current operating expenses were \$7,625,827, as compared with \$6,953,124 in 1916, an increase of \$672,702 or 9.67 per cent. The increases were as follows:

Ways and structures.....	\$44,234
Equipment.....	145,444
Power.....	105,522
Conducting transportation.....	274,437
General and miscellaneous.....	110,468
	\$680,106
Less—decrease in traffic expense.....	7,403
Net increase.....	\$672,702

The increase in operating costs is ascribed to the increase in wages, the

The total capital expenditures during 1917 were \$293,495, with offsets of \$158,340 for property retired or sold, leaving a net increase of \$135,134. The car mileage in 1917 was 444,076,753 car miles as compared with 43,649,328 car miles in 1916. The passenger totals in the two years were 403,300,696 and 389,112,152 respectively. The percentage of revenue passengers using transfers in 1917 was 53.60, and the average fare per ride was 3.23 cents. The 1916 figures were 53.77 per cent for transfers and 3.23 cents for the average fare per ride.

Suspends New Security Offerings

The Capital Issues Committee, in Washington, has adopted a resolution announcing that during the period from Sept. 15 until after the close of the Fourth Liberty Loan campaign it would not pass upon any application respecting the sale or offer of new securities, excepting applications which the committee might regard as "urgently necessary."

Investment houses, brokers, corporations and others offering unsold portions of security issues heretofore passed by the Capital Issues Committee are asked to withdraw the same from public offering or solicitation during the period from Oct. 1 to the close of the Liberty Loan campaign. The committee announces that this action "is not intended to restrict counter sales or sales of listed securities made in ordinary course of business on stock exchanges."

Principal In Default

Eastern Power & Light Corporation Unprepared to Meet Collateral Trust Notes Maturing Sept. 1

Holders of the 7 per cent collateral trust notes of the Eastern Power & Light Corporation, New York, N. Y., due on Sept. 1 and the 5 per cent convertible gold bonds of that company which matured on March 1, 1918, have been asked to deposit their holdings with the Equitable Trust Company, New York, N. Y., under an agreement which makes provision for their exchange in return for negotiable certificates of deposit.

PERSONNEL OF BOND COMMITTEE

A bond committee consisting of O. B. Willcox, who is chairman of the board of the company; H. E. Cooper and H. C. Rorick has been formed. On March 1, 1918, an issue of \$2,327,000 of 5 per cent gold bonds matured and their extension was provided for in the hope that some relief could be obtained from the War Finance Corporation. Ninety-two per cent of the bondholders exchanged their holdings for 7 per cent collateral trust notes due on Sept. 1, which the company in turn found itself unable to meet on maturity.

A stockholders' protective committee consisting of W. P. Bonbright, chairman; W. S. Barstow and George C. Lee has also been formed and holders of preferred stock and voting trust certificates for the common stock are asked to deposit their holdings with the New York Trust Company and receive in exchange transferable certificates of deposit.

In a letter summarizing the situation, J. B. Taylor, president of the company, points out that during the six months ended June 30 operating costs have been mounting out of all proportion to revenues. The cost of supplies has increased more than 100 per cent, and wages have risen 50 per cent in the last two years, half of the increase coming in the last six months. Further increases in operating costs can be expected in the future, according to Mr. Taylor.

\$900,000 OF FLOATING DEBT

The company has a floating debt of \$900,000 which must be met soon. This was incurred in making advances to subsidiary companies for extensions and improvements and is secured by notes of these companies. With some readjustments, Mr. Taylor believes some of the subsidiaries (power and coal companies) are capable of earning their own fixed charges and a surplus sufficient to meet fixed charges of the parent company.

Among the properties controlled by the company are the Reading Transit & Light Company, Oley Valley Railway, Neversink Mountain Railway, Claremont Railway & Lighting Company, Claremont, N. H., and the City Railway, Wheeling, W. Va.

Chicago Financial Program

Proposals for Readjusting Capitalization of Unified Companies Under Pending Resettlement Franchise

Considerable interest attaches to the financial provisions of the Chicago traction ordinance, summarized in the Aug. 24 issue of the *ELECTRIC RAILWAY JOURNAL*. While several steps are yet to be taken before the measure is certain of becoming effective, the extent of the financial program, involving the raising of about \$500,000,000 during the life of the franchise, makes the plan unusually striking.

CAPITAL ACCOUNT \$220,114,428

The recognized capital account of the combined surface and elevated companies as of June 30, 1916, is \$220,114,428, and the present outstanding securities will have to be scaled down to this figure except for allowances for additions to capital approved during the past two years. The pending franchise provides that securities for 60 per cent of this valuation may be in the form of bonds with an interest allowance of 5 per cent, and the balance shall be covered by debentures having no lien on the properties and subject to payment from the proceeds of sale to the city. These debentures are to bear interest at 8 per cent up to July 1, 1932, and 7 per cent thereafter.

The Chicago Railways on Jan. 31, 1918, had outstanding bonds amounting to \$96,241,465. There was also \$100,000 of capital stock subject to 265,100 participation certificates of the predecessor company. It is expected that \$55,655,000 of first mortgage bonds and \$16,397,800 of Series A bonds will be fully taken care of under the city's guarantee. More than 84 per cent of the \$16,936,475 of Series B bonds are also within the valuation and subject to working out of details which practically place the entire issue in a guaranteed position in the event of the city not purchasing the property. The Series C bonds, \$903,336, will all be retired by the operation of a sinking fund. As to the remaining bonds, it is expected that if the city does not purchase the property and thus stop the income return on the agreed valuation, they will be subject gradually to retirement through amortization.

INITIAL RETURN 6.2 PER CENT

Under the old ordinance the life of all securities ended in 1927. The new franchise will give an average return of 6.2 per cent up to 1932 and 5.8 per cent thereafter. This guarantee is understood to assure full payment of 8 per cent on Series 1 participation certificates and approximately 3 per cent on Series 2 up to 1932. After that date both series will automatically disappear. Series 3 and 4, which have had no return under the present ordinance, will also be valueless under the proposed measure.

The Chicago City Railway had on Jan. 31, 1918, \$33,900,000 of first mort-

gage bonds and \$18,000,000 of capital stock. Of the latter, 94 per cent is pledged with the trustee of the Chicago City & Connecting Railways Collateral Trust. The Chicago City Railway bonds will have an assured guarantee as to principal and interest under the new franchise. The Chicago City & Connecting Railways issue of \$21,456,000 of bonds will also be taken care of in full. The \$25,000,000 of 4½ per cent preferred certificates of Chicago City & Connecting Railways stand to earn up to 1932 better than \$3.50 a share and after that date better than \$2.50 a share in perpetuity or until city purchase. The common certificates of \$15,000,000 probably would have no value.

The Chicago Elevated Railways have a recognized valuation of \$70,943,020 included in the total given above. The securities of the four elevated railway companies are held by the Chicago Elevated Railways Collateral Trust. The \$14,000,000 of two-year notes of this voluntary association and the \$7,000,000 of ten-year debentures, together with the floating debt, come within the

named Roscoe Reed as receiver for the Paducah Light & Power Company and the Paducah Traction Company.

The receiver has requested A. S. Nichols, present manager, to continue the operation of the properties pending further developments. The appointment of a receiver was not unexpected and is the direct result of conditions due to the war, attending the operation of the companies. High cost of material and labor, together with slender revenues, combined to force operation at a loss.

After a long fight the traction company was recently granted a 6 and 7-cent fare, but the added revenue proved insufficient to balance the increased cost of operation.

12 Per Cent Increase in Revenue

Kansas City Fare Increase Figures for First Four Weeks of Operation Show Interesting Facts

As has previously been announced in the columns of this paper, the Kansas City (Mo.) Railways began the collection of a 6-cent fare in Missouri on July 15. The accompanying figures present the statement of earnings beginning on that date and covering

STATEMENT FROM KANSAS CITY RAILWAYS FOR WEEKS BEGINNING MONDAY, JULY 15, TO AUG. 11, 1918, COMPARED WITH WEEK BEGINNING JULY 8, 1918

Week Ending	—Adult Passengers—		Passengers Carried on 2½-Cent Tickets		Passengers Affected by Increase	—Total Cash Fares— Since Increase	Fares— Week Before	Per Cent Increase	
	Weeks Since Increase	Week Before Increase	Weeks Since Increase	Week Before Increase				7/14/18	7/16 to 7/22/17
MISSOURI									
July 21.....	2,011,857	2,132,528	56,190	55,433	1,995,217	\$121,949	\$108,214	12.69	11.49
July 28.....	1,967,914	2,132,528	55,795	55,433	1,946,053	119,251	108,214	10.20	9.02
Aug. 4.....	2,012,971	2,132,528	59,641	55,433	1,990,262	122,042	108,214	12.78	11.57
Aug. 11.....	1,968,453	2,132,528	53,250	55,433	1,946,671	119,220	108,214	10.17	8.99
Total.....	7,961,195	8,530,112	224,876	221,732	7,878,203	\$482,463	\$432,857	11.46	10.26
KANSAS									
July 21.....	483,135	443,690	5,444	5,746	242,936	26,722	22,328	19.68	23.04
July 28.....	451,983	443,690	5,512	5,746	240,382	25,140	22,328	12.70	15.87
Aug. 4.....	451,800	443,690	5,528	5,746	239,673	25,124	22,328	12.53	15.69
Aug. 11.....	452,786	443,690	5,520	5,746	227,206	25,049	22,328	12.19	15.34
Total.....	1,839,704	1,774,760	22,004	22,984	950,197	\$102,037	\$89,312	14.16	17.48

agreed valuation. It is expected also that the \$16,000,000 of preferred stock will receive up to 1932 a return of 4 or 5 per cent. After that date there will be a less return. It is not likely that the \$25,000,000 of common stock will have any value under the new arrangement.

It has been stated that no effort will be made to agree upon a plan for the distribution of the new securities as between the various companies until after voters shall have passed upon the new ordinance at the referendum next November.

Receiver for Paducah Properties

Acting upon a petition brought by W. F. Bradshaw, of the Mechanics' Trust & Savings Bank, as trustee, upon failure of the Paducah Traction Company to meet interest on bonds of the People's Railway, Light & Power Company, Circuit Judge W. M. Reed has

a period of four weeks. An analysis shows that, as compared with the week before the increase was put into effect, that being considered an average week as to earnings, etc., there was for the average of the four weeks a decrease in adult passengers amounting to 568,917 or 6.7 per cent and an increase in total cash fares equal to 11.5 per cent.

The fare increase has not been applied to Kansas City, Kan., riders who do not cross into Missouri, of whom the report shows there are 52 per cent, and there has been an increase in adult passengers in Kansas amounting to 3.7 per cent with a total increase in cash fares equal to 14.2 per cent—2.7 per cent more than in Missouri, where the 6-cent fare applies.

The increase in passengers in Kansas was found to be made up from part of the decrease in Missouri, the explanation being as follows: There is employment for a large number of men a few blocks from the State line on the

Missouri side. The majority of these laborers live on the Kansas side, and have, of course, been in the habit of paying fares in Kansas going to their work, and in Missouri going home at night. Since the introduction of the increase in fares, all cars going from Kansas to Missouri have been stopped at the State line and the extra cent collected by special collectors. Many of the laborers, some actuated by a saving instinct, but the majority probably feeling antagonistic toward the increase, got off at the State line and walked to their work, and in the evening walked to the State line before boarding the car. This took a number of fares away from the Missouri side and added them to the Kansas side. The outcome of this development may be indicated by the first column under the Kansas figures, which shows that the increase in adult passengers dropped from 8.9 per cent the first week to 1.9 per cent the second week. The remainder of the decrease in traffic on the Missouri side is attributed only in small part to a direct result of the fare increase, it being believed that severe weather conditions, a steady depletion of the riding man-power of the city, and several other local conditions, have exerted a greater influence.

The average increase in total cash fares for the four weeks period for Kansas and Missouri combined is approximately 12 per cent.

Financial News Notes

Public Sales of Notes Successful.—The Wisconsin Gas & Electric Company, Milwaukee, Wis., has recently sold \$200,000 of five-year 6½ per cent notes over the counter and principally

to its customers. These notes were issued in denominations of \$50, \$100, \$500 and \$1,000.

Car Bonds Authorized.—The public utilities committee of the Council of Seattle, Wash., recently voted to recommend the passage of the ordinance transferring \$217,000 from the general fund for the purchase of cars for the municipal street railway, notwithstanding the veto of Mayor Hanson.

Abandonment Opposed.—Property owners of the Tal-Coe addition to the city of Temple, Tex., have organized for the purpose of opposing the removal of the tracks of the railway that serves that addition. This line forms a part of the Texas Traction Company, but the company ceased operating cars several months ago, and preparations had been made to remove the tracks.

Another Abandonment Planned.—The Fishkill (N. Y.) Electric Railway on Sept. 7 filed with the Public Service Commission of the Second District of New York notice that it has declared in favor of the abandonment of certain parts of its line as no longer necessary for the successful operation of the road and convenience of the public. The commission will order a hearing on the proposed abandonment of that part of the road in question.

Commission Approves Philadelphia Loan.—The Pennsylvania Public Service Commission has approved the contract between the Philadelphia Rapid Transit Company and the United States Housing Commission by which the Federal government, through the commission, will lend the company \$1,740,000 to extend transit facilities for workers in war industrial plants. As outlined in the ELECTRIC RAILWAY JOURNAL for Aug. 17, page 303, the money will be used to purchase ninety additional cars and accessories.

Abandonment Meeting Called.—A special meeting of the stockholders of the Forty-Second Street, Manhattanville & St. Nicholas Avenue Railway,

New York, N. Y., (Third Avenue Railway System) is to be held Sept. 24 for the purpose of ratifying the action of the board of directors in declaring abandoned the franchises to construct, maintain and operate street surface railroads in, upon and along certain streets, avenues and highways in the Borough of Manhattan, city of New York.

Wants \$750,000 Issue.—The Eighth Avenue Railroad, New York, N. Y., a subsidiary of the New York Railways, has asked the Public Service Commission for the First District for authority to issue certificates of indebtedness for \$750,000 for the purpose of discharging outstanding certificates issued in January, 1914. The company says in its application that it would not be able to pay off the certificates falling due, but expresses the hope that it will be able to meet the new ones before they mature. It is proposed to have the new certificates carry 6 per cent interest, payable semi-annually and to mature on Feb. 1, 1929.

Minneapolis Road to Resume.—Resumption of operation of the cut-off of the Minneapolis, Northfield & Southern Railroad from Auto Junction to Short Line Junction and thence over the Electric Short Line terminals to the station at Second Avenue N and Seventh Street in Minneapolis is planned as well as continuation of operation from Fifty-fourth Street station to Northfield. This was determined at the first meeting of stockholders in Minneapolis. J. H. Ellison, Minneapolis, temporary president, was elected to that office. The new directors are: H. A. Whittier, Northfield; W. F. Roche, Lakeville; John B. Irwin, Richfield; F. T. Day, Waseca; R. H. Benham, Orchard Gardens; W. O. Winston, J. H. Ellison, W. L. Harris, C. C. Wagner, A. D. Walker, Julius Rosholt, Minneapolis. Mr. Whittier was elected vice-president of the company, and Mr. Winston was chosen to fill the position of treasurer.

Electric Railway Monthly Earnings

BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, ME.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$77,978	*\$48,825	\$29,153	\$19,884	\$9,269
1m., July, '17	71,350	*41,322	30,028	18,794	11,234
12m., July, '18	917,483	*547,003	370,480	235,094	135,386
12m., July, '17	861,585	*490,717	370,868	222,633	148,235

CHATTANOOGA RAILWAY & LIGHT COMPANY, CHATTANOOGA, TENN.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$145,541	*\$115,479	\$30,062	\$32,017	†\$1,955
1m., July, '17	139,345	*90,573	48,772	29,835	18,937
12m., July, '18	1,558,279	*1,379,122	179,157	369,556	†190,399
12m., July, '17	1,337,254	*932,375	404,879	357,145	47,734

COLUMBUS RAILWAY, POWER & LIGHT COMPANY, COLUMBUS, OHIO

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$321,805	*\$219,666	\$102,139	\$56,166	\$45,973
1m., July, '17	320,953	*240,374	80,579	47,540	33,039
12m., July, '18	4,230,224	*3,063,517	1,166,707	624,337	542,370
12m., July, '17	3,781,218	*2,541,200	1,240,018	535,959	704,059

COMMONWEALTH POWER, RAILWAY & LIGHT COMPANY, GRAND RAPIDS, MICH.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$1,793,536	*\$1,218,365	\$575,171	\$506,737	\$68,434
1m., July, '17	1,586,891	*958,491	628,400	445,400	183,137
12m., July, '18	20,996,644	*13,987,285	7,009,359	5,709,642	1,299,717
12m., July, '17	18,355,019	*10,773,757	7,581,262	5,138,542	2,442,720

CUMBERLAND COUNTY POWER & LIGHT COMPANY, PORTLAND, ME.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$313,326	*\$193,763	\$119,563	\$71,342	\$48,221
1m., July, '17	308,571	*183,736	124,835	66,823	58,012
12m., July, '18	3,146,389	*2,169,782	976,607	851,150	125,457
12m., July, '17	3,019,819	*1,983,379	1,036,440	812,510	223,930

EAST ST. LOUIS & SUBURBAN COMPANY, ST. LOUIS, ILL.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$377,497	*\$270,935	\$106,562	\$67,445	\$39,117
1m., July, '17	314,202	*219,015	95,187	64,757	30,430
12m., July, '18	3,927,213	*2,862,830	1,064,383	804,305	260,078
12m., July, '17	3,418,246	*2,173,588	1,244,658	768,991	475,667

GRAND RAPIDS (MICH.) RAILWAY

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$109,280	*\$83,945	\$25,335	\$19,340	\$5,995
1m., July, '17	113,390	*75,897	37,493	16,348	21,145
12m., July, '18	1,281,980	*950,427	331,553	229,874	101,679
12m., July, '17	1,302,532	*868,007	434,525	208,316	226,209

PORTLAND RAILWAY, LIGHT & POWER COMPANY, PORTLAND, ORE.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., July, '18	\$659,379	*\$415,669	\$243,710	\$190,901	\$52,809
1m., July, '17	511,624	*279,043	232,581	177,586	54,995
12m., July, '18	6,963,845	*4,318,193	2,647,652	2,169,015	478,637
12m., July, '17	5,727,598	*3,093,915	2,633,683	2,169,583	464,100

* Includes taxes. † Deficit. ‡ For the month \$19,781; and for twelve months, \$310,293 included for depreciation.

Traffic and Transportation

Only Legislature Has Power

In Matter Involving Tacoma's Seven-Cent Fare United States Attorney Holds Legislature Has Power

United States Attorney Robert C. Saunders on Sept. 5 stated in an opinion rendered upon request of the Attorney General at Washington, D. C., that the 7-cent fare now being charged in the city of Tacoma, Wash., by the Tacoma Railway & Power Company, is not legal.

OPINION BASED ON STATE LAW

Prosecutor Saunders' opinion is based on the State law, which says that fares in cities in Washington never shall be more than 5 cents, and also upon a decision of the State Supreme Court which says that the power to increase such tariffs is vested in the Legislature. Mr. Saunders expresses the same belief as that of Mayor Hanson of Seattle in his answers to proposals by the Puget Sound Traction, Light & Power Company to increase fares in Seattle to 6 or 7 cents.

Prosecutor Saunders stated that the Attorney General at Washington had also asked for an opinion from the United States Attorney of Oregon on the advance in city railways in Oregon.

It is stated by Mr. Saunders that the Attorney General asked for his opinion upon a request from Postmaster General Albert S. Burleson, who recently received a letter from Alice Thorsen, who is a well-known club woman of Tacoma, raising the question of the legality of the advanced fares in Tacoma. Miss Thorsen expressed the belief that the Government was being defrauded through the demand being made upon letter carriers for extra fare on Tacoma cars. Mr. Saunders said in part:

"Street car companies desiring to raise their rates in this State must seek their relief from the Legislature. The power to advance such rates does not rest with the city, the Public Service Commission or with the courts.

SAYS STATE LAW IS PLAIN

"The State law is plain. Section 25 of the Public Service Commission law, passed by the Legislature in 1911, says fares never shall be more than 5 cents for one continuous ride in any city in the State. This and other related matters last spring were tested in the courts. In the case of the State ex rel the Tacoma Railway & Power Company, the Supreme Court on April 7, 1918, held that the remedy for relief from franchise obligations on an application for increased fares, that it might give adequate and sufficient service, rests with the Legislature."

The 7-cent fare in Tacoma was authorized by the City Council on July 6. It was decided that the matter was one of a war emergency and should be put on that basis. The principal features of the ordinance were reviewed in the *ELECTRIC RAILWAY JOURNAL* for July 20, page 130.

Brooklyn Wants Ten Cents

Would Divide Surface Railway System into Two Five-Cent Zones and Reduce Transfers

New passenger tariffs filed with the Public Service Commission for the First District of New York on Sept. 10 by the Brooklyn Rapid Transit Company divided the surface lines of the company into two zones with a 5-cent fare for each zone or a 10-cent fare for a ride in both zones. They also called for a modification of the transfer system so that transfers would be confined to each zone. The plan provided for the operation of the new schedules in thirty days, but the commission, at a meeting held on the evening of Sept. 10, issued an order deferring the new schedules for sixty days. In the meantime the commission will hold public hearings beginning on Sept. 30 to determine whether to accept or reject the new plan.

FARE AUTHORIZED BY FRANCHISE

Accordingly, the petition of the surface companies sets forth that in the tariffs filed they have "followed the decisions and opinions of the commission, as expressed in the fare case hereinabove referred to, and each of said tariffs imposes no rate of fare in excess of that authorized to be charged by the franchise agreement between municipal governments and each of your petitioners respectively and by law. In many instances the said tariffs do not impose as high a rate of fare as your petitioners respectively are authorized to charge by such contracts and law."

The petition calls attention to the injurious effects of the order of 1911 upon revenues, the increased costs of transportation occasioned by the order, the war and other causes, and the diminished and confiscatory rate of return permitted by said order and existing conditions. It refers to the companies' previous request of May 23, 1917, for a partial modification of that order and asserts that the relief then sought for "is entirely insufficient to enable your petitioners properly to maintain and adequately to operate their properties, or to get any adequate return therefrom under existing conditions."

REVENUE FIGURES PRESENTED

The petitioners refer to the financial statements indicating the falling off in revenues on surface lines and the increased cost of transportation, and add:

"Since the close of the fiscal year on June 30, 1918, the passenger re-

ceipts of your petitioners have fallen off upward of \$400,000 below the passenger receipts for the same period of the preceding year, while the operating expenses are constantly increasing, as indicated in the evidence before you, to which you are respectfully referred. Since Aug. 2, 1918, wages of employees have been raised to rates which will represent an additional yearly expenditure of considerably more than \$1,000,000. This situation cannot continue without financial embarrassment and additional public inconvenience.

"Additional relief to that herein sought will be required, and this is being requested in an application before the Board of Estimate & Apportionment for the right to increase the unit of fare from 5 to 7 cents; but your petitioners ask as a measure of immediate justice the relief involved in the application hereby made, which is within the legal power of the commission to approve."

Under the new tariffs transfers will continue to be issued at about fifty-seven locations.

Court Hears Columbus Case

Federal Judge D. C. Westenhaver, of Cleveland, heard arguments in the legal fight between the Columbus Railway, Power & Light Company, Columbus, Ohio, and the city of Columbus during the week ended Sept. 7. The company has, as already stated, increased its rate of fare to 5 cents and is endeavoring to have its franchise abrogated, on the ground that the terms of the grant are confiscatory and that the company cannot operate under them without encountering financial trouble.

J. S. Clark, representing the E. W. Clark Management Company, operating the road, contended in court that the franchises granted in 1901 merely give the company the privilege of operating on the streets and that they may be terminated at any time by ceasing operation. On certain streets the company claims perpetual franchises, but on others it has only rights.

Henry L. Scarlett, city solicitor, accused the company of unfairness. He said that it was willing to operate during the prosperous years when profits were considered satisfactory, but wanted to surrender its rights when profits failed to materialize. He also claimed the company had failed to furnish the city with an appraisal of its plant, as requested. Judge David C. Pugh said the company sought to tear up its agreement with the city when it suited the company to do so.

It is said that a few people continue to ride without paying fare.

Increases in North Carolina

Review of Fare Conditions in That State as They Affect the Railways There

A report from the North Carolina State Committee to the National Committee on Public Utility Conditions, Washington, made under date of Aug. 15, announced the following increases in fares:

MANY CITIES AFFECTED

Tidewater Power Company, Wilmington, N. C., 7-cent cash fares and four tickets for 25 cents. Company may sell seventeen tickets for \$1 effective latter part of June, 1918.

Carolina Power & Light Company, Raleigh, N. C., 7-cent cash fares and four tickets for 25 cents, with discretionary privilege of selling seventeen tickets for \$1.

The Southern Public Utilities Company, Winston-Salem, N. C., 7-cent cash fares and four tickets for 25 cents, with discretionary privilege of selling seventeen tickets for \$1.

The Southern Public Utilities Company, Charlotte, N. C., 7-cent cash fares and four tickets for 25 cents, with discretionary privilege of selling seventeen tickets for \$1.

The Durham Traction Company, Durham, N. C., 7-cent cash fares and four tickets for 25 cents, with discretionary privilege of selling seventeen tickets for \$1.

None of the companies is selling seventeen tickets for \$1.

The increases were granted by the State Corporation Commission.

The Carolina Power & Light Company, Asheville, N. C., has eliminated all cut fares, and is on a strictly 5-cent cash fare basis. This was arranged locally at Asheville.

The North Carolina Public Service Company, operating in Greensboro, High Point, Salisbury-Spencer, and Concord, has eliminated all reduced rate tickets, and is operating on a 5-cent cash fare basis, pending a decision on its appeal for a 7-cent fare.

TWO SMALL COMPANIES STAY OUT

This leaves the small companies at New Bern and Goldsboro as the only ones which have made no move for relief. Goldsboro is quasi-municipal. These cities only operate two or three one-man cars. In Gastonia the Piedmont & Northern Railway, which operates there, has obtained permission to charge 7 cents.

R. L. Lindsey, vice-president and general manager of the Durham Traction Company, chairman of the North Carolina committee, says that company's application for additional revenue included an appeal for relief from ordinances requiring the operation of cars with two men and fixing certain other standards. Its appeal to the commission in these respects resulted in a memorandum to the effect that the company should be allowed to operate on a schedule dependent on the amount

of traffic and need for service in different parts of the city. The commission also said that it did not think that operation with two men should be insisted on in time of war. The city authorities have not repealed the ordinance, but since the fare hearing they have made no further attempts to interfere with the orderly operation of the company.

As noted previously in the *ELECTRIC RAILWAY JOURNAL* there was little or no opposition to the fare increases before the State Commission by the different city authorities affected.

Wants Increase on County Lines

The United Railways, St. Louis, Mo., applied to the Public Service Commission of Missouri on Sept. 4 for authority to increase the fares on its St. Louis County and St. Charles lines. It did not ask for a specified amount. It is said that the commission probably can entertain jurisdiction in these applications because Circuit Judge John G. Slate's judgment setting aside the 6-cent fare in the city upon the ground the commission exceeded its authority in granting them is not applicable to the county lines.

Providence Fare Hearing Sept. 16

The Public Utilities Commission of Rhode Island will on Sept. 16 begin its investigation into the new fare schedule filed by the Rhode Island Company, mention of which was made in the *ELECTRIC RAILWAY JOURNAL* of Sept. 7, page 434. When filed, the new rates were to go into effect Sept. 15, but the commission has ordered them suspended until Nov. 15, pending the investigation.

At the last session of the General Assembly the present zone system was adopted after much controversy, and was ordered into effect. The same law gave to the Utilities Commission authority to modify the system and regulate rates. Under that authority the company believes it has a right to increase fares if it can show necessity.

The present zone system established a 5-cent zone in Providence having a radius of about 2½ miles. Beyond that, zone limits were fixed approximately every 2 miles, and the fare in each of these outside zones was 2 cents for a through passenger, with a minimum of 5 cents as fare in all cases.

Under the new schedule filed the 5-cent zone in Providence is reduced in radius to about 2 miles, and the outside zones, while left practically the same in size, would be 5-cent zones instead of 2-cent zones.

The first point to be settled at the hearings, it is expected, is whether the company can raise fares under the law, and if that is found to be legal, the point will come up concerning the shifting of zone limits, which are named in the law. With the preliminaries out of the way, the procedure throws upon the Rhode Island Company the burden of proving that the new rates are reasonable and just.

2200 Women Workers

This Number of Women in Use on Brooklyn System in All Branches of Service

T. S. Williams, president of the Brooklyn (N. Y.) Rapid Transit Company, in the recent annual report of the company, commented as follows on the use of women by the company:

"In common with other railroad systems our companies' have found it necessary to employ large numbers of women to do work formerly undertaken by men. While some mistakes have been made in selection, such as would naturally occur at this inception of any experiment so radical, it must be said for the great majority of women who have sought these new occupations that they have shown themselves to be efficient, faithful and above reproach.

"There are approximately 576 women now employed as guards on the subway and elevated trains; 252 as conductors on surface lines; 120 in light shop work, and 173 as car cleaners and porters. For a great many years women have been employed as ticket agents, and we have 1150 now acting in that capacity. The employment of women has presented some new problems, particularly with reference to suitable accommodations at depots and shops, and in respect to medical and moral supervision, but these problems are being solved.

"In no class of work in which women are engaged do the duties require unusual physical effort. There is no discrimination against them in the matter of compensation, and the wages paid are considerably in excess of what similar women have heretofore received or been able to get in their previous occupations. To many of them such occupation has been a great boon, for it enables them to support themselves and their families, while husbands or other family wage earners are fighting. Had it not been for the readiness of women to fill these places street railroad service would have been much more seriously handicapped during the past year."

Objects to One-Way Operation

An ordinance has been introduced in the City Council of Portland, Ore., providing for the routing of vehicular and electric railway traffic one way in the district between Taylor, Oak, Front and West Park Streets. The pedestrian traffic will not be regulated by legislation, but educational propaganda will be used in an effort to force the people to observe traffic officers' instructions. F. I. Fuller, vice-president of the Portland Railway, Light & Power Company, maintains that the plan would involve an expenditure of between \$40,000 and \$50,000 on the part of the company. He also objects to the plan on the ground that the company would lose one-half of track area now in use, and that the additional cars forced on one-way tracks would result in congestion.

Selling Transportation in Dallas

Conductors and motormen operating the cars of the Dallas (Tex.) Railways have orders to stop and wait for persons running to catch a car if such person is within reasonable distance. This order was issued by Richard Meriwether, general manager. Mr. Meriwether said:

"If a car gets under way, the motorman and conductor are not supposed to stop it to take on other passengers, but if either the motorman or the conductor sees a person coming to catch the car and the person is not too far away, it is the duty of the car crew to wait under most conditions. They are to use their best judgment under such circumstances. Sometimes a car will be late and the motorman can not afford to hold his car for the person to reach it. It depends somewhat, too, upon whether there are many cars running on the line. In cases where a person would be obliged to stand and wait ten or twelve minutes for another car to come along the motorman or conductor usually tries to wait for the passenger.

"In the downtown section it is frequently not practicable to hold cars to suit the convenience of persons approaching to board them. The car stops at an intersection, for instance, and takes on the passengers waiting there. The traffic officers turns his sign so as to permit the forward movement of the car. The motorman must move his car onward unless he is actually taking on passengers, for if he does not do so the traffic sign is soon turned the other way and the car is delayed two or three minutes, perhaps. Of late we have shortened up schedules on some lines, thus reducing the running time. This has made it necessary to keep the cars moving without unnecessary delays. The public can assist us in having rapid transit in Dallas, if the people make it a point not to lose time in boarding cars and in alighting from them. Persons, as a rule take much more time in getting on cars than is necessary. If they would get on the cars promptly and then promptly move into them and get their seats, making room for those following them, the time lost would be greatly reduced."

I. C. C. Authorizes Increases

Authority to increase fares was granted by the Interstate Commerce Commission on Sept. 11 to a number of suburban and interurban electric railroads, the advances asked for by the roads being reduced in nearly every case. The orders include:

Union Traction Company, Coffeyville, Kan., increase not to exceed 2.6 cents per mile between Parsons and Coffeyville and Nowata, Okla., and intermediate points. The company asked for 3 cents a mile.

Alton, Granite & St. Louis Traction Company, Alton, Ill., increase to 2½ cents per mile plus Mississippi River bridge fare. The company asked for 3 cents a mile.

East St. Louis & Suburban Railway, East St. Louis, Ill., increase of 1 cent in the 10-cent fare between St. Louis and East St. Louis, Ill., and nearby points in Illinois.

Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan., an increase in local fares to 2.6 cents per mile between Kansas City and Lawrence, Kan., and intermediate points. Three cents had been asked for.

The commission is also reported to have authorized the Aurora, Elgin & Chicago Railroad to increase its passenger rates 25 per cent.

Planning Cleveland's Subway System

The Cleveland (Ohio) Rapid Transit Commission on Sept. 10 approved a contract with Barclay Parsons & Klapp, New York, for a survey and preliminary engineering work in preparation for the construction of the proposed underground terminal and subway in that city. One of the questions the firm will be called upon to consider is the direction the growth of the city will take in the future, for the commission desires to plan in the first construction work for the extensions that are to be made later. The engineer will begin then on Oct. 1. The contract price for their services is \$25,000.

Owl Car Receipts Fall Off

Figures submitted by the New York (N. Y.) Railways to the Public Service Commission for the First District of New York in announcing that it intended to cease operating surface cars from midnight to 6 o'clock in the morning, show that during the fiscal periods from 1913 to 1918, inclusive, the receipts from sixteen of the lines fell off a total of \$1,867,088.

The only line which did not disclose a substantial decrease in returns was the Eighth Street line, where there was an increase of only \$1,011 during the six-year period, or an average annual increase of only \$168.

This table shows the comparative earnings of the lines in 1913 and 1918, according to the company's figures:

	STATEMENT OF RECEIPTS	
	1913	1918
Lexington Avenue...	\$1,704,360	\$1,237,569
Madison Avenue	1,923,645	1,869,219
Sixth Avenue	1,113,371	1,015,636
Columbus Avenue ...	1,714,249	1,275,718
Amsterdam Avenue ..	730,021	611,944
Seventh Avenue	679,445	578,751
Eighth Avenue	1,556,960	1,315,803
Ninth Avenue	280,303	213,787
145th Street	90,449	79,929
116th Street	286,089	263,706
Eighty-sixth Street ..	298,939	280,875
Thirty-fourth Street ..	672,150	571,674
Twenty-third Street ..	777,879	646,224
Eighth Street	184,912	185,923
Canal Street	6,100	5,035
Grand total	\$12,018,882	\$10,151,793

The Public Service Commission is busy investigating the affairs of the company and separating those lines where the franchise terms prevent any curtailment of the service from those that are more or less within the company's control.

Basis for Rate Appeals Defined

The Public Service Commission for the First District of New York in an opinion prepared by Commissioner Kracke, has established a basis on which applications for rate increases must be made, and the precise facts that must be proved to the satisfaction of the commission's experts.

Mr. Kracke finds that where a company is earning a fair return on its investment it is not entitled to charge more for its product just because the costs of labor and materials have increased, and that permission to increase the rates must also be denied to those companies which have earned more than a reasonable return in the past and have comfortable balances at their disposal. These balances must first be exhausted before the company will have any standing as a suppliant for financial relief.

In his opinion Mr. Kracke says in effect that any relief granted must be within lawful and reasonable limits and must be because of conditions caused by the war which demand rate readjustments "as a sheer matter of conserving and continuing absolutely essential public services of heat, light, transportation, power, and communication." He says that when a change in the rate is imperative "it is important that the means be available of making the readjustment as expeditiously and economically as the facts warrant without in any way binding the companies, the consumers, or the commission as to the action which will be taken when conditions are again normal."

Entertainment for Tacoma Employees

The semi-annual dance and revue of the employees of the Tacoma Railway & Power Company was held at the Masonic Temple, Tacoma, Wash., on the evening of Aug. 29. The committee in charge of the dance and revue was composed of representatives of the transportation department and the power and equipment department. After the presentation of the revue, ice cream, cake and punch were served.

The dances were listed on the program as follows: Puyallup Hop, McKinley Flop, Traction Blues, Skip-Stop Trippers, One-Man Wiggle, Block Light Meet, Seven-Cent Waltz, Fern Hill Jazz, Spanaway Glide, Port Defiance Bumps, Tide-Flats Roughs, and the "K" Street Squeeze. There was plenty of good music for both the dance and the revue.

There is talk of having another entertainment of a similar nature. The next movement, however, will probably be that of getting an orchestra together, for in looking for talent for the revue it was found that there are enough talented employees in the service of the company to make a fine orchestra.

Many officers of the company were in attendance.

New Jersey Case Concluded

The hearing on the renewed application of the Public Service Railway, Newark, N. J., to the Board of Public Utility Commissioners of that city for permission to charge a 7-cent fare was concluded at a session in Newark on Sept. 5. The railway was represented by Thomas N. McCarter, president; E. W. Wakelee, vice-president; Frank Bergen, counsel, and L. H. D. Gilmour, solicitor. Mr. Wakelee summed up the company's plea for additional revenue. Chief Counsel Marshall Van Winkle, who has represented the League of Municipalities opposing the fare increase, was absent from the hearing. George L. Record was heard in opposition, however, but there seemed to be some question about his status. Finally Mayor Gillen of Newark declared that Mr. Record represented that city. Mr. Record said that he had no new evidence to offer because the case of the municipalities had been presented in the earlier proceedings and the League of Municipalities decided to stand by the testimony produced previously. The commission took the case under advisement. As a result of its original plea to the commission for relief, the company was allowed to charge 1 cent for each transfer.

New Buffalo-Niagara Falls Tariff

The new passenger fare tariffs just filed with the Public Service Commission for the Second District, containing increased fares between points on the Buffalo and Niagara Falls and the Buffalo and Lockport divisions and the company's high-speed line, are proposed as effective on Sept. 28. The increases proposed follow increased rates which went into effect on Aug. 22, when the one-way fares between Buffalo and Niagara Falls were increased from 35 to 50 cents and between Niagara Falls and Lockport from 35 to 50 cents. There were like increases between Buffalo and Lockport and between Lockport and Niagara Falls. On the Buffalo and Lockport division one-way cash fares between all points where the present fares are in excess of 5 cents are increased, the increases varying in amounts from 5 cents to 30 cents, and ticket fares between Buffalo and Lockport, Buffalo and Niagara Falls, and Lockport and Niagara Falls are increased 10 cents. The prices for monthly commutation ticket books between Lockport and Buffalo, and Lockport and Niagara Falls are increased from \$8 to \$10, between Lockport and Tonawanda from \$6.90 to \$9, and between Lockport and Paynes Avenue Junction from \$5.50 to \$7.50. The prices of school commutation ticket books are increased between Buffalo and Lockport from \$6 to \$7.50, and between Buffalo and North Tonawanda from \$3.75 to \$4.75, and between Pendleton Center and Lockport from \$3.25 to \$4.25. These are only a few of the changes, but they indicate the general trend of the tariff.

Transportation News Notes

Wants Six Cents in Topeka.—The Topeka (Kan.) Railway has filed an application with the Public Utilities Commission asking permission to establish a 6-cent fare in Topeka and Oakland.

Providence Service Cut.—Changes in the running time and terminals of certain lines and discontinuance of some service have been announced by the Rhode Island Company, Providence, R. I., in the hope of effecting additional operating economies.

Seven Cents Asked in Atchison.—The Atchison Railway, Light & Power Company, Atchison, Kan., has applied to the Public Utilities Commission for a 7-cent passenger fare in that city, and an increase of 20 per cent in its light and power schedule in Atchison.

Newark Would Abolish Owls.—The Public Service Railway, Newark, N. J., is considering the advisability of discontinuing all traffic in that city between midnight and 6 a. m. except on such lines as are used by the employees of industrial plants where war work is in progress.

Houston Fare Plea Filed.—The Houston (Tex.) Electric Company has an application pending before the City Council for a 7-cent adult fare and for a 3½-cent fare for school children. The matter of increased fares for this company was referred to in the issue of this paper for Sept. 7.

Wants Freight Increase.—The Elgin & Belvidere Electric Railway, Elgin, Ill., has petitioned the Public Utilities Commission of Illinois for an increase of 25 per cent in freight rates and an increase in express rates to conform with those now charged by the government-controlled express companies.

Harrisburg Companies File New Tariffs.—The Harrisburg (Pa.) Railways has filed with the Public Service Commission of Pennsylvania a tariff calling for a 6-cent fare from Oct. 1. The Valley Railways, operating in Lemoyne across the river from Harrisburg, has filed a tariff with the commission calling for a 7-cent fare from Oct. 1.

Fort Wayne Wants Six Cents.—The Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., has petitioned the Public Service Commission of Indiana for permission to charge a straight fare of 6 cents in Fort Wayne and 3 cents a mile on the interurban lines. A straight 5-cent fare went into effect in Fort Wayne some time ago.

New Tariff for Connecticut Valley Line.—The Connecticut Valley Street Railway, Greenfield, Mass., has filed a tariff with the Public Service Commission effective on Nov. 4 proposing to increase the rate of fare. The system has been divided into zones each approximately 1 mile in length, the fare to be 3 cents in each zone with a minimum charge of 6 cents.

Five Cents Straight in Ottawa.—The Ottawa (Ont.) Electric Railway has raised its passenger tariff by abolishing the \$1 books of tickets, and substituting ticket strips containing five instead of six tickets for 25 cents, thus establishing a straight 5-cent fare. No other change has been made in the tariff, the workmen's, school children's and Sunday tickets remaining at the usual rates.

Los Angeles Suburban Fare Increase.—The Railroad Commission of California on Sept. 4 granted an increase in passenger rates to the Pacific Electric Railway, Los Angeles, which is expected by the commission to produce approximately 20 per cent increase in the gross revenues of the company. The increase is applicable to lines outside of Los Angeles only, fares within the city remaining at 5 cents. The company asked 7 cents in the city.

No Higher Fares as Yet for Boston.—Contrary to press reports, there is no prospect of any immediate establishment of fares in excess of the present 7-cent unit on the Boston Elevated Railway. The trustees are studying methods of increasing revenue, including possible zone plans, but until the War Labor Board issues its finding in the company's wage case, it will be difficult to determine the next step in fare studies. During the past month the 7-cent fare has increased revenue by about 23 per cent.

Commission Approves Denver Increase.—The Public Utility Commission of Colorado on Sept. 12 granted the petition of the Denver Tramway for emergency relief. This will render effective on Sunday, Sept. 15, on all city lines a 6-cent fare with no reduction in rates except a 3-cent fare for children. The City Council previously passed the 6-cent fare ordinance, thus establishing in Denver one of the first instances in the country, if not the first, where both the municipality and the State have joined in giving concurrent relief.

Abandonment of Owls Frustrated.—The plan of John Candler Cobb, Boston, Mass., to suspend the operation of all of the surface lines operated by the New York (N. Y.) Railways from midnight to 6 o'clock in the morning was overruled on Sept. 10 by the Public Service Commission for the First District of New York which adopted an order making it impossible for the company to curtail the present service. Mr. Cobb represents the income bondholders of the company. He is a member of the board of directors of the company.

Question of Authority at Montgomery.—Holding that it had jurisdiction over regulating fares in all municipalities of Alabama, the State Public Service Commission, in session on Sept. 4 set aside the 7-cent car fares granted the Montgomery Light & Traction Company on Sept. 3, by the City Commission. The company, already engaged in collecting the increased fares, when notified that each collection constituted an illegal act, discontinued the practice. The company had appealed to the commission for a 10-cent fare on its lines extending beyond the corporate limits.

Philadelphia Fare Policy Announced.—The Philadelphia Rapid Transit Company has announced that, should the Public Service Commission fail to ratify the pending contract between the city and the company for the operation of the city-built lines, it will, prior to Jan. 1, 1919, request the commission to establish a zone system of fares in Philadelphia. It is proposed to make the base fare 5 cents with an additional charge for passengers outside of the original zone. Notice to this effect was received by the commission on Sept. 10 in a letter from Thomas E. Mitten, president of the company.

"The Trollier" Discontinued.—The Rhode Island Company, Providence, R. I., announces the discontinuance of *The Trollier*, a weekly publication issued in the interest of the company and its employees. In the issue of the paper for Aug. 31 the company says: "For the last few weeks the serious financial condition of the Rhode Island Company has become more and more acute, but we have tried to hold all departments intact. After careful consideration and much regret the directors voted to suspend temporarily, we hope, the official organ that has done so much to bring us all into closer communion."

Yonkers Fare Plea Entered.—Leslie Sutherland, vice-president and general manager of the Yonkers (N. Y.) Railroad, appeared before the Yonkers Common Council on Sept. 9 to support a petition that the company's franchise be suspended for the duration of the war and one year afterward. Mr. Sutherland, who is also second vice-president of the Third Avenue Railway, New York City, would not state what amount of increase was desired. He did say, however, that unless the company was granted an increase it would probably have to suspend. The Council referred the petition to a sub-committee which will take the matter under advisement. This committee will probably report within a few days.

Wants Three Cents a Mile.—George Bullock, as receiver of the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., on Sept. 7 filed an amended petition with the Public Service Commission for the Second District, asking authority to charge passengers at the

rate of 3 cents a mile from the State line to the city of Buffalo, instead of 2½ cents a mile. The petition says the employees have received a wage increase of approximately \$75,000 in New York State and are demanding a further increase, facts regarding which were presented to Commissioner Barhite at a hearing in Buffalo on Sept. 4. There will be another hearing before the commissioner at Buffalo on Sept. 16.

More One-Man Cars for Seattle.—The Puget Sound Traction, Light & Power Company, Seattle, Wash., will install one-man car service on two new routes, one from Columbia Street over the West Queen Anne and Kinnear lines to Second Avenue West, and the other on the Broadway line, from Union to Prospect Street, duplication of the Capitol Hill service now being given. The one-man cars will operate throughout the entire day, and will be in addition to the present cars. The company believes the Queen Anne Hill patrons will patronize the small cars in the rush hours, thus relieving the present overloading of the West Queen Anne cars, which cannot be increased in number, because of the counterweight limitations.

Additional Subway Service Ordered.—The inquiry which the Public Service Commission for the First District of New York has been making into the condition and operation of trains by the Interborough Rapid Transit Company resulted on Sept. 7 in an order increasing the service both as to the number of trains and the number of cars. Beginning Sept. 15, the company is directed to operate ten-car express trains on a two-minute headway during the rush hours on the west and east side subways, and six-car local trains on a three-minute headway in the same periods. To the end that the commission may know that the order is obeyed and maintained without interruption, it directs the company to file schedules covering service at all hours, exclusive of Sundays and legal holidays.

Oakland Company to Accept Bus Transfers.—The De Luxe Transportation Company has arranged with the Oakland (Cal.) Traction Company to deliver all passengers at Hayward to the electric system for transportation to San Francisco or East Bay cities. The bus service will also handle freight, baggage, express and mail. The De Luxe Company is to operate buses from San José to the Alameda County line, at which point passengers are to be transferred to the street cars. The schedule is every forty minutes during the rush hours and at hour intervals during the remainder of the day. The through rate (47 miles) is to be \$1.10, and 85 cents is to be charged between San José and Hayward (31 miles). The passenger buses are to be lighted and heated electrically. Each will have a seating capacity for twenty-five passengers.

Six Cents for Fresno.—The Railroad Commission of California has authorized the Fresno (Cal.) Traction Company to increase its 5-cent fares to 6 cents, and its commutation fares 10 per cent. The company has operated with a deficit each year for the last four years. The company estimates a deficit this year, if the present rates were maintained, of \$85,000. In the commission's judgment the public would favor any increase in rates, rather than a radical reduction in the service rendered. The relief sought by the company does not rest upon any demands for return upon invested capital, but only for sufficient revenue to meet operating expenses and fixed charges. According to the commission, this situation represents a war necessity. Any added revenue obtained from the increase in rates will be absorbed in increased compensation positively necessary to employees and for the purchase of materials.

Conference on Reading Valuation.—Another hearing was held in Reading, Pa., on Aug. 29 before the Public Service Commission, in the matter of increased fares which high operating costs have made necessary on the city and suburban lines of the Reading Transit & Light Company in Reading, Norristown and Lebanon. Contentions having been raised by the protestants, over the valuation which the company submitted at the first hearing some months ago, the commission ordered that an engineer representing the railway and another representing the protestants confer with one of the commission's engineers, with a view to having a valuation agreed upon, that can be used as a basis for the final disposition of the fare cases. There being nothing further to submit from the protestants, this ended the hearing. Another will be called as soon as the engineers have a report to submit.

Fares Fixed by Ordinance Must Stand.—A decision was handed down on Sept. 10 by Judge Chatfield in the United States District Court in Brooklyn in the case of the Gas & Electric Surety Company against the Manhattan & Queens Traction Corporation, New York City, in which it was held that it is not the province of the court to alter rates fixed by contract between a city administration and a private corporation, but a matter for legislation. The suit, brought in the Federal court because the defendant corporation is now in the hands of a receiver, is based on a plea for increase to a 7-cent fare and increases of wages of employees. The Judge said: "The receiver of a property can operate under the franchise or contract, but cannot disregard the essential limitations showing of what the property consists. Beyond the limits created by the franchise or contract the court has not the power to fix rates other than the city has already fixed." The case has been pending only a short time.

Legal Notes

FEDERAL COURTS—*Owner of Property Injured by Railway Construction Must Show Actual, Not Relative, Loss.*

The owner of realty injured by the construction and operation of an elevated railroad was not deprived of his property without due process of law in violation of the Fourteenth Amendment because benefits resulting from the increased travel were considered in determining whether the premises had been damaged, though other lands in the neighborhood were similarly benefited, for the right guaranteed is merely that the owner shall not be deprived of the market value of his property under a rule of law making it impossible for him to obtain just compensation, and there is no guaranty that he shall derive a positive pecuniary advantage from a public work whenever a neighbor does. (*McCoy et al. vs. Union Elevated Railway*, 38 Supreme Court Rep., 504.)

CALIFORNIA—*Penalty for Frivolous Appeal.*

Where the evidence in the opinion of the court showed that the defendant was extremely negligent and that the person killed was not negligent, an appeal on the ground that deceased was negligent as a matter of law and that defendant was entitled to a directed verdict, was frivolous, and a penalty of \$100 was added to the damages. (*Levings et al. vs. Pacific Electric Railway*, 173 Pacific Rep., 87.)

INDIANA—*The Right of Way of Funeral Processions.*

In an action for damages in a collision between a street car and a hearse, where the company admitted that it was customary to give funeral processions the right of way, an instruction that although the driver had an equal right of way with the car, it was his duty on seeing the car to drive off the tracks, was improper, as ignoring the custom. (*Beck vs. Indianapolis Traction & Terminal Company*, 119 Northeastern Rep., 528.)

KENTUCKY—*Company Not Under Obligation to Complete Line.*

The making and filing of articles of incorporation for the construction of a railroad, which contain no covenant that the railroad will be constructed, do not impose any duty upon the corporation to construct the proposed road nor to complete its construction after it was commenced.

An electric line proposed to be constructed between two towns and completed only part of the distance, was not a street railway within Const. Art. 163, 164, requiring a franchise of not more than twenty years' duration to

be acquired, and the fact that by organizing as an interurban line the company escaped the franchise cost of street railways did not obligate it to complete the line to the second city. (*Bentler vs. Cincinnati, Covington & Erlanger Railway*, 203 Southwestern Rep., 199.)

LOUISIANA—*Contributory Negligence to Stand on Platform of High-Speed Interurban Car.*

It is contributory negligence for a passenger on a fast-moving suburban train, when it was being operated outside of a municipality, to stand on the platform, particularly after being warned not to do so, and he cannot recover damages for injuries resulting to him from such negligence, although there was mutual negligence on the part of the employees of the railway company. (*Louviere vs. Southwestern Traction & Power Company*, 77 Southern Rep., 293.)

MAINE—*Who Are "Passengers"?*

A person who was injured by the opening of the front door of a pay-as-you-enter street car while passing by such door to enter the car at the rear door, held not a passenger at the time of the injury. (*Murray vs. Cumberland County Power & Light Company*, 103 Atlantic Rep., 66.)

MASSACHUSETTS—*A Collision with Unregistered Automobile.*

Less care is demanded of a motorman to avoid a collision with an unregistered automobile than with one which has complied with the law. To make the company liable he must inflict the injury intentionally or be so utterly indifferent to the rights of others that he acts as if such rights did not exist. Gross negligence alone will not suffice. (*Wentzell vs. Boston Elevated Ry.*, 119 Northeastern Rep., 652.)

MICHIGAN—*City Order for Relocation of Street Car Tracks Should Be Obeyed.*

A city resolution ordering a change of location of street car tracks is not invalid because where the tracks cross a railroad they cannot be moved under the existing law without the consent and order of the State Railroad Commission, since it will not be assumed the Railroad Commission will withhold its consent, and, if it should, its failure to consent would be a good defense to an attempt to enforce the order. (*City of Owosso vs. Michigan United Railways*, et al., 167 Northwestern Rep., 920.)

MICHIGAN—*Workmen's Compensation Act—Definition of Injury "Arising Out of Employment."*

To entitle a claimant to compensation for an injury arising out of his employment it must be shown that the causative danger was peculiar to the work and not common to the neighborhood, and that it was incident to the character of the business and not independent of the relation of master and servant, and, while it need not have been foreseen or expected, it must, after the event, appear to have had its

origin in a risk connected with the employment and to have flowed from that source as a rational consequence.

In a proceeding by a common laborer employed in the street track-laying department of a street railway for personal injury when a delivery wagon struck the boom of a concrete breaker and moved it toward him, a finding of the Industrial Accident Board, made the final arbiters of questions of fact, that he was sitting on the curb during a lull in the work, but on duty, when struck was sufficient, if warranted, to support an award, though against the weight of the evidence. (*Malone vs. Detroit United Railway*, 167 Northwestern Rep., 996.)

New Publications

Grinding Wheels

No. 13 in the series of "Safe Practices" pamphlets issued by the National Safety Council, Chicago, Ill. Price, 10 cents.

Covers inspection, storage, mounting and safeguarding of abrasive wheels.

Measuring the Temperature of Gases in Boiler Settings

By Henry Kreisinger and J. F. Barkley. Bulletin No. 145 of the Bureau of Mines, Department of the Interior, Washington, D. C., seventy-two pages, paper. One copy free; extra copies, 15 cents each.

This bulletin contains the results of an experimental study of the subject, together with a description of the methods and apparatus used in the tests.

A Convenient Multiple-Unit Calorimeter Installation

By J. D. Davis and E. L. Wallace. This is a reprint of Technical Paper No. 91 of the United States Bureau of Mines, Washington, D. C., first printed last November; 48 pages. One copy free; extra copies 15 cents each.

This bulletin gives full information regarding the calorimetry practice of the Bureau of Mines and should be of value to anyone who is concerned with measurements of the heating value of fuels.

Scope and Application of National Electrical Safety Code

Circular No. 72 of the Bureau of Standards, United States Department of Commerce. 84 pages. Copies may be secured at 20 cents each from the Superintendent of Documents, Government Printing Office, Washington, D. C.

This new publication on the safety code has been prepared to bring the subject up to date, and it contains supplementary information based upon actual experience with the code. An interesting feature is a list of 100 typical electrical accidents indicating the need for a safety code. The circular should be read at once by all electric railway men who are concerned with the application of the code itself.

Personal Mention

C. H. Whitesell has been appointed master mechanic of the Wheeling (W. Va.) Traction Company. Mr. Whitesell has been in the employ of the company since 1901, during which time he has served in the capacities of carpenter, carpenter foreman, general carhouse foreman and inspector.

Walter J. Hodgkins, former manager of the construction department for the Ashland Light, Power & Street Railway Company, Ashland, Wis., has been made manager for the entire works, following the resignation of F. R. Winders. Mr. Hodgkins will have charge of all the work of the company, which includes interests in Ironwood, Bessemer, Wakefield, Hurley and Washburn.

Walter Hedley, son of Frank Hedley, vice-president and general manager of the Interborough Rapid Transit Company, New York, N. Y., and the New York Railways, has been decorated with the Croix de Guerre. He was one of four members of United States Ambulance Unit No. 592 to be so honored. The citation of the unit for bravery and gallantry under fire was made after its members had completed their first year of service in practically every sector on the western front from Ypres to Lorraine.

Pitt F. Drew has been elected president of the Middlesex & Boston Street Railway, Newtownville, Mass., to succeed James L. Richards, resigned. Mr. Drew was born in Lancaster, N. H., on Aug. 27, 1875, and was educated at Phillips Andover Academy, Dartmouth College and Harvard Law School. He has practiced law in Boston since 1902. He is the son of Irving W. Drew, recently appointed United States Senator from New Hampshire, and brother-in-law of Edward K. Hall, vice-president of the Electric Bond & Share Company. He has no other corporate affiliations of general interest.

Guy E. Tripp, formerly colonel in the United States army and head of the production division, has been made brigadier general in the United States army, and placed in offices having charge of the production of ordnance material in their respective sections of the country. The district chiefs will report direct to General Tripp, who is succeeded as head of the production division by Col. C. C. Jamieson. Previous to his connection with the ordnance department, General Tripp was chairman of the board of directors of the Westinghouse Electric & Manufacturing Company, with headquarters in New York.

John A. Dewhurst has recently resigned from the Twin City Rapid Transit Company, Minneapolis, Minn.,

to become connected with Day & Zimmerman, Inc., engineers, Philadelphia, Pa. Mr. Dewhurst was with the Twin City Rapid Transit Company three years. Before that he was with the railway and traction engineering department of the General Electric Company. While at Minneapolis he was engaged on transportation problems, having had charge of the schedule department part of the time and being assistant to the general superintendent during the rest of his service with that company.

T. F. Johnson, superintendent of transmission and distribution of the Georgia Railway & Power Company, Atlanta, Ga., has been appointed assistant general superintendent of the electrical department. Mr. Johnson has been with the company eight years. He was graduated from Georgia Tech. in 1908, and in 1910 took his engineering degree, joining the company that fall. He started in rolling a wheelbarrow at the Fulton plant, went to Morgan Falls, worked with the Northern Construction Company on the big Tallulah power development and rejoined the Railway & Power Company as head of the transmission and distribution department. The position of assistant general superintendent has just been created.

James L. Richards has resigned from the presidency of the Middlesex & Boston Street Railway, Newtownville, Mass. Mr. Richards has been at the head of the property for about ten years, succeeding Adams D. Claffin. He is president of the Boston Consolidated Gas Company and until the taking over of the Boston Elevated Railway by public trustees was a member of the executive committee of the board of directors of the Boston Elevated Railway. He has long been identified with the movement for securing higher fares on street railways in Massachusetts and was one of the first financial executives in the East to recognize the abilities of M. C. Brush, now president of the Boston Elevated Railway and formerly associated with Mr. Richards in the management of the Middlesex & Boston road.

Richard H. Wheeler has recently been appointed traffic manager of the Hercules Powder Company at the Nitro plant, Nitro, W. Va. Mr. Wheeler was assistant designing engineer of the electric locomotive department of the General Electric Company in 1911-1912. From 1912 to 1915 he was assistant electrical engineer of the electrification of the Mount Royal tunnel and terminal project of the Canadian Northern Railway at Montreal. From 1915 to 1917 he was assistant engineer of the Shawinigan Water & Power Company

at Montreal. From 1917 to 1918 he was designing engineer with Ford, Bacon & Davis, New York, and from February, 1918, up to the time of his appointment to the Hercules Powder Company he was assistant manager of the powder apparatus department for the Thompson-Starrett Company, construction engineers, building the United States government explosive plant "C."

Obituary

Edward E. Potter, superintendent of transportation of the Houston (Tex.) Electric Company, died suddenly at Houston on the evening of Sept. 7. Mr. Potter had been connected with Stone & Webster properties in various parts of the country for many years. His former home was at New Bedford, Mass., where his widow and one son now reside. He was formerly general manager of the Seattle (Wash.) Electric Company. Later he was transferred to the home office of Stone & Webster at Boston.

Robert C. Green, superintendent of equipment of the Lehigh Valley Transit Company, Allentown, Pa., and the Easton Transit Company, died suddenly on Aug. 31 after returning home from the theater with his wife where they had been members of a party which included President Harrison R. Fehr of the company and Mrs. Fehr. Mr. Green was born in Memphis, Tenn., thirty-four years ago. He received his preliminary training under the tutelage of his father, Alfred C. Green, of the Galena Signal Oil Company, when he was master mechanic of the shops of the Rochester (N. Y.) Railway. Robert Green attended a technical school in Rochester, from which he was graduated a mechanical engineer. He was employed for some time by the Public Service Corporation, Newark, N. J., and later by the Metropolitan Street Railway, New York, N. Y. In September, 1912, he entered the employ of the Easton Transit Company, and eighteen months ago he was given full charge of equipment on all lines of the Lehigh Valley Transit Company, which position covered the superintendency of the shops at Allentown, Easton, Souderton, Slatington and other points on the system. The latest type of equipment used by the Lehigh Valley Transit Company is the design of Mr. Green. He also designed the all-steel double-truck, center-entrance cars, known as No. 900, and the standard passenger car of the system. The snowplows and service cars are also of his design. He was generally recognized as possessing exceptional ability in the solution of mechanical engineering problems, and his death closes a career which promised to have been a brilliant one had he lived. Mr. Green is survived by his widow and twin daughters.

Construction News

Construction News Notes are classified under each heading alphabetically by States. An asterisk (*) indicates a project not previously reported.

Recent Incorporations

***Indian Creek & Northern Railway, Fairmont, W. Va.**—Incorporated to construct a line from Lowesville to Blacks-ville. Capital stock, \$50,000. Incorporators: J. W. Devison and C. A. Philippi, Granttown and S. D. Brady, James Close and James A. Meredith, Fairmont.

Franchises

Newark, N. J.—The State Board of Public Utility Commissioners has approved the application of the Public Service Railway for ordinances of the Newark Board of Street and Water Commissioners adopted May 23 granting permission to the company to construct a new line in Newark called the Port Newark extension and also an extension connecting the tracks of the company in Chestnut Street, Newark, through Gotthardt Street to Hamburg Place, a distance of less than a mile and a half. Each franchise is to run for fifty years. The Port Newark line is an extension from the tracks in Hamburg Place east of Avenue L and through Hamburg Place and Avenue R over the bridge of the Lehigh Valley Railroad Company and the Pennsylvania Railroad between Astor and Murray Streets, Newark. The plan includes a bridge over the Central Railroad crossing with approaches. The extension is to constitute a separate fare zone of 5 cents for each person unless the general rate of fare is increased beyond 5 cents. It is to be operated under the agreement of the Public Service Railway entered into with the United States Shipping Board Emergency Fleet Corporation, March 7, 1918.

Track and Roadway

***Los Angeles, Cal.**—Plans have been completed by the city of Los Angeles for the construction of a new electric railway system between Redondo Beach and Torrance, about 4 miles. to provide adequate transportation facilities for workers employed in the various shipbuilding and war plants in the vicinity of San Pedro. The work is estimated to cost about \$100,000.

San Francisco - Oakland Terminal Railways, Oakland, Cal.—The San Francisco-Oakland Terminal Railways has filed with the Railroad Commission of California an application for authority to buy from the Emergency Transportation Company \$10,100 capital stock of the latter company. The payment for the stock is to be in materials and labor furnished to the Emergency Transportation Company in the construction of a single-track railroad on Chestnut Street from Eighth to First Streets, with station spur tracks at the foot of Chestnut Street. The San Francisco-Oakland Terminal Railways intends, with the consent of the commission, to lease the complete railroad from the Emergency Transportation Company.

Winnipeg (Man.) Electric Railway.—An extension will be built by this company on Sargent Avenue.

Bay State Street Railway, Boston, Mass.—According to a finding of the Public Service Commission of Massachusetts, the Bay State Street Railway is not required at present to build an extension costing \$35,000 in the Ayers City district of Lowell, Mass. Citizens of Lowell petitioned the board to order the company to build the extension, a grant of location having been made in 1901 with the proviso that the construction should be completed within two years.

Kansas City (Mo.) Railways.—A loop will be constructed by the Kansas City Railways on Monroe Avenue between Nicholson and Garner Avenues between the Missouri Pacific and Kansas City Southern shops, and a "Y" will be built at the west terminus at Thirteenth Street and Central Avenue, Kansas City, Kan.

Southwest Missouri Railroad, Webb City, Mo.—Work will be begun at once by the Southwest Missouri Railroad on the construction of an extension of its line on Main Street south from the present terminus to connect with the Joplin-Picher line.

Cincinnati, Ohio.—Director of Street Railroads Culkins is working out a plan for connecting the east end of the city with Cumminsville by establishing a cross-town line through Hyde Park, Oakley, Norwood and Bond Hill.

Guelph (Ont.) Radial Railway.—This company is constructing 3000 ft. of track on Garden Street, Guelph.

Toronto (Ont.) Suburban Railway.—The Toronto Suburban Railway has been granted an extension of time until Nov. 30 within which to construct, equip and put in operation its extension on Davenport Road east of Bathurst Street to the northern limits of the city.

Rio Grande Valley Traction Company, El Paso, Tex.—It is reported that extensions to its system are being contemplated by the Rio Grande Valley Traction Company.

Shops and Buildings

Public Service Railway, Newark, N.J.—An addition will be built by the Public Service Railway to its workshops at Newton and States Avenues, Camden.

Richmond Light & Railroad Company, New York, N. Y.—The Public Service Commission for the First District of New York has ordered the Richmond Light & Railroad Company to make extensive improvements in its shops, etc., and overhaul its rolling stock, to provide for increased operation.

Cleveland, Ohio.—Plans have been revived for the construction of a new combined steam and interurban passenger station to face the Public Square at Cleveland, Ohio. The Cleveland Union Terminals Company was recently incorporated with a capital stock of \$10,000 by John L. Cannon and Charles W. Stage, attorneys.

Power Houses and Substations

New York, New Haven & Hartford Railroad, New Haven, Conn.—Approximately 18 acres of land have been acquired by the New York, New Haven & Hartford Railroad along the west bank of the Mianus River to provide additional water supply for its power plant at Cos Cob.

Syracuse & Suburban Railroad, Syracuse, N. Y.—It is reported that in connection with the reorganization of the Syracuse & Suburban Railroad it is planned to make extensive improvements in the power plant and system.

Bartlesville (Okla.) Interurban Railway.—In order to meet the increasing demands on the electric plant of the Bartlesville Interurban Railway, new generating, condensing and boiler equipment is now being added which will be in service early in the fall. The new equipment consists of a 1250 kw. Westinghouse turbine and LeBlanc jet condenser, a 3600 g.p.m. spray pond and a 300 hp. Heine boiler. A reserve supply of fuel oil to protect against gas shortage this winter will be made available by the installation of a 3000 bbl. steel tank. John Strom, Joplin, Mo., is in charge of new construction work.

Monongahela Valley Traction Company, Fairmont, W. Va.—Plans are being made by the Monongahela Valley Traction Company to construct a gas producer plant and lay 8 miles of 5- and 6-in. pipe line.

Manufactures and the Markets

D. SCUSSIONS OF MARKET AND TRADE CONDITIONS

FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES • MARKET QUOTATIONS • BUSINESS ANNOUNCEMENTS

Coal Production Up to Last Week's Record

Output of Mines Must Be Maintained At High Level in Order to Keep up to Schedule

The output of bituminous coal in the United States during the week ended Aug. 31 was approximately the same as the week preceding, according to the regular weekly report of the Geological Survey. Estimates place production during this week at 12,642,000 net tons as against 12,620,000 net tons during the week of Aug. 24 and 11,656,000 net tons during the corresponding week of 1917.

The average production per working day for week ended Aug. 31 is estimated at 2,107,000 net tons, an increase over the corresponding week of last year of 14 per cent and over the average daily requirements for the coal year of 4.7 per cent. The schedule of the Fuel Administration, however, calls for an increased rate of production during the six months beginning with April, and production in the first five of these six months has been nearly 13,000,000 tons below this figure. To overcome this apparent shortage it will be necessary to maintain the average daily rate of production during the seven months remaining in the coal year at 2,037,000 net tons or 2.9 per

per year for the year, divided between fifty-two weeks of six working days each, with no allowance for national holidays.

Production of anthracite in the United States during week ended Aug. 31 is estimated at 2,259,715 net tons, an increase over the week preceding of 125,716 net tons or 5.9 per cent, and over the corresponding week of last year of 268,228 net tons or 13.5 per cent. The daily average during the current week is estimated at 376,619 net tons as against 338,677 during the coal year to date, and as against 329,923 net tons during the coal year of 1917. The total production for the coal year to date is estimated at 44,028,000 net tons as against 42,890,000 or an increase of 2.7 per cent.

Car Window Glass Higher

Supply Short and Still Falling Off—Mills May Not Open Before December

By reducing the discounts on car window glass from 80 per cent to 77 per cent on quality A first three brackets, single strength and from 82 and 3 per cent to 79 per cent on AA quality, double thickness, the manufacturers have succeeded in raising prices. The supply of glass is becoming shorter each day with the government as the

Tungsten Lamps To Replace Carbons and Gems

Fuel Administration Announces Plan for Conservation—Little or No Effect on Railway Market

The Fuel Administration has announced the adoption, effective on Sept. 15, of a plan contemplating the gradual elimination of the carbon and gem lamps and the substitution therefor of the tungsten lamp. Inasmuch, however, as the electric railways are now almost universally using the tungsten lamp the plan will not affect their supply except perhaps to increase it.

The supply of lamps last winter became very low in certain parts of the country, and while a generally very good condition at present, there is a feeling that another shortage may develop this winter. The release of factory space and of glass should help to minimize any shortage.

Changes in Brill Organization in St. Louis

A change in the personnel of the American Car Company of St. Louis, one of the subsidiary companies of The J. G. Brill Company, occurred on Sept. 1, when George H. Tontrup, for many years general manager, and E. L. Bronenkamp, Southern sales agent, severed their connection with the Brill organization to enter into an enterprise in St. Louis mentioned in another column. Ford A. Richards, for several years the representative of the Brill organization on the Pacific Coast, has been made general sales manager, and Wirt L. Haymond, for many years associated with the business department of the American Car Company, has been made assistant sales manager.

Program for Semi-Annual Meeting of A. G. M. A.

An interesting program is being arranged for the semi-annual meeting of the American Gear Manufacturer's Association, which will be held at the Onondaga Hotel, Syracuse, New York, Sept. 19, 20 and 21.

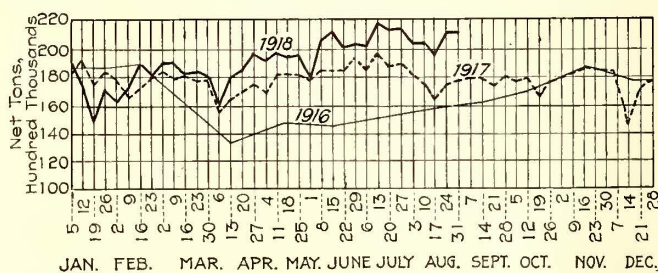
A portion of the program has been announced as follows:

"Priority," by Charles A. Otis, of the Priority Committee.

"What Is the Possibility of Women Becoming a Permanent Factor in the Gear Industry?" by W. H. Diefendorf.

"Trade Acceptances," by C. E. Crofoot.

"The Outlook of the Steel Supply," by C. E. Stuart, secretary-treasurer Central Steel Company, Massillon, Ohio.



ESTIMATED AVERAGE COAL PRODUCTION PER WORKING DAY OF BITUMINOUS COAL, INCLUDING COAL COKED

cent in excess of the average daily production in the five months, April to August. In the period beginning with the second week of June to the last week of August, the average daily rate of production has been approximately 2,061,000 net tons, compared with an average daily rate in the period from the first of April to the first of June of 1,864,000 net tons. It is thus evident that only by maintaining production at the level of the last three months through the good weather portion of the coming seven months of the coal year, will the estimated requirements be met. These figures of estimated requirements are based upon 628,000,000 tons

largest buyer. The mills have been shut down for some time and the indications are that they will remain closed until early in December. Ordinarily the mills opened early in the fall when the furnaces had all been fixed and the hot weather over.

In order to obtain a supply for the winter street railways may find it best to anticipate their needs. There are no reasons why the price should be lower but rather some of the recent activities in the market might be forerunners of still higher prices. Besides, the supply is so low that it might be found advantageous not to have to rely on any outside stocks.

Conditions Right for Purchase of Shop Tools

Although Prices Are High, the Savings Effected Show a Quick Profit on Investment

A survey of repair-shop conditions on electric railways indicates that there never was a time when the discriminating purchase and supervised application of high-class tools would pay a better return upon the cost of such equipment than now. The price of material and supplies under war conditions is so high that waste of stock must be cut to the minimum, and anything which increases production reduces the amount of material held in reserve at the expense of the country's resources at large. The present and prospective cost of labor for some time to come put a premium on time-saving methods, and a good deal of spasmodic buying in the tool market has lately been due to this cause.

It is true that the shipyards and munitions plants have consumed tools in enormous quantities and that as long as the war lasts this condition may be expected to continue. In many cases electric railways have postponed machine tool purchases on account of revenue being below that required to meet the fair cost of service, including maintenance on a liberal program. Deliveries, also, have been seriously affected by the demands of the plants engaged in immediate war service. The cost of a machine tool installation capable of working a substantial change for the better in repair-shop service is not very great in proportion to the benefits at once made possible.

Prices are high, and many managers hesitate to tie up money in tools which cost from 50 to 100 per cent more than before the war, thinking mainly of the perpetual fixed charges thus set in motion. If the service possible by such tools is viewed from the standpoint of production, however, the investment cost shrinks in importance. Where it can be shown that a machine tool will pay for itself in a year or two after installation and perhaps show a handsome profit besides, it is a conservation step to secure it if the work of some munitions plant or other gilt-edged priority concern will not thereby suffer. Without the service of the electric railway, the work of many a munition plant would go lame indeed, and there is reason to believe that tools which can be shown to be essential to better transportation service can be procured if the railway manager and purchasing agent go about the matter promptly with the government authorities.

Master mechanics of railway companies do not need to be told that there is a field of almost unparalleled opportunity in their jurisdictions for the increase of shop efficiency through improvements in tool service. It is significant that a good deal of machinery has been going into railway shops in the past few years despite

the handicaps of inadequate revenue. The market has not been developed to anything like its possibilities, however. This is partly due to the absorption of the machine tool builders in filling orders outside the electric railway field, and is also due in part to a feeling that until enough money is available to build new and sorely needed shops designed along the most modern ideas, there is not much use in spending funds for high-class new tools on any comprehensive scale. Last winter's experience, however, has taught not a few roads that a first-class tool may be worth far more than its cost in a single period of traffic interruption due to storms, if by its use cars get back into service a day or more earlier than would be possible with the older shop methods of equipment maintenance.

The market for electric motors in sizes up to 50-hp. rating is in a better condition to-day than for some time, owing to the efforts of the motor manufacturers to expand their production and accumulate at least moderate reserve stocks in the smaller units. Control apparatus also can be secured on about as favorable deliveries as motors. Railway companies which have paid some attention to modernizing their shop facilities during the last few years have reaped the reward of their efforts in not a few cases, and in view of the essential character of electric railway service, it is none too early to see what can be done toward improving this branch of shop facilities. Electric railway repair shops have not worked direct connection of motors to anything like its possibilities, and as a fuel-saving measure the problem of tool service betterment deserves consideration as well as from the standpoint of labor and material economy. The necessity for efficient shop operation was never so keen, and the cultivation of the field of improved tool applications is bound to yield results next winter which will be helpful to the railways and advantageous to the industrial and general public if the operating companies stand on their base as essential utilities and seek government co-operation in rendering better service.

G. H. Tontrup Forms New Company

The National Safety Car & Equipment Company, 418-419 Pierce Building, St. Louis, Mo., has been incorporated by George H. Tontrup, formerly for many years general manager of the American Car Company. Mr. Tontrup is president and treasurer, and associated with him as vice-president is Edward T. Bronenkamp, who was Southern sales agent of the American Car Company.

The new company will make a specialty of selling complete Birney safety cars and has made arrangements with the Cincinnati Car Company to build these cars. In addition the company will handle a general line of electric and steam car supplies.

Track Material Demands Increasing

Higher Fares, Government Financing and Prospects of Peace All Indicate Large Demand

While the demand for track and roadway specialties has not been very great since the spring months, the outlook for future orders never was brighter. Manufacturers who have made careful surveys of the existing conditions have found that while the needs for track renewals and track extensions are very pressing, there has been a persistent tendency on the part of the electric railways to mark time. This cannot be continued indefinitely and the very fact that little material could be bought during the past months indicates that with the very first assurance that permanent peace is about to be culminated, there will be an overwhelming demand for materials with which to construct long-needed extensions and essential maintenance repairs.

Daily developments steadily increase the list of railway companies granted financial relief by fare increases and the list of those seeking such relief. Many properties have found themselves facing the disagreeable fact that delay in repair work has passed the point of economy and each additional day is adding to the final reckoning, but credit conditions have not permitted of any intervention. As soon as necessary financial assistance assures the proper credit it is believed that rush orders will be placed for track materials.

We have already had several examples of government financing of railway extensions. The most recent which has come to notice is the financing by the United States Housing Corporation of 2 miles of track for the transportation of munitions workers on a Middle Western property. Indications are that there may be considerable of such government assistance given for extension and repairs necessary for the various war industries.

Except for priority orders it will be a case of first come first served. Even in case of an early peace present prices would not be materially reduced for say a year after the final settlement. It is therefore highly advisable that those companies which feel confident of relief in the near future place their orders for track materials without delay.

Rolling Stock

Springfield (Mo.) Traction Company has received word that the twelve new pay-as-you-enter cars being built by the American Car Company will be ready for shipment about Sept. 15. Upon arrival the older type of cars now in use are to be taken to the repair shops and equipped as pay-as-you-enter cars.

Trade Notes

Galena Signal Oil Company has cut its quarterly dividend from \$3 to \$1.50. A letter sent to the shareholders said that the reduction has been deemed necessary because of current high costs of labor and materials, which had reduced earnings.

Warren C. Drake, who for the past twelve years has been connected with the stoker-engineering department of the Westinghouse Electric & Manufacturing Company, New York, has entered into partnership with H. S. Sleicher, and has opened an office in New York, under the firm name of Sleicher & Drake, for the handling of power-plant equipment.

Lakewood Engineering Company manufacturer of cranes and hoists, announces the opening of new offices in Chicago, in the Lumber Exchange Building. Announcement is made also that the Charles T. Topping Machinery Company has merged its interests with the Pittsburgh office of the Lakewood Engineering Company, 411 Fulton Building.

Bates Expanded Steel Truss Company, Chicago, Ill., sole manufacturer of the one-piece expanded steel poles for utility transmission and electric railway service, is distributing a handsome glass desk paper weight to its customers and to inquiring friends. An

illustration on the paper weight shows a typical Bates pole in combination with transmission, telephone, trolley and street lighting service. This souvenir is accompanied with an announcement that the paper weight is intended as a perpetual reminder of the utility of Bates poles.

New Advertising Literature

Independent Pneumatic Tool Company, Chicago, Ill.: Four-page folder descriptive of Thor pneumatic and electric tools.

R. H. Beaumont Company, Philadelphia, Pa.: Catalog 38, describing and illustrating the Beaumont drag scraper system for the ground storage of coal.

Electric Arc Cutting & Welding Company, 222 Halsey Street, Newark, N. J.: A circular giving advantages and uses of its alternating-current electric arc cutter.

H. W. Johns-Manville Company of New York City.: A comprehensive booklet on "Fuel Waste in the Power Plant." The booklet discusses the subjects of where to look for fuel losses and how to reduce and improve power-plant efficiency. It lists certain common but preventable causes of fuel wastage which can be corrected by the use of Johns-Manville or similiar material.

National Tube Company, Pittsburgh, Pa.: A paper entitled "The Preservation of Hot Water Supply Pipe in Theory and Practice" presented at the annual meeting of the American Society of Heating and Ventilating Engineers by F. N. Speller and R. G. Knowland.

Fisher Governor Company, Marshalltown, Ia.: A catalog describing and illustrating special governors, stop valves, reducing valves, back-pressure valves, balanced-lever valves, float valves, tank controller and other governors and regulating devices for pumps. In addition to the above the catalog also describes and illustrates other power-house specialties.

Wheeler Condenser & Engineering Company, Carteret, N. J.: Bulletin 112-A, just published, deals with condensers, pumps, cooling towers, etc. Under the head "Choice of Kind of Condenser" the two general classes of condensers are discussed. The remainder of the bulletin illustrates and describes other Wheeler condensing machinery in detail. The bulletin embraces large and small surface condensers, showing typical complete installations, rectangular and cylindrical types, jet condensers, barometric condensers, air pumps, rotative dry-vacuum pumps, the turbo air pumps, centrifugal pumps for circulating water and natural and forced draft cooling towers. In addition, a page is devoted to the feed-water heater and two pages to multiple-effect evaporators and dryers.

NEW YORK METAL MARKET PRICES

	Sept. 4	Sept. 11
Copper, ingots, cents per lb.....	26	26
Copper wire base, cents per lb.....	29.25	29.25
Lead, cents per lb.....	8.05	8.05
Nickel, cents per lb.....	40	40
Spelter, cents per lb.....	9.50	9.75
Tin, Chinese*, cents per lb.....
Aluminum, 98 to 99 per cent., cents per lb.....	†33.10	†33.10

* No Straits offering. † Government price in 50-ton lots or more, f. o. b. plant.

OLD METAL PRICES—NEW YORK

	Sept. 4	Sept. 11
Heavy copper, cents per lb.....	23.50 to 24.50	23.50 to 24.50
Light copper, cents per lb.....	21 to 21.50	21.00 to 21.50
Red brass, cents per lb.....	23.50 to 24.50	23.00 to 24.00
Yellow brass, cents per lb.....	16 to 16.75	16.00 to 16.50
Lead, heavy, cents per lb.....	7.50 to 7.75	7.50 to 7.75
Zinc, cents per lb.....	7.50 to 7.75	7.50 to 7.75
Steel car axles, Chicago, per net ton.....	\$41.52	\$41.52
Old carwheels, Chicago, per gross ton....	\$29.00	\$29.00
Steel rails (scrap), Chicago, per gross ton.	\$34.00	\$34.00
Steel rails (relaying), Chicago, gross ton..	\$60.00	\$60.00
Machine shop turnings, Chicago, net ton.	\$16.25	\$16.25

ELECTRIC RAILWAY MATERIAL PRICES

	Sept. 4	Sept. 11		Sept. 4	Sept. 11
Rubber-covered wire base, New York, cents per lb	30 to 37	30 to 34	Galvanized wire, ordinary, Pittsburgh, cents per lb.....	3.95	3.95
Weatherproof wire (100 lb. lots), cents per lb., New York.....	32.40 to 36.75	32.40 to 36.75	Car window glass (single strength), first three brackets, A quality, New York, discount†.....	77%	77%
Weatherproof wire (100 lb. lots), cents per lb., Chicago.....	35.00 to 37.72	35.00 to 37.72	Car window glass (single strength, first three brackets, B quality), New York, discount.....	77%	77%
T rails (A. S. C. E. standard), per gross ton.....	\$70.00 to \$80.00	\$70.00 to \$80.00	Car window glass (double strength, all sizes AA quality), New York discount....	79%	79%
T rails (A. S. C. E. standard), 100 to 500 ton lots, per gross ton.....	\$67.50	\$67.50	Waste, wool (according to grade), cents per lb.....	11½ to 22	16 to 40
T rails (A. S. C. E. standard), 500 ton lots, per gross ton.....	\$62.50	\$62.50	Waste cotton (100 lb. bale), cents per lb..	13 to 13½	12 to 13
T rail, high (Shanghai), cents per lb.....	4½	4½	Asphalt, hot (150 tons minimum), per ton delivered.....	\$38.50	\$38.50
Rails, rdgr (grooved), cents per lb.....	4½	3½	Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton.....	\$42.50	\$42.50
Wire nails, Pittsburgh, cents per lb.....	3½	3½	Asphalt filler, per ton.....	\$45.00	\$45.00
Railroad spikes, drive, Pittsburgh base, cents per lb.....	4½	4½	Cement (carload lots), New York, per bbl.....	\$3.20	\$3.20
Railroad spikes, screw, Pittsburgh base, cents per lb.....	8	8	Cement (carload lots), Chicago, per bbl....	\$3.34	\$3.34
Tie plates (flat type), cents per lb.....	*3½	*3½	Cement (carload lots), Seattle, per bbl....	\$3.68	\$3.68
Tie plates (brace type), cents per lb.....	*3½	*3½	Linseed oil (raw, 5 bbl. lots), New York, per gal.....	\$1.90	\$1.90
Tie rods, Pittsburgh base, cents per lb....	7	7	Linseed oil (boiled, 5 bbl. lots), New York, per gal.....	\$1.92	\$1.92
Fish plates, cents per lb.....	*3½	*3½	White lead (100 lb. keg), New York, cents per lb.....	14	14
Angle plates, cents per lb.....	*3½	*3½	Turpentine (bbl. lots), New York, cents per gal.....	65½	66½
Angle bars, cents per lb.....	*3½	*3½			
Rail bolts and nuts, Pittsburgh base, cents per lb.....	4.90	4.90			
Steel bars, Pittsburgh, cents per lb.....	5	5			
Sheet iron, black (24 gage), Pittsburgh, cents per lb.....	4.90	4.90			
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.....	5.80	5.80			
Galvanized barbed wire, Pittsburgh, cents per lb.....	4.35	4.35			

* Government price. † These prices are f. o. b. works, with boxing charges extra.