Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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What Shall We Term the "Safety Car"?

THE discussion now in progress regarding phraseology to be used in connection with the light-weight, quick-service, one-man, etc., safety car reminds one of the early days of the bicycle. Once upon a time these machines were made with a big wheel in front and a little one behind, or vice-versa. With the former, the rider struck on his nose; with the latter, on the back of his head. Then came the "safety bicycle" or "safety," which had also virtues other than the name indicated; but this term appealed to the public and stuck until the new type of wheel had replaced the others. Then the machine was simply a "bicycle" again. In the case of the one-man car, only usage will in the long run determine the name. Managers, among themselves, will naturally often refer to the "one-man" car; in publicity work "safety" or "frequent-service" car is perhaps better. Variety in this matter is not undesirable. Sometimes force in statement will result from the use of more than one term.

Carry the Message to the Public

A REAL OPPORTUNITY is afforded in the coming hearings of the Federal Electric Railways Commission for the electric railway companies to get their case before the public. Up to this time the electric railways have realized the seriousness of their situation, but the public as a whole has not. Most people are not accustomed to worry much about the troubles of others. It is much easier for the average citizen to assume that the companies would get out of their troubles somehow, and if they did not, it would not greatly affect his daily life or fortune.

But with a federal commission engaged on the subject, the matter immediately acquires national and consequently journalistic interest. The testimony presented last week by Mr. Taft was sent out broadcast by the press agencies and helped to carry the lesson that something must be done. The original appointment of the commission and the preliminary correspondence in relation thereto between the Secretaries of Commerce and Labor and the President also attracted wide attention.

We dwell upon this phase of the hearings because it is an incidental advantage of the investigation now under way and one in which the railways can help. The duty of the commission is to get the facts and report upon them. The main duty of the railways is to supply these facts, so far as they can, but with this duty there is the opportunity just mentioned, namely, to help give these facts publicity through company publications, car cards, local daily papers and other ways.

With this publicity should be combined the thought of what the public owes the railways. Too many people think of what the railways owe the public without considering that there is any reciprocal responsibility. They insist that the railways should be ready always to furnish good and safe service in attractive, comfortable cars, and this is true. But they often forget that this can be done only when the public is willing to pay a reasonable price for that service, to co-operate with the company where it can be done and to boost and not knock. It is only where this responsibility is recognized that the best service can be given.

What Would Accelerate the Adoption of Standards?

THE American Electric Railway Engineering Association has been laboring a long time in the field of much-needed standardization in the several branches of electric railway engineering which come within its scope. It has adopted a number of standards and besides these its "Engineering Manual" sets forth many recommended practices which have substantially the same force and effect as the standards themselves. Nevertheless, the committee on standards, through a questionnaire put out about three years ago, found that only a very small portion of the association membership has adopted the standards. There appeared to be an inexplicable apathy on the part of the membership toward the standards, and while strong efforts have since been made looking toward their wider use, there has been but little progress recorded. This situation seems to indicate either one of two things: (1) The standards are not satisfactory, or (2) the membership really does not want standards.

The same conditions seem to exist in regard to the general failure of the steam roads to use the valuable standards and recommendations of the American Railway Engineering Association. Perhaps one of the reasons for this state of affairs in connection with both engineering associations may be found in the last clause of the statement found at the head of the Proceedings of the American Railway Engineering Association, to wit: "Its action is not binding upon its members." Another reason may possibly be found in the failure of those in responsible management to interest themselves in the subject. Let the general managers take a positive stand to the effect that association standards must be used wherever possible and we venture to predict a surprising increase in the rate of progress in standardization.

One of the most depressing of the reasons assigned by those who do not use the standards was that ancient crutch: "Local conditions prevent using." This has been ascribed from time immemorial by the unprogressive as the reason for staying in a rut. It may well be asked, "Why have any standards if no one will even

make an effort to use them?" Of what use are the expensive technical committees if the results of their labors are to be passed over so lightly? A standard in the Manual is of little value, while one in use on the majority of roads should be worth much to all of them.

We are coming more and more to the view that strong measures must be taken if standardization is ever to become general in the electric railway field. The sudden cessation of the war was the only reason why the government did not take a hand in standardizing girder guard rails. Had the war lasted three months more, we should have been forced to use some one of only seven guard rails which the mills were to be allowed to roll. These were to have been selected from the hundred or more for which each of the mills possesses rolls. If this condition had come to pass, "local conditions" could not have prevailed and the adoption of guard-rail standards would have been advanced several years. The rail mills could accomplish the same result if they would arbitrarily confine their rollings to a few sections which would be furnished at the prevailing price, while all other sections would only be furnished at an increased price. Thus those who insisted on purchasing small tonnages of non-standard rails would pay the price for their non-conformity. Most rail users would soon see the expensiveness of individuality.

Why Not Get the Security Holders to Help?

IT IS SO UNUSUAL to find in the daily papers any word of commendation for public utilities, especially from "Pro Bono Publico" and similar correspondents, that when such friendly comments do appear, someone else writes in to inquire if the anonymous contributor is a security holder in the company referred to. This calls to mind the suggestion made by a banker recently that those who have invested in utility securities could do much to protect their investments if they were as active in calling for fair treatment as the opposition is in decrying any measures looking toward relief for these companies.

It occurs to us that such a plan would be specially effective in the smaller cities and towns. There are hundreds of thousands, perhaps millions, of persons throughout the country who have invested in such securities. In a small city where the individual counts for something and is known to his neighbors it would undoubtedly be a surprise to the community to find that it was not only men of wealth who were affected by the popular sport of crushing the transportation agencies. There is more or less prejudice against capitalists, but if it could be made known how widely distributed the utility holdings are there would surely be a more popular reception of appeals for fair play. To be effective, the stock or bondholder need not necessarily be a resident of the town in which the property is located, especially if it is one which is growing and seeking capital for civic improvements, as in the case with many towns, particularly in the West. To such communities a reputation for fairness to investors in the enterprises in their city is sought after, at least in the abstract. In such cities requests for fair treatment of the local transportation enterprise from those in a position to lend money should receive consideration.

Some effort has been made along these lines by companies with their stockholders but the bondholders have usually been considered as a class from which no assistance could or should be expected. This is so no longer, at least with most electric railway companies. Danger of loss of capital threatens not only the owners of the stock but those of the bonds as well. We should be glad to see some effort made to enlist their help, not only for individual cases but for assistance in solving the broad questions which affect the whole industry.

A Receiver Cannot Do The Impossible

SOME strange views exist as to the powers of a receiver. When a public utility company is hard pressed and it is hinted that a receivership is impending, a certain portion of the patrons may be heard to say "We should worry. It isn't our funeral, and besides the receiver may force the company to buy more cars and give better service."

As a matter of fact a receiver cannot do the impossible. He cannot get blood out of a turnip. A receivership generally means that the property in question is financially sick and that a "doctor" is required to prevent collapse. If the community is at all dependent upon the utility for its progress and well being, it should be an occasion of serious concern to all good citizens when such drastic measures are necessary.

A receiver is first of all an agent of a judicial tribunal, and he may do only what the court permits him to do. The primary purpose of his appointment is to preserve the value of the property for the interest of the creditors, and this object he must keep constantly in mind. What a receiver does must be legal or his actions can be undone. Under the protection of the court the ailing corporation, or rather its creditors, through their representative the receiver, may borrow some money for improvements, but the property must be able to earn a return on this capital. If there is any legal means to secure additional revenue, such as by raising fares, the receiver may also secure this help through the court. It must be remembered also that a receiver may receive authority to abandon non-productive routes, so that the people who depend on these routes for business development are likely to suffer from the conditions which made a receivership necessary.

A. R. A. Meeting Presages a Rousing October Convention

ATLANTIC CITY surrendered to the steam railroad mechanical department men who held an oldtime convention from June 18 to 25 on the familiar "million-dollar pier" in that metropolis by the sea. The attendance, spirit and interest in things technical and social passed all expectations. The men present at the meetings seemed impressed with the masterly way in which the sessions were handled and with the earnestness with which the discussions were followed. The last-named characteristic is at least partly attributable to the suggestion sent out by the Railroad Administration that the men who attended should study the proceedings with a definite view to reporting to their superiors as to methods of applying the lessons of the convention directly to their own properties. As long as the roads are in Uncle Sam's hands such a suggestion comes almost with the force of law.

This paper has advocated a similar use of the electric railway association meetings. While there is no centralized authority which can say in essence to all

electric railway men at once that they are expected to go to the convention to get concrete suggestions applicable to their respective properties, yet there is an economic compulsion impelling them to do so. Undoubtedly many roads already have in operation definite plans to enable the convention attendants to get the teachings of the meetings directly and promptly to all employees who must apply these lessons if they are to be applied. Such a program, combined with careful study of the proceedings as reported in this paper, will insure an immediate and adequate return upon the considerable investment of money, time and energy which the convention involves.

There was a time when, very properly, the annual convention of the electric railway industry was looked upon primarily as an outing. Then there were few matters of vital interest affecting the utility as a whole. Now the opposite condition pertains, and the annual meeting of the American Electric Railway Association affords the only opportunity for a general taking account of stock and lining up the companies for a general advance. From considerations of necessity if no other, the coming one, of all conventions, ought to be the best, and reasoning from the success of the steam road meeting, it is going to be so.

Use Prepayment Areas to Multiply One-Man Cars

IT IS REMARKABLE what applications we can find for the modern one-man car if we really go about the matter from the new point of view of a device that can do so much to cut expenses and enlarge revenues and service. For example, where we would hesitate to try rerouting for big cars, we can justify the cost in advance if it will permit us to operate the smaller, lighter but more numerous units.

Regardless of rerouting, which may be delayed by technicalities concerning franchises, we can find wider application for the one-man car by installing prepayment areas to the greatest practicable degree at all those points where passengers board the cars *en masse*. This means that one or two cashiers will do the work of a score or more conductors; that the patrons will board the car from a higher level (perhaps flush with the car platforms), that doors at both ends of every car will be available for entrance, and that as the cars will get away faster the capacity of the terminal tracks will be appreciably increased. Once the cars, be they big or small, have left the prepayment area, their main work will be the discharge and not the taking on of passengers. In the morning, of course, they will pick up a full load eventually, but as the passengers will board in ones, twos and threes, the operator will not be subjected to any unusual effort. Further, in some cases—as where most riders are going to a large factory—the prepayment station at this point can be turned into a pay-as-you-leave area for the discharged riders, other riders paying as they leave the car.

An additional incentive toward the greater use of the prepayment-postpayment area is the coming of the odd flat or odd zone fare. We have seen for ourselves that even a change-making booth will not prevent the thoughtless or the selfish from boarding and delaying a prepayment car because they lack the exact change. Another good reason for the most liberal use of the prepayment area is in the opportunity it affords to give the customers a pleasant shelter while waiting for their cars. Protection against the weather, maximum ease in tendering fare and absence of all effort and pushing in boarding the cars will leave a pleasant "I'll come again" taste in the mouth of every patron. And last but not least, the prepayment area will bring the railway all the money paid by all the riders.

Post-War Maintenance Demands Trained Workers

AMONG the many significant things said and done at the Atlantic City meeting of the mechanical section of the American Railroad Association, none was more suggestive than the statement made by F. W. Brazier, superintendent of rolling stock New York Central Lines, of the great need for good mechanics in the car department of steam railroads. If this is true of these roads, which have been agitating the subject of apprentice training for so many years, what is to be said of the situation on electric railway properties? Echo answers, "What?"

Steam road shops are, on the average, large compared with the general run of electric railway shops. The mechanical departments, moreover, embrace many groups of men working in well-defined trades. It would seem, therefore, that with a demand as pressing as that which Mr. Brazier describes, and in view of the liberality in the matter of wages which the Railroad Administration has shown, the operation of apprentice systems with auxiliary mental training ought to be the usual and successful practice.

Electric railway master mechanics will have a tendency to throw up their hands and declare that if the steam roads cannot do any better than they have done, with so many elements in their favor, what can be done in the average small city or interurban road shop where the men are few, with duties not always well defined and with no money available to pay wages high enough to attract high-grade men. This attitude may be natural enough, but it will never get us anywhere. Granted that conditions are in many ways unfavorable, there are compensations, too. The relatively small size of the shop force permits close contact between master mechanic and men; and the same condition pertains with regard to the roadmaster, the overhead superintendent, the power plant engineer and their respective staffs. Elaborate systems of apprentice training are not usually practicable, but provision can be made for the development of individuals, with group instruction under appropriate circumstances.

An elaborate investigation among electric railways, made by the writer before the war set in, disclosed a very considerable lack of plan in developing skilled mechanics. While at that time there was not the acute labor shortage that has developed later, there was a shortage in real skill, the old-fashioned craftsmanship. The one-time process of "learning a trade," unsystematic as it often was, had been outgrown.

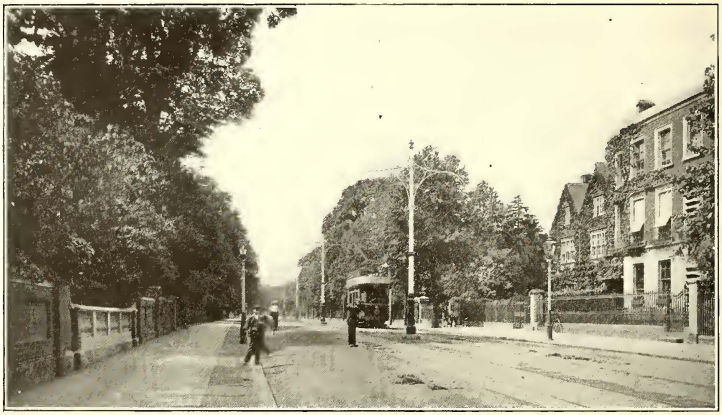
The American Association had at one time a committee on apprentice training. This "went by the board" in due course, for lack of support. Possibly the war period has so changed the labor situation that this committee should be revived or one with a somewhat different scope should be created. There are several men in the association vitally interested in this matter and their services should be secured for such a committee.

The Zone Fare in Practice

READING

More than 180 Rides Per Passenger Per Annum in a Community of 88,000—Combination of Penny Short Rides and 1½-Penny Rides from Center to End of Line, with Second Collection if Ride Is Across Town—Recent Fare Increase Has Been Successful in Increasing Revenue Although Closing of Aircraft School Cut Traffic

BY WALTER JACKSON



BATH ROAD, READING, IN THE WEALTHIER DISTRICT

ABOUT 40 miles west of London lies Reading, the mother city of Reading, Pa. It is somewhat smaller than its daughter, the population of the extended borough of Reading being 88,000 compared with 96,000 for the younger American city. There are not many resemblances between the two cities in general layout, but except for the older portion of the English city there is the same prevalence of small dwellings.

Reading, England, is not only an industrial community but also a commuting town for many men whose work lies in London. Consequently, the visitor will find a large number of one-family houses on ample grounds in addition to the closely built but small houses of the working classes. In the business section, buildings are rarely more than four stories high, while high tenements are non-existent. On the whole, then, the problem of congestion does not worry this famous old city on the Thames.

The principal source of the local traffic is a great biscuit bakery employing about 7000 people. Other establishments, including an equally famous seed business, as shown on the accompanying map, do not all together equal in size the biscuit plant. Fortunately for the tramways, most of these places are not too close to the residential sections.

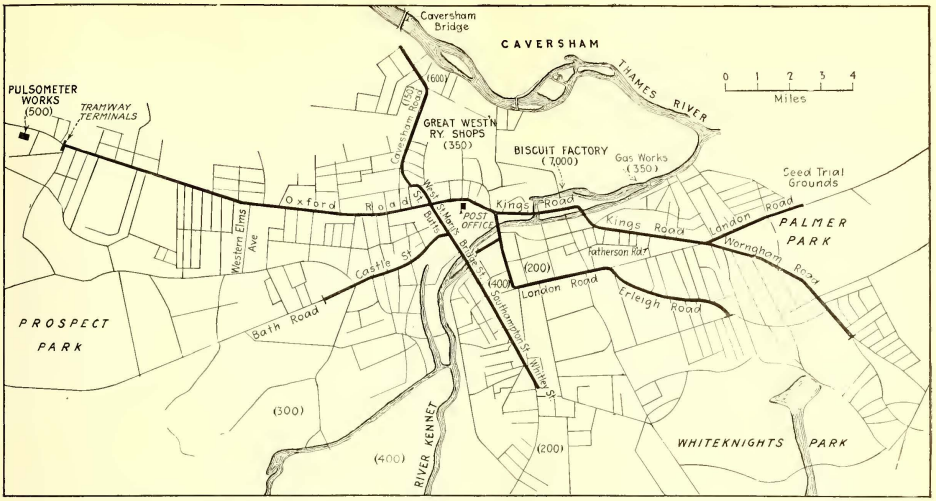
In addition to this business traffic there is that of the London commuter all the year round, while in the summer the popularity of boating on the Thames brings many pleasure seekers to Reading. It is hardly necessary to add that during the years of the great war, the last-named class of travel suffered. A set-off thereto was the development of Reading as an aircraft center.

ROUTING AND DENSITY OF TRAFFIC

The total length of single track in Reading is slightly in excess of 13 miles. Nearly all of this, or about 6 miles of route, is double-track, and the remaining single-track sections are to be double-tracked as soon as feasible. A good deal of rosette span construction is used as the successor to center-pole construction, which was removed because of increased automobile traffic. The Reading Corporation Tramways has compulsory powers to install rosettes, paying the owner of the building a nominal fee of 1s. per annum. In accordance with general British practice, offset trolley wire is common in order to avoid long brackets in double-track side-pole construction.

The map clearly indicates the routing scheme, namely, through routes both east-west and north-south. The main line, Oxford Road to Wokingham Road, 3.4 miles long, serves both residential and working-class districts, with a standard headway of five minutes with extras during the morning, noon and evening rush hours. At the old rate of fare it carried 4,192,195 1d. passengers and 60,550 2d. passengers during the six months ended Sept. 30, 1918—a substantial rate of increase over the fiscal twelve months ended March 31, 1918, when 6,609,-949 1d. and 77,898 2d. passengers were carried.

Since May, 1918, fuel-saving considerations caused a revision of the triangular through line Erleigh Road-



ROUTE MAP OF READING, WITH LOCATIONS OF PRINCIPAL INDUSTRIES AND NUMBER OF EMPLOYEES

Caversham-Whitley, which had a flat seven and a half minute service over 6.39 miles of route and carried 3,826,240 1d. passengers and 19,650 2d. passengers during the fiscal year ended March 31, 1918. The triangle has been replaced by two through routes—Erleigh Road to Bath Road via Broad Street, 2.19 miles long, and Whitley Street to Caversham Road, 1.67 miles long. This change eliminated the doubling back on the 1.55 mile leg between Erleigh Road terminus and the junction of West and Broad Streets.

It is not possible to make a direct comparison showing the way traffic was affected by the foregoing rerouting, but the figures may be of interest in showing the density of travel. Thus the Erleigh-Bath line, 2.18 miles long, with a residential patronage and a flat ten-minute service, carried 787,883 1d. passengers and 22,840 2d. passengers during the five months, from May 1 to Sept. 30, 1918. The Caversham-Whitley line, 1.67 miles long, serving a working-class district with a six-minute service, carried 1,923,912 passengers, all at the then prevailing rate of 1d., during the six months ended Sept. 30, 1918.

The Bath Road-London Road route was also abandoned in May, 1918, because of coal restrictions. As an independent line it had a flat ten-minute service over its 2.26 miles of route, serving suburban traffic largely with some working class traffic at the London Road end. The total traffic was 906,448 1d. passengers and 5277 2d. passengers during the fiscal year ended March 31, 1918. The route is now a part of the Erleigh-Bath line, except that one special car is added for Bath-London service during the morning, noon and evening peaks.

PREVAILING STYLE OF WORKMEN'S HOUSES ON OXFORD STREET—NO BIG TENEMENTS IN READING

Increase in Fare

Until Jan. 12, 1919, rides up to 1.89 miles were obtainable for the minimum penny fare. There was also one overlapping penny stage across town, 1.71 miles long, from Western Elms Avenue to Fatherson Road. In general, a ride from the center of the city to the end of any line cost only 1d. to the regular passenger, or 2d. if he rode across town.

Under the new schedule the penny rate is retained only for stages up to 0.9 mile, and a flat fare of 1½d. is charged for a ride from the center to the end of any line. As the confusing overlap has been abolished, the main line ride of 3.4 miles would cost 3d., the second 1½d. fare being collected separately as a precaution against over-riding. This particular line is divided into four stages at Oxford Road, Western Elms Avenue and General Post Office going east and at Wokingham Road, Fatherson Road and West Street junction going west. The Post Office and West Street junction are only about 200 ft. apart, so that this neutral zone is not an overlap in the usual sense in which that term is understood.

The result of the fare increase to date is indicated by the following figures, but it should be noted that the closing down of the school of the Royal Air Force coincided with the day on which the new fare system was introduced. The several thousand officers and cadets of the Royal Air Force formed a very re-

munerative class of passengers; in many cases they would travel distances of only 1500 to 1600 ft. and pay their fare of 1d. Even as regards the ordinary passenger, it should be emphasized that a large proportion of the traffic, under the new rates, must come from people who can be induced to ride 0.9 mile or less. The figures for various days of January and Feb. 3 are:

Date	1918 Receipts	1918 Passengers	1919 Receipts	1919 Passengers
January 17	£175	39,458	£205	36,448
January 18	228	53,324	261	48,250
January 21	157	36,188	218	34,447
January 29	149	31,309	182	31,949
January 30	146	31,504	207	33,100
February 3	156	35,783	183	32,221

On a weekly basis, figures up to the week ended Feb. 27 are:

Week Ended	1918 Receipts	1918 Passengers	1919 Receipts	1919 Passengers
January 16 (part)	£588	138,169	£813	151,175
January 23	1,140	268,551	1,327	253,060
January 30	1,065	250,426	1,247	234,898
February 6	1,109	266,978	1,233	229,407
February 13	1,165	271,481	1,237	230,726
February 20	1,120	263,962	1,308	250,717
February 27	1,145	268,588	1,324	244,804
Total	£7,335	1,728,155	£8,491	1,594,787

Loss in passengers, 8 per cent—gain in revenue, 15.7 per cent.

When due allowance is made for the shutting down of the aircraft school, it is clear that the fare increase at Reading has gone over the top as well as could be expected in a small city. Such losses as were suffered by its American daughter city are certainly not evident.

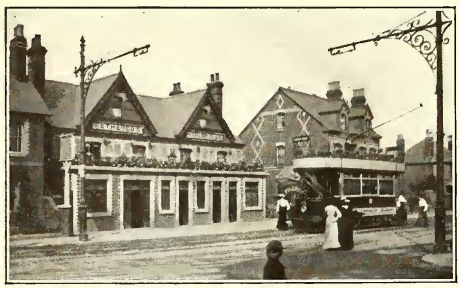
In addition to the full-price tickets, the Reading Corporation Tramways sells several other varieties at reduced rates as follows:

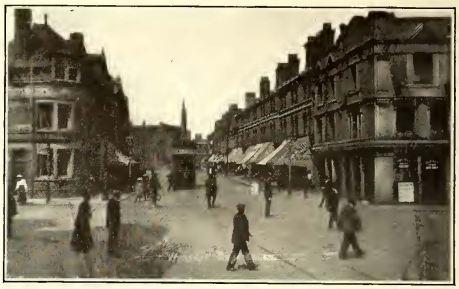
GEORGE FREDERICK CRAVEN, the thirty-six-year-old manager of the Reading Corporation Tramways, is an engineer by profession. He is an associate member of the Institution of Civil Engineers, a member of the Institution of Electrical Engineers and a member of the Institution of Mechanical Engineers. He has been in his present appointment for the last six years. During the war the Reading Tramways Department undertook some special war work, and Mr. Craven has to his credit the design of some interesting specialties which were adopted and used. Mr. Craven holds the office of honorable secretary to No. 2 (Board of Trade) Tramways Area; he is district engineer for Industrial Coal Supplies under the Coal Controller, and in addition he holds the post of local fuel overseer under the Household Fuel and Lighting Order of 1918. During the war he gave advice on electrical matters to several large engineering firms and other manufacturers in the borough of Reading.

Workmen's return tickets, price 2d, are issued before 7.45 a. m. each weekday. These may be used for any return trip during any day except after 1.30 p.m. on Saturdays. On the return journey, the passenger gives up this ticket in exchange for a punched fare receipt surprinted "W" in red to distinguish it from fare receipts given for single-trip cash fares.

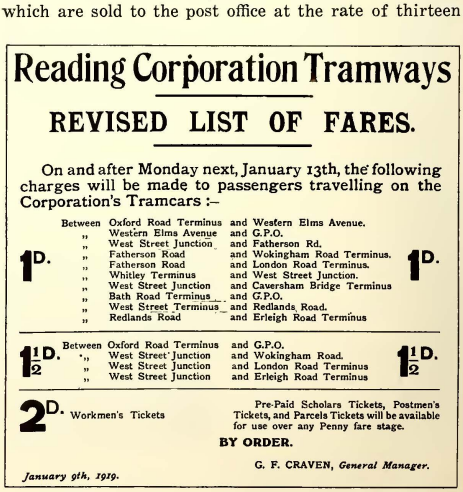
School tickets at ½d. each permit the user to ride a 1d. stage per ticket between 8 a.m. and 6 p.m. on Mondays to Friday inclusive, and between 8 a.m. and 1.30 p.m. on Saturdays. They are not available on Sundays and holidays. Such tickets must be given up to the conductor, who issues therefor exchange fare receipts surprinted "E." Although these tickets are sold only in bundles of twenty-four per shilling, it is customary for school teachers to retail smaller lots to their poorer pupils. The age limit of the holder of a school ticket is fifteen years.

The prepaid ticket illustrated is sold at full price in lots of thirty to merchants and others who prefer to give their messengers tickets instead of money for car rides. Each ticket is good for a penny stage and must be delivered to the conductor for an exchange ticket. In like manner, the letter carriers' tickets, which are sold to the post office at the rate of thirteen





AT LEFT, IN THE SUBURBAN DISTRICT OF OXFORD ROAD, READING; AT RIGHT, WEST STREET, SHOWING THE PREVAILING TYPE OF DOWNTOWN BUILDINGS



Reading Corporation Tramways

REVISED LIST OF FARES.

On and after Monday next, January 13th, the following charges will be made to passengers travelling on the Corporation's Tramcars :–

1D.	Between Oxford Road Terminus	and Western Elms Avenue.	1D.
	,, Western Elms Avenue	and G.P.O.	
	,, West Street Junction	and Fatherson Rd.	
	,, Fatherson Road	and Wokingham Road Terminus.	
	,, Fatherson Road	and London Road Terminus.	
	,, Whitley Terminus	and West Street Junction.	
	,, West Street Junction	and Caversham Bridge Terminus	
	,, Bath Road Terminus	and G.P.O.	
	,, West Street Terminus	and Redlands Road.	
	,, Redlands Road	and Erleigh Road Terminus	
1½D.	Between Oxford Road Terminus	and G.P.O.	1½D.
	,, West Street Junction	and Wokingham Road.	
	,, West Street Junction	and London Road Terminus	
	,, West Street Junction	and Erleigh Road Terminus	

2D. Workmen's Tickets

Pre-Paid Scholars Tickets, Postmen's Tickets, and Parcels Tickets will be available for use over any Penny fare stage.

BY ORDER.

G. F. CRAVEN, *General Manager.*

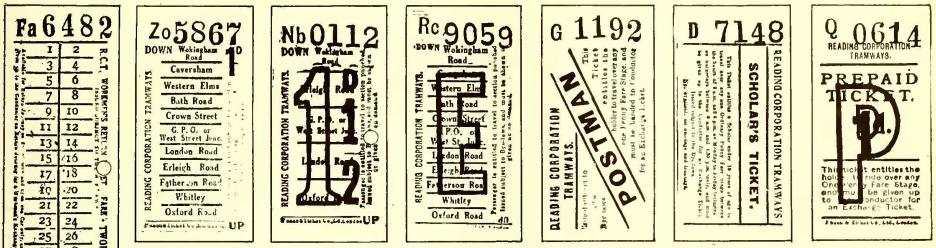
January 9th, 1919.

POSTER ANNOUNCING READING FARE INCREASE

instead of twelve penny tickets for a shilling, must also be given up for exchange fare receipts.

It should be clear from the foregoing that no matter what rate of fare the passenger pays, he must have a fare receipt that proves he is entitled to ride.

In a city with one predominant industry, the electric railway is at a disadvantage compared with the lines in larger places having varied industries. Quite recently, however, the Reading biscuit bakery adopted a forty-eight hour week for its 7000 employees, thereby



SPECIMENS OF TICKETS USED IN READING

As already described in the case of the Aberdeen Corporation Tramways, all the tickets assigned to any one conductor are taken in serial order out of a bin containing 10,000 of each classification. The estimated requirements for the day, together with waybill and punch, are put up in an individual box which is handed to the conductor when he reports for the day's work. The identifications, the quantity and the last and the first numbers of the tickets are already written down on the waybill when he receives his stock, so that he can check the ticket numbers and the punch reading, before leaving. The conductor himself writes down the record of exchange tickets, "First numbers returned to office" and "Quantity sold," and figures out the amount of cash he should turn in. Conductors are allowed to hold 2s. for change. Overs are returned to the conductors, and shorts must be made up by them.

Unlike the practice on some other properties, the conductor does not get the same punch all the time. Punches are rented from the Williamson Ticket Printer, Ashton-under-Lyne.

All transactions with the conductors are carried out at the office of the traffic superintendent. The staff comprises two cash clerks, two checking clerks and two boys. One of the latter fills the conductors' ticket boxes, and the other is used for miscellaneous service.

abolishing breakfast riding and emphasizing the morning peak. This plant now opens at 8 a.m. and has a luncheon period from 12.30 to 1.45 p.m. A number of the smaller places begin at 6 a.m. and have a breakfast period beginning at 8 or 8.30 a.m. and a luncheon period from 1 to 2 p.m. Suggestions to stagger the hours of opening and closing have been made, but housekeepers object to preparing breakfasts at different hours for different members of the family.

There is no bus service in Reading. Although buses are operated through the city from near-by towns, they are not used for local riding as the rate of fare is practically triple that of the tramway. Tramway service begins at 5.15 a.m. with the workmen's cars and ends at 11 p.m., forty-five minutes earlier than before the war. On the main line cars are operated at a schedule speed of $8\frac{1}{4}$ m.p.h., and the minimum on the shorter lines is 7 m.p.h. These schedules are to be expected in view of the size of the town and the necessity of frequent stops to encourage the short rider. The stops, in fact, are spaced 450 ft. to 600 ft., variations depending upon the location of traffic-gathering points, such as converging streets and important buildings.

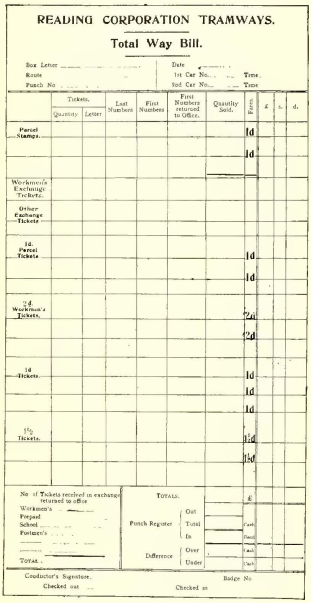
The system has thirty-six cars, of which six are double-truck. The smaller cars seat twenty-two on the

LATEST DESIGN OF READING DOUBLE-DECK CAR, AND INTERIOR VIEW OF LATEST CAR, WITH FARE ANNOUNCEMENT ON BULKHEAD

lower deck in longitudinal seats and twenty-six on the open upper deck in cross seats. The larger cars, which are 33 ft. 6 in. over all, seat thirty below and forty-two above, all in cross-seats. There is no limitation as to standing. Because of railway viaducts, Reading's cars have no top covers.

All cars are mounted on Brill trucks. The single-truck cars carry two DK-25-A 25-hp. motors and Dick-Kerr DB-1 Form B controllers, and the double-truck cars carry Dick-Kerr 6-A or 20-A 40-hp. interpole motors with DB-1 Form C controllers or the Dick-Kerr 6-K controllers with non-detachable handle. Most of the hand brakes are of Ackley type, with a few Peacocks as well.

The lighting circuits per car are three in number, with five 16-cp. lamps per circuit. Incandescent lamps are used for the headlight, for the colored route - indicating light suspended above the motorman and for the roller-type destination signs. In addition to the two 250-volt grounding indicator lamps specified by Board of Trade regulations, which are in series between the trolley base and the ground, a bell is used for a leakage indicator as the bell ringing is more noticeable than lighting of the lamps.


READING CORPORATION TRAMWAYS.

Total Way Bill.

Box Letter ..... Date .....

Route ..... 1st Car No.... ... Time.

Punch No ..... 2nd Car No.... ... Time

	Tickets. Quantity	Letter	Last Numbers	First Numbers	First Numbers returned to Office	Quantity Sold.	Fares	£	s.	d.
Parcel Stamps							1d			
							1d			
Workmen's Exchange Tickets										
Other Exchange Tickets										
1d. Parcel Tickets							1d			
							1d			
½d. Workmen's Tickets							½d			
							½d			
1d Tickets							1d			
							1d			
							1d			
1½ Tickets							1½d			
							1½d			

No. of Tickets received in exchange returned to office ..... £

Workmen's ..... TOTALS.

Prepaid ..... Out

School ..... Punch Register Total

Postmen's ..... In

..... Over

TOTAL ..... Difference Under

Conductor's Signature.

Checked out ..... Checked in ..... Badge No.

READING ALL-DAY WAYBILL

The latest type of single-truck car, built in the local shops, is shown in the accompanying illustrations. It is 27 ft. 6 in. over all with 5 ft. 6 in. platforms, bulkhead doors 24 in. wide in the clear, step 14 in. high arranged to be folded directly by hand (not through a platform handle), and 33-in. wheels. Ventilation is provided by means of small end-hinged windows over the main windows, arranged to open one way on one side and the opposite way on the other, according to the direction of running.

In this car all filigree work has been eliminated, and the customary veneer finish is replaced by white enamel composition board. The two roller destination signs are placed at opposite ends on the upper deck. They are illuminated by means of two 16-cp. lamps. On the ground glass back of the front sign appears the admonition: "Kindly tender copper for your fare," and on the back of the rear sign the passenger is asked to "Please obtain ticket for every fare paid."

During the fiscal year ended March 31, 1918, the traffic receipts (exclusive of parcels service, advertising, etc.) of the Reading Corporation Tramways were £55,212 (approximately $276,000), corresponding to the carriage of 13,771,598 passengers as follows:

Prepaid tickets to city departments, full value	38,220
Prepaid tickets to business houses, full value	14,910
Free and charity	7,320
School education committee	84,000
School tickets to individuals	275,808
Workmen's return tickets	616,561
Postmen's tickets	25,323
Regular tickets	12,710,356
Total	13,771,598

On the basis of population served by Reading alone, namely, 76,500, the number of rides per annum per inhabitant rose from 143 to 180 in the fiscal year ended March 31, 1918, as compared with the preceding year. Traffic has kept on increasing at such a rate, however, that the figure of 180 may be said to apply now to the borough population of 88,000. In the last fiscal year the effect of the rerouting and increased travel is indicated by the increase in passengers per car-mile from 11.97 to 14.97. At the same time, the annual car-miles were increased from 912,258 to 920,174 car-miles, while the daily run per car rose from 89.3 miles to 93.4 miles.

In spite of the fact that the operating ratio rose from 53.41 per cent to 58.8 per cent, the net surplus was increased from £5,273 to £8,400. Larger amounts were also assigned to the sinking fund, reserve fund for renawals, etc. It is hoped that the increase in fare, which was held back as long as possible, will enable the railway system to maintain its strong financial position in the face of higher operating costs and a possible reaction in post-war travel.

Labor Indorses Technical Research

AT ITS Atlantic City convention just closed the American Federation of Labor adopted a resolution designed to encourage wider investigation of methods to promote better utilization of the nation's resources.

The preambles to the resolution recite that the productivity of industry is greatly increased by the technical application of the results of scientific research; that the health and well-being not only of the workers but of the whole population as well, are dependent upon advances in medicine and sanitation; that the increased productivity of industry resulting from scientific research is a most potent factor in the ever-increasing struggle of the workers to raise their standards of living; that there are numerous important and pressing problems of administration and regulation now faced by federal, state, and local governments, the wise solution of which depends upon scientific and technical research; and that the war has brought home to all the nations engaged in it the overwhelming importance of science and technology to national welfare.

The resolution follows:

Resolved, by the American Federation of Labor in convention assembled, that a broad program of scientific and technical research is of major importance to the national welfare and should be fostered in every way by the federal government, and that the activities of the government itself in such research should be adequately and generously supported in order that the work may be greatly strengthened and extended; and the secretary of the Federation is instructed to transmit copies of this resolution to the President of the United States, to the President *pro tempore* of the Senate, and to the Speaker of the House of Representatives.

Safety Cars Increase Earnings 25 Per Cent in Terre Haute

Thirty One-Man Cars Placed in Service in December Have Also Increased Car-Miles 25 per Cent, Reduced Accidents and Won Popular Favor

A TYPICAL FLEET OF SAFETY CARS ON WABASH AVENUE

TERRE HAUTE, IND., is a city of 75,000 population. The local railway service is furnished by the Terre Haute division of the Terre Haute, Indianapolis & Eastern Traction Company, which operates about 30 miles of city lines with forty passenger cars, exclusive of 78 miles of interurban lines and twelve interurban cars. The city equipment has included double-truck 20-ton cars and single-truck 12-ton cars, all operated by two men.

On June 10, 1918, thirty Birney standard one-man safety cars were ordered for delivery in October. This was said to be the largest order which to that date had been placed by any one city at one time for safety cars. A publicity campaign announcing these cars was begun about the middle of September, and among the points emphasized in the first "Talks" were the safety features of the cars, the more frequent and rapid service made possible by their installation and the necessity of having exact fare ready. The first series consisted of ten advertisements.

When the publicity campaign was begun it was expected that the cars would be delivered about the middle of October. Delivery, however, was delayed a month due to the effect at the factory of the influenza epidemic.

After the cars were delivered additional advertisements were run, explaining on which lines the cars would be placed and covering other details of the service and later thanking the public for its cooperation. Investigation showed that as a result 95 per cent of the passengers had the exact fare ready when boarding the cars.

There was formerly a specific ordinance in Terre Haute which required two men to operate a car. Through the efforts of the company this ordinance was repealed and another was passed permitting the operation of the Birney safety car with one operator.

CARS COMPLETELY EQUIP FOUR LINES, INCREASING SERVICE ON EACH

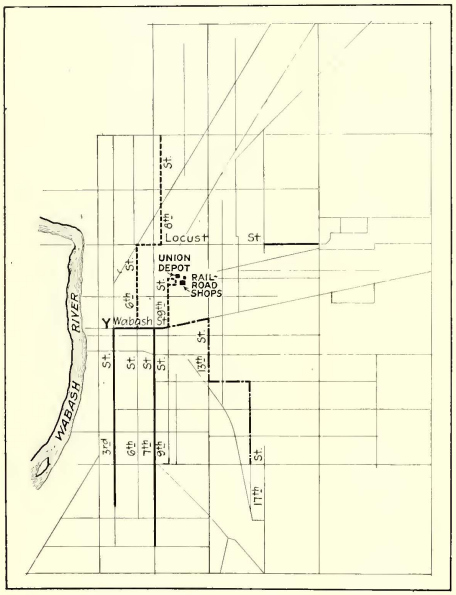
The first cars were placed in service on Sunday, Dec. 1, seven of them replacing seven two-man cars on the South Seventh Street-South Third Street line with three of the new cars held as extras to be used during the rush hours. The headway was cut from ten minutes to eight minutes, with a four-minute headway during rush hours. This line, which is shown by a heavy line on the accompanying map, is partly double and partly single track and has a round-trip mileage of 8.5. The cars operate north on Third Street from Grant to Wabash, east on Wabash to Seventh and south on Seventh to the Southern Indiana Railroad tracks, returning over the same route.

Ten days later six of the new cars were placed in service on the Eighth Street-Union Depot line, replacing five two-man cars and cutting the headway from ten to seven minutes. This is a double-track line with a round-trip mileage of 5.82. The route, as indicated by a dotted line on the map, is from Eighth and Maple south to Locust, west to Sixth, south to Wabash, east to Ninth, north to the Union Depot. Here the cars loop and return over the same route.

Five days later four cars were placed in service on the South Seventeenth Street line, replacing four two-man cars and maintaining a ten-minute schedule. This was then a single-track line but a passing track has now been installed at Franklin Street, and with the addition of two more cars a six-minute service was commenced on Memorial Day. This line has a round-trip mileage of 5.12 and, as shown by a dot and dash line on the

map, operates from Hulman and Seventeenth Streets north to Crawford, west to Thirteenth, north to Wabash, west to the Court House at Third and Wabash. Here the cars "wye," returning over the same route. One car was also placed on a short stub line, ½ mile long, on east Locust Street on a ten-minute schedule. This is indicated on the map by a heavy line from Nineteenth to Twenty-fifth streets.

All of these lines, with the exception of the East Locust line, pass over Wabash Avenue, the main business street of the city. This gives a headway of less than one minute through the business district. Outside of the business district all of the lines pass through residence sections. Terre Haute has many industries; it is the center of the Indiana bituminous coal fields and is the home of steel mills, malleable casting plants,



MAP OF STREET RAILWAY SYSTEM IN TERRE HAUTE SHOWING SAFETY CAR LINES

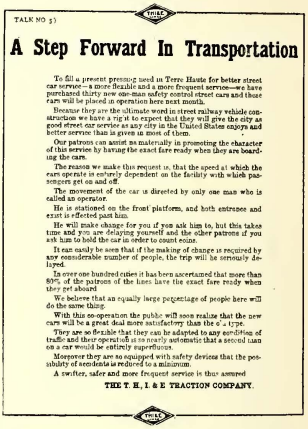
rolling mills and three glass bottle plants. These industries are all so scattered, however, that there is no industrial center and the safety-car lines serve both the industrial and the residence sections.

There are altogether six grade crossings in the city and the safety cars operate over three of them. Flagmen are stationed at each and, although on Wabash Avenue and North Sixth Street this is also a benefit to the two-man cars, the cost is all charged against the safety cars.

When the cars were first placed in service people made a great deal of fun of them, calling them various odd names reflecting on their size. The operation was successful from the beginning, however, in spite of the fact that the cars were placed in service just in time to catch the full brunt of the Christmas holiday rush. Special instruction sheets were issued to the men covering the operation of the new cars and no opposition was ever made to the one-man feature. In fact, the men are very well pleased with the cars, as they receive an increase in wages of five cents an hour when operating them. Men with seniority rights were given the first chance to pick the runs and they were required to make good. If they could not, other men replaced them. The first man to take out one of the new cars was the oldest motorman on the system, now in his thirtieth year as a motorman in Terre Haute, and he has never missed a day since.

The men not only like the extra $15 a month, but have been heard to state that they are not as tired at the end of the day after performing their dual service as formerly on the two-man cars. They say the cars ran more smoothly that the larger ones. Favorable comments have also been made by the press, and the local chamber of commerce has written to other chambers commending the cars and recommending their adoption in other cities.

The cars are of the standard Birney safety type, furnished by the American Car Company. The equipment includes two GE-258 motors, K-10 control, C-P-25 air compressors, friction bearing 78-M Brill trucks, Johnson single-dial fare boxes, and International 8-5 double clock registers. Three of the cars have also been equipped with Dayton air-operated register mechanism with most satisfactory results. The cars are double end and have a total weight of 13,200 lb. When first delivered they were not equipped with trolley stands, but some trouble was experienced at railroad crossings due to the higher overhead. Later, in order that they might be interchangeable among lines, all cars were equipped with 1-ft. trolley stands, the 14-ft. pole being retained. Each car is also equipped in each vestibule with a rack in which the operator inserts a card with his name printed in 2-in. letters. Above the rack are the words "Operator in Charge of This Car Is."


TALK NO 5)

A Step Forward In Transportation

To fill a present pressing need in Terre Haute for better street car service—a more flexible and a more frequent service—we have purchased thirty new one-man safety control street cars and these cars will be placed in operation here next month.

Because they are the ultimate word in street railway vehicle construction we have a right to expect that they will give the city as good street car service as any city in the United States enjoys and better service than is given in most of them.

Our patrons can assist as materially in promoting the character of this service by having the exact fare ready when they are boarding the cars.

The reason we make this request is, that the speed at which the cars operate is entirely dependent on the facility with which passengers get on and off.

The movement of the car is directed by only one man who is called an operator.

He is stationed on the front platform, and both entrance and exit is effected past him.

He will make change for you if you ask him to, but this takes time and you are delaying yourself and the other patrons if you ask him to hold the car in order to count coins.

It can easily be seen that if the making of change is required by any considerable number of people, the trip will be seriously delayed.

In over one hundred cities it has been ascertained that more than 80% of the patrons of the lines have the exact fare ready when they get aboard.

We believe that an equally large percentage of people here will do the same thing.

With this co-operation the public will soon realize that the new cars will be a great deal more satisfactory than the o.. type.

They are so flexible that they can be adapted to any condition of traffic and their operation is so nearly automatic that a second man on a car would be entirely superfluous.

Moreover they are so equipped with safety devices that the possibility of accidents is reduced to a minimum.

A swifter, safer and more frequent service is thus assured

THE T. H. I. & E. TRACTION COMPANY.

ONE OF THE SERIES OF ADVERTISEMENTS ANNOUNCING THE NEW SERVICE

596,166 Car-Miles Without a Wheel Change

Up to June 1 the thirty cars had made a total of 596,166 car-miles. During this period of approximately six months of service, not one of the 24-in. chilled steel wheels had been changed, the average mileage per wheel being 19,872. Wheel-trueing brakeshoes are used on the cars when required. One explanation of the excellent wheel life is that Terre Haute is a very level city so that excessive braking is not necessary. There has been practically no motor nor truck trouble arising

from internal causes and the air equipment has operated perfectly.

The service on the entire system as measured in car-miles has been increased 25 per cent, due entirely to the increased service given by the safety cars. As the lines equipped with safety cars represent 40 per cent of the total city mileage, the increase on these is correspondingly greater. There has been an increase in gross earnings of 25 per cent for the safety car lines, and an increase of 15 per cent for the entire city system, accompanied by a decrease in power consumption of 4 per cent, including four interurban lines operating twelve 54-ft. four-motor cars on an hourly schedule over the city tracks, together with freight and service cars within the city limits.

As an incident to the inauguration of safety car service, three Cheatham electric track switches were installed and others will soon be added. To operate the switches it is necessary to notch up to five points on the controller with the light cars, whereas two points are enough with the standard car. Until this was realized the operators experienced some trouble in working the switches and in some instances, upon failure to throw the switches at the customary two points, got out and threw them by hand.

Data so far available show a saving in maintenance of equipment of 2 cents a car-mile and in power of 1¾ cents a car-mile with the new cars. All of the savings together have enabled the company so far to continue existence on a 5-cent fare and no application for a higher fare has been made, although the city system is but half equipped with safety cars.

Average Accident Cost per Safety Car Less Than 13 per Cent That of Other Types

Up to the present time in articles on safety-car operation little has been said about accident data. The result of four months' operation (Jan. 1 to May 1) of twenty-three safety cars in Terre Haute has given some very interesting figures, as noted in the accompanying table:

ACCIDENT DATA T. H., I. & E. TR. CO.—TERRE HAUTE LINES, JAN. 1 TO MAY 1, 1919

ALL CITY CAR LINES
(Not including interurban cars)

Covers twenty-three safety cars and sixteen other types of cars, and includes all accidents, with cost of settlement of damages to vehicles and personal injuries.

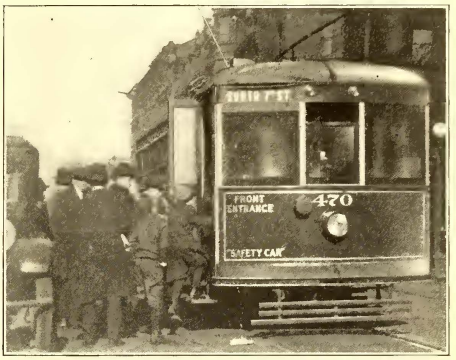
		Safety Cars	Other Type City Cars
Collisions, etc., in	January	28	20
	February	21	21
	March	22	13
	April	25	12
	Total	96	66
Accidents involving expense		21	15
Total cost including repairs to street cars		$900.45	$4,928.77
Cost per accident		$9.38	$74.63*
Car-mileage data:			
Total car-miles, safety cars		416,700	
Total car-miles, other types		348,200	
Accidents per thousand car-miles, safety cars		0.23	
Accidents per thousand car-miles, other types		0.19	
Accident cost per thousand car-miles, safety cars		$2.16	
Accident cost per thousand car-miles, other types		$14.15	

* Includes cost of personal injuries.

While the table shows a greater total of accidents with the safety cars than with other types, there were practically 50 per cent more safety cars in operation. The total cost of the accidents involving safety cars was about 13 per cent of that involving other cars, and the cost per accident and average cost per car operated were less less than 13 per cent.

Jitneys commenced operation in Terre Haute about four years ago, and at the time safety car service was inaugurated there were in regular daily operation between ninety and 100 jitneys. A few of the operators were "casuals" and "floaters," that is to say, men who had other occupations and owned or rented a Ford for the purpose of dropping in during rush-hour traffic and picking up a few nickels on the various lines. On two lines where the schedules have been increased, the jitney bus traffic has been greatly diminished, although it has not entirely disappeared. On the South Seventh Street line on the day safety-car operation was commenced, there were eighteen to twenty jitneys operating regularly. Gradually this number has been reduced, until since the first of the year there have been but four or five operating regularly, besides five or six more which drop in for an hour or two on the rush-hour traffic.

The territory tributary to the South Seventeenth Street line has been a fruitful field for the jitney bus,



NINETY-FIVE PER CENT OF THEM HAD THEIR EXACT FARE READY THE FIRST WEEK

on account of the car service being on a ten-minute headway until May 30, when it was reduced to six minutes. It is confidently expected that the jitney bus traffic will be successfully combated on this line with the improved car service, although it is still too early to give any figures.

Jitney buses operated for a long time in Terre Haute without regulation, supervision or restraint and without protection of any sort to the traveling public. Early in 1918 a jitney ordinance was passed, which required the jitney buses to take out licenses and carry insurance. This ordinance was amended before its final passage so that the insurance feature was very mildly treated, in that instead of requiring a bond to be taken out in a standard old-line liability insurance company, a "mutual" bond was allowed in "Jitney Drivers' Mutual Insurance Company." Any protection provided by this kind of insurance arises from assessment of the various policyholders. Even under this municipal provision, many jitney buses are operating without either license or bond for limited periods each day, or on heavy traffic days.

The jitney-bus drivers have their own organization and naturally receive sympathy and support on this account from other organized trades, but E. M. Walker,

general manager of the Terre Haute property, states his belief, based on his experience during the past six months, that the safety car is the successful competitor of the jitney bus.

Another by-product of safety-car operation has been found to be the absence of complaints from the public concerning inattention on the part of the operator, who is so comfortably and fully occupied that he has no time to be discourteous.

In replying to letters from other companies interested in the operation of safety cars, Mr. Walker has summed up what these cars on his property have accomplished as follows: Elimination of step accidents; reduction in accidents of a general nature, due to facility of handling cars; faster schedules with same number of cars; satisfaction of the people, both expressed by word and indicated by increased patronage; successful competition with the jitney bus, which had become an active contender for the business; satisfaction of the city government as evidenced by resquests for extension of safety car service; satisfaction on the part of the operators, on account of increased wage and easier riding cars; saving in power, permitting an increase in car-miles with a reduction in total power requirements; reduction in car maintenance expenses; evident reduction in track maintenance, due to the light weight of the cars.

As stated before, the fare in Terre Haute is 5 cents. However, for the benefit of the post office, telephone companies, etc., metal tokens are sold in quantities at 5 cents each. These are of the same size as the nickel and are recorded as such by the fare box.

Indeterminate Franchise Is Most Equitable*

By Halford Erickson
Hagenah & Erickson, Chicago, Ill.

THE kind of a franchise that now seems to be the most equitable to all concerned is the so-called indeterminate franchise or permit. Franchises of this kind are comparatively new. In only one state, Wisconsin, do they seem to have been in use long enough for even the semblance of a fair trial, and this discussion is largely confined to that state.

For nearly four years after the indeterminate permit had been provided in 1907 as a substitute for the ordinary utility franchise in Wisconsin, it was left optional with utilities to surrender their franchises and substitute the new grant, or to retain their existing franchises. In 1911, however, the Legislature decreed that all franchises coming under the provisions of the utility law of 1907 and not yet changed should become and have the same effect as indeterminate permits.

There are now two ways whereby an indeterminate permit can be secured: (1) By applying to the municipality for a grant to use the streets, etc., for the purpose of furnishing service where there is no utility occupying the field. This grant when exercised becomes by operation of law an indeterminate permit. (2) By securing a certificate of convenience and necessity from the Wisconsin Railroad Commission as authority to enter as a competitor a field already occupied by a utility furnishing similar service, and in addition to this by obtaining from the municipality such a permit to use the streets as the one just mentioned, which permit also becomes an indeterminate permit through the operation of law.

Protection Afforded to Public and Utilities

Among the factors which tend to protect the public and to promote its convenience and welfare, the following may be mentioned:

1. The public is entitled to adequate service at reasonable rates that are free from unjust discriminations.
2. Since the municipality has the power to grant or withhold the use of its streets and highways for public utility purposes, it may also, where no utility exists and where a certificate of public convenience and necessity has been granted, either reject or accept applications for such use; and through the exercise of this power it is in position largely to control the situation.
3. The municipality has been granted the power to acquire at a fair price the property and business of the utilities by which it is served and can exercise this power and enter the public utility business whenever it chooses to do so, or whenever it becomes dissatisfied with the service, the rates or any other conditions.
4. Whenever public convenience and necessity demand it, the municipality or some other utility can obtain authority to enter the field and to furnish service in competition with the existing utility.

Among the factors which tend to increase the safety of the investment and promote fair treatment to the enterprises are the following:

1. The utilities for adequate service are entitled to rates that are reasonable under the circumstances.
2. The utilities are entitled to fair prices for the property that is used for the convenience of the public when it is taken over by the municipalities.
3. Except where active competition existed when the public utility and indeterminate permit laws went into effect, the utilities are entitled to the exclusive right to furnish the service until the property is taken over by the municipalities or until for good reasons competitors are authorized to enter the field.
4. Public utilities are entitled to have all investments made for the benefit of the public kept intact through proper charges made for the service rendered.

In connection with the factors just explained, consideration should also be given to the following propositions:

1. What constitutes adequate service is determined by standards and rules developed through careful investigations and wide experience. Such standards and rules are enforced by regular inspections and by other methods and proceedings.
2. Reasonable rates under normal conditions are made up of charges that are high enough to cover the operating expenses, including depreciation, and interest and profit on the fair value of the property and business involved.
3. In determining the fair value of the plants and their business consideration when possible is given not only to the cost of reproduction but also to the original cost of such plant and business together with other factors that may affect the value.
4. The power to authorize a competitor to enter the field under a certificate of convenience and necessity is exercised with the greatest care and with the most scrupulous regard for all the interests that are affected. Such certificates are not granted until it has been clearly established that public convenience and necessity demand such action. In passing upon such matters the commission is controlled by the utility's inability or unwillingness to render adequate service and other questions that vitally affect the public welfare rather than local frictions, political interests and untried and uncertain governmental experiments. The burden of proving that such competition is necessary and to the best interest of the public is also largely upon those who make such application. In addition to this the merits of such applications are carefully inquired into by the commission. With the adequate power which the commission has, not only for ascertaining the true situation but for compelling the existing utilities to furnish adequate service and to carry on their businesss so as to promote the

*Abstract of address presented before public utilities committee of Chamber of Commerce of the United States in Washington, D. C., May 29, 1919.

general welfare, it is clear that it is not often necessary to grant such application.

5. The power to permit competition when needed is regarded as of almost as great importance as the power to revoke franchises, a power that rests exclusively in the Legislature. It is also a fact that such competition, if authorized, would under the circumstances be almost certain to spell ruin to the existing utility. When the existing utility, however, can be made to serve the public as well and at as low cost as any service of the kind that could be obtained from any other source, then it would manifestly be an injustice as well as a waste of capital and efforts to authorize competition. The power to authorize competition, however, has a considerable amount of value as a regulative force.

In conclusion, the indeterminate form of franchise affords more protection to both the public and the utilities than any of the kinds by which it was preceded. Whether the indeterminate permit would work as well in the absence of public utility laws and commissions as in connection with such laws is not entirely clear. It may also be a question whether such permits could be adopted in some states without far-reaching changes in their legal systems. But as most of the states now have so-called public utility laws and commissions these obstacles are probably not serious.

The General Situation Demands Relief

In addition to the foregoing remarks the general electric railway situation may be summarized in part as follows:

The electric railway situation is one for which adequate remedies should be found and properly applied. How can it best be met? About the only remedies that can be suggested is an increase in the rate of fare for passenger transportation wherever needed, and the elimination of all expenses and charges except such as are necessary for adequate service. In such cases the customary flat 5-cent fare will either have to be raised to a higher figure or restricted to shorter rides or to smaller areas or zones with an additional and lower rate for each succeeding zone. As to which of these methods should be chosen is a matter that would largely seem to depend upon the conditions of each particular place.

A flat rate of say 5 cents, or any other given sum, is not always desirable. This is especially true in the larger cities with long rides or lines. In such cities a flat rate causes the short distance rider to pay more than his share and the long distance rider to pay less than his share. For this and other reasons such flat rates also tends to discourage or reduce the short haul traffic and thereby to decrease the traffic density of the railway system. Flat rates therefore, are not only likely to be inequitable as between long and short haul riders, but by reducing the density of the traffic they also tend to keep the earnings down and the cost of operation per unit of traffic high.

Flat rates appear to be equitable in the smaller cities where the lines are comparatively short, and inequitable, as well as discouraging to certain parts of the traffic, in the larger cities where the lines and the hauls are comparatively long. These objections, on the other hand, do not seem to hold as against rates in the makeup of which due consideration is given to those expenses which do not vary with the length of the haul as well as to that part of the total expense which vary with the length of the haul. Rates in which distance is thus a factor are sometimes called zone rates and at other times again distance or mileage rates. Rates of this kind can mostly be so adjusted that both the short-haul and the long-haul rider are made to bear their just share of the total cost. They can also be so applied as to bring in the maximum amount of traffic.

Justice in Zone Rates

It is of course a fact that in order to base zone rates on costs many complicated apportionments of the expenses and many distributions of the apportioned items are necessary. The fixed expenses which are largely independent on the length of the haul must be separated from the variable expenses which depend upon or vary with the length of the haul. The fixed expenses in turn must be distributed on the total passengers handled. The variable expenses must be allotted to the passengers somewhat in proportion to the length of their ride. In the latter distribution the total variable expenses, the total car mileage, the average number of revenue passengers per car-mile and the length of the zone are important factors. While these distributions when taken together are complicated, experience has demonstrated that they are practicable and of the greatest help in determining rates of fare that are just and fair to all.

Nor can it justly be said that zone rates are so difficult in application as to be impracticable for this reason. While such rates have not as yet been generally applied, enough experience has been had under them to show that they can be used without causing either passengers or employees any undue inconvenience. Through mechanical devices for checking or counting and proper rules for entering and leaving cars in addition to a little watchfulness, it is easily possible fairly and economically to administer a zone rate system. While it is true that zone rates are not as convenient in everyday use as flat rates, it is also a fact that in larger cities this disadvantage is more than offset by several important advantages.

Congestion Is Not an Obstacle

It has also been said that zone rates tend to retard the growth of suburban districts and to cause congestion of population and are therefore undesirable. It is very doubtful whether this objection should be given a great deal of weight. Experience shows that the distribution of the population in the larger cities is chiefly affected by such conditions as rents, character of the population, time consumed in going and coming, the standard of living and other causes of this nature. It is of course possible that under zone rates the small additional charges beyond the first zone might also contribute a little toward undue congestion, but it is hardly probable. At any rate it would be of much less importance in this respect than the causes just mentioned. On the other hand, there are also in the zone rates certain offsetting elements. If under such rates, for instance, the roads can be more easily placed in a sound financial position than under the flat-rate system, it would also follow that the roads could be more easily and quickly made to extend into new suburbs than would otherwise be the case. As such suburbs, when connected with the city by proper transportation service, usually tend to relieve congestion in the city, this is a matter of much importance.

Public utilities, including electric railways, are entitled, under normal conditions, to rates that will yield reasonable returns for the operating expenses including taxes, depreciation, and interest and profit on the fair value of the investment. The price for capital varies somewhat with the risks involved and with other conditions, but it is the price that must be paid if the capital is to be had. For several years up to the beginning of the war capital in the public utility field could not as a rule be had on normal income bases unless such utilities were earning about 8 per cent for interest and profit on the fair value of the plant and the business. During the war this rate has, of course, been much higher, but it is not unlikely that, when normal conditions have been established, the price of capital in this field may return to some such a figure as that just mentioned.

Resuscitation from Electric Shock

THE ELECTRIC RAILWAY JOURNAL publishes as a supplement with this issue a chart giving instructions for resuscitation from electric shock by the prone pressure method as recommended by the National Electric Light Association. The chart is an abbreviation of the booklet of rules for resuscitation from electric shock, as revised by the association and presented at the recent Atlantic City convention by the committee on safety rules and accident prevention, of which W. C. L. Eglin is chairman. In commenting on these rules Mr. Eglin called attention to the work, in 1911, of the prior committee on this subject. He then said, in part:

"The revision of the rules and also the chart, which consists of an abbreviated form of these rules, has been based on field experience covering a number of years; and while no very radical changes have resulted, changes in detail have been made which, it is felt, will make the operation of the method more effective, and to which the careful attention of instructors and those familiar with the method is directed."

Steam Railroad Master Mechanics Meet

The Second Part of the Atlantic City Convention of Section III, American Railroad Association, Was Devoted to the Field Covered by the Former American Master Mechanics' Association

CONTINUING the report, begun in last week's issue, of the record-breaking meeting of the men of the mechanical departments of the steam railroads, held at Atlantic City, June 18 to 25 inclusive, the following digest contains items of general and electric railway interest.

Heating of Passenger Trains Drawn by Electric Locomotives

The report of the committee on design, maintenance and operation of electric rolling stock was devoted entirely to the heating of passenger trains drawn by electric locomotives.

The report traced the history of experiments, first with oil-fired boilers, next with electric boilers and finally with oil-fired boilers again. The early oil-fired boilers were abandoned on account of accumulation of carbon on the tubes, of trouble with back drafts and of difficulty in regulating the supply of oil and water. The electric boilers were found to be expensive to build and maintain.

After tests on improved types of oil-fired burners the type described in the issue of the ELECTRIC RAILWAY JOURNAL for June 10, 1916, page 1080, was developed. This was applied to twenty-nine locomotives. It is 39 in. in diameter, has 1380 copper flues 30 in. long and $\frac{1}{2}$ in. in diameter, 436 sq.ft. of heating surface, a working pressure of 110 lb. per square inch and a capacity of 2200 lb. per hour. Improvements over earlier types consisted among others of the use of a water leg 18 in. deep and $2\frac{1}{2}$ in. wide; increasing the bridges between the tubes to $\frac{3}{4}$ in.; substitution of a forced draft in the firebox with a closed door for the natural draft used previously, and the use of two expansion joints of the bellows type in the boiler shell.

The fuel-oil burner used is very simple, very easily cleaned and adapted to eastern fuel oil, which has a paraffine base, or kerosene. The lower section of the burner, which carries the steam or air for atomizing the oil, projects beyond the oil orifice, forming a lip or shelf on which the excess oil may flow and still be atomized. Where it is more economical to use the heavy western oils having an asphalt base, it has been found necessary to leave off the lip, because of the liability of oil accumulating at that point and interfering with the steam jet, as shown by the experience of the Chicago, Milwaukee & St. Paul. Only when the boiler is started is air from the main air reservoir turned into the stack blower to insure a draft and onto the burner to atomize the fuel oil. As soon as there is a steam pressure approximating 50 lb. a three-way cock is used to substitute steam for compressed air. That only a very short time is required to obtain steam for this change is obvious when it is realized that with cold water in the boiler it requires only four minutes to develop a steam pressure of 10 lb. and ten minutes from starting the fire a steam pressure of 110 lb. is obtained.

Carefully checked recent tests have shown that the raising of the breeching, or smoke box, above the top flue sheet from its original height of $1\frac{1}{2}$ in. to $10\frac{1}{2}$ in. has resulted in increasing the steam capacity of these boilers 32.2 per cent. This is undoubtedly due to the fact that there is now a free exit for the gases from the outer tubes, which in effect increases the heating surface of the boiler, the products of combustion passing through these outer tubes having previously been choked by the limited area through which the gases from these flues could escape.

Particular attention is called to the fact that there is a superheater in connection with the boiler. It is possible to obtain any reasonable degree of superheat required. Good practice indicates that about 15 degrees is desirable, as a high superheat damages the steam hose and gaskets. Tests show that when the steam is somewhat superheated it requires less steam per car per hour to heat it satisfactorily.

The type of boiler just described is standard for the electric passenger locomotives on the New York Central, where its capacity is rated at 2200 lb. of steam per hour; on the Chicago, Milwaukee & St. Paul, where it is rated at 2600 lb. of steam per hour; on the New York, New Haven & Hartford, where the maximum capacity is given as 2700 lb. and an average of 2200 lb. per hour. It has been adopted for the electrified zone of the Canadian Northern Railway, where the heating plant is installed in a separate car, or trailer, instead of on the locomotive. Each of the railroads reports satisfactory results from these boilers. In each case the cars are heated from a steam header at terminals before the engines are attached, or are delivered, properly heated, by the steam locomotives to the electric engines. On the Chicago, Milwaukee & St. Paul the outside temperature is occasionally 40 deg. below zero, and the heating plant "appears fully to meet the requirements for the heating of the trains in the coldest weather." The New York, New Haven & Hartford Railroad reports that "in normal winter weather, on trains of nine cars or less, only one boiler is used, but with cold weather and longer trains we find it better to use two boilers, one for each locomotive."

Amount of Steam Necessary

The heating plant should be designed to develop the amount of steam required by the most severe conditions, and there are a number of conditions which influence the requirements. Among others are the following: The temperature of the outside air; the severity and direction of the prevailing winds; the number of cars in the train; the amount of radiating surface of the steam pipes; the cubical contents of the cars; the ventilating system used in the cars; the presence or absence of double sash; the materials of which the cars are built, whether wood or steel, for instance; the efficiency of the heat insulation, especially in the case of steel cars, including, particularly, the steam line under and between the cars; the steam control on the cars, whether hand or automatic.

As far as the committee was able to determine, there are no data as to the amount of steam needed to satisfactorily heat passenger cars which can be generally applied. The results are usually given in pounds of steam per car per hour for various outside temperatures, without detailed information as to car dimensions, construction, ventilation or heating system. Under these circumstances the records are of no practical value except locally.

Comparison of Oil and Electricity

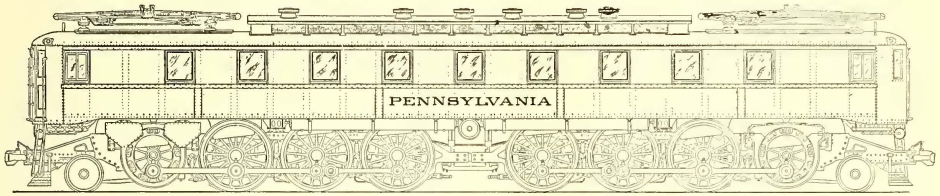
So far as the committee is informed, no practical steam boiler has yet been developed which uses electricity as a source of heat. Assuming that such a heating plant is available, there are certain facts which should be borne in mind. The cost of electricity to produce a given amount of steam is from six to ten times that of fuel oil, omitting the item of fixed charges in the cost of current. The ratio depends on the relative cost of fuels. If the peak load for propulsion and heating current come at the same time, during the Christmas holidays, for instance, it will be necessary to increase the power station and substation capacity, not only increasing the capital invested, but incurring additional fixed charges which continue during the whole year though the additional apparatus is required for only a few months, during the heating season. Estimates made a few years ago showed that electrically generated steam would cost about $45,000 a year more than from oil-fired boilers, the number of locomotives involved being less than 35, not including fixed charges in the cost of current. If fixed charges are included, there would be in this case a saving of over $100,000 a season in favor of oil as a source of heat.

There is undoubtedly an element of danger of fire in the use of fuel oil or kerosene. This was greater in the earlier designs of heating plants, when the oil was under air pressure, than with later designs, which feed the oil by gravity. Care in design, construction and operation have shown the hazard is small.

The experience with the electric steam boilers has been so very limited, that there are practically no facts on which to base an opinion as to the liability of fire and personal injury in their use. That there is an element of danger there can be no doubt. There are, however, certain conditions, such as long tunnels, which make the electrically heated steam boiler very desirable and in all probability will result in a successful design.

The report abstracted above was signed by C. H. Quereau, superintendent electrical equipment, New York Central Railroad, Chairman; G. C. Bishop, superintendent motive power Long Island Railroad; J. H. Davis, electrical engineer Baltimore & Ohio Railroad; George McCormick, general superintendent motive power Southern Pacific Railroad; H. R. Warnock, general superintendent motive power Chicago, Milwaukee & St. Paul Railway; W. L. Bean, mechanical assistant to federal manager New York, New Haven & Hartford railroad; J. T. Wallis, general superintendent motive power Pennsylvania Railroad; J. E. Pilcher, mechanical engineer Norfolk & Western Railway; A. C. Deverill, superintendent motive power Great Northern Railway.

In connection with the meetings there were many matters of interest and importance aside from the technical programs. For example on the evening of June 21 speakers of countrywide renown paid tribute to the railroad men who had participated in the war activities. To quote the New York *Times*: "The spokesmen for a thankful nation were Franklin D. Roosevelt, Assistant Secretary of the Navy, speaking for both the Army and the Navy Departments; United States Senator Walter E. Edge of New Jersey, and Colonel Henry W. Hodge, who was Assistant Director of Transportation in France for the American Expeditionary Force.



ELEVATION OF SINGLE-PHASE, THREE-PHASE LOCOMOTIVE EXHIBITED BY PENNSYLVANIA RAILROAD AT ATLANTIC CITY CONVENTION

"The occasion was a recognition night rally under the direction of the mechanical sections of the American Railway Association, and master car builders, superintendents of motive power and other executives of the big trunk lines now comprising the federalized railway system of the United States crowded the hippodrome of the Million Dollar Pier and cheered every reference to General W. W. Atterbury and other transportation specialists who made history when America crossed the Atlantic."

On the evening of June 23 a lecture was given by Major E. D. Campbell, Artillery Division, Ordnance Department, United States Army, on "Railway Artillery". This lecture was a fit accompaniment to the exhibits of artillery of this type referred to in part in last week's issue.

Meetings of Related Associations

During the convention a number of meetings of related associations were held. Among these was the first meeting of the executive committee of the reorganized American Railroad Association. R. H. Aishton, regional director Northwestern Region was elected president, J. E. Fairbanks was re-elected general secretary and treasurer, and other offices were filled as well. The date Jan. 21, 1920, was set for the next meeting of the association.

The railroad Supply Men's Association also met and elected officers. George R. Carr, Dearborn Chemical Company, Chicago, Ill., was elected president, J. F. Schurch Rochester, N. Y., vice-president, and J. D. Conway of Pittsburgh, secretary-treasurer. New execu-

tive committeemen are W. H. S. Bateman, Philadelphia; John M. Gillespie, Pittsburgh; C. D. Jenks, Cleveland; L. S. Wright, Chicago; Colonel George L. Morton, Atlanta.

The Association of Railway Electrical Engineers also met in semi-annual convention for the informal discussion of pressing problems. Particular attention was given to the report of the committee on locomotive headlights, based upon a general questionnaire. The work of the committee of illumination also came in for consideration, as did that of the committees on electric arc welding and electrification. The latter, presented by E. Wanamaker, Rock Island Lines, showed that there is an increasing interest being taken by railroad managements in electrification projects. The committee desires information in its field for the benefit of those roads which are logically interested in electric traction.

Brief reference was made last week to the powerful electric locomotive exhibited by the Pennsylvania Railroad. This has been developed for use on the Altoona Division of the main line of the railroad in West Central Pennsylvania. It is claimed to be the most powerful locomotive ever built, having a rating of 4800 hp. normal rating, and being capable of exerting 7600 hp. during acceleration. A photograph of the machine was reproduced last week. A side elevation accompanies this article. The locomotive was described in detail in the issues of this paper for June 9, 1917, page 1048, and Oct. 6, 1917, page 619.

Why Not Apply the Safety Car to Interurban Service?

The Frequent-Service Feature Would Be Appreciated and the Operating Economies Would Affect the Balance Sheet Favorably

BY D. C. HERSHBERGER.
General Engineering Department, Westinghouse Electric & Manufacturing Company

THE wonderful success of the quick-service safety car on city streets, in all parts of the country, demonstrates that it would also solve some interurban or surburban problems. It is capable of performing the present schedules on many low-speed lines, where old types of cars are now operating, It will also be capable of performing the necessary service on lines which at present have medium schedule speeds, provided the running time is increased and a greater number of cars put into operation in order either to maintain the present headway, or to reduce it if the traffic warants. On some roads this will necessitate the changing of the present passing points on single-track lines, while in other cases additional passing points will be required.

Where relatively heavy cars are now used on lines having limited feeder capacity, the voltage at the car is usually low, which interferes with the operation of the present heavy cars. With the safety cars the power peak, as well as the average current on the line, is reduced to such an extent that a much higher average voltage will obtain. This improvement in voltage will aid the safety car in maintaining present schedules.

On some interurban lines the tide of traffic in a given direction is heavy for short periods, which may be in excess of the capacity of present safety cars if operated singly. To meet this condition these cars can be operated with two or more running on the same block on the heavy trips. In other cases, some of the old cars, operated as trippers, may be used for the peak load.

The safety car is capable of maintaining a reasonable schedule, and if the track is in good condition is practically free from pitching and rolling. As its weight is only one-third or one-fourth that of the interurban car which it would supersede, the car would obviously involve less expense for track maintenance or, conversely, with the same maintenance expenditure, the track could be kept in much better condition so that the safety car would actually have better riding characteristics than the old heavy cars operating on poorly maintained tracks.

The public which patronizes interurban or suburban lines prefers neat, well-maintained and well-operated cars, even though they may be small, to old "ramshackle," weather-beaten, noisy cars. The latter have a depressing effect on the car rider and encourage adverse criticism.

A few interurban and many suburban lines are equipped with longitudinal-seat cars. Such cars are less pleasing to the public than cross-seat cars like those of the safety type. Proof of this is seen in the fact that in cars having longitudinal seats along one side and cross-seats on the other, the cross-seats are always filled first.

The interurban transportation field presents an opportunity for a new type of one-man safety car. There are many lines which could be better served by a light four-motor, double-truck safety car with greater seating capacity, and geared for higher speed than the present safety cars. A car of this type, equipped with safety appliances, can be as easily and safely operated by one man as on the present safety cars now in use on city and suburban lines.

As the operator has the entire responsibility for safe transportation of his passengers he will be less careless in observing operating rules and signals, and in handling the public, than would either the motorman or the conductor were the responsibility divided between them. On interurban roads the duration of stops for receiving and discharging passengers is relatively small as compared with the total time between terminals; in fact it is much less than on city lines. Hence the question of stand-still time to permit boarding and alighting would not interfere with the service, as the public would become habituated to having the proper fare ready when boarding.

The question of fare collection is, of course, one of the first that comes to the mind of the transportation superintendent. On steam roads the patron would not think of tendering fares by zones for the reason that the railroads have never inaugurated this practice. The same is true with a large number of interurbans. Where zone systems are employed it would obviously be necessary to revise the present methods.

On many of the roads, where the two classes of safety cars referred to above could be operated, the crews know most of the patrons, and furthermore know their habits with respect to boarding and leaving the car. Thus it should be easy for safety-car operators to collect the fare for a whole ride at the time the passenger boards the car. However there are many places where this method of fare collection could not be employed due to franchise and other restrictions. In these cases other methods can be employed to advantage.

The application of safety cars to interurban service would meet with difficulties, but with tact and perseverance these can be overcome.

Iowa Association Holds Two-Day Meeting

Joint Session with Iowa Section of the N. E. L. A. Was Included—Discussion Was Intensely Practical and Timely—J. P. Ingle Was Elected President

AS NOTED briefly in last week's issue of this paper, the Iowa Electric Railway Association met at the Colfax Hotel, Colfax, on June 18 and 19. The afternoon session on June 18 was held jointly with the Iowa section of the National Electric Light Association. Papers were read by William Chamberlain, general counsel United Light & Railways Company, on "Rate Litigation in Iowa," and by Dean William G. Raymond, University of Iowa, on "The Iowa State Board of Conciliation — Its Work and Possibilities." An abstract of the latter appears elsewhere, and one of the former will follow. On the evening of that day an impromptu dance was held.

The morning of June 19 was devoted largely to routine business. In the absence of C. E. Fahrney, president of the association, Vice-President F. J. Hanlon presided. A general discussion on paving completed this session.

During the afternoon of June 19 papers were read by T. C. Roderick, assistant general manager Tri-City Railway, on "The Safety Car," and by C. W. Place, engineer General Electric Company, on "The Automatic Control of Substations." These will be abstracted in a later issue of the JOURNAL.

These papers were generally discussed and the discussion finally turned on the subject of track reclamation by welding and grinding.

Before the meeting closed Secretary H. E. Weeks called attention to the paucity of railway representatives at the meeting. After discussion it was decided to appoint a committee to draft a plan to increase attendance at, and interest in, the meetings. The following were appointed:

J. P. Ingle, Keokuk Electric Company, chairman; B. J. Denman, Tri-City Railway & Light Company; R. A. Leussler, Omaha & Council Bluffs Street Railway; W. H. Brooks, Westinghouse Electric & Manufacturing Company, and A. P. Jenks, General Electric Company. At the executive session following the general meeting officers were elected for the ensuing year as follows: President, J. P. Ingle; vice-president, F. J. Hanlon; secretary-treasurer, H. E. Weeks, and member of the board of directors for five years, J. P. Ingle.

The convention concluded with a banquet and dance attended by 150 or more delegates and guests of the two associations. After dinner the associations were welcomed to Colfax by the secretary of the Commercial Club who, with the Mayor, represented the city at the banquet. The main speaker was John F. Gilchrist, vice-president Commonwealth Edison Company, Chicago, Ill., who spoke on "Public Utility Regulation."

WEDNESDAY PAPERS FAVORED RATE LITIGATION

The paper read at the joint session on Wednesday by Mr. Chamberlain was considered so important to the members that the association plans to publish it in full in pamphlet form. In the discussion of the paper a question brought from Mr. Chamberlain the statement that the acceptance of a franchise does constitute a contract but that such acceptance does not constitute the acceptance of the franchise ordinance in which, and not in the franchise or lease, the rates are specified. In answer to another question Mr. Chamberlain replied that the decision of Judge Applegate, as referred to in the paper, does not affect railway properties unless they come to be included in the statutes covering general conveyances, a decision in regard to which has never been rendered. It was further brought out that a franchise voted upon by the public does not become any more of a contract than otherwise as the public merely signifies its approval of the action of the council.

An interesting point in the discussion of the paper by Dean Raymond was the statement by him that the method used by the board in determining the going value of a utility was to estimate the annual cost of operation of the property, to add a percentage—say 10 per cent—and to capitalize this at say 7 per cent. The result was assumed to be the going value. The discussion brought forth complimentary references to the fairness of the board, and to the influence that its decisions have had on the councils of cities whose controversies were not under consideration.

BRICK IS FIRST CHOICE IN PAVING

The general discussion on the best paving to be used in connection with street car tracks, with special reference to the advantages of cement, creosote blocks, brick and asphalt, was led by R. J. Smith, superintendent way and structures Tri-City Railway. Mr. Smith said that his experience with creosote block and asphalt had been unfortunate and that he considered asphalt a failure in track paving. In fact, in general, any monolithic pavement should be avoided. Concrete, preferably reinforced, may serve for temporary construction where traffic is light Creosote block makes an excellent pavement as far as the paving itself is concerned provided the blocks are perfectly treated and perfectly laid, both operations under rigid inspection. They should be laid on the green concrete, thus eliminating a grout cushion, and the joints filled with grout.

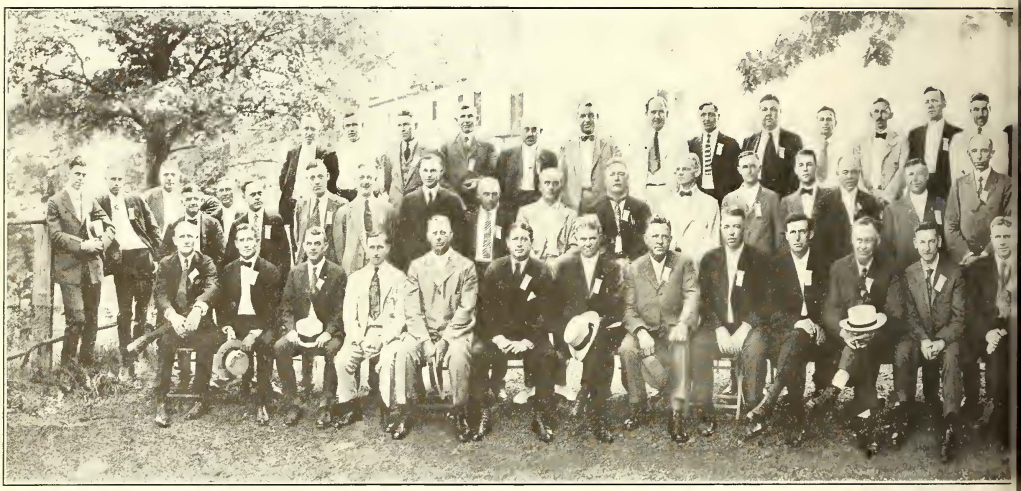
The standard on his property, said Mr. Smith, is a brick pavement laid in a 1:4 mix grout cushion which is, in turn, placed on the green concrete foundation. The paving joints are filled with grout and no provision is made for expansion. With a bituminous filler the bricks wear at the edges, resulting in "turtle backs." For extremely heavy traffic granite or sand stone blocks on a grout cushion should be used in place of brick. The railway should not be required to put down a fine twenty-year pavement every time paving is done when grade or other changes may be required in a few years.

In the discussion which followed Mr. Smith's remarks O. H. Simonds said that his experience with creosote blocks had been unfortunate; that they were generally spaced too close together and that in replacing or repairing pavement on his property the space was being increased to ½ in. A mortar cushion with a grout filler

is used. Mr. Simonds also prefers the brick pavement from the standpoint of economy.

Speaking of filler blocks Mr. Smith said even with the best construction the rail will vibrate and therefore the pavement should be kept vertically separate from the rail. Of course this allows water to seep in but if the web space of the rail is filled with mortar the seepage will not be serious. Anyway brick cannot be laid under the head of the rail satisfactorily. T-rail construction is the best, with the brick arched at the center of the track and brought down to the head on the rail and the web space filled with grout. J. P. Ingle, E. C. Allen and J. O. Schulze agreed with Mr. Smith in his conviction that brick gives the best pavement and that concrete and creosote blocks are unsatisfactory.

Referring to paving around special work Mr. Smith said that he is using brick, but still experimentally. Perfect special-work construction does not offer any difficulties in paving, but no railway lays perfect special work and constant maintenance is necessary. T. C. Roderick stated that brick gives the most satisfactory results, wood block is very unsatisfactory and asphalt is fairly satisfactory if brick is used against the rail. Nose blocks have not proved satisfactory but where it has been necessary to use them a specially-designed granite block has given the best results. Water-bound macadam makes a fairly satisfactory cheap pavement for very light traffic, but needs constant maintenance although this is not costly. Special work with sharp-angle frogs has been paved with granite blocks cut to fit.



GROUP OF DELEGATES AT CONVENTION OF IOWA ELECTRIC RAILWAY ASSOCIATION

Safety Car a Live Subject

Mr. Roderick's paper brought out the most extended discussion of all those presented. In the course of this F. J. Hanlon said that he did not believe that there is a property in Iowa that can afford to operate cars with two men. The one-man car insures faster schedules, and on his property faster loading and unloading are actually obtained. The fare box is equipment essential to the safety car, and passengers will have the correct fare ready. Otherwise caustic remarks about delaying traffic are made by other passengers. With a 9-ft. wheel base the riding qualities of the car are better than those of a double-truck car. Mr. Hanlon did not favor the use of ball bearings.

Some discussion ensued on the necessity for an overhead register and E. C. Allen stated that this is not necessary, that it will never check with the fare box until the men make it do so at the end of the trip. Mr. Allen said that his experience indicates that 95 per cent of the passengers have the exact fare ready. If half-fare and other tickets are in use a register would seem to be necessary. Mr. Hanlon said that his safety cars are equipped with Economy meters and that in spite of a 25 per cent increase in the unit cost of power at the plant the cost of power consumed has been considerably reduced.

Where the standard safety car has been installed an average annual saving of $3,500 per car, including power consumption, platform expense and maintenance, has resulted, according to Nic LeGrand, National Safety Car & Equipment Company. In every case the gross receipts have increased from 12 to 55 per cent. One big feature in favor of the car is the absolute elimination of platform accidents. The loss of fares is also practically eliminated because the men are kept too busy to "knock them down." Mr. LeGrand thinks it desirable that the cars be kept standard and believes that faster loading and unloading will result with a 30-in. door opening than with a wider one. Local conditions can be adjusted to the car better than the car to local conditions, said W. H. Brooks. The cars should be kept standard. W. H. Beattys, Westinghouse Traction Brake Company, explained the safety features of the car such as the "dead man's" handle and foot pedal, the operation of the brakes, sanders and doors, and said that there is nothing else that will give to the railway companies a return on the investment such as is given by the safety car. J. P. Ingle said that three

years ago Stone & Webster standardized on the Birney car and that since that time nothing else had been purchased. The only thing the local manager can specify is the number of the car, the color and the destination sign. No property, he said, has a right to ask for an increase in fares until every known saving had been instituted and that means the safety car.

The Automatic Substation Another Important Development

In the discussion which followed the reading of Mr. Place's paper John M. Drabelle, electrical engineer Iowa Railway & Light Company, said that manufacturers must substitute for the highly refined switchboard relay a more substantial equipment. A little trouble has occurred at the relay on his property but the first year of operation has been very satisfactory. The automatic hydraulic station has in two years developed 6,000,000 kw.-hr. of energy at a maintenance cost of $42.88. C. A. Butcher, Westinghouse Electric & Manufacturing Company, said that he believes that automatic substations will in the future be installed more rapidly than the manual stations. He emphasized the necessity for intelligent inspection. A. P. Jenks said that the automatic substation is not in the experimental stage. The first installation was made several years ago and although of course a few "bugs" have developed the equipment has proved very successful and most reliable. The automatic substation and the safety car go hand-in-hand in relieving the street railway situation. Both are labor-saving devices and this is important as the eight-hour day is coming and manual stations which now operate on two shifts will have to change to three.

The general discussion on reclaiming track and special work by welding and grinding was led by R. J. Smith who said that he was convinced the work pays richly. The welding process is as uncertain as any process in the industry, he said, in spite of the fact that the progress of the art has eliminated much of the uncertainty and will eliminate more. The work should be handled by a separate department. That in Davenport has included building up and grinding old track, bolted special work and manganese centers, putting on welded plates and other special jobs. The arc welded joint is a success but indifferent success has been obtained with welding of special work and manganese centers. With manganese it is somewhat of a hit-and-miss process, as the manganese loses some of its properties when heated.

The foundation upon which the work has been done should be borne in mind in considering any welding failures. Mr. Smith said that as the efficiency of resistance machines is low, it may pay to have more generator sets and fewer resistance machines. The importance of having the work clean before welding was emphasized. Every property, even though small, should have a welder and a grinder. In answer to a question Mr. Smith said that there is no bad effect upon the weld as a result of doing the work under traffic, but if the traffic is heavy it will be better to do the work at night and not delay schedules.

AND IOWA SECTION OF NATIONAL ELECTRIC LIGHT ASSOCIATION AT COLFAX, IA.

All mechanical joints are being replaced with welded joints on his property, said O. H. Simonds, and the work is being done at night. Grinding is a part of the welding operation and should always follow the building up of joints. It is also a good plan to grind joints on new track before any traffic has passed over them.

Germany Electrifying Suburban Lines

The *Electrician*, London, states that Berlin is now falling into line with other large cities in adopting electrification for its network of suburban railways, one section of which has been commenced. The trains are to be composed of twelve coaches each with a double-axle driving truck at each end. The system is so arranged that existing coaches can readily be adapted to it. It is proposed to divide the trains into two portions, each working independently, which will facilitate economical working during the light traffic period.

is used. Mr. Simonds also prefers the brick pavement from the standpoint of economy.

Speaking of filler blocks Mr. Smith said even with the best construction the rail will vibrate and therefore the pavement should be kept vertically separate from the rail. Of course this allows water to seep in but if the web space of the rail is filled with mortar the seepage will not be serious. Anyway brick cannot be laid under the head of the rail satisfactorily. T-rail construction is the best, with the brick arched at the center of the track and brought down to the head on the rail and the web space filled with grout. J. P. Ingle, E. C. Allen and J. O. Schulze agreed with Mr. Smith in his conviction that brick gives the best pavement and that concrete and creosote blocks are unsatisfactory.

Referring to paving around special work Mr. Smith said that he is using brick, but still experimentally. Perfect special-work construction does not offer any difficulties in paving, but no railway lays perfect special work and constant maintenance is necessary. T. C. Roderick stated that brick gives the most satisfactory results, wood block is very unsatisfactory and asphalt is fairly satisfactory if brick is used against the rail. Nose blocks have not proved satisfactory but where it has been necessary to use them a specially-designed granite block has given the best results. Water-bound macadam makes a fairly satisfactory cheap pavement for very light traffic, but needs constant maintenance although this is not costly. Special work with sharp-angle frogs has been paved with granite blocks cut to fit.

GROUP OF DELEGATES AT CONVENTION OF IOWA ELECTRIC RAILWAY ASSOCIATION

Safety Car a Live Subject

Mr. Roderick's paper brought out the most extended discussion of all those presented. In the course of this F. J. Hanlon said that he did not believe that there is a property in Iowa that can afford to operate cars with two men. The one-man car insures faster schedules, and on his property faster loading and unloading are actually obtained. The fare box is equipment essential to the safety car, and passengers will have the correct fare ready. Otherwise caustic remarks about delaying traffic are made by other passengers. With a 9-ft. wheel base the riding qualities of the car are better than those of a double-truck car. Mr. Hanlon did not favor the use of ball bearings.

Some discussion ensued on the necessity for an overhead register and E. C. Allen stated that this is not necessary, that it will never check with the fare box until the men make it do so at the end of the trip. Mr. Allen said that his experience indicates that 95 per cent of the passengers have the exact fare ready. If half-fare and other tickets are in use a register would seem to be necessary. Mr. Hanlon said that his safety cars are equipped with Economy meters and that in spite of a 25 per cent increase in the unit cost of power at the plant the cost of power consumed has been considerably reduced.

Where the standard safety car has been installed an average annual saving of $3,500 per car, including power consumption, platform expense and maintenance, has resulted, according to Nic LeGrand, National Safety Car & Equipment Company. In every case the gross receipts have increased from 12 to 55 per cent. One big feature in favor of the car is the absolute elimination of platform accidents. The loss of fares is also practically eliminated because the men are kept too busy to "knock them down." Mr. LeGrand thinks it desirable that the cars be kept standard and believes that faster loading and unloading will result with a 30-in. door opening than with a wider one. Local conditions can be adjusted to the car better than the car to local conditions, said W. H. Brooks. The cars should be kept standard. W. H. Beattys, Westinghouse Traction Brake Company, explained the safety features of the car such as the "dead man's" handle and foot pedal, the operation of the brakes, sanders and doors, and said that there is nothing else that will give to the railway companies a return on the investment such as is given by the safety car. J. P. Ingle said that three years ago Stone & Webster standardized on the Birney car and that since that time nothing else had been purchased. The only thing the local manager can specify is the number of the car, the color and the destination sign. No property, he said, has a right to ask for an increase in fares until every known saving had been instituted and that means the safety car.

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Iowa State Board of Conciliation

Its Origin, Work and Possibilities Are Described by One of the Members of the Board

BY WILLIAM G. RAYMOND
Dean of Engineering Department, State University of Iowa

THE creation of the Iowa Board of Conciliation was unique in the history of public utility rate settlements. In the early summer of 1918, Hon. Martin J. Wade, Judge in the United States District Court for the Southern District of Iowa, found that his court was about to be swamped with actions brought to secure increases in municipal public utility rates. These actions were growing out of increased cost due to war conditions and the unwillingness of rate controlling bodies,—i. e., city councils—to recognize these increased costs as sufficient cause for increased rates. Seeking relief for his court and the parties concerned, Judge Wade suggested that the utility companies and representatives of the municipalities should get together and create a body of some kind that might act as arbitrator or advisor in such disputes as were arising, a body that might proceed with less formality and more speed than it was possible to realize in court procedure and with less expense to all parties, a body which although without the authority of a court would have the confidence of utilities and municipalities, and by their mutual consent be able to adjust their differences.

BOARD IS TEMPORARY ONLY, HAVING BEEN CREATED AS A WAR MEASURE

As a result of this suggestion a number of meetings were held, and finally on July 26, at a joint meeting of the League of Iowa Municipalities and Owners of Public Utilities in Iowa in Des Moines, a board, called the Board of Conciliation, was named. Its plan of organization provided for a membership of five of which one is to be an engineer and one a lawyer. the members of the board appointed at the meeting mentioned were: Mayor J. F. Ford of Fort Dodge, Dean William G. Raymond of Iowa City, Ex-Judge Clarence Nichols of Vinton, Mayor Truman A. Potter of Mason City and J. H. Ingwersen of Clinton. The rate of compensation fixed for the members was $25 a day and the expenses were to be paid one-half by the municipality and one-half by the utility interested. The board was created primarily as a war measure and it was intended that it should pass out of existence upon the close of the war. It was also provided by the meeting that the same committee of ten that had made the report naming the first board should continue to function as an appointing agency if and when for any reason vacancies should occur on the board.

Mr. Potter, president of the League of Municipalities, called the first meeting of the Board at Des Moines on Aug. 9. At this meeting Mr. Nichols was choosen chairman and Mr. Ford secretary. At a later meeting held at Cedar Falls and attended by a good representation from both the League of Municipalities and the Association of Utilities the following rules were adopted:

RULES RELATING TO JURISDICTION AND PROCEDURE

I

When a dispute shall arise between any of the municipalities of the state and the owner of any public utility in such municipality as to any question of which the State Board of Conciliation shall have jurisdiction, such dispute shall be brought before the board either

1. By an agreement in writing signed by the parties specifying the particular dispute on which the action of the board is desired and a request that the board take jurisdiction and make determination thereof, or
2. On the written application of one of the parties to the dispute consented by and concurred in by the other party, as hereinafter provided for, or
3. On the application of one of the parties to the dispute where the other party thereto fails or refuses to consent that the board act in relation thereto.

II

In cases where the parties invoke jurisdiction of the board as provided in paragraph one above, no further formal application shall be necessary, but in other cases there shall be an application addressed to the State Board of Conciliation and filed with J. F. Ford, secretary of the board, at Fort Dodge, Iowa. Such application need not follow any particular form but it shall be sufficient to specify the particular matter in dispute and the parties thereto and request the action of the board thereon.

III

Upon receipt of an application such as provided for in Rule 2 above, the secretary shall immediately mail a copy thereof to the other party to the dispute and the latter shall, within ten days after the mailing of such copy, file with the secretary of the Board at Fort Dodge, Iowa, a written communication consenting to and concurring in the request of the applicant for a hearing.

IV

In the event the party to whom the copy of application is sent, as specified above, shall fail or neglect within ten days to consent to the Board of Conciliation acting in relation to such dispute and join in the request therefor, the Board shall proceed to hear the matter on the application of the one party, provided the rules hereinafter set forth are complied with.

V

Whenever the board shall obtain jurisdiction in either of the ways herein specified it shall direct which party shall submit its evidence first and the form and manner in which the same shall be submitted, and the time within which the same shall be submitted and shall also fix the time in which the opposite party shall submit its evidence and the manner and form thereof.

VI

There shall be filed with the board six copies of all agreements, applications or other matter required by the board, including copies of any showing of facts to the end that the secretary may furnish one copy to the opposite party and one copy to each member of the board.

VII

The expenses involved in the inquiry shall be paid as folfows: Each party to the controversy shall pay the expenses made or incurred by such party, but the fees and expenses of the board shall be paid in the manner specified in the report of the committee of ten, adopted by the joint convention of municipalities and utilities held in Des Moines

*Abstract of paper read at meeting of Iowa Electric Railway Association, Colfax, Iowa, June 18, 1919.

on July 26, 1918, except that where the hearing is on the application of but one party to the controversy the entire expense of such inquiry shall be paid by such party; provided that the party or parties applying to the board, as hereinbefore specified, shall at the time file with the board an agreement duly executed to provide for the expenses of the inquiry, as above stated.

VIII

The time and place of meeting of the board shall be determined by a majority of the members of the board from time to time, except that the chairman shall call a meeting of the board whenever any three members of the board shall request it.

IX

In acting in any controversy the chairman and at least two other members of the board, to be selected by him shall act.

X

In case of the absence or inability of the regular chairman to act, the remaining members of the board shall select a temporary chairman to act in connection with any inquiry.

XI

The board will from time to time formulate such other rules as may appear to be necessary in the conduct of the business of the board.

ADDITIONAL RULES OF PROCEDURE OF THE STATE BOARD OF CONCILIATION

XII

In the absence of a stipulation by the parties to the contrary, the utility company shall submit its evidence to the board first, the evidence to be in the form of affidavits and exhibits, and in no case shall oral testimony be submitted except an order be previously obtained from the board to that effect.

In the absence of objections by one of the parties, the board will assume that the rate existing prior to the war was a fair and reasonable rate, in which case the evidence shall be confined to a showing, on the part of the company, of the reasons why the rate should be increased, to meet changed conditions due to the war.

In the event there is objection to the rate existing before the war, then the utility company shall produce its proof on the following propositions:

a. A statement or estimate of the reasonable investment to create the property as and when it was created, including, (1) franchise cost; (2) financing cost; (3) organization cost; (4) construction of the physical plant cost; (5) engineering cost; (6) legal expenses, not included in Nos. 1, 2, and 3; (7) other overhead costs; (8) development cost; (9) accrued capital consumption or depreciation.

b. The annual cost of operation during the years 1913, 1914, and 1915.

c. The annual cost of operation at prices current at the time of hearing.

d. The annual depreciation or consumption allowance.

e. Actual or estimated present patronage or sales of the commodity produced.

f. Actual sales of the commodity produced in each of the three years, 1913, 1914, and 1915.

g. Such additional evidence as in the given case the board may require or permit. The showing shall distinguish between actual figures and estimates, actual figures to be given where possible.

XIII

In the absence of some direction of the board to the contrary, the utility company shall make its showing as above outlined, within ten days from the date when the stipulation of the parties was filed with the board, or the parties had concurred in the hearing, and serve copy thereof within said ten days on the other party, and file proof of such service with five copies thereof with the secretary of the board.

XIV

The municipality, at any time after service of the showing of the utility company on it shall have the right to inspect the books and papers of the utility company, relating to the service, the rate of which is in controversy.

XV

Within five days after the receipt of the showing by the utility company, the municipality shall serve such interrogatories as it desires the utility company to answer, upon the local manager of the utility company, and file proof of service, including five copies of the interrogatories, with the secretary of the board at Fort Dodge, Iowa.

XVI

Within five days from service of the interrogatories upon the utility company, the utility company shall serve upon the municipality a copy of its answers to said interrogatories, and file five copies thereof with the secretary of the board at Fort Dodge, Iowa, together with proof of service upon the opposite party.

XVII

Within ten days after the service of answers to interrogatories on the municipality, or within fifteen days of service of utility company's showing the municipality shall file its showing in opposition to the utility company, with the secretary of the board at Fort Dodge, Iowa, the same to include five copies thereof, together with proof of service of copy thereof on the utilities company.

XVIII

The board may grant such additional time in either of the matters provided for in Nos. 12 to 17 inclusive as may appear to be proper in the particular case.

XIX

After the parties have submitted the showings as above the board reserves the right to call for or permit such additional testimony as it may deem proper.

XX

If requested by the parties, the board will, at any stage of the proceedings, appoint an accountant or engineer, or both to perform such services in connection with the investigation as the parties may agree upon and the board approve.

XXI

After the showings have been completed as herein provided, in case the board elects to visit the municipality and inspect the utility in question, reasonable notice will be given both parties, of the time when such visit of inspection will be made.

CONTROVERSIES ALREADY SETTLED

On Sept. 4th the board met in Waterloo to determine the order in which it would take up the several questions submitted and to choose an engineer to make a report in the case of one of the controversies in which the city and utility had agreed that the board should make the entire necessary investigation through its own engineer.

At this meeting Mr. Ingwersen had resigned from the board, owing to a change in his business arrangements which took him out of the State.

The board had before it at this time requests for its services from Iowa City, Fort Dodge, Keokuk and Fort Madison. In each of these cities there was a controversy over gas rates. The Keokuk case was the only one in which the board was asked by both parties to make its own investigation with its own engineer, and to this day this is the only case in which such action was taken.

It will be noted that either party to a controversy might secure the service of the board. The board has received and acted on sixteen requests and has received several others that were subsequently withdrawn formally or not pressed, because of other actions taken by the parties. The cases in which both parties joined in asking the services of the board have been six in number, namely, Iowa City, Keokuk and Fort Dodge gas cases, and Grinnell, Marshalltown and Sanborn electric light and power cases. In the ten other cases heard by the board, the utility was the petitioner and the municipality declined to join. These cases were Fort Madison and Mount Pleasant gas cases; Osceola gas and electric light and power case, Chariton, Laurens,

Pomeroy, Rolfe and Fonda electric light and power cases and the Des Moines Street Railway rate case. In some of these cases the municipalities declined to recognize the need of the services of the board, standing on their rights under the franchises under which the utilities were operating, claiming that there was nothing to conciliate or arbitrate. In some cases the municipality simply ignored the matter, making no communication to the board.

After the Iowa City, Fort Dodge, Keokuk, Fort Madison and Marshalltown cases had been disposed of the board lost its lawyer member through the resignation of Judge Nichols. This vacancy has not been filled. T. F. Harrington of Sioux City was selected to serve in the place of Mr. Ingwersen and he acted in the Sanborn case, the last one considered. The other cases were heard and passed upon by the three remaining members of the board, Mr. Potter acting as chairman.

In two cases only can the board be said to have acted strictly in accordance with the name—Board of Conciliation. In the Marshalltown case, after hearing the evidence presented by the utility and the questions of the city, the board got the parties together and they agreed on a rate somewhat less than that asked by the utility, and the board proceeded to make an order naming this rate. In the Sanborn case, the company had been charging less than the franchise rate from the beginning of its service, but made a considerable difference between residence lighting rates and rates for power and those of consumers of large quantities. The inequity of the rates rather than the gross earnings of the company annoyed the people, and an ordinance was adopted lowering the rates. From this the company appealed and asked for a maximum a little larger than the franchise maximum. It appeared at the hearing that the company could arrange a step rate within its franchise maximum that would appear more equitable than that in force and that would be sufficient to meet its immediate requirements. The board suggested that this be done at once and submitted to the representatives of the city, and it was done.

In no case did a municipality appear alone asking the service of the board. When only a single interest appeared for the purpose of securing the opinion of the board as to what—on the showing made by the utility—would be a fair rate, this opinion was desired because of the expectation that in subsequent litigation the court would recognize the finding of the board as prima facie evidence of the fair rate to be fixed as the temporary rate pending final settlement of the controversy. This expectation was realized in a number of cases.

Rate of Return Granted

Settlements made through the board were probably more favorable to the municipality than settlements through the courts would have been except in those cases in which the franchise rate was held to be a contract rate alterable only at the will of the city councils, because the rate of return used by the board in computing a fair temporary rate was only 6 per cent. Indeed in some cases it was less than 6 per cent. In a court case it would be incumbent upon the deciding authority to prohibit a rate yielding less than a fair return on the fair value of the property. This fair return would not be lessened as a compromise measure for a presumably brief period. It would have to be the going fair rate of return, and in general this would probably have been recognized as not less than 7 per cent or 8 per cent. A property earning enough to pay 6 per cent would probably be granted no relief under a confiscatory rate plea, but most companies were earning less than this, and while the court may say that a rate yielding 6 per cent is not confiscatory, opinions of master and court have quite generally upheld higher rates as fair. Indeed in the Perry gas case in which the writer sat as master, the parties agreed that 7 per cent on the fair value of the property used in the service would be a fair return, and asked that rates be suggested on this basis.

The members of the board on more than one occasion said among themselves that for a long-time regulation under normal conditions, 7 per cent or 8 per cent would be a fairer rate of return than 6 per cent used in their settlements; but that as a matter of compromise, for a short time, and under the conditions existing, a return of 6 per cent ought to be accepted by the utilities and be satisfactory to the public. Apparently the board's findings were satisfactory.

The municipalities also saved money in the greatly lessened cost of the proceedings. In general it is fair to say that the cost of the investigation and settlement has been greater to the utility than to the city. In some cases the cost was shared equally. In other cases of joint action the whole expense was borne by the utility, and of course this was true in all cases in which the utility was the only petitioner. In the Keokuk case in which the board employed the expert, the total cost was $966. In the Iowa City case in which the parties employed their own experts, the total cost to the city and utility was $1,508. In many cases the showing made by the utility was prepared by members of its regular force without either expert or attorney fees.

Fundamental Principles Recognized

It may be worth while to record certain principles recognized by the board when determining fair compromise rates.

1. In finding value of property, estimated or known actual reasonable investment was used rather than reproduction costs at present prices or prices averaged over an arbitrary period. Estimated depreciation was deducted Meters, small tools, etc., were carried at full cost.
2. That thing known as going value, business value, going concern value, and pernaps by other names, was recognized as an element of value.
3. Except in one or two cases in which the result would have been rates beyond what the traffic would bear, interest on fair value was computed at 6 per cent.
4. With one or two exceptions rates were determined to cover cost of service only. In cost of service was included all so-called operating expense, depreciation, and interest at 6 per cent on the fair value of the property. In the exceptional cases mentioned the rates advised were less than would have resulted from an allowance of 6 per cent interest as an item in the cost of service. These rates were either agreed upon by the parties themselves, or ordered by the board because a higher rate was judged to be more than the traffic would bear.
5. Rates were ordered generally for a period of six months, or for the duration of the war and six months thereafter. When the result of the application of the ordered rate seemed uncertain the order was for a shorter period.

It is well to note that although differences of opinion sometimes existed on the board, its findings were never other than unanimous.

National Action Can Help Greatly

How the Federal Electric Railway Commission May Be of Assistance to Electric Railways

BY PAUL SHOUP
Vice-President Southern Pacific Company and President Pacific Electric Railway Company

YOU ASK my comments on the Federal Commission appointed to deal with electric railway affairs, and what it can do.

The efficiency of a commission depends upon its personnel and its power. The personnel is one of knowledge of the industry. The appointments are not political. I am much pleased to see my friend Mr. Gadsden on the Board.

The power is not so apparent. What the electric roads need is *action*, not *recommendations*. We need somebody to *do* something, not *suggest* something. The *needs* of the situation have been threshed out in every city of any size in the United States in the last few years.

The Board, then, faces a difficult situation. It must undertake in a national way to accomplish the results which, to a large extent, local effort has failed to accomplish. The industry is manifestly in a very bad way with 15 per cent of the mileage in the hands of receivers and 40 per cent that would be if not sustained by strong stockholdings or banking interests hoping for something better and accepting permanent or temporary plans for reduced interest charges.

The National War Labor Board in its labor decisions has raised wages of employees on an average, I suppose, 50 per cent and even more for the lower-paid employees, due to the increased cost of living, and where cases have not been before the Board, the companies have voluntarily made large increases, or the influence of the War Labor Board's decisions has resulted in like increases in neighboring cities. The cost of materials used in maintenance has increased 60 per cent to 150 per cent.

The War Labor Board has recommended in connection with its labor decisions, increases in fares to meet the increased payroll at least, but what response have the communities served given? The deplorable state of the industry makes answer. In many cases the public has responded favorably. State commissions have acted to meet the situation when within their power, but this is not true to the degree necessary to put the companies in as good a position as they were in 1914—and that was not a satisfactory one.

THE PEOPLE WILL BE FAIR IF THEY UNDERSTAND

Only a local sympathetic understanding of their own relations to the electric railways which give them service, by the people served, will bring about a solution. This can be done by a nation-wide campaign that will give a clear general knowledge of the situation, supplemented by an active and vigorous local and state educational program which shall bring the subject home to every patron as something affecting his interests in which he has a personal concern directly, both because of the service he needs and the effect of its loss upon the community where his interests lie.

Let us not cheer ourselves with the belief that the people of the United States are sitting up worrying about the financial needs of the electric lines. Chiefly they are concerned with problems immediately affecting their own bread and butter, or, if in the upper financial stratum, their own bank accounts, large or small. They take about as much interest in the financial difficulties of an electric line as they do in the receivership of a department store, flour mill, or a lumber yard—we all say "too bad, sorry to hear it" and let it go at that.

But as a whole, the people are eminently fair if the truth reaches them, which largely it does not, because the relations between real education and selfish propaganda are entirely too close.

The real question, then, for this Commission to answer is: How shall each person directly or indirectly concerned be made to know, to heed, to be interested in the true facts affecting the company giving his community service?

The Commission has whatever value a national creation may give it. It will need organization, money to work with, intensive personal effort on the part of every member, and the whole-hearted active and sustained effort of all the electric railways in the United States and all associations directly or indirectly dealing with electric railway affairs. It is not within my province to suggest how it should go about its work; that would be an intrusion. But as things to be done, these suggestions, none of them new, may be of interest:

WHAT MIGHT BE DONE

1. *Ask the Congress to pass a bill creating a 7½-cent coin.* The nickel of 1914 had as much purchasing power as such a coin would have now. Convenience is a great factor in people's lives. Habit follows upon convenience. It will be easier to spend a 7½-cent coin for street car fare than it is a nickel and two or three pennies. Secure by local action substitution of this coin for the nickel fare. If lower fares are necessary, sell tickets, monthly "readiness-to-serve" tickets, or strips of tickets, ten or more.

2. *Carry on a Campaign to*

(a) Increase urban fares, increase suburban commutation fares and put others on a mileage basis.

(b) Eliminate or prevent jitney and motor-truck competition where electric railway service is adequate, and everywhere insist that such competitors bear burdens in proportion to business done as heavy as those of the electric lines—taxation and all other public obligations.

(c) Reduce obligations that are onerous, now exacted by legislation. These subjects will include:

(1) General taxation which, in California, takes 5½ per cent of the gross revenue,

(2) Franchise taxation, taking 1 per cent to 5 per cent of the gross revenue,

(3) Paving and maintenance, a relic of horse-car days when hoof beats battered the pavements.

(4) Cost of putting wires underground, replacing wooden with iron poles, separating grades, maintaining at the railway's sole expense watchmen that other traffic needs have made necessary.

(5) Free transportation, demanded by franchises, which should be reduced to a minimum.

(d) Amend franchises so that the values of investments will not be automatically destroyed by the passage of time.

(e) Consider wage questions only in connection with income hereafter, a principle to be adopted because of the narrow margin now between operating expenses and taxes and income.

Surely no one is rash enough to suggest that any electric railway of any consequence anywhere in the United States is earning a fair return on the money invested.

Any industry in which capital does not earn a fair return of course attracts no capital. That industry must then, in course of time, disappear as its facilities wear out. Employment of labor then disappears also.

Action Awaited with Interest

We, in California, await with great interest the action of the new commission. In this State, probably one and possibly two electric roads earned a fair return on capital invested the last year. These two owe their prosperity solely to war business activities. But 90 per cent of the invested capital in that industry in this State received less than 4 per cent and a good many millions none at all. And by invested capital is meant cash actually put in the properties.

Manchester Is Planning to Develop

IN VIEW of the town-planning scheme contemplated by the Corporation of Manchester, which provides for the construction of three new arterial roads upon the southern side of the city and the building of thousands of houses, the tramways committee is giving attention to the transport facilities which will be needed. The *Manchester Guardian* quotes J. M. McElroy, general manager, in regard to the present congested state of the main arteries of the city, owing to the increasing traffic. Parallel thoroughfares, he said, must be provided somehow, so that the flow of traffic to and from the proposed new residential districts might be frequent and efficient. With regard to the arterial roads in the town-planning scheme, Mr. McElroy pointed out that the proposal of the tramways committee was not to put down tram rails right away into virgin country. The motor omnibus would be the pioneer of the tramways. Builders, whether municipal or private, would not put up houses unless they were assured that rapid and cheap transport would be provided, and the ultimate proposal was to have cars running at a high speed upon a specially prepared track somewhat after the manner of an American interurban line.

"The government department," said Mr. McElroy, "recognizes very clearly now that the successful solution of the housing and town-planning problems must include adequate means of transport. The fact that the government has set up a Ministry of Transport shows that the importance of this matter is for the first time being properly recognized in this country. Proper transport has a vitalizing effect upon the whole community."

The Committee of One Hundred Begins Work

Now Is the Time for Unstinted Effort and Unlimited Co-operation to Prepare Electric Railway Case

THE Committee of 100, which was recently appointed by President Pardee to prepare and present the case of the electric railways before the newly created Federal Electric Railways Commission, held its first meeting in New York on June 26. It was the consensus of opinion that the opportunity presented by the creation of the federal body is one of which the industry should not fail to take advantage. Several subcommittees were appointed to work up the various aspects of the case.

Guy E. Tripp, chairman of the committee, after stating the purposes involved in the appointment of the Committee of 100, emphasized strongly the importance of the work and the responsibility of the individual members of the committee. In his opinion, the situation demands extraordinary effort on the part of every individual. President Pardee, P. H. Gadsden and other members of the committee spoke along similar lines and urged hearty support to the committee. In this connection, it was said that the association staff is already working up data, and some companies have offered to loan members of their staff for the furtherance of the committee's work.

The general executive committee consists of the chairman and vice-chairman. The sub-committees, whose personnel will be anounced later, will include a committee on publicity, a committee on presentation and a committee on recommendations. The committee on presentation will supervise the preparing and presenting of data, while the committee on recommendations will work up the concrete suggestions which to the electric railway industry seem to promise the best solution of its problems. Special attention will be given to the matter of publicity by the committee appointed for this purpose.

It is now thought that further hearings will be held by the Federal Electric Railways Commission in Washington at the rare of about two a week, but final plans in this respect have not yet been decided upon. The Committee of 100 expects to complete its work for presentation before the federal commission at the earliest possible date.

Contemplated Electrifications in Japan

According to a Japanese contemporary some important heavy electrification work will soon be undertaken in Japan. The work already decided upon comprises the following: Yokohama to Numazu, 67.4 miles; Ofuna to Yokosuka, 10 miles; Uyeno to Ohmiya, 16.6 miles; Ryogoku to Chiba, 22.7 miles, a total of 116.7 miles. The authorities plan to send engineers into nine provinces surrounding Tokyo in quest of promising water power sites. A part of steam roads entering Tokyo have already been electrified.

On the United Railways of St. Louis, the exhaust from the air-brake cylinders is piped into the flue pipe of the coal stove carried on the cars. In this way a better draft is secured, and as the company burns soft coal, the result has been very satisfactory to passengers.

Sewer Work Puts Extra Tax on Way Department in Brooklyn

Tracks Had to Be Removed and Temporary Routes Provided to Insure Minimum Interference with Passenger Traffic

THE expense incurred by electric railways due to sewer construction is a considerable factor in street railway operation and one which is not generally appreciated. These expenditures mount up to hundreds of thousands of dollars from which neither the railway nor the fare-paying public derives a benefit. In most sections the railways have assumed this burden in order that the flow of traffic may be interrupted as little as possible.

Two very extensive pieces of sewer construction have been taking place in the Borough of Brooklyn, New York, during the past five years. The first is what is known as the "Classon Avenue relief sewer," which

SEWER WORK IN PROGRESS, TEMPORARY TRACKS AND OVERHEAD WIRES INSTALLED AT SIDE

was begun in 1913 and required five years to complete. The second is the "Ocean Avenue" sewer, which is now under construction from Avenue O to Sheepshead Bay, a distance of 2 miles. This work was begun in the summer of 1917 and is now about complete.

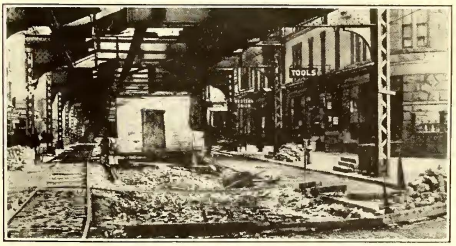
In size the main portions of the Classon Avenue sewer rival the dimensions of a subway tunnel large enough to accommodate railway trains. Many of the streets through which this sewer passes are occupied by surface and elevated lines of the Brooklyn Rapid Transit Company. An expenditure by the railway company of $228,000 has been necessary to care for and protect the tracks and overhead structures and to continue car operation without interruption during the long period occupied by the sewer work. The work done by the railways has included the reconstruction and underpinning of elevated railroad columns and foundations, the installation and removal of temporary tracks, the installation and removal of many portable cross-overs, the entire removal of tracks and pavements from the streets in a number of places, the removal and replacement of overhead wires and poles, the purchase and installation of expensive special track work to provide switches and curves for rerouting of cars, and the replacement of tracks and pavements after the work was completed. The work on this sewer extended along or across tracks for a distance of about 4 miles and 2.27 miles of single track was removed and replaced on seven different streets in the course of the

TEMPORARY DOUBLE TRACKS IN PLACE PREVIOUS TO REMOVAL OF MAIN TRACKS ON OCEAN AVENUE, BROOKLYN

work. The cost to the railway company varied from $4.22 to $79.55 per lineal foot of street.

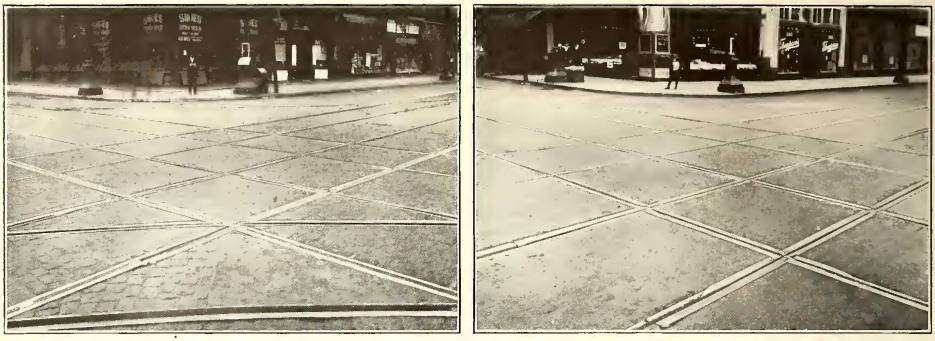
During this construction there was a decrease in income on the lines affected of $300 per day and there was no apparent increase elsewhere to indicate that the traffic was being carried by either the elevated service or by other surface lines. The Tompkins Avenue line, though not on a business street, was discontinued and rerouted for two years. There also was one other line on a large sewer project which was without car service for one year and had only a single-track service for two years more.

For the construction of the Ocean Avenue sewer it was necessary that both tracks, approximately 4 miles of single track, be removed and temporary tracks built in the roadway alongside. Fortunately the street was wide enough to permit this. The method of doing the work together with the conditions encountered are



MAIN TRACKS REMOVED AND TEMPORARY SINGLE TRACK IN PLACE DURING CLASSON AVENUE SEWER CONSTRUCTION

suggested in the accompanying illustration. All of the track work was done without interruption to car traffic, as this line is one having a very heavy car service in the summer months. In addition to the removal of the tracks and the building of temporary tracks the original tracks had to be restored following the sewer work.



SOME TYPICAL LAYOUTS WITH CONTINUOUS MANGANESE TYPE OF RISERS

This meant the reconstruction of 8 miles of single track to provide 2 miles of sewer work. Naturally the cost of so much track work was high and it is estimated that it will ultimately cost the company more than $40,000. Unfortunately, owing to war conditions, it was necessary to replace the old rails, when in a good many cases it would have been desirable to lay new rails if they had been obtainable.

Risers Increase Life of Frogs and Mates

Different Types of Construction Used by United Railways of St. Louis to Support Wheel Flanges at Crossings

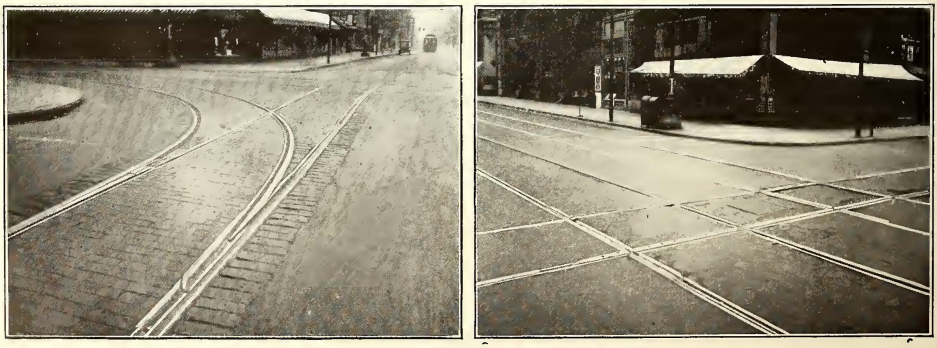
By C. L. Hawkins
Engineer, Maintenance of Way, United Railways Company of St. Louis, Mo.

SPECIAL steel risers placed in the rail flangeway of built-up frogs, crossings and mates to prolong the life of such pieces by supporting the wheel flanges at intersectons were in general use upon the tracks of the United Railways of St. Louis in 1904. At that time the risers were so placed that the distance from the top of the rail was equal to the depth of the wheel flange, but in December, 1905, the thickness of risers was increased $\frac{1}{8}$ in. This change in construction increased the life of the frogs, as there was practically no wear on the rail at the receiving side of intersections until the upper $\frac{1}{8}$ in. of the riser was worn out.

The risers were of intermittent type and were constructed of Black Diamond tool steel riveted or dovetailed into the rail flangeway. The rivets were driven vertically through the riser and the lower portion of the flangeway and when the risers were renewed the new risers were fastened to the rail by screws driven into the rivet holes, which had previously been tapped for the purpose. Wheel flanges passed directly over the countersunk heads of the rivets or screws, and where rivets were used the lower heads of the rivets were countersunk to prevent interference with the joint plates.

In 1910, manganese-steel risers were adopted and the use of tool-steel risers was discontinued. These risers were somewhat longer than the tool-steel risers and they provided more satisfactory approaches. They were attached to the flangeway in the same manner as the tool-steel risers and the wheel flanges were carried directly over the rivets as before. These risers were a substantial improvement over the tool-steel risers.

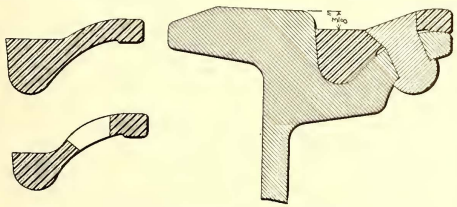
When solid manganese types of frogs, crossings and mates were adopted in 1911, the pieces were cast with raised flangeways or risers of the intermittent type, having approximately the same shape as the flangeways of the built-up pieces formerly protected with the renewable risers. The flangeways of frog points were



RENEWABLE RISERS AND BUILT UP MATES

$\frac{1}{2}$-in. deep for $\frac{3}{8}$-in. wheel flanges. During 1915, however, the length of risers was increased so that continuous risers extending from one end of the crossing to the other were provided in a double-track crossing installed at Broadway and Washington Avenue. A number of crossings of a similar type were later installed at other locations. These crossings have given very satisfactory service and the additional expense of these changes has been justified.

On account of the excessive prices of solid manganese steel special work during the war period, a renewable continuous riser was adopted in September, 1916, for use on built-up crossings. The first crossings were laid at Seventh and Locust Streets and they are in use to-day. These risers were designed for use with 9-in. 132-lb. Lorain trilby rail, Section 440, and completely cover the flange and groove of the rail. They are attached to the rails by $\frac{1}{2}$-in. standard button-head rivets,



SECTIONS OF CONTINUOUS MANGANESE RISERS

driven through the outer portion of the flangeway where they are untouched by wheel flanges. About 100 crossings provided with risers of this type have been installed, the number of locations being about fifty. Some trouble resulted from the use of $\frac{1}{2}$-in. rivets for attaching the risers to the rails and the size of rivets was then increased to $\frac{3}{4}$-in. The results secured from these crossings have been satisfactory except at a few locations where the rivets have been sheared off and the manganese risers have disintegrated. As the cast manganese risers are rather rough castings, which require considerable grinding before they can be properly seated and surfaced, some of the disintegration can probably be charged to improper seating. By increasing the size of rivets to $\frac{3}{4}$-in. it is expected that this trouble will be overcome.

The risers are designed for use in 90-deg. crossings, but by means of an oxy-acetylene torch the same risers can be shaped for use in crossings with intersection angles as sharp as 54-deg.

Built-up mates protected with the continuous riser type of construction have given very good service and have greatly reduced the cost of mates used on the lighter lines. The risers are strong enough to assist in tying the rails and the mate together, and have been much more satisfactory than the tool-steel risers used in bolted mates where the risers were so soft that the metal was "squashed" out and acted as a wedge to pry loose the short rail in the built-up mate. About twenty-five built-up mates with continuous manganese-type risers are in use to-day, the first of which was laid at a heavy intersection at Sixth and Locust Streets on July 8, 1918. These mates are especially for use at locations where the heavy run is the straight run.

The accompanying photographs show typical layouts with continuous manganese-type risers.

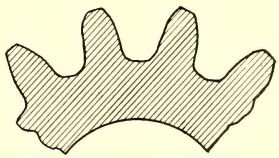
The chilled cast-iron wheels used by the United Railways are equipped with heavy flanges, and only a small portion of the chipping of flanges has been charged to the use of the risers in frogs, crossings and mates.

Shop Notes from Croydon

IN ACCORDANCE with the usual British practice, all wheels used by the Croydon Corporation Tramways, of which T. B. Goodyer is manager, are of the steel-tired variety. They are of 31$\frac{3}{4}$-in. diameter new and the tires are permitted to wear from their original thickness of 2$\frac{1}{4}$ in to a minimum of $\frac{3}{4}$ in. The tires as delivered hitherto have given a life ranging from 85,000 to 112,000 miles. Mr. Goodyer, however, was just as prompt in applying to wheel tires the "sorbitic" process of "hardening in place" as he was to rails, and twelve tires were so hardened during the fall of 1918. It is, of course, too soon to draw any conclusions from this experiment, but the process is inexpensive and has already shown happy results in prolonging the life of the track.

Although the Corporation Tramways operate surface cars only and at moderate speeds, Mr. Goodyer uses Cincinnati tool-steel gears and pinions; he was, in fact, the first British operator to use gears and pinions of this kind. The condition of the first pinion, installed on June 27, 1913, as it appeared on Nov. 8, 1917, is shown in the accompanying drawing. At that time this pinion, operating on a GE-52 motor, had run 103,641 miles. It showed on the pitch line a wear of but 0.023 in., or the equivalent of 4506 miles per 0.001 in. At this rate of wear, which has been consistently maintained since the foregoing measurements were made, these pinions will be good from ten to fifteen years.

As for the gears of the same type, they are wearing so slowly that their useful life is figured to approximate a century! Gears of other manufacturers in the same



CROYDEN GEAR TOOTH PROFILE AFTER GEAR HAD GIVEN MILEAGE OF 103,641

service have never done better than 41,000 miles. The use of split gears is standard in Croydon. Mr. Goodyer believes that what is best is cheapest in the long run, and especially on account of the great war shortage, it was desirable to have pinions, gears and other equipment that could be relied upon to wear safely and long.

Another Croydon shop practice of interest is the use of oil spindles in place of graphite bushings in the trolley wheels. These wheels are 4 in. in diameter in accordance with the practice of many other British roads. The graphite spindles were not found to be good enough, owing to the excessive side reach of the trolley poles, necessitating the use of from 29 lb. to 30 lb. tension. Another item is in the use of locknuts, as on brake suspensions and motor-case bolts, a little item in which Croydon is ahead of many American lines. The locknuts used are not considered perfect, but they are far better

than the ordinary fastenings which soon work loose under vibration. Renewable controller contact fingers, as made by the White Engineering Supplies Company, are used also, affording another evidence of the local attention to economy and reliability in small as well as large portions of car equipment.

AMERICAN ASSOCIATION NEWS

Director of Exhibits Appointed

GEORGE W. WELLS, recently with the Engineering Department of the Bureau of Industrial Housing and Transportation, has been appointed Director of Exhibits of the October convention and will have charge, under the Exhibit Committee, of all details of the exhibits. Mr. Wells for a number of years was manager of the electric lighting and street railway system in Tampa, Fla. He was also superintendent of the mechanical department of the West Penn Railways and president and manager of the Wells Mills Electric Company, which operated among the mills and mines of western Pennsylvania and West Virginia.

Secretary Burritt announced on Thursday that applications had been received for about 34,000 sq. ft. of space, or more than half of the space probably available. This insures the success of the exhibit feature of the convention.

Revision of Electric Railway Fire Code Rules Under Way

THE standing committee of the Electrical Committee of the National Fire Protection Association on cars and railways has under consideration the revision of the requirements of the National Electric Code on wiring of carhouses. In addition to this review attention will be given to the question of formulating rules applicable to railway systems and cars operating at voltages from 600 to 1500 volts. Two special committees of the American Electric Railway Engineering Association are co-operating in this work.

Any person having suggestions or recommendations on the Code rules covering these subjects is invited to communicate with the chairman of the standing committee, Martin Schreiber, Public Service Railway, Newark, N. J.

Engineering Standards Committee Appointed

SECRETARY BURRITT has announced the personnel of the standards committee of the Engineering Association for the current year, as follows: H. H. Adams, superintendent of shops and equipment Chicago Surface Lines, chairman; E. J. Blair, electrical engineer Metropolitan West Side Elevated Railway, Chicago; E. R. Hill, Gibbs & Hill, New York City; C. G. Keen, engineer way and structures American Railways, Philadelphia; John Leisenring, signal engineer Illinois Traction System, Springfield; John Lindall, superintendent of rolling stock and shops Boston Elevated Railway; Norman Litchfield, mechanical engineer American Car & Foundry Company, New York City; H. H. Norris, ELECTRIC RAILWAY JOURNAL, New York City; E. D. Priest, engineering department General Electric Company, Schenectady, N. Y.; Martin Schreiber, chief engineer Public Service Railway, Newark, N. J.; W. C. Starkey, chief engineer Ohio Brass Company, Mansfield, Ohio; A. B. Stitzer, chief engineer Republic Engineers, Inc., New York City; N. W. Storer, general engineer Westinghouse Electric & Manufacturing Company, E. Pittsburgh, Pa.; Robert C. Taylor, superintendent of equipment Michigan Railway, Albion, Mich.; E. B. Trist, Carnegie Steel Company, Pittsburgh, Pa.

Toledo Section Elects Officers

THE annual election of the Toledo joint company section, held on June 9, resulted in the choice of M. H. Somerville for chairman, P. J. O'Neill, Jr., for vice-chairman, W. M. Bergen for secretary, Harry Fowler for financial secretary, and Del. Miller for treasurer. Nine members of the executive council were also selected. An entertainment program was given after the election.

Chicago Section Closes Season

THE final meeting of the section year was devoted by the Chicago Elevated Railways section entirely to entertainment, principally music. It was held on June 17, with seventy-five members present.

LETTER TO THE EDITORS

The Safety Car and the Skip Stop

TERRE HAUTE, INDIANAPOLIS & EASTERN TRACTION COMPANY, TERRE HAUTE DIVISION
TERRE HAUTE, IND., June 23, 1919.

To the Editors:

I read with interest your editorial in the current number of the ELECTRIC RAILWAY JOURNAL, discussing the safety car in connection with the skip stop.

At the time we commenced operating safety cars in our city, we were operating skip stops at the request of the United States Fuel Administration, transmitted to us through the local Fuel Administrator for this county. Just prior to installing safety car service, we advised the County Fuel Administrator, at whose request we had put into effect the skip stop, that coincident with the commencement of safety car operation on our lines we would abolish the skip stop, for the reason that the safety car would save much more power than it was ever hoped to save by skip stops with the larger and heavier types of cars which the safety cars superseded.

Anyone who has had much experience with the jitney bus as a competitor will, I feel sure, readily admit that the "skip stop" is a very fine thing—for the jitney bus

E. M. WALKER, General Manager.

The Birmingham Railway, Light & Power Company, Birmingham, Ala., has started operating its new brass foundry. From now on, brass parts necessary for replacements and for the repair of cars will be cast in the company's own shop. The company has an iron foundry which is equipped to make any necessary emergency castings. The first lot of brakeshoes to be made since the foundry has been in operation were cast recently.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

Massachusetts Strike Over

Threat of President Mahon of Amalgamated to Annul Union Charter Ends Walkout of 3500 Men

The strike on the Eastern Massachusetts Street Railway, which began June 16 on the Lowell division and spread to most of the lines north of Boston last Sunday, ended on June 25 as a result of the threat of W. D. Mahon, president of the Amalgamated Association, to annul the charters of the unions involved in the walkout unless the men returned to work on that day. About 3500 carmen were involved. The strike originated in a protest of the Lowell employees against the use of the Rooke fare register on open cars.

On Jan. 8 last some 450 Rooke registers were installed on cars operated by the Bay State Street Railway, the predecessor of the Eastern Massachusetts Street Railway. Additional stocks of registers have since been added until now there are about 750 in use, and there had been no interruption in their use until the strike of the Lowell conductors based on their claim that the use of these registers on open cars was unsafe. In reply the trustees of the company insisted that the registers could be used with safety on open cars, and said that those originally installed by Receiver Donham had proved very satisfactory and hence had been continued.

Union officials ordered the matter to be submitted to arbitration, but the men refused to obey their orders. On the lines south of Boston car service was well maintained except on the Quincy division, where the local union struck in sympathy with the men on the northern lines. In his appeal to the men Mr. Mahon pointed out the loss in death, disability and old-age benefits, which would be sacrificed if the men persisted in defying the officials of the union.

Industrial conditions in northern Massachusetts were greatly upset by the strike. The trustees of the company did not attempt to operate the divisions involved during the walkout, but offered to reinstate all strikers who returned to their work on Wednesday morning.

As the Union Sees It

A recent issue of the *Union Leader*, the official organ of the Amalgamated Association in Chicago, has an editorial in reference to the new federal electric railway commission. In this it says:

> Wherever the trouble lies in the electric railway business the cause should be located and the remedy applied. In its present condition securities are shrinking, service is suffering and the employees are bearing more than their share of the load.
>
> Unlike the steam railroads, which were taken over by the government as a war measure and guaranteed a fixed return on present capitalization—real and intangible—the electric railways have had to meet the continuously rising costs and weather the storm the best they could, without any assistance from the government, though they were virtually compelled to accept cost determinations by a government agency on the biggest item of expense in their business. Bad as the financial organization and methods of some of the electric railways are reputed to be, they cannot be compared with the steam railroads in financial jugglery, the history of which spells scandal and is common knowledge.
>
> Placing the electric railway industry on a sound business basis will not only promote the development of the nation, but prove beneficial to all factors in the business—security holders, public and employees.

Illinois Utilities Plan Campaign

Public utility managers and operators of Illinois held a meeting in Springfield, Ill., on June 13 and laid plans for closer co-ordination of effort in placing the after-the-war case of the industry, as a whole, before the public. To bring about a better understanding of the situation which the electric railway, electric light and power and the telephone and gas companies face, in common with all other lines of business, due to the high cost of materials and labor, managers of all utility companies operating in the various towns and cities of Illinois are to organize to unify their efforts.

Acting through the Illinois committee on public utility information, which is operating under the auspices of the Illinois Electric Railways Association, Illinois Electric Association and the Illinois Gas Association, a program is to be carried on fully to inform the citizens of the State as to the situation of the industry. It was pointed out at the meeting that unless the $1,000,000,000 investment of the utility industry in Illinois is fairly treated and a better understanding of its position brought about, much injury can be wrought, and the services rendered by these companies disrupted. Speakers at the meeting declared that the ramifications of the industry in the State were such that fully one-third of all citizens, directly or indirectly, now have a financial interest in the companies, either as wage earners, security holders or through collateral industries dependent upon the utilities. Of the total of all citizens, 16 per cent are in the employ of the electric, gas, telephone, water and electric railroads. It was particularly insisted that a better understanding be created because of the need for the investment of $450,000,000 of additional capital by the utilities in the State within the next five years.

Seattle Branching Out

Municipal Ownership in Pacific Coast City Growing by What It Feeds Upon

Preliminary steps are being taken by the city of Seattle, Wash., toward opening negotiations for the purchase of the Seattle & Rainier Valley Railroad, including the interurban lines from Seattle to Renton. The utilities committee of the City Council has under consideration a report by Thomas F. Murphine, superintendent of utilities, based on reports by the State Public Service Commission and investigations by the Seattle utilities department, in which Mr. Murphine gives the original production cost of the system as $1,347,498.

Offer Is Really a Renewal

Mr. Murphine estimates that under favorable conditions, which the city has authority to assure, the Rainier Valley lines could be operated at a profit on a 5-cent fare. The value to the municipal system of the company's Fourth Avenue tracks is inestimable.

When negotiations for the purchase of the property of the Puget Sound Traction, Light & Power Company were pending, owners of the Seattle & Rainier Valley lines offered that property to the city for $1,800,000. The price was considered too high, and the matter was dropped temporarily. When the Public Service Commission gave the company authority to increase the fares from 5 to 7 cents, the matter again became a live issue, following the petition of the residents of that district for the city to purchase the line.

Estimated Worth, $1,347,498

While estimating the original cost of the present system at $1,347,498, Mr. Murphine calls attention to a heavy depreciation in the value of the rolling stock, tracks and overhead system. It is claimed that the rolling stock, which originally cost $319,964, would require the immediate expenditure of $100,000 to put it in good condition. The overhead system is said to be worth no more than 50 per cent of the cost of a new system. Tracks are reported to be in such condition as to require the expenditure annually for five years of an amount double the sum spent by the company annually for maintenance.

Authority to extend the operation of municipally owned transportation lines for a distance of 8 miles outside the city limits is provided in a bill passed by the last Legislature. This bill was passed with the understanding that the city would purchase the Rainier lines.

Pittsburgh Arbitration Details

Company There Lost 12,052,011 Passengers in Eleven Months Under Five-Seven Cent Fare

The hearing in the arbitration of the wages of the employees of the Pittsburgh (Pa.) Railways, to which brief reference was made in the ELECTRIC RAILWAY JOURNAL for June 21, developed some very interesting points. One of the most significant bits of information brought out was that the valuation of the properties of the railway, which has been under way for months, is expected to be completed before July 1 and that financial interests are now investigating to ascertain what help is needed to put the company in proper condition. The valuation is being made by a joint commission comprising representatives of the company, the city of Pittsburgh and the Public Service Commission.

AUDITOR'S STATEMENT INTERESTING

Testimony offered by witnesses for the receivers the second day of the hearing, particularly that of J. A. Mead, auditor of the company, was replete with interest. Mr. Mead submitted several sets of figures illustrative of the effect of fare increases upon revenue, and showing the condition and financial history of the company.

Mr. Mead declared that no one could operate the lines of the company at a reasonable profit based upon their value. He said that not a dollar had been paid in dividends upon the stock of the Pittsburgh Railways since the organization of the company in 1902. When asked if the system could be operated profitably if the valuation were cut 50 per cent, Mr. Mead declined to commit himself further than to say that under certain conditions there might be a surplus over fixed charges.

According to Mr. Mead for every dollar of the $1,500,000 the company now has in cash there were claims for $7, aside from the claims of the city. The company was now using up its capital, by reason of not being able to keep up repairs.

AVERAGE FARE 6.23 CENTS

When the company increased fares from 5 cents to 5 and 7 cents, the proportion of riders at each rate worked out in such a way as to make the average fare 6.23 cents, an increase of about 25 per cent. The number of passengers carried, however, fell off 12,052,011 in eleven months. This factor reduced the revenue increase to a little more than 13 per cent.

There was doubt whether even a fare increase would serve to make a wage raise possible, counsel for the receivers declared J. M. Loftis, superintendent of transportation, on the stand, produced a list of railroad stations accommodating territory in which street cars would be unable to compete with the steam lines were fares still further increased. It was shown that at best a higher fare would have to be imposed by areas, with constant consideration for steam railroad competition. Short rides in territory not traversed by steam lines would have to be made more costly than long rides in railroad-served districts.

Witnesses from the employment office of the company testified that there was no labor shortage in Pittsburgh now, and that the company was having no difficulty in keeping its force of 3000 platform men recruited at present wages.

P. N. Jones, general manager of the Pittsburgh Railways, said that every 1-cent increase in wages added about $85,000 to the expenses of the company and that the 12-cent increase asked by the men would cost about $2,000,000 annually, because it would necessitate raises for other than platform employees.

W. D. George, receiver, declared that the receivers felt the receivership "would be broken down if an increase in wages became necessary." C. A. Fagan, receiver, testified that interest and rentals have not been paid for months, that taxes were being defaulted and that the company was unable at present to meet many ordinary operating expenses.

The case presented by counsel for the employees the first day of the hearing was based principally upon the outcome of the Detroit wage dispute and increased living costs. Witnesses testified that rentals in Pittsburgh had gone up 25 per cent in the last year and that other costs correspond. P. J. Ward, business agent of the local union, said that car men working at the present maximum rate of 48 cents an hour, nine hours a day and seven days a week, made $133 a month. Wages being paid workers in the building trades were submitted as a basis of comparison. Counsel for the receivers in cross-examination, brought out the difference in the class of labor involved, especially the difference in the time invested by the building worker to learn his trade.

Developments in St. Louis

President McCulloch Charged with Complicity in Referendum Theft, but Issues Denial

On June 23, Richard McCulloch, president of the United Railways, St. Louis, Mo., handed his resignation as manager to the receiver to Rolla Wells, receiver of the company, after a warrant had been issued by Circuit Attorney McDaniels, charging him with burglary in connection with the theft of the now famous referendum petitions a year ago.

At the same time Bruce Cameron, superintendent of transportation, who for some time has been under indictment on a charge of burglary in the second degree in connection with the same theft, also sent his resignation to Receiver Wells. The latter accepted both resignations and then issued a formal statement announcing that he did so not because he had prejudged the charges made against Mr. McCulloch and Mr. Cameron, but "merely because the iteration of these charges has impaired the efficiency of these gentlemen to perform their respective functions. The determination of the truth or falsity of these charges must rest with the proper judicial forum."

Upon hearing that a warrant for his arrest had been issued, Mr. McCulloch appeared before Judge Krueger in the Court of Criminal Correction, waived reading of the information and pleaded not guilty. A hearing on the charge was set for July 7 and Mr. McCulloch's bond was fixed at $2,500. On the previous Saturday Mr. McCulloch had issued a written denial of the charge that he planned, ordered and directed the theft of the referendum petitions which was made on the witness stand before Special Master Lamm by Julius C. Jackson, former special agent of the company, and James F. Brady, at present confidential agent in the claim department of the United Railways.

The statement issued by Mr. McCulloch follows:

> I have read the statements published in the press, purporting to have been made by Julius Caesar Jackson and James F. Brady as witnesses in the hearing before Judge Lamm as special master. These alleged statements, so far as they relate to anything I am alleged to have said or done with respect to the referendum petitions, are unqualifiedly false.
>
> I did not suggest, direct, authorize or countenance the taking of the referendum petitions by Jackson or anyone else. I have never had any conversation with Jackson or anyone else concerning that matter, and had no knowledge that Jackson or anyone else entertained any such plans. I never had any meetings with Jackson, either at the company's office or anywhere else, and never at any time gave him any instructions, either directly or indirectly, on any matter whatever; indeed, I do not remember ever having seen him but once, which was long prior to the time that the referendum petitions were being circulated.
>
> I did not give any money to Brady to take to Jackson, or authorize or direct him to go to see Jackson or carry or convey any message to him.
>
> I do not intend to go into detail with respect to the various statements made by either Jackson or Brady, except to say that I had nothing whatever to do with the matters mentioned by them.
>
> The fact that both Brady and Jackson told a different story before the Grand Jury which investigated this matter last summer than the story they now tell should of itself convince anyone that their statements are not to be relied upon.

Both Mr. McCulloch and Mr. Cameron had been with the electric railway system of St. Louis for many years, the former since 1893 and the latter since 1900.

Following issuance of the warrant against Mr. McCulloch, Circuit Attorney McDaniels announced that the

grand jury would immediately undertake a new investigation of the petitions theft and that among the first witnesses subpoenaed were Jackson, Brady, George W. Baumhoff, former manager of the old St. Louis Transit Company, and Ephrim Caplan, counsel for John W. Seaman in the receivership suit against the United Railways directorate. Mr. Baumhoff on the witness stand also had linked Mr. McCulloch with the plans for the theft of petitions.

Other important developments in the hearings were the following:

Announcement by Special Master Lamm that he probably would not come to a decision in the Seaman suit for a receivership until next fall.

Announcement by Charles W. Bates, attorney for the receiver, on the witness stand that the receiver had ordered discontinued the payment of $1,000 monthly to the North American Company as "fiscal agents" of the United Railways which had been made prior to the appointment of a receiver.

Testimony by David R. Francis, Jr., a former director of the United Railways, that James A. Hooke, director of public utilities for the city of St. Louis, was one of the men who had advised him that the power contracts of the railway with the Union Electric Company, St. Louis, should be approved. The plaintiffs had charged that these contracts were instances of mismanagement on the part of the directors.

Testimony of John I. Beggs, director of the United Railways, that power contracts made by the railway in 1908 were instances of economy as it would have cost $5,000,000 to build plants for making at St. Louis the power brought from Keokuk and that the company could not raise such an amount. The plaintiffs had cited the 1908 contracts as other instances of mismanagement.

Council Acts on Detroit Matters

City Body at Odds with Commission on Referendum, but Approves Railway Agreement—Wage Scale Restated

On June 20 the City Council of Detroit, Mich., voted to postpone indefinitely consideration of a plan for a postcard referendum on the railway question as formulated by the Street Railway Commission, voted to continue the present working agreement with the Detroit United Railway in force until a subway car can be built, and appointed the city's arbitrator with an alternate to act in case the first named declined the appointment.

Council Acts Promptly

This action was taken during the absence of Mayor Couzens from the Council chamber. In the opinion of the Mayor the Council acted in too great haste and without considering a greater list of possibilities before appointing James S. Holden and William H. Maybury as arbitrator and alternate. The action taken, however, has been commended by prominent citizens as the most constructive step toward the settlement of Detroit's transportation difficulties in a long time.

At the meeting on June 23 two Councilmen reversed their opinions and held out for further consideration of the matter, thus upholding Mayor Couzens, and as a result the resolution of June 20, originated by Councilman John C. Lodge, was not reported out. Although nearly half of the time named in Judge Marschner's court order has elapsed without an arbitrator being decided upon, one Councilman argued that there was no particular hurry as the railway had not appointed an arbitrator and that the representative of the company should be appointed first.

An amendment providing that the three propositions embraced in the Lodge resolution, the Rapid Transit system, the appointment of an arbitrator and the agreement with the Detroit United Railway Company, should be voted on separately, also failed to pass.

The agreement which Councilman Lodge proposed be drawn up provided that the board of arbitration called for in Judge Marschner's court order be made a continuous body to fix fares annually and was objected to on the ground that it tied the city up with the railway for an indefinite period of time.

Councilman Bradley's new resolution proposing that the board of arbitration shall exist only during the period named in the court order—nine months—and not for an indefinite period as contemplated in the orginal resolution failed to pass by a tie vote of four to four at the meeting on June 24.

Abner E. Larned, president of the Street Railway Commission, asked the Council for a joint meeting at which New York subway experts could speak on the proper policy to be maintained between the surface and rapid transit lines. This request will probably meet with approval.

Sixty Cents Is Maximum

Service has been resumed on all lines, the only difference from conditions before the strike being the absence of workingmen's tickets and the tickets on the 3-cent lines. The use of these tickets ended on June 21.

The employees of the Detroit United Railway are now excluded from the railway controversy and are apparently satisfied with thier new rate of pay. They are paid 50 cents an hour for the first three months, 55 cents an hour for the next nine months, and 60 cents an hour thereafter, instead of 65 cents an hour after one year's service, as was originally stated.

Apparently the Mayor had made up his mind in advance that he would consent to no fare in excess of 5 cents and when the city's investigators, including Barclay Parsons & Klapp, made their detailed reports these were not made public or furnished to the railway. It is believed that had these been published they would have clearly shown that the depreciation allowance finally presented by the accountants, not engineers, were not sufficient. As a matter of fact the company's depreciation charges, or rather estimates were cut for no other purpose than to make it appear that the business could be conducted at a profit on the 5-cent fare. Depreciation was based practically upon the allowance of the company last year, not upon the actual requirements, although President Brooks of the railway had frankly told the city that because of low fares money that should have gone to depreciation had to be used for wages and to meet operating expenses of like nature.

The *Free Press* of June 19 published an editorial under the caption "City Wants Service," which would seem to indicate a change in sentiment among office holders. That paper said in part:

> If the Common Council as a whole is swinging around to the view of the street car question indicated in the letter written by President John C. Lodge to George H. Barbour, it is taking a course that promises solid benefit to Detroit, a course that ought to meet with thoughful public approval.
>
> The Detroit United Railway as a political issue is worn out. The people are heartily tired of the once popular game of "baiting the company," for indulgence in that pastime has brought no benefit, except to politicians, and it has cost Detroit a great deal of money and has hampered progress. Detroit has always been the "goat."
>
> What the residents of this community of a million want now, is reasonable co-operation with the railway by the city government, and in return decent treatment and reasonable service from the company. They made this clear throughout the period of the recent street car strike.
>
> The talk about throwing the company off the streets is nonsensical. The project for a $10,000,000 bond issue for piecemeal building of municipal lines with which to carry on a long drawn-out fight against the railway is impractical and lacks the true constructive element. It savors of spite and Detroit has grown too big to indulge in such pettiness. The council ought at once to rescind the bonding resolution it passed under pressure and in a moment of hysteria. Failure to rescind will necessitate a special election that will be an imposition on the patience and pocketbook of the public.

Muskogee Strike Unsettled

The strike of motormen and conductors of the Muskogee (Okla.) Traction Company, which was thought to have been settled two weeks ago, is still unsettled. The company agreed to most of the conditions submitted by the striking trainmen and an agreement was reached for the settlement of the trouble, but when the agreement was placed before the labor council its ratification was refused. The traction company thereupon attempted to operate cars, but strikers stoned the cars and rendered their operation without armed guards impossible.

Owners of the railway have come to Muskogee in an effort to bring the opposing factions together and effect a settlement of the strike. Conferences will be held with the striking trainmen in an effort to reach a temporary agreement under which cars may be kept running while minor differences are threshed out.

Municipal Men Want Raise

Superintendent of Seattle Lines Announces His Opposition to Recently-Formulated Request

Proposing increases in the wage of trainmen and shopmen of the Seattle (Wash.) Municipal Railway amounting to about $1,000,000 a year, representatives of the union have filed with Thomas F. Murphine, superintendent, a new wage scale which the City Council will be asked to make effective, beginning on Aug. 1.

Mr. Murphine has advised the union representatives that he cannot recommend the proposed increase to the City Council, stating that it would be impossible to get the money for the advance asked. In a letter to the trainmen he states that while it is true that an increase of 1 cent in the fare would mean $1,000,000 more a year if everybody now riding would continue to ride, the experience of other cities shows that 20 per cent increase in fares has brought only 10 per cent increase in revenues.

Detailed estimates of the effects of the proposed wage advance on the operating expense of the different departments, show an increase in operating expenses of $751,773 in the transportation division; $108,628 in the road division, and $98,763 in the shop division. With other items of cost, these estimates aggregate more than $1,000,000.

A $6-Day Asked

The proposed schedule provides for a wage of $5.50 for conductors and motormen during the first six months service, and $6 a day thereafter, operators of one-man cars and gripmen on cable cars receiving an additional 50 cents a day. When the city took over the lines on April 1, trainmen were being paid 46, 48 and 50 cents an hour. The wage was immediately raised to $4.25, $4.50 and $4.75 a day, the present scale. Operators of one-man cars and cable cars received an additional 5 cents an hour. Under the new schedule, extra men would be guaranteed a monthly wage of $110 instead of $90, as at present; trainmen breaking in students would be paid $1 a day additional instead of 25 cents now paid; all trainmen would be required to take one day off in every eight days; and time and a half would be allowed for Sundays and holidays.

The new schedule further provides an eight-hour day; that employees in the train service working regular runs shall be guaranteed not less than eight hours for each day's work, with the exception of Sunday. Runs of seven hours or more are to be considered regular runs. Time and a half is to be paid for all work in excess of 8½ hours. Fifteen-day vacation is also asked. Substantial advances in the pay of shopmen are also requested. In his letter to the men Mr. Murphine said, in part:

> We shall not enter into a discussion of the merits of this proposed increase, nor of the cost of living, but shall confine our statement to the question of where the money is coming from to pay such increase.
>
> At the present time the amount derived from a 5-cent fare is sufficient to meet operating and other expenses such as interest, bond retirement, etc. If all passengers now riding were to pay an additional 1-cent fare it would mean an increase in revenue of approximately $1,000,000 a year, but experience in other cities has shown that the law of diminishing returns operates as soon as the fare is raised, so that a 20 per cent increase in fare in very few instances has increased the gross receipts more than 10 per cent, and any corresponding increase shows correspondingly diminishing returns.
>
> We do not believe that any fare charged at this time would bring in $1,000,000 additional revenue, and in order to pay this additional amount it would be necessary for the railway department to receive a subsidy or bonus from somewhere. As this is a matter that would require an entire change in policy in the operation of the city railway and is a matter primarily for the legislative body of the city, we at this time express no opinion.
>
> We answer your question in regard to the proposed increase negatively. We shall not recommend the same to the City Council.
>
> As you know, our only means of revenue is the fare obtained from passengers, which has been established and it has been the aim of this department to maintain it at 5 cents. The fact, we believe, of maintaining a 5-cent fare was the controlling factor of the purchase by the city of the railway system formerly owned by the Puget Sound Traction, Light & Power Company.

Strike in Manila

A strike on the part of the employees of the Manila Electric Railroad & Light Company, at Manila, P. I., has been in progress during the past three weeks. The power plant workers were the first to go out. They were followed by about one-half of the trainmen and part of the shop and carhouse force.

During the early part of the disturbance 50 per cent of the regular cars were successfully operated under local police protection. Later on Acting Governor General Charles E. Yeater placed a detachment of the constabulary force of the Islands on duty in Manila as a precautionary measure against any possible trouble. Following this action the full regular car service was put on and has been effectually maintained since. Power house operation has been continuous, the work being handled by recruits from other departments.

There have been only slight evidences of violence, as the authorities have been watchful and have succeeded in suppressing any serious disturbance. The company's property has not suffered any damage.

No demands or grievances were presented by the employees to the company. The strike was put into effect without warning on advice of political labor agitators, whom the company refused to recognize. The general public and the press are unqualifiedly supporting the company in the position taken by it. Indications point to an early cessation to the strike as it is not meeting with the success anticipated.

This strike of the employees of the railway and light company is a reflection of the general labor unrest that has been in evidence in Manila recently, which made its appearance in the form of strikes on the part of dock workers and cigar makers.

Rhode Island Men Ask More

Want War Labor Board to Reopen Case in Which They Were Granted Increase Last July

The demand of the employees of the Rhode Island Company, Providence, R. I., for an increase in wages amounting to 62 per cent, which threatened to result in a strike, culminated in the union officials applying to the National War Labor Board for a decision in the case. This action was taken after the receivers of the Rhode Island Company had flatly refused to consider any demands for an increase in wages, insisting that the condition of the company financially precluded the possibility of an increase being granted. The receivers also refused to submit the subject to arbitration, stating that they were merely acting under orders of the Superior Court of Rhode Island and had no authority to resort to arbitration.

The National War Labor Board set June 23 as the date of the hearing, and on that day Examiner Charlton Ogburn of the board heard the attorney for the employees at a hearing in the City Hall, New York City. John J. Fitzgerald, attorney for the men, insisted upon a reopening of the case against the Rhode Island Company, a decision in which had been rendered last October. Examiner Ogburn expressed a doubt as to the authority of the War Board to reopen the case inasmuch as the case originally was against the Rhode Island Company whereas the property is at present being operated by receivers. Mr. Ogburn stated that he would forward the testimony with his recommendations to the War Board.

The receivers of the Rhode Island Company were not represented at the hearing, claiming that they had not been invited and expressing the opinion, further, that had an invitation been received they doubted their authority to appear without specific instructions from the court.

In the meantime, the employees have stated that there will be no strike pending the decision of the War Labor Board.

Windsor Wages Adjusted

Employees of the Sandwich, Windsor & Amherstburg Railway, Windsor, Ont., have accepted the terms suggested by the Ontario Railway Board. The board acting on the findings of the auditors who examined the financial status of the company, recommended the wage increase demanded by the men, and the 5-cent fare rate asked by the company.

The minimum wage provided is 40 cents an hour with a maximum of 50 cents and provides for 20 cents extra an hour for overtime. Formerly 6 cents extra an hour was paid for overtime.

Although Mayor Winter was hopeful that the border system would be purchased by the city and operated by the

Ontario Hydro-Electric Commission, negotiations which have been pending for about a year appear to be halted by the action of the Councils of Windsor and Walkerville in allowing the by-law to go to a vote of the people.

Sir Adam Beck, chairman of the Ontario Hydro-Electric Commission, is quoted as saying that the vote on increased fares to be taken on July 5, makes more valuable the franchises now held by the railway. Mayor Winter claime that the by-law if passed by the people will be binding for only one year and that the border cities are willing to hear any proposition the commission cares to make concerning the purchase of the lines before July 5.

Railway Will Operate Buses

The Public Service Commission of Massachusetts has approved the petition of the Connecticut Valley Street Railway, Greenfield, Mass, to acquire and operate motor vehicles for the transportation of passengers between Greenfield and Montague. As explained previously in the ELECTRIC RAILWAY JOURNAL the proposed new service will be in addition to and will supplement the company's present car service. The rate of fare on the buses will correspond with the rate at present in effect on the cars of the railway, a minimum fare of 6 cents with a rate of 3 cents per mile. The company looks forward to this service as a means of preserving to the railway its legitimate business between these two points.

A Tidbit

Here is delicious bit of verbal horseplay from a daily newspaper editorial:

Of course, we know we're just an ordinary darn fool, with no knowledge of big business and no experience in handling large sums of money. Nobody credits us with having money or expects us to know anything about it, and in both instances the guess is good. We haven't and we don't.

But being an ordinary darn fool, we've got the hunch that since a lot of other darn fools, ordinary and fancy, have tackled the street car problem and messed it up, we've a right to offer a solution.

The other day, while playing golf we gave considerable thought to the local transportation problem, and its present pitiable plight. We dubbed several shots in consequence, but we are glad to make that sacrifice for the public welfare. We have several methods by the local railway may be driven off our streets forever; not just temporarily, but forever!

First, if everybody, for the glorious good name of the city will agree to walk to work, there will be no need of street cars. All the workmen will have to do is to get up two or three hours earlier in the morning and set their evening meal two or three hours later in the day, and the trick is done. Why pay an extra cent for a transfer, when you can walk 8 miles and change from the shady to the sunny side of the street as often as you wish, without charge?

But it occurs to us that there may be many weak-kneed, spineless, subservient and timid citizens, willing for the sake of their own comfort and convenience to knuckle down to the local railway and actually ride on its trolley cars if they have the opportunity. Shame on them for their lack of devotion to a high ideal and their city's welfare. Cowards and poltroons are they who must have trolley transportation to their daily toil! Why, we wonder, were they given legs and feet?

For them, however, we have a splendid plan. We shall have no more dickerings with the railway. We shall establish an airship system.

News Notes

Youngstown May Increase Operating Allowance.—Following a request from the Mahoning & Shenango Railway & Light Company for an increase in operating allowance from 22 to 31 cents a mile, Street Railway Commissioner W. L. Sause, of Youngstown, Ohio, has recommended an increase to 27 cents.

Lake Shore Men Granted an Increase.—Employees of the Lake Shore Electric Railway, Cleveland, Ohio, were granted an increase in wages on June 5. Those on the interurban line will receive an advance of 3 cents an hour and those on local lines, 2 cents an hour. The new schedule becomes effective at once.

Reno Men Want More.—An increase in wages from a basic pay of 28 cents an hour to 40 cents an hour and a ten-hour day, with time and a half for overtime, are demanded by the trainmen of the Reno (Nev.) Traction Company in a petition handed Manager R. C. Leeper by a committee of the men. The shopmen and the road men have handed in a similar petition asking for an increase of 50 cents a day for each employee.

Beaver Valley Men Ask Wage Inquiry.—The Beaver Valley Traction Company, operating in Beaver Falls, Pa., and its employees have presented a joint petition to the War Labor Board, asking that it investigate conditions and decide if there should be an advance in the scale of wages paid the employees, from May 1, 1919. The company at present is paying 39, 41, 43 and 47 cents. The board has announced it will send an examiner to Beaver Falls about July 6.

Will Arbitrate Matter of Extensions.—The Cincinnati (Ohio) Traction Company has agreed to arbitrate its differences with the Interurban Railway & Terminal Company, which are causing a delay in the extension of the local line to Kennedy Heights and Pleasant Ridge. It is understood that arbitration is satisfactory to the Interurban Railway & Terminal Company. The matter will be taken up as soon as C. W. Culkins, street railroad commissioner, is officially notified to this effect by the company.

Wage Arbitration in Little Rock.—Rev. Hay Watson Smith has been accepted by the Little Rock Railway & Electric Company, Little Rock, Ark., as the third arbitrator to complete the arbitration committee to make a settlement of the demands of the employees for a flat rate raise of 20 cents an hour. The men are at present receiving a maximum of 35 cents an hour and a minimum of 30 cents. The raise was asked by the men on April 14, 1919, to become effective May 22. The company denied the request, offering a raise of 4 cents an hour. This was promptly turned down. A strike ultimatum was delivered to the company as the last means to effect a settlement.

Completing Hydro-Electric Plans.—The Ontario Hydro-electric Commission of Canada will start construction work soon on the proposed hydro-radial line between Port Colborne, Ont., and Bridgeburg, Ont., a distance of about 25 miles. This line will skirt the Canadian shore of Lake Erie, touching all of the popular summer resorts. The line would connect with Buffalo via the bridge across the Niagara River at Bridgeburg. It is proposed to start the work at the Bridgeburg end and rush the building of the line to Fort Erie and then to Crystal Beach before work is attempted between Crystal Beach and Port Colborne. The work will be done by the Dominion government under the direction of Sir Adam Beck, chairman of the Ontario Hydro-Electric Commission.

Paving Controversy Settled.—The long-standing controversy between the city of Pittsburgh and the Pittsburgh (Pa.) Railways over the paving of Chartiers Avenue and West Carson Street has been settled. At the conclusion of a hearing during the week ended June 21 before Referee W. R. Blair, serving as master for the United States District Court, under which a receiver is operating the Pittsburgh lines, it was announced that the paving will be done. The company will spend, as its share of the cost, $103,614, subject to the approval of the federal court. The matter has been contested bitterly for a long time, the company contending it did not have the money to pay for its proportion of the cost. Finally the argument centered about the quality of construction to be used, the company standing firm for the cheapest way out. This was compromised.

Co-operative Course in Electrical Engineering.—A co-operative course in electrical engineering, conducted by the Massachusetts Institute of Technology and the General Electric Company, established in 1917 but dropped last year, has been revived with the close of the war. The course covers a period of five years, of which the first two are identical with the established course in electrical engineering at the institute, and the last three are divided between instruction at the institute in Cambridge and experience associated with instruction at the West Lynn and other works of the General Electric Company. The work of the final year of the course is of advanced nature, with emphasis laid on the problems of administration, the design and development of engineering projects, and in creative work, such as research. The course leads to the degree of Master of Science and the number of men admitted each year is limited to forty.

Financial and Corporate

Segregation Seems Likely

Court Announces New York Leased Lines Will Be Returned to Owners if Rental Is Unpaid

Judge Mayer in the Federal Court in New York announced on June 25, after a long discussion by lawyers representing various interests, that if the New York Railways could not pay its rentals for the Eighth and Ninth Avenue lines, they would be returned to their owners. That the company cannot pay the rentals and interest on bonds due on July 1, and have capital enough left to carry on the business, was announced by Job E. Hedges, the receiver, in an application asking the court for instructions in the matter.

Morgan J. O'Brien, representing the Eighth and Ninth Avenue lines, complained of the default in rental payments, and asked that the lines be turned back. The owners, he said, would accept the rentals if they were offered, but as the amount grows larger each day, with the prospects of payment remaining stationary, he thought the owners should have their properties. An effort would be made to operate them at a profit.

COURT EXPLAINS ISSUES INVOLVED

Under the lease to the New York Railways a rental of $215,000 a year was to be paid for the Eighth Avenue line. This, with other costs, would bring the annual payments up to $265,675. Rent on the two lines is due for the first quarter of the year.

In reply to a question by Judge Mayer, Mr. O'Brien said he thought there would not be much difficulty in arranging for transfers between the Eighth and Ninth Avenue lines and several crosstown lines. Judge Mayer told him that if he would submit a plan by July 8 showing that the interests of the public would be safeguarded he would instruct the receiver to turn over the lines. Judge Mayer said:

> The time has come when we must have more action and less talk. The court wishes to keep the system intact, but it has no right to destroy property. The New York Railways is running at a deficit every day. There is no doubt about that. Public Service Commissioner Nixon has indicated that he will take up the matter of transfers, and I presume he will give an answer at an early date. I believe the solution of the transfer problem will mean the solving of the problems we have been considering.
>
> As for the Eighth and Ninth Avenue lines, we know we cannot pay the rentals, and we have no right to keep the property running at a loss. The owners promise to run the cars in a way that will serve the public if we return them. The responsibility of breaking up the property cannot be charged to the court, which is not going to take money out of the pockets of the owners of the lines. If Judge O'Brien will present to me by noon on July 8 a satisfactory plan of operation I will instruct the receiver to return the lines.

Receiver Hedges also asked for instruction as to what action he should take regarding the payment of interest due on July 1 on the first real estate and refunding mortgage 4 per cent bonds, which amounts to $361,225, and the interest on the 5 per cent underlying bonds, as well as those of the leased lines. He said the system had been operating cars over the Williamsburg Bridge since Sept. 1, 1915, on temporary permits, and that during the six months ended March 31 last it had fallen short $1,210,011 of earning the interest on its bonds.

Joseph Cotton, in behalf of a committee of the first mortgage bondholders, who have $18,000,000 of the bonds, said he represented 1600 bondholders, each owning less than $10,000 of bonds. Their holdings, he said, represented their chief source of income. He said that a default in payment of interest would make it necessary to begin foreclosure proceedings. Asked by Judge Mayer if he would foreclose if the interest was paid, he replied that if offered the payment it would be accepted and marked "on account." Judge Mayer said:

> It seems inadvisable to instruct the receiver to pay this interest under the circumstances, since nothing will be gained. There is no course left to the court but to instruct the receiver not to pay it.

Abandonment Approved

The Public Service Commission, for the Second District of New York, on June 17 approved the declaration of abandonment by the Syracuse, Lake Shore & Northern Railroad, now the Empire State Railroad Corporation, of that part of its route on the East River Road, commencing at Riverside Cemetery in Scriba and running southerly to its present terminus.

The Syracuse, Lake Shore & Northern Railroad in 1911 asked the commission for approval of a declaration of abandonment of that part of its road on the east side of the Oswego River at Riverside Cemetery and running southerly to the bridge at Minetto. The declaration of abandonment relating to that part extending upon private right-of-way to the Minetto bridge was approved and abandonment of the remainder was disapproved.

The Empire United Railways, Inc., successor of the Syracuse, Lake Shore & Northern Railroad, in 1914 made application for approval of the declaration of abandonment as to the remainder of the route proposed to be abandoned in 1911. The commission refused approval without prejudice to renewal of the application and the Empire State Railroad Corporation filed the petition upon which the commission acted on June 17. There were hearings by Public Service Commissioner Irvine.

Contests Receiver's Plan

Trustee of B. R. T. Refunding Mortgage Objects to Displacement of Existing Liens

Arguments were begun during the week ended June 21 in the United States Circuit Court of Appeals on an appeal made by the Central Union Trust Company, New York, as a trustee under a first refunding mortgage of the Brooklyn Rapid Transit Company. The appeal is from an order issued by Judge Julius M. Mayer in May, 1919, authorizing the issuance of $20,000,000 of receiver's certificates in the interest of the Brooklyn Rapid Transit lines. The arguments upon which the trust company's appeal are based are as follows:

1. That the Brooklyn Rapid Transit Company is a private business corporation and no authority exists to displace existing liens upon its property by the issue of receiver's certificates without the consent of said lien holders.

2. That no authority exists to issue receiver's certificates in aid of the power plant project.

3. That no authority exists to issue receiver's certificates for the purpose of maintaining, rehabilitating, constructing or equipping the properties of other corporations controlled by the Brooklyn Rapid Transit Company.

4. That no authority exists to issue receiver's certificates at the expense of the first refunding mortgage bondholders for the purposes of benefiting the note holders.

The order authorizing the issuance of the certificates, against which appeal has been taken, was given on the basis that the money was to be expended for power facilities and other purposes, to the limit of $16,000,000.

The trust company objects to priorities granted, and it is further contended that the power equipment of the Brooklyn Rapid Transit Company is sufficient, and that the expenditure is contemplated so that the Brooklyn Rapid Transit Company may supply the power and other facilities which the subway company, the New York Municipal Railway Corporation, must furnish in order to perform its contracts.

Lindley M. Garrison, receiver, and Carl M. Owen for the company argued that unless the contract work of the New York Municipal Railway Corporation is completed its rights under the agreement of the company with the city of New York in connection with the operation of the new rapid transit lines will be voided. Mr. Garrison went into detail on the necessity of the money for the preservation of the property:

> If the Brooklyn Rapid Transit Company should cease its activities, it would be weeks and perhaps months before the surface lines and the elevated lines would be able to find substitute sources of power and find new agencies for the carrying on of their repair and maintenance work. In the meantime the public confusion and the public loss would be extreme.
>
> Unless this construction work is proceeded with, there is a possibility of serious default of the New York Municipal in the performance of its obligations under contract. The failure to complete this construction will jeopardize the vast investment of the Brooklyn Rapid Transit Company and the refunding bondholders in the New York Consolidated and the New York Municipal situation.

The court reserved decision.

Net Income Cut in Half

Twin City Lines Suffer from Higher Costs and Lower Transportation Revenues

The operating ratio (including taxes) of the Twin City Rapid Transit Company, Minneapolis, Minn., was 81.77 per cent for the calendar year 1918 as compared to 74.84 per cent for 1917, upon the basis of the total railway operating revenue and non-operating income. This big jump was due to the increased cost of labor and materials and to the decrease in traffic.

The transportation revenues during 1918 declined $501,255 or 4.9 per cent. The causes assigned by the company were the exodus of young men for military service, the lack of community prosperity based on large war contracts, and the influenza epidemic. The operating expenses rose $280,455, or 4.2 burdens caused the next income to drop $846,748, or 55 per cent.

More ground was lost through a slight increase in taxes, through a decrease in non-operating income and through larger deductions from gross income. The combination of all these burdens caused the net income of the company to drop $846,748, or 55 per cent during 1918.

The company has paid dividends upon its common stock since 1899 and has, from time to time, increased the rate until it reached 6 per cent in 1909. This rate, however, had to be reduced to 2 per cent in 1918. The profit and loss balance carried forward at the end of the year was $1,180,078, as compared to $1,285,804 the year before.

The expenditures for additions and replacements during 1918 totaled $188,981. The only large expenditures were for necessary reconstruction of track, some additional street paving, and the purchase of certain competing motor buses. Upon the purchase of these buses, competing bus lines were discontinued, and the company is now operating some of them in the northern part of the city of Minneapolis on a newly opened and paved street on which street cars are not operated.

The revenue passengers carried in 1918 numbered 188,930,268, as compared to 199,621,160 in 1917. The transfers redeemed in the two years were 67,985,059 and 73,678,873, respectively.

INCOME STATEMENT OF TWIN CITY RAPID TRANSIT COMPANY FOR YEARS ENDED DEC. 31, 1917 AND 1918

	1918 Amount	1918 Per Cent	1917 Amount	1917 Per Cent
Revenue from transportation	$9,618,500	99.2	$10,119,755	99.4
Revenue from other railway operation	77,479	0.8	62,111	0.6
Total railway operating revenue	$9,695,979	100.0	$10,181,866	100.0
Way and structures	$1,005,629	10.3	$1,031,215	10.1
Equipment	823,048	8.5	781,664	7.6
Power	1,132,335	11.7	1,047,484	10.3
Conducting transportation	3,142,150	32.4	3,031,123	29.8
Traffic	37,422	0.4	57,138	0.6
General and miscellaneous	873,961	9.0	816,845	8.0
Transportation for investment — credit	10,572	0.1	41,950	0.4
Total railway operating expenses	$7,003,974	72.2	$6,723,519	66.0
Net operating revenue	$2,692,005	27.8	$3,458,347	34.0
Taxes assailable to railway operation	936,451	9.7	916,196	8.0
Operating income	$1,755,554	18.1	$2,542,151	25.0
Non-operating income	15,215	0.2	25,846	0.2
Gross income	$1,770,769	18.3	$2,567,997	25.2
Rent for leased roads	$3,000	0.0	3,000	0.0
Interest on funded debt	1,034,428	10.7	989,724	9.7
Net loss miscellaneous physical property	27,333	0.3	25,586	0.3
Miscellaneous debits	14,706	0.1	11,636	0.1
Total deductions	$1,079,467	11.1	$1,029,947	10.1
Net income	$691,302	7.2	$1,538,050	15.1

Larger Loss in Boston

May Returns Show Largest Deficit So Far in 1919, Although Cost per Passenger Decreased Slightly

The financial report for May, made public by the trustees of the Boston (Mass.) Elevated Railway, shows a deficit of $324,002 for the month, as compared with $316,392 in April and $285,124 in February, the worst preceding months in 1919. As in April, one of the reasons for the larger deficit was the excess of track and car repair work above a fair monthly average. The details appear herewith.

The revenue passengers in May totaled 29,967,223, and the total receipts from all sources were $2,453,191. Of this amount $2,385,156 was received from fares. The total cost of service was $2,777,194, of which $1,316,416 was expended for wages. The cost of labor per revenue passenger was 4.393 cents.

The total cost of service per revenue passenger for May was 9.267 cents, as compared with 9.328 cents in April, 8.923 cents in March, 9.304 cents in February, 8.970 cents in January and 9.026 cents for the eleven months ended May 31, 1919.

Receipts per revenue passenger in May were 8.186 cents. The receipts under the 8-cent fare in May, 1919, as compared with the 5-cent fare in May, 1918, showed an increase of $738,177, or 44.82 per cent. This compared with an increase of 45.96 per cent in April, 42.32 in March, 44.91 per cent in February and 43.77 in January.

RECEIPTS AND COST OF SERVICE OF THE BOSTON ELEVATED RAILWAY FOR MAY, 1919

Receipts:	
From fares	$2,385,157
From operation of special cars, mail pouch service, express and service cars	9,243
From advertising in cars, on transfers, privileges at stations, etc.	24,949
From other railway companies for their use of tracks and facilities	4,187
From rent of buildings and other property	6,193
From sale of power and other revenue	11,613
Total receipts from direct operation of the road	$2,441,343
Income from deposits, income from securities, etc.	11,848
Total receipts	$2,453,191
Cost of service:	
Maintaining track, line equipment and buildings	$487,612
Maintaining cars, shop equipment, etc.	226,514
Power (including 22,778 tons of coal at $5.633 or $128,314)	194,096
Depreciation	167,000
Transportation expenses (including wages of car employees, carhouse expenses, etc.)	835,904
Salaries of administrative officers	7,583
Law expenses, injuries and damages, and insurance	102,556
Other general expenses	71,696
Total operating expenses (of which $1,316,416 represents wages)	$2,092,961
Taxes, proportion	80,762
Rent for leased roads (exclusive of subways)	215,969
Proportion of rent of subways and tunnels, to be paid to the city of Boston, exclusive of Cambridge Subway, owned by company	125,934
Interest on Boston Elevated bonds and notes	140,009
Miscellaneous items	4,561
Proportion of dividends under acts of 1918	116,998
Total cost of service	$2,777,194
Net loss	$324,003

Abandonment Petition Denied

The Public Service Commission of New Hampshire has denied the application of the Portsmouth Electric Railway for permission to abandon permanently its North Hampton branch and to discontinue temporarily during certain months of each year the so-called North Beach branch, saying:

> Nothwithstanding the poor financial showing of this road we have seen that it did not ask for an increase of rates until August, 1918, when it increased the fares from 5 cents to 6 cents and put into effect a 2-cent transfer charge. In February, 1919, it further increased the fares from 6 cents to 7 cents, retaining the 2-cent transfer charge. These new rates obviously have not been in effect long enough to tell with any degree of certainty just how they will affect the revenue. To allow the road to take up its tracks before it has been ascertained for a fact that the road would not pay would be unjust to the public. If, however, under the present rates, or even higher rates, the road cannot be made to pay what its owners are legally entitled to receive, then the road can renew this petition.

Finances Before Commission

Some Details Made Public of Readjustment Plan of the United Railroads of San Francisco

The plan for the readjustment of the finances of the United Railroads, San Francisco, Cal., has been agreed upon by the different interests involved and is now before the California Railroad Commission for approval. Approval by the commission will complete efforts toward a financial readjustment, which has been a matter of negotiation for more than four years.

Under the plan now agreed upon, the total bonded indebtedness of the company will amount to approximately $15,000,000, less than half of the present funded debt. Of the $15,000,000 funded debt proposed in the new plan, approximately $10,500,000 will be in the form of 5 per cent Market Street Railway bonds. There are now outstanding $7,098,000 of these bonds and it is proposed to issue about $3,525,000 additional. Following the bond issue will be a note issue of approximately $5,000,000. There will be issued about $11,750,000 first preferred stock. Second preferred and common stock will also be authorized and issued.

There are outstanding $23,500,000 of 4 per cent sinking fund bonds of United Railroads and it is around these and the question of what provision will be made for them that interest centers. There are also underlying bonds amounting to $12,298,000 which will have to be taken care of. These include $7,098,000 Market Street Railway 5 per cent bonds. These bonds will remain a lien on the property and, as stated above, approximately $3,525,000 additional will be issued. Of the remaining $5,200,000 underlying bonds, the majority are in default as to principal though interest is being paid regularly. It is believed that the short-term notes will be sold and that proceeds will be used to retire the $5,200,000 underlying bonds.

Under the plan as now drawn up, holders of the sinking fund 4 per cent bonds will receive 15 per cent of the par value of their holdings in the new Market Street Railway 5 per cent bonds to be issued. First preferred stock to the extent of 50 per cent will be given to holders of the 4s, and the balance, amounting to 35 per cent, will be made up by second preferred and common stock.

Arranging Sale of Grafton Property

The trustee in bankruptcy of the Grafton (W. Va.) Traction Company and associated companies, Dr. T. F. Lanham, Grafton, has filed a petition in the United States District Court for the Northern District of West Virginia, praying for an order authorizing the sale of the electric railway property and the property of the affiliated companies, either at public auction or by private sale.

It seems to be a recognized fact that the Monongahela Valley Traction Company, which operates in Marion and Harrison Counties, will in all probability be a bidder for the property in the event of a sale. This would undoubtedly result in joining Grafton with Clarksburg and Fairmont in an interurban railway loop that would prove most convenient and desirable for each of the cities mentioned.

The petition for the sale of the property will be heard at a creditors' meeting to be held in the office of I. E. Wyckoff, referee in bankruptcy, on June 30.

Change in Ownership at Sistersville

Ownership of the Union Traction Company, Sistersville, W. Va., and the Sistersville Electric Light & Power Company has passed to Boston capitalists. The business will be conducted under the name of two companies, the Sistersville & New Martinsville Traction Company and the West Virgina Power Company.

The power plant in Sistersville will be moved to Paden Park early next year, and important improvements are being worked out for Paden Park, which will make it one of the most popular and convenient pleasure resorts in that part of the Ohio Valley.

The extension of the road above New Martinsville to Clarington, or better still to Moundsville, where connection could be made with roads to Wheeling and other points, is one of the improvements that will vastly increase the revenue of the road and will be a great benefit to New Martinsville.

The Sistersville & New Martinsville Traction Company, the successor company, has been incorporated with a capital stock of $500,000 by R. Broadwater, W. J. McCoy, Nell Burns McCoy, W. R. Reitz and E. C. King, all of Sistersville.

Change in Control

The controlling interest in the Pittsburgh, Harmony, Butler & New Castle Railway changed hands during the week ended June 21, when David McCahill, Pittsburgh attorney, purchased the holdings of R. H. Boggs. The properties involved in the deal, which include control also of the Pittsburgh, Mars & Butler Railway, the Harmony Electric Company and the North Pittsburgh Realty Company, all affiliated concerns, are appraised officially at between $8,000,000 and $9,000,000. Mr. McCahill and Mr. Boggs declined to state what the consideration in the transaction had been.

Mr. McCahill has been elected president of all the companies, succeeding Mr. Boggs in that office. The latter will remain on the directorate, however. The new president has taken personal charge of the properties and has announced that he will improve service and may purchase new equipment.

The lines involved in this sale were built in 1905-1906. Mr. Boggs, who is one of the proprietors of the Boggs & Buhl store in Northside Pittsburgh, headed the movement which resulted in their construction, as a matter of public spirit. The cars pass the doors of the store and undoubtedly have extended the Pittsburgh shopping radius to include thousands to whom the city stores otherwise were unavailable. While never much of a success financially, the railways have always served the public well and have contributed greatly to the development of a great area north of Pittsburgh. Mr. Boggs has retired from the public utility field because of poor health and the claims of his other business interests.

Deficit for Calgary in 1918

The 1917 surplus of the Calgary (Alta.) Municipal Railway, amounting to $21,493, was during the calendar year 1918 turned into a deficit of $7,118. The comparative report for these two years follows:

	1918	1917
Car earnings	$606,188	$556,375
Miscellaneous earnings	10,926	7,686
Bank interest	20,465	18,493
Total	$637,579	$582,554
Operating expenses	$419,682	$356,096
Fixed charges, etc.	225,015	204,965
Total	$644,697	$561,061
Deficit	$7,118	
Surplus		$21,493
Car-miles	2,735,264	2,739,923
Car-hours	279,109	279,584
Fare passengers	12,928,882	13,606,663
Transfers	3,796,960	3,830,702
Total passengers	16,725,482	17,437,365
Average fare, revenue passengers (cents)	4.687	4.023
Average fare, all passengers (cents)	3.696	3.139
Average daily receipts	$1,954	$1,596
Average daily operating expenses	$1,203	$975
Average daily total expenses	$1,820	$1,537
Percentage of operating expenses to revenue	71.2	61.1
Cost of power per car-mile	3.368c	3.253c

The report states that all taxes were paid and that allowances were made for sinking fund and depreciation. During 1918 unlimited tickets were sold six for 25 cents, and twenty-five for $1; workmen's tickets, good 6 to 8 a.m., eight for 25 cents; school children's tickets, ten for 25 cents. In consequence of the deficit, fares were raised May 14.

The new schedule provides for a 5-cent cash fare. Tickets are sold five for 25 cents, or twenty-two for $1. Workmen's tickets have been abolished. Children's tickets are sold eight for 25 cents.

A Question of Control

The Ministry of Ways and Communications bill is slowly struggling through the committee stage in Parliament. As regards tramways, the only important point made is that the government has promised to consider whether it will accept a modification which will put municipally-owned tramways to a certain extent under the control of the new ministry. As the bill at present stands, such tramways—unlike all other public means of locomotion—are not brought under control. In reference

to the supply of electricity, which in addition to means of transportation it is proposed should come under the new ministry. The government has accepted an amendment deleting electric supply from the subjects in regard to whether the existing powers of government departments should be transferred to the ministry. The government, however, has not abandoned its intention. The provision as to supply of electricity had been included in the bill on the assumption that by this time the question would have been largely settled under another bill to be introduced for the purpose of setting up a national electric power supply. The latter bill has, however, been delayed owing to the illness of the president of the Board of Trade (Sir Albert Stanley). The government now intends that the bill will make provision for the whole subject, including the transfer of existing powers to the Ministry of Ways and Communications.

Financial News Notes

Co-Receivers for Atlantic City Line.—Stern & Silverman, Philadelphia, Pa., will probably be named as co-receivers with A. J. Purington, receiver of the Atlantic Shore Railway Company, Atlantic City, N. J., who succeeded former Judge Clarence L. Cole in that office.

Abandonment Threatened.—It is reported that the North Coast Power Company may abandon electric railway service between Centralia and Chehalis, Wash. The action was threatened if steps are not taken by the two cities to relieve the jitney competition, which has made it impossible to operate the electric railway at a profit.

Boise Road Sold.—The property of the Boise (Ida.) Railway, including the city electric line in Boise, subject to a $75,000 mortgage on the Natatorium, has been sold under hammer. The railway company's equipment was sold to S. F. Watts of Independence, Kan., for $100. It is understood the new owner plans to improve and restore the property.

Providing Municipal Railway With Funds.—Ordinances have been introduced in the City Council of Seattle, Wash., providing for two loans aggregating $500,000 to the Seattle Municipal Railway betterment fund, for the purpose of speeding up improvements and extensions to the municipal railway system. One ordinance provides for borrowing $250,000 from the general fund, and the other $250,000 from the street railway fund. The loans are to be repaid in September from the proceeds of the $790,000 bond issue recently voted for betterments to the railway system.

Receiver's Appointment Made Permanent. — Cornelius S. Sweetland, treasurer of the United Traction & Electric Company, Providence, R. I., who was named temporary receiver of the company on petition of the Central Trust Company, New York, was made permanent receiver of the company in the Superior Court of Rhode Island by Presiding Justice Tanner, on June 23. The developments leading up to the filing of the petition by the Central Trust Company were detailed in the ELECTRIC RAILWAY JOURNAL for June 21. Mr. Sweetland was instructed by Justice Tanner to take over the affairs of the company and operate it under instructions from the court.

Columbus Notes Offered.—Stone & Webster, Boston, Mass., are offering for subscription $1,750,000 of three-year 6 per cent gold coupon notes of the Columbus (Ga.) Electric Company, which is under the direction of the Stone & Webster Management Association. The notes are dated July 1, 1919, and are due July 1, 1922. They are in the denomination of $1,000, $500 and $100. The proceeds from the sale of the notes will be used to retire the present $1,500,000 of 6 per cent notes due on July 1 and also to take up the floating indebtedness of the company, now amounting to $170,000, which has been incurred for additions and extensions to the company's plant. The present net earnings are almost double all interest charges.

Notes to Pay for Cars.—Public Service Commissioner Lewis Nixon of the First District of New York has announced that he will shortly approve an order to permit the surface line companies of the Brooklyn Rapid Transit system to issue lease warrants or notes for 80 per cent of the value of 200 of the 300 new cars which the company must buy, by order of the commission. Before his approval is granted the company must submit schedules of the principal and interest amounts which are involved. The companies are to pay 20 per cent of the value of the cars in cash, each car to cost $5,600. The total cost, including interest and discount, it was stated by A. M. Williams, of counsel to the Brooklyn Rapid Transit companies, would amount to $1,245,696.30.

Electric Railway Monthly Earnings

BATON ROUGE (LA.) ELECTRIC COMPANY

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Apr., '19	$27,371	*$17,402	$9,969	$3,474	$6,495
1m., Apr., '18	20,816	*10,403	10,413	3,279	7,134
12m., Apr., '19	299,786	*172,751	127,035	42,116	84,919
12m., Apr., '18	237,946	*124,390	113,556	38,616	74,940

CAPE BRETON ELECTRIC COMPANY, LTD., SYDNEY, N. S.

1m., Apr., '19	$46,455	*$33,316	$13,139	$5,354	$7,785
1m., Apr., '18	37,674	*27,986	9,688	5,255	4,433
12m., Apr., '19	542,625	*408,776	133,849	63,674	70,175
12m., Apr., '18	480,141	*333,326	146,815	63,221	83,594

COLUMBUS (GA.) ELECTRIC COMPANY

1m., Apr., '19	$100,248	*$46,657	$53,591	$30,443	$23,148
1m., Apr., '18	94,223	*39,514	54,709	28,200	26,509
12m., Apr., '19	1,189,571	*614,382	575,189	352,125	223,064
12m., Apr., '18	1,149,762	*454,419	695,343	318,767	376,576

EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.

1m., Apr., '19	$109,133	*$67,384	$41,749	$12,969	‡$28,905
1m., Apr., '18	89,317	*51,409	37,908	11,811	26,097
12m., Apr., '19	1,220,183	*733,725	486,458	153,368	‡335,115
12m., Apr., '18	975,911	*545,543	430,368	132,633	‡322,306

EL PASO (TEX.) ELECTRIC COMPANY

1m., Apr., '19	$124,652	*$86,766	$37,886	$7,411	$30,475
1m., Apr., '18	102,665	*69,344	33,321	6,441	26,880
12m., Apr., '19	1,329,995	*944,033	385,962	82,819	303,143
12m., Apr., '18	1,274,797	*823,650	451,147	70,561	380,586

GALVESTON-HOUSTON ELECTRIC COMPANY, GALVESTON, TEX.

1m., Apr., '19	$247,480	*$178,453	$69,027	$38,027	$31,000
1m., Apr., '18	205,083	*136,577	68,505	29,564	38,941
12m., Apr., '19	2,860,162	*2,044,651	815,511	366,405	449,106
12m., Apr., '18	2,265,272	*1,482,279	782,993	339,181	443,812

HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Apr., '19	$24,629	*$17,003	$7,626	$6,065	$1,561
1m., Apr., '18	25,900	*16,396	9,504	6,119	3,385
12m., Apr., '19	310,281	*213,076	97,205	73,396	23,809
12m., Apr., '18	340,899	*217,869	123,030	73,827	49,203

JACKSONVILLE (FLA.) TRACTION COMPANY

1m., Apr., '19	$85,353	*$82,231	$3,122	$14,217	†$11,095
1m., Apr., '18	74,329	*50,116	24,213	14,130	10,083
12m., Apr., '19	1,003,103	*829,108	173,995	178,026	†4,031
12m., Apr., '18	749,634	*512,744	236,890	168,781	68,109

NORTHERN TEXAS ELECTRIC COMPANY, FORT WORTH, TEX.

1m., Apr., '19	$259,594	*$164,454	$95,140	$24,845	‡$79,877
1m., Apr., '18	267,913	*157,422	110,491	25,277	‡94,797
12m., Apr., '19	2,886,615	*1,911,250	975,365	300,847	‡789,517
12m., Apr., '18	2,932,282	*1,646,832	1,285,450	309,852	‡1,042,681

PENSACOLA (FLA.) ELECTRIC COMPANY

1m., Apr., '19	$42,935	*$34,941	$7,994	$8,005	†$11
1m., Apr., '18	35,008	*24,138	10,870	7,077	3,793
12m., Apr., '19	550,955	*417,395	133,560	90,239	43,321
12m., Apr., '18	391,640	*238,931	152,709	82,012	70,697

SAVANNAH (GA.) ELECTRIC COMPANY

1m., Apr., '19	$115,286	*$96,855	$18,431	$24,512	$6,079
1m., Apr., '18	92,579	*62,704	29,875	23,079	6,796
12m., Apr., '19	1,251,005	*966,065	284,940	288,357	†3,417
12m., Apr., '18	1,035,134	*694,962	340,172	274,204	65,968

TAMPA (FLA.) ELECTRIC COMPANY

1m., Apr., '19	$98,578	*$61,143	$37,435	$4,546	$32,889
1m., Apr., '18	84,863	*48,347	36,516	4,264	32,252
12m., Apr., '19	1,124,069	*664,653	459,416	52,540	406,876
12m., Apr., '18	997,955	*574,859	423,096	49,761	373,335

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

Traffic and Transportation

New York State Study

Commission Calls for Statistics on Which to Base Inquiry into Results with Increased Fares

The Public Service Commission for the Second District of New York is taking steps to ascertain the effect of revenue changes in the operation of electric railroads in the second-class and third-class cities of the State, following permission by the commission to make increases in fare. It has asked railroads upon which fare rates have been advanced to furnish comparative monthly statements of passenger revenue, revenue passengers carried and car-miles operated each month since an increased tariff has been in effect, compared with the corresponding months of the prior year and in which lower fares prevailed. The commission has asked that this information be segregated between city and other operating divisions.

More Than Fifty Increases

Passenger fares have been increased in more than half of the fifty second-class and third-class cities in the State, either by an advance from 5 to 6, 7 and 8 cents per passenger or by shortening of zones and increasing revenue in that manner. Petitions for authority to increase fares are pending in several cities. Increases in a number of instances have been granted for a period of one year because of the stipulations in local franchise amendments. There are longer periods in other cities while in some municipalities the increased fare is to prevail until its necessity no longer exists.

Increased rates have been permitted by the commission where thorough investigation has demonstrated that higher fares and more revenue were required to preserve public service and where local franchises and agreements stipulating a maximum fare were amended and authority given the commission to allow the increased fare upon proof of necessity.

Wants to Learn Effects

The commission is seeking the information to learn the general effect of the increased fares upon the revenue and financial conditions of the roads where fare rates have been advanced and what decrease, if any, in the volume of travel has followed with the higher fares.

Roads operating outside municipalities have been permitted to increase fares by increased mileage rates and shortening of the fare zones. All increases permitted by the commission have been after a thorough study of general operating conditions of each individual line and the increased cost in operating conditions, including wages and materials, to electric roads during the war. The study it is proposed to make should prove extremely helpful, particularly at this time.

Louisville Fares and Service

It is reported that a new ordinance to curtail service and reduce operating expenses for the Louisville (Ky.) Railway will be introduced at the next session of the General Council. Since the Council killed the original ordinance Mayor Smith has washed his hands of the entire affair. He was instrumental in introducing the original ordinance in favor of economies in operation rather than an increase in fares, but this was killed because a few scattered residents on the West Chestnut and Madison and one or two other lines had friends in the Council. It is said that under the new ordinance to be introduced the Chestnut-Madison and the Liberty-Bank lines will be continued, with a few of the short lines eliminated. Mayor Smith is quoted as stating that he was in favor of aiding the railway, but after being blocked in his efforts he is through.

T. J. Minary, president of the company, is quoted as having made the statement that the only hopes now are something unforeseen or help from the government.

In spite of franchises it is held that the railway is entitled to an increased fare, inasmuch as the question of wages was taken out of the company's hands.

Independent Audit Shows Loss

The Tri-City Railway, Davenport, Iowa, operated at a loss of $35,029 for the first four months of 1919, according to the report of the David G. Fisher Company, auditors and utilities engineers, which has just completed a survey of the company's books.

The report shows that the company's profits for the year 1918 were $11,168, and that a dividend of 2 per cent was paid on the outstanding stock, which is listed at $250,000. The report was made at the expense of the company, the auditors being engaged by the Davenport City Council.

When the officials of the company appeared before the Aldermen a number of weeks ago and announced that they were operating at a loss and that it would be necessary for the people to vote an increase in fares, the Council agreed to lend its moral support to the matter if a survey of the books showed that the increase was justified.

While the fare charged by the company on all city lines is 5 cents, the average fare was slightly above 4 cents.

Jersey Hearing Resumed

Municipalities Begin Presentation of Testimony Drawn from Studies of Foreign Zone Practice

The hearings in regard to the proposed zone plan of fares for the Public Service Railway on its lines in New Jersey were resumed on June 23. The company and the commission had previously completed the presentation of their testimony. On the date mentioned the municipalities began their case.

The first witness called in their behalf was Walter Jackson, former associate editor and business manager of the ELECTRIC RAILWAY JOURNAL. His testimony had largely to do with practices with respect to zone fares in general, zone fare distances and zone fare collections, based on knowledge obtained by him in visits to Europe, the most recent one made during the past winter as the basis for articles which have appeared previously in this paper.

Mr. Jackson made it plain that he was a strong advocate of the zone fare. He also praised the Public Service Railway highly for the work that it had done in preparing the elaborate report on which its case for zone fares is predicated.

At the hearing on June 24 he asserted that jitney competition with the Public Service Railway could probably be abolished very largely by the installation of one-man safety cars with low rates of fare and more frequent service. In this connection he made a strong plea for close co-operation on the part of the commission and the many cities with the electric railroad. Asked by Commissioner Slocum if the installation of one-man cars would not necessitate a heavy capital expenditure, Mr. Jackson said that aside from the proved high rate of return it would be easy to raise capital for safety cars because they can be used wherever the gage is standard width whereas the old-time big car was of special length and width.

The witness argued in short for a flexible plan of zone fares made out from the standpoint of increasing short distance traffic rather than from the viewpoint of convenience in collecting fares and in bookkeeping. He also pointed out that an inflexible zone fare made no provision for changes in zone lengths to correspond with changes in cost of operation. In much of what Mr. Jackson said he reiterated statements made previously in articles in this paper, written over his name, to acquaint American electric railway managers with what has been done in Great Britain, where zone fares have been in use for many years.

Among the witnesses on June 25 were Robert H. Whitten, formerly with the Public Service Commission for the First District of New York, Mr. Jackson and Ralph S. Bauer, Lynn, Mass., merchant and a student of electric railway affairs. Mr. Bauer said electric railway operators lack the merchandising sense.

Ten Cents in Pittsburgh

New Rate Announced on June 23 Provides, However, for Tickets at Seven and One-Half Cents

A 7½-cent fare will be started in Pittsburgh on or about Aug. 1, the receivers of the Pittsburgh Railways announced on June 23. This rate is good only upon payment by tickets. Cash fare will be 10 cents. Present fares in Pittsburgh are 5 cents within an area of a radius of approximately 2 miles from the center of the city, and 7 cents for a ride of any length, any part of which is outside that area.

Two-Area System a Failure

City officials have announced they will oppose the proposed increase before the State Public Service Commission, but this will not prevent its taking effect. Under the law of Pennsylvania a public service corporation may change its rates upon thirty days notice to the commission. If there are objections these must be heard by the commission, but the new rates go into effect pending a decision. The decision of the commission may then be carried before the courts upon appeal. So to all intents and purposes announcement of intention by the receivers makes it certain the new charge will be levied.

A prominent feature of the announcement of the receivers is their declaration that the two-area system has proved a failure in Pittsburgh. In explanation of their abandonment of it, in the formal statement carrying the announcement of the new fare, they say that it is complex, difficult and expensive in administration. It has failed to produce the revenue the lines need and further, the receivers declare, it is unjust under Pittsburgh conditions.

Pittsburgh, they explain, was built up under the flat fare system. Adoption of the two-area plan thus was tantamount, in a way, to a breach of contract, in that it altered realty values, to the loss of many owners in the 7-cent area, who had paid for their property at a time when no one had any reason to expect there would ever be any fare differential against it. The receivers also take the stand that although congestion within a small area is to be desired from the standpoint of company profits, it makes better living conditions impossible and is ruinous public policy.

Concession on Transfers

A slight extension of the transfer privilege will accompany the new fare. Passengers boarding a car anywhere within the present 5-cent area, and paying a cash fare, will receive a transfer to any other line, good as far as the present 5-cent limit. This means transfers across the downtown district, something for which the Pittsburgh public has clamored for years. The only thing of that nature in effect now is a crosstown line, from the Northside business district through the downtown district, just across the Allegheny River, to which transfers are issued from all connecting lines.

Absolute necessity of more revenue is adduced by the receivers as justification for the increase. It is the cheaper alternative, in the long run, they argue. No bond interest payments or lease rentals have been made since last fall. As a result disintegration of the whole fabric of Pittsburgh transportation is threatened. One of the underlying companies of the Pittsburgh Railways, the Southern Traction Company, already has instituted proceedings looking to foreclosure of its mortgages on certain lines, the way having been opened for this by a recent decision of the Federal Court, under which the receivers operate the lines, that the right to such action cannot be denied. Since that decision the receivers have foreseen a time when each of the dozen or more underlying companies might attempt again to operate their lines independently. This, they set forth, would prove more costly to the public than the 7½-cent fare.

Rebate slips will be attached to tickets sold under the new rate and given to payers of cash fares. These will call for the return of difference between fare paid and the old 5-cent fare, the last rate which has the approval of the Public Service Commission, if the new rate is disallowed finally. Since 5 cents was the rate in Pittsburgh, a 5½-cent fare and the present 5 and 7 cents have been charged. Protests against these rates are still pending with the commission.

One reason for the early announcement of intention to increase—no declaration was necessary until the first of next month for an increase Aug. 1—was a desire to play absolutely fair with the platform employees, whose demands for a raise were scheduled to come up for argument before the War Labor Board in Washington on June 25, the receivers said. A fare increase was necessary whether or not the men got their raise, and the receivers did not wish to embarrass them in their effort.

St. Louis Fare Hearings Resumed

The Public Service Commission of Missouri will resume its hearing of the United Railways fare case the latter part of the present month and will then take up the question of wages.

At a hearing held at Hotel Statler, May 20, the commission took up the question of increased revenue for the company, and at the request of the city's representatives the cross-examination of Richard McCulloch president of the company, was continued for two weeks. When the case was called on June 5, the hearing was continued until June 24, in St. Louis.

The 6-cent fare which expired on June 1 was continued for sixty days on the city lines without opposition from the city counselor, who stated that if increased revenue is necessary the county lines, which still have a 5-cent fare, should bear their proportion of the burden. The commission announced that it would not fix a permanent fare until the revaluation of the company's property is completed, and this probably will not be before November. In the meantime the commission may make temporary changes in the rate of fare to meet the situation.

Arranging for Windsor Fare Vote

The action of the Council of Sandwich, Ont., in refusing to submit the by-law granting the Sandwich, Windsor & Amherstburg Railway increased fares has caused a break in the negotiatons started at the end of the recent strike of the railway employees. As the proposed by-law for Windsor as originally published was conditional upon the favorable vote on similar by-law by the voters of Sandwich and Walkerville, the action of Sandwich officials makes revision of Windsor's by-law imperative.

After members of the Council of Sandwich had decided that the proposed by-law would meet with certain defeat at the special election, and after a proposed amendment was defeated which provided for submitting the bill to the voters on condition that the company presented a statement of earnings to the municipalities, it was discovered by Mayor Winter of Windsor that the railway was already entitled to collect 5-cent fares in Sandwich under present franchise agreements. It was also found that the franchise provided for a one-fare zone for Sandwich passengers extending only as far as the Windsor Ferry docks.

It is believed that the Councils of Windsor and Walkerville will submit amended by-laws to the people at a later date than first planned, to fulfill agreements which caused the termination of the strike. The amendment to the Windsor by-law will withdraw the clause which states that the effect of the by-law is contingent upon passage of a like bill in Sandwich.

The original by-law as drafted for Walkerville provided that the right to vote was restricted to property owners and tenants with leases extending over the period of time covered in the financial obligation considered. This will be amended to give all voters a voice in the fare settlement.

The management of the railway has agreed to use any increase in fares granted by the people in meeting the demands of the men for higher wages. The company officials will be asked to attend the next meeting of the Council of Windsor and it is understood that the question of charging 1 cent each for transfers will be discussed with the view of getting the company to omit this charge from the increased fares asked.

Watching Spokane Results

Fares in Spokane, Wash., will not go above 6 cents, but there is not much hope for a reduction until the lines of the Spokane Traction Company and the Washington Water Power Company are merged and the expense of operation reduced. This is the opinion of State Public Service Commissioner A. A. Lewis. Mr. Lewis is reported to have said:

The commission fixed the ninety-day period for the 6-cent fare, first to give the companies and the city a chance to get together on the merger of the lines, and also to see what effect the increased fare would have on the returns of the companies.

This ninety-day period will end on July 6, and I imagine the commission will grant a continuance if the interested parties need more time to carry out consolidation. The unification of the two systems, with the consequent elimination of competing lines and a reduction of the overhead expense, is the only solution of the situation, as the Public Service Commission sees it.

It is safe to say, however, that no increase of fare above 6 cents will be granted by the commission, hence it is up to the railway companies to expedite the merger as much as possible. It is likely that the Public Service Commission will meet again to take the matter up some time before July 6.

J. S. Simpson, auditor of the Washington Water Power Company, has announced that the May report under the 6-cent fare shows an improvement over April.

Ohio Commission Wants Facts

The Public Utilities Commission of Ohio has issued an order that all public utilities which have been granted increases in rates for service since May 1, 1918, must submit with any new schedules for further increases statements showing what improvements have been made to properties or service since the previous advances and what new conditions have developed to warrant the new rates proposed.

If these statements do not indicate that increased rates are warranted the commission will take steps to prevent their going into operation. It is said that a number of companies were preparing to file schedules of increased rates, although they were granted increases last year. The commission does not believe that operating expenses have increased since the armistice was signed. If anything, the members think they have diminished slightly. Therefore, they want the facts in all cases where additional increases are asked.

Relief Committee Quits in Tacoma

Unable to see any solution to the electric railway problem in Tacoma, Wash., under present conditions, leaders in the committee of twenty-five have taken steps to close up the work of the committee and quit, passing the issue to the City Council and the company. Scott Z. Henderson tendered his resignation as chairman and also submitted a resignation from the committee he had sent to the Mayor, declaring that he saw no prospect of a possible settlement and that he had not the time to give to the problem. His resignation was accepted and H. G. Rowland elected in his place as chairman. Maurice Langhorne, one of the committee, said:

This situation, in my judgment, calls for long and hard application on the part of somebody competent to work out a solution. Personally I believe the city has treated the company outrageously and that no company treated as this one has been by the city could ever make a success. It is for the City Council, the constituted authorities responsible for action, to take up the problem and settle it.

L. H. Bean, manager of the Tacoma Railway & Power Company, objected to the committee quitting without at least offering some recommendation to the Council. He said:

We have been operating the lines under an agreement with the committee for ten months, and part of that agreement was that the committee, as the result of our furnishing it with all the information we could, make some recommendation for a final solution of the problem.

Recent Women's Laws Not Oppressive

Miss Mary Van Kleeck, director of the woman-industry service of the Department of Labor, expects to file with the New York Industrial Commission a statement of the recently enacted law in New York state fixing the hours of labor of women which has been working to the detriment of employees of the Brooklyn Rapid Transit Company and its application based upon the results of investigations conducted by experts of the Federal Woman's Bureau in co-operation with the State Commission. The argument sets forth conditions in Chicago where women ticket agents have been successfully employed, on day shifts only, ever since the present transit system was established. Miss Van Kleeck points out that the plan in use in Chicago exists in a State where there is no law prohibiting night work for women. Miss Van Kleeck's statement in brief is as follows:

Women have been successfully employed as ticket agents in Chicago since the establishment of the present transit system. They work shifts of eight hours with the prohibition of night work voluntarily adopted by the company in agreement with the trade union. The women's work is limited to two shifts falling within the hours of a day. The seniority rights of all the workers which give the privilege of choice of shifts are maintained by the establishment of one list for men and another for women. The men are entitled to select their shifts as their length of service permits, and the only difference between their seniority rights and that of women is that the women are not permitted to select the night shift.

On the other hand, the prohibition of night work for women does not compel the men to work exclusively at night, since within the men's list the choice of day shift becomes possible. That this plan should have been adopted as a practical working scheme, when the Illinois law would have permitted night work, is very significant in showing the practicability of adjustment to comply with a night work law while retaining women in the position of ticket agents.

Governor Smith was waited upon on June 16 by twenty women railway employees from New York City in an effort to have him recommend that the special session of the Legislature repeal the Lockwood law regulating the hours of labor and working conditions of women employees. The Governor told the delegation that he would make no such recommendation. The women then appealed to the Republican leaders, who are said to have told them that members of the Legislature were helpless unless the Governor sent a specific message to that body. This the Governor has refused to do.

Statement About Cleveland Depot Promised

In response to a request of the City Council of Cleveland, Ohio, for a report on the status of the new depot plan, O. P. Van Sweringen, in an interview, stated that the railroads had one year in which to file declaration of intention to use the new depot and the year does not expire until Jan. 6, 1920. He expressed the belief that the railroads will not consume the year in making their intentions known. He said that considerable progress has been made in the development of the plans.

Some other railroad men said that in a proposition of this magnitude, involving the expenditure of $50,000,000 and the complete rearrangement of the city's steam and interurban systems, there are almost innumerable details to be worked out before all parties are satisfied. Some of the negotiations are of a very delicate nature and premature publication of reports might prejudice the best interests of both the city and all other parties concerned.

Those in charge of the promotion say they have taken the city authorities into their confidence as far as they consistently could.

Transportation News Notes

Increase of Fare in Cincinnati.—Announcement was made by Street Railway Commissioner Caulkins on June 14 that the rate of fare on the lines of the Cincinnati (Ohio) Traction Company will be increased from 6 cents to 6½ cents on July 1.

Hearing Set on Niagara Falls Fares.—Chairman Hill of the Public Service Commission for the Second District of New York will hold a hearing on June 30 on the petition of the International Railway, Buffalo, for permission to charge a 7-cent fare in Niagara Falls.

Fare Changes Not Determined—Hearings in local communities served by the Eastern Massachusetts Street Railway will begin in the near future upon the rates of fare to be established by the public trustees of the road. Estimates of the revenue requirements of the company and probable earnings under different rates of fare were outlined at a recent hearing in Boston by Chairman Homer Loring, but no decision has been reached as to the fare schedule to be installed.

Improvement in Reading Traffic.—Ideal summer weather has resulted in a large amount of traffic over the lines of the Reading Transit & Light Company, Reading, Pa., to the several parks located in and about Reading. Carsonia Park, which is owned by the company and is located within a fifteen-minute ride of the business section, retains its leadership in popularity as the city's principal recreation place. Rining Rocks Park has also become more popular than ever under new management.

Tacoma Company Wants Increase. The Pacific Traction Company, Tacoma, Wash., has applied to the Public Service Commission at Olympia for permission to increase its fares outside the city limits, from 2 to 6 cents. Where 5-cent fares are now charged, the company proposes to ask 7 cents; 14 cents where 10 cents is charged; and 21 cents where 15 cents is the present tariff. Arthur R. Warren, Tacoma attorney in opposing the increase, states that a 42-cent round-trip from Steilacoom to Tacoma is prohibitive.

Would Do Away with Charter Cars.—The receivers of the Pittsburgh (Pa.) Railways are trying to arrange with city authorities for an agreement whereby the company may cease to operate "charter cars." Its franchises require continuous service over the lines covered, the penalty being nullification. For years cars have been run over abandoned lines once a day, to keep the franchises alive. As a measure of economy, the receivers wish to be relieved of this necessity, without forfeiture of franchise.

Chicago Fare Matter in Court.—The fight of the Chicago (Ill.) Surface Lines for a 7-cent fare has been taken into the courts. On June 19 an appeal from the ruling of the Public Utilities Commission was filed in the Sangamon County Court on a petition that the question be reopened. It is expected that the question of valuation will enter largely into the final outcome and the Chicago Surface Lines management is satisfied that an investigation will show that this exceeds the amount of the capital account.

Accident on Brooklyn Elevated.—Many persons were injured, two of them seriously, in a rear-end collision on the Broadway elevated line of the Brooklyn (N. Y.) Rapid Transit Company in Brooklyn, at 11:30 o'clock p.m., on June 23. A Canarsie-bound train made up of steel cars crashed into a Lexington Avenue train made up of wooden cars.

Competing Bus Not Allowed.—Holding that the Visalia Electric Railroad, Exeter, Cal., is capable of taking care of the traffic between Visalia and Lemon Cove, the Railroad Commission of California has denied the application of the Sequoia National Park Stage Company for a permit to operate an auto stage line between the two points. The stage company, however, may operate between Lemon Cove and the Sequoia National Park line during the months that the park is open and between Lemon Cove and Kaweah the rest of the year.

Conditions Unbearable in Tacoma.—It is reported that the Tacoma Railway & Power Company of Tacoma, Wash., plans to reduce wages, decrease the number of employees and curtail railway service, with possible abandonment of cars to outlying districts. The statement was made after the City Council had laid aside without action a report from the committee of twenty-five citizens appointed to investigate railway conditions. Louis Bean, manager, states the company is under unbearable pressure, and cannot hold out much longer.

Permission to Renew Petition Reserved.—The Public Service Commission for the Second District of New York has closed the petition of C. Loomis Allen and H. S. Holden, Syracuse, receivers, for permission to increase fares on the former Empire United Railways, Inc., in Auburn with permission to the Empire State Railroad Corporation, successor, to renew the application when it shall deem such renewal desirable. The application was not pressed before the commission because of franchise restrictions in Auburn and the decision in the Quinby case in Rochester.

Rule of the Road Established.—Corporation Judge Felix D. Robertson of Dallas, Tex., has ruled that automobiles and other vehicles must not pass cars while the latter are stopped for the purpose of taking on or letting off passengers, and that arrests for violations of this law can be made under the State highway law. It was generally believed that arrests could not be made under the State laws, but that only the city ordinance covering this practice applied. The holding of Judge Robertson will cause a curtailment of this practice, because the penalties under the State law are much more severe than under the city ordinance.

Massachusetts Has Model Road.—In the course of its lengthy finding which the Public Service Commission of Massachusetts has just made public and in which it upholds the fare schedule submitted by the Union Street Railway, New Bedford, in eliminating the transfer privileges on the Dartmouth & Westport division of the company the commission at the same time pays the management of the company the compliment of having the best managed electric railway property in the State. "Unique" is the word which the commission uses in referring to the efficient operation of the road.

New Fares in Hull.—The Hull (Que.) Electric Railway has announced a new fare tariff calling for a 5-cent increase to all points outside of Hull proper. The new tariff provides for a 20-cent fare from Ottawa to Deschenes, Aylmer and Queen's Park, or three tickets for 50 cents, forty-six tickets for $6; the trip to Red Gate or Rivermead and intermediate points will cost 15 cents, or two tickets for a quarter; the fare to Royal Ottawa Golf Club is placed at 10 cents straight, no commutation tickets. To Tetreauville and Bisson's Creek, which is inside the limits of the city of Hull, will be 10 cents straight. The fares from Ottawa to Hull remain unchanged, as do the special workmen's and school children's tickets.

Suburban Increase Denied. — Announcement of the decision of the Public Service Commission of West Virginia on the application of the West Virginia Traction & Electric Company for a raise in rates, has been made. The commission declined to raise the rates of the company from 10 cents to 15 cents. The towns of Edgewood, Woodsdale, Pleasant Valley and Elm Grove had protested, along with the city of Wheeling. The company wanted an additional fare zone in the territory served by the railway, and claimed inadequacy of return. The protestants contended the raise in rates is discriminatory and unreasonable. The Wheeling to Elm Grove line was the one on which the rate increases were desired.

Interurbans Play Up Their Facilities. — The Chicago, South Bend & Northern Indiana Railway and the Southern Michigan Railway, South Bend, Ind., are calling the attention of merchants in the territory which they serve to fast freight service from Chicago to points in Indiana, Ohio and Michigan by interurban railway and Great Lakes boats. By arrangement with connecting lines first-day delivery is made to and from Indianapolis and first-day delivery to and from Chicago, through cars operating daily. Same day delivery to and from Michigan City, La Paporte, Rolling Prairie, New Carlisle, South Bend, Mishawaka, Elkhart, Goshen, Niles, Berrien Springs and St. Joseph is announced. The companies are operating express-freight service which means express service at freight rates.

Six-Cent Fare Repealed.—The newly-installed City Commission of Galveston, Tex., has repealed the 6-cent fare ordinance enacted by the former administration, under the terms of which the Galveston Electric Company was authorized to collect 6 cents for adult fares and 3 cents for children and students' fares. Before the 6-cent fare ordinance was repealed, the commission held a hearing at which representatives of the railway appeared and presented arguments tending to show that the higher fares were needed to pay the operating cost of the company, and that if the old fares were reinstated, the company would be forced into bankruptcy. Luke C. Bradley, Houston, district manager for Stone & Webster, in charge of all properties in Texas, presented an exhaustive financial report showing earnings and operating costs. A statement made by him previously to the Mayor was reviewed in the ELECTRIC RAILWAY JOURNAL of June 14, page 1192.

Legal Notes

FEDERAL COURTS—*Under Laws of Ohio Franchise Is a Contract*

Under the laws of Ohio, the ordinances of Columbus granting street railway franchises for a fixed term of years, which were accepted by the grantees, constitute a binding contract, the obligation of which the company cannot avoid on the ground that the increased operating expenses, due to the war and the higher wages fixed by the War Labor Board, make it unprofitable, especially in the absence of a showing that further operation under the contract was impossible, or even that operation thereunder for the entire term of the franchise would be unremunerative. [Columbus Railway, Power & Light Co. *vs.* City of Columbus, Ohio, et al., 39 Supreme Court Rep., 349.]

FEDERAL COURTS—*Under California Law City Has Power to Build Competing Municipal Road*

Civ. Code Cal., Sec. 499, prohibiting two street railroads from using the same street for over five blocks, and a San Francisco city franchise containing similar provisions, held inapplicable to a municipal street railway system.

The establishment of a municipal street railway system, which was not prohibited by plaintiff street railway's franchise, did not constitute a taking of its property requiring a resort to eminent domain.

San Francisco City Charter, Art. 12, Sec. 2, requiring the municipality to consider offers to sell existing public utilities before constructing new ones, held sufficiently complied with where a general solicitation of offers for the sale of any existing street railway was sent to plaintiff street railway and others. [United Railroads of San Francisco *vs.* City and County of San Francisco et al., 39 Supreme Court Rep., 361.]

INDIANA—*Ejection of Passenger With Improperly Marked Ticket*

Where passenger who purchased a through ticket was required to change cars and boarded the proper train, she was entitled to passage thereon, though the conductor had given her a defective ticket. [Union Traction Company of Indiana *vs.* Smith, 123 Northeastern Rep., 4.]

INDIANA—*Failure of Wagon to Carry Tail Light Not Necessarily Negligence*

A wagon driver's failure to have a tail light on his wagon as required by city ordinance will not defeat recovery for personal injuries upon being struck by street car while driving along tracks, unless such negligence proximately contributed to the injury. [Indianapolis & Cincinnati Traction Company *vs.* Senour, 122 Northeastern Rep., 772.]

GEORGIA—*Power of State over Rates*

Under Const. Art. 4, Sec. 2, Par. 2 neither the Legislature nor any municipality can, by ordinance or contract, abridge the exercise of the State's police power. In the case in question, the city of Atlanta was without authority to pass an ordinance fixing the rates of fare upon the lines of the street railway constructed within the limits of the municipality, and any attempt by the municipality to pass such ordinances was nugatory. But where the State has not exercised, and is not seeking to exercise, its police power as to street railway fares, a municipality and a street railroad may enter into valid contracts on such subject. (Georgia Ry. & Power Co. *vs.* Railroad Commission of Georgia et al., 98 Southeast. Rep. 696.)

MISSOURI—*Obligation to Stop Car During Ejection*

Where a street railway's motorman knew a boy whom he was telling to leave the car was on the front steps, he should have stopped the car to give the boy opportunity to alight, and in failing to take such means to prevent injuries to him after knowing his peril, he was negligent, and the company was liable for injuries when the boy slipped under wheels. (Quirk *vs.* Metropolitan Street Railway, 210 Southwest. Rep. 103 and 106.)

NEW YORK—*Indemnity for Accident from Construction in Street Even with Negligence*

A surface street railway company had a right, as a condition of consent that the work of constructing an elevated railroad might be done over its tracks, to exact an agreement from the elevated railroad to protect it against any accident incident to the construction work, though contributed to or caused solely by the negligence of its own employees because the construction work presented additional dangers of accidents which the street railway was not required to assume. (Post & McCord, Inc., *vs.* New York Municipal Ry. Corp., 175 New York Sup. 392.)

VIRGINIA—*Powers of Municipal Corporations to Exempt from Taxes*

Municipalities of a State have no power to exempt property from taxation, except as they are expressly authorized by the State. (City of Richmond *vs.* Virginia Ry. & Power Co., 98 Southeast. Rep. 692.)

WISCONSIN—*Motorman Not Always Negligent When He Fails to Use Best Method to Avoid Accident*

A street car motorman, observing a pedestrian in danger, must use all reasonable care to avoid striking him, but if a sudden emergency arises without his negligence, and there are different ways to avoid collision, he is not negligent because he fails to select the best course. [Williams *vs.* Duluth Street Railway, 171 Northwestern Rep., 939.]

New Publications

The Turnover of Factory Labor

By Sumner H. Slichter. D. Appleton & Company, New York, N. Y. 460 pages. Cloth, $3 net.

The basic idea back of this book is that a definite plan and specific responsibility for creating and executing the plan are as necessary in dealing with labor as in controlling manufacturing operations. Not only does the book study the labor-turnover problem, but it also analyzes methods of handling men in order to guide employers to the adoption of proper means to reduce the turnover with its hugh expense. The work is timely, informative and constructive.

Efficient Railway Operation

By Henry S. Haines, formerly vice-president and general manager "Plant System" and ex-president American Railway Association. 709 pages, the Macmillan Company, New York, N. Y., $4.

In this book on railway operation in general, the electrification of steam railroads is covered both historically and in connection with the railroad of to-day. It will be of value to electrification enthusiasts in showing the conservative point of view of an experienced steam railway operator. On page 32 Mr. Haines says:

> It is finally to be recognized that after more than ten years of experimental practice on an extensive scale by a number of important corporations, electric traction has superseded steam on less than 700 miles out of the 250,000 miles in the railway system of the United States. Taking all these matters into consideration, there need be no apprehension of steam being replaced by electric traction to such an extent as to affect the existing capitalization of our steam railroad system.

It is interesting to note that he avoids the term "electric locomotive," using in its place "electric tractor."

Opportunity Monographs

Prepared by the Federal Board for Vocational Education, Washington, D. C.

These pamphlets are prepared by the Bureau mentioned to aid disabled soldiers, sailors and marines in choosing a vocation. Two have recently appeared of interest to the electric railway field. The first is No. 30 and covers opportunities for work on steam railroads and street railways. The suggestion is made that certain physical defects do not disbar a person from the position of motorman or conductor, although both occupations are mentioned as requiring a high degree of responsibility. Other branches of electric railway service in which disabled men, if skilled, could work to good advantage are as machinists, electrical workers, armature winders, carpenters, car repairers, linemen, track foremen and inspectors. The duties in these occupations are given in the pamphlet. The second pamphlet describes the occupations in the electrical manufacturing industry.

Personal Mention

Percy L. Radcliffe has been named night superintendent of the city lines of the Detroit (Mich.) United Railways.

D. A. Smith has been appointed to succeed Leo Reynolds as superintendent of the Michigan, Gratiot, Mack, Brush, Davison, North Detroit and Leesville lines of the Detroit (Mich.) United Railways.

J. P. S. Lyles has been appointed counsel for the Columbia Railway, Gas & Electric Company, Columbia, S. C., to succeed William Elliott, whose resignation is announced elsewhere in this department.

Leo Reynolds has been appointed division superintendent of the Woodward, Hamilton, Victor and Northwestern belt lines of the Detroit (Mich.) United to succeed James Bullen, who has resigned after many years of service with the company.

Leon Snyder, who has been acting as night superintendent of the city lines of the Detroit (Mich.) United Railways, has resumed his duties as assistant division superintendent of the Woodward, Hamilton, Victor and Northwestern belt lines of the company.

P. C. Reinhardt has been promoted to the position of treasurer of the International Railway, Buffalo, N. Y., to succeed the late George W. Wilson. Mr. Reinhardt has been with the company for twenty-eight years, starting as a receiving clerk. He was later assistant paymaster, assistant cashier, cashier and assistant treasurer.

William Elliott has resigned as counsel for the Columbia Railway, Gas & Electric Company, Columbia, S. C. Mr. Elliott was general manager of the company from 1906 to 1910, when he became general counsel, in which capacity he has since continued. He remains as a member of the board of directors of the company and will continue as counsel for the company in the so-called canal litigation.

John Paul Lucas has been appointed director of publicity for Southern Public Utilities Company to succeed Leake Carraway, who resigned a month ago to become connected with the Virginia Railway & Power Company, with headquarters at Norfolk, Va. Mr. Lucas entered the service of the Charlotte *Observer* in 1901 as a reporter. In 1905 he went to Trinity College to take a special course, returning to the *Observer* at Charlotte as assistant city editor and has since been engaged continuously in newspaper work. When the federal government established the food administration with Henry A. Page as State administrator in North Carolina he called Mr. Lucas to become executive secretary, and in this position he directed the activities of a number of the divisions of the commission, including that of publicity, and while he did not carry that title he was to all intents and purposes the assistant State food administrator.

James E. Gibson, general manager of the Kansas City (Mo.) Railway since 1916, has resigned from the company. It is understood that Mr. Gibson has under consideration plans to enter the banking business, but that he may decide to continue in electric railway work. Mr. Gibson was born in Kansas City on Aug. 28, 1881. He is the son of

J. E. GIBSON

James F. Gibson, formerly judge of the Circuit Court. He was educated in the public schools of Kansas City and at the University of Missouri, from which institution he was graduated with the class of 1902. In the same year he was appointed secretary to Congressman W. H. Cowherd. After serving under Mr. Cowherd from 1902 to 1904 he resigned to enter the service of the Metropolitan Street Railway, Kansas City, the predecessor of the Kansas City Railways, as a clerk in the accounting department under J. A. Harder, then auditor of the company. In December, 1905, he was advanced from the auditing office to the position of assistant to President Corrigan of the company. He entered the transportation department of the company in 1909 as superintendent of the forty-eighth and Harrison division, where he remained until June, 1910, when he was appointed to the office of general superintendent of the company. He served in the capacity of general superintendent through the receivership of the Metropolitan Street Railway and the reorganization of the company as the Kansas City Railways.

J. McMillan, general manager of the Pacific Electric Railway, Los Angeles, Cal., retires from active service on July 1. Mr. McMillan has rounded out nearly forty-five years of railway service with the Southern Pacific lines and the Pacific Electric Railway, having during the last sixteen years faithfully served the Pacific Electric Railway in an official capacity. Though no longer in active service, Mr. McMillan will in a sense remain with the company for the vacant position will not be filled. Mr. McMillan began his railroad career with the Houston & Texas Central Railway in the capacity of telegraph messenger. He soon became an operator and later was made station agent. In 1878 he entered the employ of the Galveston, Harrisburg & San Antonio Railway. Subsequently Mr. McMillan went to San Antonio as freight agent and later he was made commercial agent and district freight and passenger agent and finally division passenger agent. Early in 1903 Epes Randolph, vice-president and general manager of the electric railways which H. E. Huntington planned for Los Angeles and southern California, selected Mr. McMillan as chief clerk. When Mr. Randolph retired, Mr. McMillan was appointed traffic manager and since the retirement of General Manager Schindler, who succeeded Mr. Randolph, Mr. McMillan has handled both the traffic and transportation interests of the Pacific Electric Railway and Los Angeles Interurban Railway. "Joe" McMillan, as he is generally known in Los Angeles and the territory served by the lines with which he was connected, is admired for his sterling qualities and good fellowship, for his mastery of his profession and for his loyalty to his friends and to the interests intrusted to him.

Obituary

W. R. Kerschner of W. R. Kerschner & Company, Inc., New York City, died of plural pneumonia on June 21 at the age of forty-seven years. Before coming to New York City in 1910 Mr. Kerschner was in the electric railway supply business in Allentown, Pa. In 1915 he organized W. R. Kerschner & Company, Inc., and arranged to handle the products of the Keyes Products Company, Cincinnati Car Company, Albany Car Wheel Company, Charles I. Earll and the Columbia Machine Works & Malleable Iron Company. Mr. Kerschner was vice-president of the Columbia Machine Works & Malleable Iron Company, Brooklyn, N. Y., with which he had been closely associated for twenty-two years. Mr. Kerschner's presence at conventions and at other electric railway gatherings will be missed. He was well known in the industry and popular because of his loyalty to his friends, readiness to do his share in anything which came up and unfailing good humor.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Steel Market Steady Under Increasing Buying

Stability Reflected in Little Price-Cutting Being Done, with Upward Tendency Apparent

The iron and steel market is showing a much better tone than it did a month ago. Orders have been coming through in much better volume for structural steel, and the steam railroads have considerable proposition work and also have begun to make better purchases. The electric roads have confined most of their activity to proposition work, of which much is in the hands of track material manufacturers. This is particularly true of frogs, crossings, etc., inquiries on which are naturally expected to turn into orders eventually. How long that eventuality can be put off it is difficult to say.

The whole condition of the steel market shows much more stability than at other times this year. The railway orders, while not for large quantities of rails, special work, bolts, nuts, spikes, plates, etc., have increased in an encouraging manner. Prices have as a whole remained steady since the change of the latter part of April. Some cases have been found where price cutting has been practiced, but this in general seems to be because certain smaller dealers want to realize on some material bought under large contracts or because a mill has been running slow and the producer is willing to cut prices in order to get business and keep his force together. But that time is about passed now, and most price cutting seems to be on resales.

Small Quantities of Rail Being Bought

Stocks of track specialties laid in by the steam railroads in the last two years have not been entirely exhausted and where they can be used on other lines they are transferred as needed. But it will not be long before these are used up and new ones must be purchased. Several railroads came into the market a few weeks ago with inquiries for spikes, but later reported that they had been able to secure some from other roads and would not buy for the present. The general inquiry for spikes is very light. Electric roads have been purchasing small quantities of high T and girder rails and special work, but rather for repairs and replacements than for new work. It is expected that little new work will be started this year.

The special track work which the electric roads have been buying has been less and less in the line of solid manganese pieces and tends more toward manganese inserts at the places of wear. Some roads have found they could get along well with only the inserts and may not go back to the more expensive solid specialties. The price for manganese is fluctuating considerably, so no set price holds on special work. Besides, almost every piece of work is different, due to curves, angles, etc., so that again no set price is laid down. Taken all in all, steel prices are at present steady and little immediate change is anticipated, although indications are that the tendency will be upward rather than downward.

Transformer Stocks Now Practically Normal

Producers Stand Ready to Build Machines for Continuous Pressures Up to 225,000 Volts

During the period of low sales volume which followed the midwinter relaxation of war material production, manufacturers of transformers utilized the opportunity to build up stocks, and these are now practically normal. Prompt deliveries can be made on distribution transformers of standard design. On power transformers deliveries are now about as good as can be expected in view of the painstaking care necessary in building high-class units.

Generally speaking, the higher-voltage equipments require increased time in the factory for the proper handling of the insulation problem, and from two to three months is still requisite for the shipment of transformers of this class or of the larger sizes designed to meet special conditions and not ordinarily carried in factory stocks. Rush orders are now and then put through in shorter periods, but the design and construction of transformers which will withstand severe over-potentials due to surges and other causes is a problem requiring such technical skill that the time allowances above outlined represent conservative practice and should not be curtailed except for extreme needs.

While development work is not specially active at this time, it is noteworthy that transformer builders stand ready to produce equipment capable of continuous operation at pressures up to 225,000 volts. Line difficulties appear to be the limiting factor in present transmission engineering, decided advances having been accomplished within the last three or four years in dissipating the effects of excessive voltage peaks and interwinding strains in transformer equipment itself.

Power Tools Selling Fairly Well

A Number of New Electric and Pneumatic Devices Are Coming in the Market

The amount of shop work being done in repairing electric railway equipment and rebuilding cars has caused somewhat better sales in this field of electric and pneumatic tools. Lack of new line building has of course kept down heavy sales.

Track drills have sold fairly well, considering the amount of work that is being done in rebuilding of roadbed. Sales are expected to increase considerably when the roads begin to extend or relay their rails.

Several new types of both pneumatic and electric tools have recently made their appearance in the market, and manufacturers have sufficient capacity and supplies to take care of the business they feel will come their way when the building on a large scale really gets under way.

Prices have been steady but the tendency, manufacturers say, is upward, if anything.

Journal Box Packing

More Attention Being Paid to This Material as Necessity for Substitutes for Wool Waste Arises

Journal box packing has in the last few years been getting more and more attention, and particularly now that there is a scarcity of wool the need for substitutes arises.

In the past wool waste was the factor which gave the packing the necessary resiliency. Although offering less capillarity to the oil than did cotton, wool was used sometimes entirely for the packing and sometimes mixed with varying amounts of cotton—the wool providing the resiliency and the cotton the oil carrier. The scarcity of wool waste during the war and at present, and its high price, required the use of a substitute which would provide resiliency and keep down packing costs.

Several waste mixtures are on the market. Among the substitutions used for wool are animal and vegetable fibers, sponges, steel and brass springs and steel turnings. The use of these has cut the wool content from 25 to 100 per cent, for in one packing no wool was used. These foreign materials must be correctly and uniformly mixed with the wool and cotton, of course, in order to give the right packing required for the duty to be done. Besides saving

wool these mixtures, it is claimed, save oil, as greater resiliency and better oil capacity are said to result per pound of packing. Also some roads have found much less labor necessary for repacking and reoiling with the compounded wastes.

Some wool wastes are costing from 30 to 40 cents a pound; cotton waste is about 13 cents, with a tendency upward. This is because of the large quantities of cotton waste being bought by England for respinning, as it costs them less than raw cotton does. The source of wool waste is diminishing. The best grade, it is stated, is found from old carpets, and the demand for floor coverings to-day is for rugs rather than carpets. Rug waste is of little value as wool waste. The cost of the compounded wastes is nearer 15 and 20 cents a pound.

There is sufficient supply of these substitutes so that orders can be shipped in quick time. There is already more interest being shown in the packing by electric roads although it is the larger roads which have been more active.

Insulating Materials Selling Better

Prices Steady Just at Present, but There Are Indications of Higher Prices to Come

Manufacturers of insulating compounds and materials state that sales are coming through in better shape than they were a month or so ago. This better buying movement is traced to the amount of repair and rewinding work that is being done. Regardless of the amount of work done in keeping in touch with prospective customers, one producer finds solicited business picking up in a satisfactory manner.

Inquiries also are more active, with requests for samples and prices. Prices are at present steady, but with cotton advancing and a heavy export demand anticipated after peace is settled, it would not be surprising if prices on tapes and cloths advanced further. At the same time there is no reason to believe that prices on insulating varnishes and other compounds are due for a drop.

Rolling Stock

Murphysboro Electric Railway, Light, Heat & Power Company, Murphysboro, Ill., is trying to get two trailers for early delivery. A new interurban car is expected on early July delivery.

The Connecticut Company has received four new city and interurban cars for operation on the New Haven (Conn.) lines. The others of the eleven ordered are due to arrive soon from the Brill factory and will be placed in service on other runs.

Eastern Massachusetts Street Railway, formerly the Bay State Street Railway, Boston, Mass., announced recently that it had voted to spend $125,000 immediately to rebuild thoroughly 100 cars, which will soon be in operation. The work has already been started at the Lowell car shops.

Track and Roadway

Galesburg Railway, Lighting & Power Company, Galesburg, Ill.—The lines of the Galesburg Railway, Lighting & Power Company throughout the city of Galesburg will be improved and an extension will be built of the West Main Street line to Linwood Cemetery, where a loop will be constructed.

United Railways & Electric Company, Baltimore, Md.—A contract has been awarded by the United Railways & Electric Company to the Price Construction Company, Baltimore, for building a reinforced concrete two-story signal tower at Sparrows Point.

Butte (Mont.) Electric Railway.—The Butte Electric Railway will begin at once paving the tracks on West Granite Street, from Montana to Henry. This is in preparation for work of bitulithing the street. The present 4-in. rails will be replaced by 5¾-in. rails, and new ties will be laid. The cost will be about $25,000.

Interborough Rapid Transit Company, New York, N. Y.—Announcement has been made that the extension of the dual system between Atlantic Avenue and Utica Avenue on the Eastern Parkway subway will be ready for operation about Feb. 1.

Ohio Traction Company, Cincinnati, Ohio.—The County Commissioners of Hamilton County voted a bond issue of $500,000 to defray the expenses of lowering the tracks of the Ohio Traction Company within the village of Wyoming to conform to the new grade of the Carthage-Hamilton pike. The County Commissioners will do the work and will charge the expense to the Ohio Traction Company.

Cleveland (Ohio) Railway. — Improvements planned by the Cleveland Railway include the construction of three new lines and two extensions of existing lines at a cost of about $640,000. The three new lines to be constructed are the East Thirtieth Street line from St. Clair Avenue to Broadway, about 2 miles; the West Seventy-third Street line from Denison Avenue to the West Park cemetery, about 8000 ft., and the Broadview line, from West Twenty-fifth Street to Schaaf Road, about 5300 ft. Extensions will be built of the Kinsman Road line from East 140th Street to East 156th Street, 3300 ft. and the Union Avenue line from East 112th to East 131st Streets, 7500 ft.

Portland Railway, Light & Power Company, Portland, Ore.—An application has been filed by the Portland Railway, Light & Power Company for the storage of 40,400 acre-feet of water from the Oak Grove Creek for development of power along the Clackamas River. The construction of a storage reservoir is estimated to cost $300,000.

Hull (Que.) Electric Company.—The Hull Electric Company is reconstructing 1.5 miles of track, using 85-lb. rails in place of 56-lb. rails.

Quebec Railway, Light & Power Company, Quebec, Que.—A 1-mile extension will be built by the Quebec Railway, Light & Power Company on the Beauport Road in Limoilou Ward, between the Canadian Railway tracks at Mastai Village to the city limits.

Houston, Richmond & Western Traction Company, Houston, Tex.—Plans are being made by the Houston, Richmond & Western Traction Company to begin work at once on the construction of its proposed interurban line from Houston to San Antonio. A proposition has been submitted to the citizens of Eagle Lake to bring the line through that city and a committee of five was appointed to secure the right-of-way for the line through Colorado County. Ed. Kennedy, general manager. [Oct. 6, '18.]

Power Houses, Shops and Buildings

Boston (Mass.) Elevated Railway.—Plans are being prepared by the Boston Elevated Railway for the installation of two new multi-stage, turbine centrifugal pumping units, each of 3000 gal. per minute capacity in the power station at Lincoln Street.

Interborough Rapid Transit Company, New York, N. Y.—Transit Construction Commissioner John H. Delaney has instructed the engineering staff under his direction to prepare plans for and estimate the cost of the construction of a new station on the Interborough subway at 122nd Street and Broadway, application for which has been made in the form of numerous petitions recently filed with him by the Harlem Board of Commerce and by individuals on Morningside Heights.

Pittsburgh (Pa.) Railways.—The receivers of the Pittsburgh Railways Company have petitioned the federal court, under which they operate the lines, for permission to spend enough money to put the South Eleventh and South Twelfth Street inclines into condition for reopening. They were closed several months ago, so that electric motors might be installed to replace the old steam motive equipment.

Philadelphia & Western Railway, Upper Darby, Pa.—The Philadelphia & Western Railway is offering for sale a fully equipped power plant, at present in operation, of 4000-kw. rated capacity, generated through two Curtis vertical turbo-generators of 2000-kw. capacity each. The plant is supplied with superheaters, boilers, transformers, rotary converters, with auxiliary apparatus, and is situated within a few miles of Philadelphia.

Hull (Que.) Electric Company.—It is reported that the Hull Electric Company will purchase two 60-kva. oil-cooled, single-phase transformers, 10,000 volts to 2300 volts.

Dallas (Tex.) Railway.—A contract has been awarded to the Fred A. Jones Construction Company for the construction of a six-story addition to the present Interurban Building at a cost of about $125,000.

North Coast Power Company, Vancouver, Wash.—The North Coast Power Company will reconstruct its transmission line from Kelso to Kalama. The line now carries a load of 6600 volts and will be built for a load of 22,000 volts. The improvement will cost about $30,000.

Pacific Northwest Traction Company, Seattle, Wash.—A new station has been completed by the Pacific Northwest Traction Company at Sixth Avenue, between Pine and Olive Streets, for the use of the Everett interurban line.

Puget Sound Traction, Light & Power Company, Seattle, Wash.—The city of Seattle is negotiating with the Puget Sound Traction, Light & Power Company for the purchase by the city of the traction company's surplus electric power.

Trade Notes

Arthur Power Recording Company, New Haven, Conn., announces an order received recently for 400 power-saving recorders, and several smaller orders.

Detroit Insulated Wire Company announces that R. S. Wakefield has recently been appointed representative for Texas with offices at 13,123 Great Southern Life Building, Dallas.

B. A. Wesche Electric Company, Cincinnati, Ohio, manufacturer of electrical apparatus, announces change in address of its Eastern sales agent to 110 West Fortieth Street, New York City.

Railway Audit & Inspection Company, Inc., Philadelphia, writes that the correct title of Charles H. Dennis, mentioned in a recent issue as formerly operating head of the company, was general superintendent of employment.

H. L. Garbutt, for the last six years manager of the line material section of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has been appointed manager of the supply division of the Westinghouse San Francisco office.

Bound Brook (N. J.) Oil-Less Bearing Company, announces a new machine shop and office building of concrete and steel construction, 100 ft. x 180 ft., two-story, being built for its use on Lincoln Boulevard, adjoining the present foundry and the Nigrum Impregnated Wood Works. By this move the company will have its entire factory located at one point.

William B. Schaife & Sons Company, Pittsburgh, Pa., announces the opening on July 1 of a Chicago sales and engineering office at 38 South Dearborn Street, with Charles F. O'Hagan, formerly chief engineer of the company at Pittsburgh, as resident engineer and manager. This company was founded in 1802 and makes, among other equipment, the We-Fu-Go and Scaife water softeners and filtering equipment.

British Westinghouse Electric & Manufacturing Company, Ltd., Manchester, England, through its committee on the Westinghouse War Relief Fund, raised, up to the end of December, 1918, nearly £66,000. Of this amount, approximately two-thirds had been subscribed by the employees and one third by the company. The company reports that the present balance is sufficient to cover for a period of at least ten years the relief of the disabled and the dependents of those who have made the supreme sacrifice. There are 207 relatives and 382 children of deceased workers, in addition to many disabled soldiers and sailors for whom responsibility has been incurred.

National Conduit & Cable Company, according to the *Wall Street Journal,* showed a deficit of $219,694 in the first quarter this year, compared with a deficit of $292,413 in the corresponding quarter of 1918. The stagnant condition which prevailed throughout the brass industry over the first three months of this year, it was stated, resulted in few companies earning sufficient to cover overhead, depreciation, etc. Companies which manufacture brass and copper products are not working at more than 50 per cent of capacity. Some of them are only handling one-third the business transacted in normal times. However, it is expected that June will witness a good buying movement.

R. H. Beaumont Company, 315 Arch Street, Philadelphia, manufacturer of conveying and hoisting systems, is expanding its business to take in complete boiler houses under one contract covering the entire job. R. H. Frost, formerly with John W. Cowper, Buffalo, N. Y., has been engaged to take charge of all matters pertaining to this branch of the business. He will co-operate with the company's engineering department in the design of a standard boiler-house structure. The company has opened an office in Cleveland, Ohio, with H. B. Mosley, formerly with the home office, as manager. The Canadian Fairbanks-Morse Company, of Montreal, is representing the Beaumont company in Canada.

Mitchell-Rand Manufacturing Company, after extensive alterations to the building at 18 Vesey Street, New York City, has brought together its general offices, laboratory and warehouses under the one roof at this address. Founded over thirty years ago, the firm until quite recently dealt exclusively in waxes, asphaltum and compounds manufactured therefrom—sealing waxes, waterproofing and roofing cements, etc.; later electrical insulating compounds were produced, and to these were added insulating paints, varnishes, soldering paste, varnished tubing, manufactured mica, varnished materials and papers. As Eastern representatives of the Hope Webbing Company the Mitchell-Rand Company carries an extensive stock of tapes.

General Electric War Service Record—The enviable war record of General Electric employees at the Schenectady plant was summarized on a large display board located at the head of Works Avenue, Schenectady, to stimulate interest in the Victory loan. In effect, this display board is a large and handsome poster showing the complete war work of the Schenectady employees in the Liberty loan drives, the various fund campaigns and a record of local General Electric men in the army and navy service. Surmounted by the American eagle and the motto "The U. S. A. Our Country," this board shows the number of bonds sold in all the loan drives, including the record for the Victory loan. It gives the amounts raised for other campaigns, including war savings stamps. The total loans amount to $8,791,250 and the total war gifts to $339,313. The works' honor roll contains 3278 names, and there are thirty-five gold stars on the works' service flag. This bulletin board is in colors, with the emblems of various war relief organizations on either side, and is really a wonderful piece of work.

New Advertising Literature

Strauss & Buegeleisen, New York City: "Handbook of Eye Protection for the Industries."

Mitchell-Rand Manufacturing Company, New York City: Form No. 227, a folder on paints and varnishes for electrical insulation.

John C. Dolph Company, Newark, N. J.: A chart showing specific gravities of its insulating varnishes and also a solvent chart.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis.: Bulletin No. 1096-A on "Direct Current Motors and Generators."

Joyce-Cridland Company, Dayton, Ohio: Catalog "G" on "Lifting Jacks." This is a general catalog and its price lists supersede previous lists.

Westinghouse, Church, Kerr & Company, New York City: Folder entitled "Every Phase Work" containing pictures of construction work of great variety.

Humphryes Manufacturing Company, Mansfield, Ohio: Bulletin on drainage pumps, bulletin No. 250 on "Hand and Power Pumps" and No. 251 on "Horizontal Double Acting Force Pump."

Locomotive Superheater Company, 30 Church Street, New York City, and People's Gas Building, Chicago: An eight-page bulletin, T-2, which sets forth the advantages of the Elesco stationary superheater.