Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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It's Time for Some One to Start a New Company Section

THE silver trophy cup which was presented by this paper to the American Electric Railway Association last year to encourage the formation of company sections of that organization, reposes undisturbed in the offices of the Rhode Island Company at Providence. Now that the war is over, actually if not nominally, it is to be expected that challengers for the cup will appear. It was the idea of the donors that the cup would serve as a stimulus to friendly rivalry and as an aid to organizers of sections in stirring up local pride and enthusiasm. The officers of the association, in accepting it, expressed the belief that it would do so.

For a time before the United States entered the war the company section movement showed signs of suspended animation, as was natural. In the period between 1914 and 1916, inclusive, sections were being formed at a rate better than two per annum; then the rate fell off to about one. The Toledo section was formed early in 1917 and this husky youngster (a four-sided joint organization, to be sure) surprised everyone recently by passing the 1100-mark in membership, with greater expansion probably still to come. Just a year ago the Rhode Island Company section came into existence with a record-breaking initial membership. Who's next?

Make the Association Office a Storehouse of Data

ONE of the principal functions, possibly the principal function, of the American Electric Railway Association, is to collect and disseminate accurate information regarding the industry. The need for some such agency is becoming more acute every day, especially at the present crucial time. The association can afford to spend a very large sum each year for this purpose, and the money will be forthcoming to the extent needed if the association's bureau of information and statistics can demonstrate its ability to do the required work properly. Previous activities of the bureau of information have laid a foundation for the work which is now to be done, but the association must enter upon a new statistical era if it is to play its proper part in electric railway financial and physical rehabilitation.

But no statistical bureau can create data. All that it can do is to learn what information is needed, provide a mechanism for getting it, impress on those in possession of it the importance of giving it up for the common good, arrange it in convenient form for reference and send it out wherever the need for it exists. One of the difficulties in the past has been to convince the electric railways of the country that accurate data are really needed. The situation has been explained by President Pardee of the association, P. H. Gadsden, chairman of the committees on readjustment and national relations, and others. While at Washington as the representative of the association Mr. Gadsden was particularly embarrassed by his inability to put fully convincing figures before the governmental bureaus.

The executive committee of the American Association has placed in charge of the bureau of information and statistics a man who has had excellent experience and training for this particular work, namely, J. W. Welsh, formerly electrical engineer Pittsburgh Railways and later engineer with the Division of Transportation and Housing, Emergency Fleet Corporation. Mr. Welsh prepared the outline of the recent activities of the bureau published in the March 22 issue of this paper. We bespeak for him the active co-operation upon which he must depend. He will need it.

How One Association Will Help Member Companies

ELECTRIC railways in some twenty-five states maintain associations, sometimes in conjunction with electric light companies and in other instances by themselves. In certain of these joint associations, during the past three or four years, interest in railway subjects has had a tendency to lag, due partly to the fact that many railway operators have been too busy—or have thought they were too busy—to prepare papers and attend the meetings. This is to be regretted because such gatherings should have been particularly helpful during the trying period through which the railways have been passing, if for nothing more than because misery likes company. However, this belongs to the past. There are many serious problems ahead for the electric railways, and it is important for them to get together and do what they can to solve these questions.

This seems to have been the idea which prompted the retiring president of the Wisconsin Electrical Association, in his address a few weeks ago, to recommend that on one day of each convention the sessions be divided so that the railway attendants may discuss, apart from the light and power section, problems which are of paramount interest to their industry. This suggestion was acted upon quickly and, as mentioned in the report of the meeting last week, a committee was appointed and before adjournment presented recommendations. These call for the organization of a separate branch of the association to be known as the Railway Division and to comprise five separate committees, one each on attendance and program, shops and equipment, transportation, way and structures, and power and distribution. It was also recommended that this division hold annually, aside from the regular convention, a two-day meeting on the property of some member company, to be devoted to a study of the property with recommendations for improved efficiency.

This suggestion should redound to the benefit of every member company, for eventually each will receive the

opinion of every other operator in the State as to how his property can be operated more efficiently. It will be a sort of consultation of physicians, as it were, over a sick brother. And we are of the opinion that it may be a stimulant to advanced efficiency also, as each patient about to be the subject of the consultation will wish to appear to the best advantage.

It is to be hoped that all associations which have suffered a setback during the war will now draw themselves together in a similar manner for a concerted effort to put new enthusiasm into the industry.

Select Rail Sections with the Idea of Using Association Standards

"THERE are many things in the way of lack of uniformity in practices of railroads that should be corrected, and one of these is the rail section." Thus spoke C. A. Morse, president of the American Railway Engineering Association in his address at the recent annual convention. He had reference to the fact that, while his association has standardized seven rail sections between 70 and 130 lb. in weight, there are being rolled to-day some fifty different sections between those weights and twelve of them are variations of the 100-lb. rail alone. He also said that thoughtlessness and lack of knowledge of this unfortunate situation is probably the cause of such a state of affairs. Another factor is the ambition on the part of engineers to "design something."

We are inclined to agree with Mr. Morse in his analysis and think his strictures could be applied equally well to the rails used by electric railways, and those standardized by the American Electric Railway Engineering Association. For instance, we wonder how many electric railway engineers know that their own association has standardized the same sections as the American Railway Engineering Association from 80 to 100 lb. How many continue to order 80-lb. A. S. C. E. rails in preference to their own 80-lb. A. E. R. A. standard? Again, how many electric railway engineers know that the 7-in. 80-lb. and 7-in. 91-lb. plain girder rails which they order as L. S. Co. Sections 80-335 and 91-375 are really their own association standards also?

To turn to the Engineering Association's standard groove girder rails, there appears to be an opinion among many that these sections are too heavy for most roads. The 7-in. standard groove girder rail weighs 122 lb. per yard, but when it is remembered that very few substantial groove rails weigh less than 105 lb. and most reach 112 to 116 lb., it will be seen that the standard is really not unduly heavy when its merits are fully considered. We know of one road which abandoned a 105-lb. rail of this type in favor of the 122-lb. association standard, and the change has proved to be very wise. There have been fewer paving and joint troubles, while better joints and a smoother riding track have been secured.

At present prices and costs, an increase in weight of 17 lb. in the rails would probably add to the cost of relaid track, complete, between 1½ and 2 per cent, but this is more than offset by a prospective increase in head wear or rail life of from 20 to 25 per cent, to say nothing of the greater salvage value of the heavier rails. Hence, when a company is about to order rail, it should be very certain that it cannot afford to use the Engineering Association standards before choosing some non-standard rail.

What Others Think and Recommend

HOLDING the looking glass up so that we may see ourselves as others see us may not be a flattering experience, but it is sometimes a profitable one. This is the conclusion arrived at by a railway man who writes to us and whose letter touching on answers to our recent questionnaire is printed in the communications department in this issue. This gentleman, who signs himself "Manager," refers to the series of articles which appeared in three issues of this paper, giving the views of representatives of the public on the questions of increased fares, publicity, franchises and municipal ownership. We are pleased to have furnished the medium for this "analysis of public thought" and hope the electric railway industry will take to heart some of the opinions expressed.

There is no question but that there have been and still are mutual misunderstandings on these important subjects. The industry is undoubtedly suffering from sins of the past, but the leaders of these public utilities should take courage from the fact that those who speak for "the opposition" are not insisting that the doors be shut against compromise and harmony in the future. Instead they offer many a suggestion which might be used in a "get together" policy, with strong possibility that these companies may be saved from financial ruin.

Lack of frankness and open-handed dealing appear to have been the basis for misunderstanding in the past. Railway men would charge these faults mainly against "the other side," but the public brings this indictment solely against the corporations. We believe that to a certain extent both are right, and, this admitted, there appears to be a ground for future co-operation. Perhaps we might clear the atmosphere by dismissing such terms as "the opposition" and "the other side" when referring to the public, because the triumvirate of co-operation which is getting best results these days is the one which reads: "The public—the employee—and the company."

Leaders of the industry at the recent mid-winter conference of the association seem to have recognized public clamor to a considerable extent when they united on a policy of basing future appeals for popular support on an honest valuation. This policy if carried out in a proper spirit would silence the cry against "overcapitalization" and "profiteering." There is not so much dispute over the rate of return to be allowed capital in these utility corporations as there is upon the question of the valuation on which the return is to be granted. There will, of course, be a difference of opinion over methods of valuation and the items to be included therein, but if harmony is ever reached on this issue—as it will through sincerity of motive on both sides—a settlement should not be a difficult task.

Proponents of the public point of view also point out some of the deficiencies in the publicity practice of the utility corporations. We seem to have gone wide of the mark in this policy also, in spite of well intentioned methods. Here again we may profit from listening to the advice of those whom we have been seeking to convert. It has been said that publicity is a two-edged sword, and he who would use it must remember that if he expects the public to believe the facts as he relates them he must be prepared to open his books wide and reveal the whole story, good and bad alike, of his corporate stewardship.

We urge careful study of this series of articles on the men who are responsible for the well-being of our industry, and we respectfully call their attention to the old saw: "There is none so blind as they that will not see."

Utilizing Employees' Co-operation in Promoting General Good-Will

ELECTRIC railway managers have sometimes been criticized for not utilizing to a greater extent the opportunity to improve relations with the public through the good offices of the platform men. In fact, this was touched upon in an editorial in these columns recently. In justice to the managers it must be said that up to within a year or so, they have been handicapped in doing this very thing because the average platform man did not stay with any particular company long enough to become imbued with the manager's spirit. Platform work for electric railways for a long time was looked upon as of rather a transient character. It was considered by many as a makeshift, something to fall back upon when nothing really attractive offered. Obviously it was very difficult to develop a spirit of loyalty to a company and a desire to please the public under such circumstances.

Conditions, however, are different now. Without entering into a discussion of the adequacy or inadequacy of past wages in this field, we can say that electric railway wages now are, on the average, high, considering the requirements of the work. The result should be a greater average length of service on the part of employees. Not only are the wages higher in dollars and cents but they will become relatively higher as the fabulously large wages paid by manufacturers of war materials fade gradually from actuality to memories.

It is particularly desirable now that an effort be made to secure the active co-operation of the men and this, as pointed out, should be easier than heretofore. It must be done largely through the supervisory force, because good spirit can be engendered effectually only through man-to-man contact. It ought to be possible to have throughout an organization a spirit of good-will, provided the employees stay long enough to be affected by the contagion. One of the latest attempts along this line is the suggestion campaign inaugurated by The Connecticut Company a few days ago. Reference was made to this in our news columns for March 29. Briefly, the thought was to encourage two ideas. One was for all employees to offer suggestions and in other ways help to conserve the company's resources and increase its income so that it may be established in as sound a financial condition as possible. The other was to improve public relations by courteous and efficient service at all points. A report just received indicates that the men are taking a cordial and active interest in the campaign and good results are expected. The work will be followed up by means of monthly letters. Other companies have done somewhat the same thing in different ways, with varying degrees of success.

Organizations of the men can be utilized also, particularly the company sections of the American Electric Railway Asociation, which should be formed now in considerable numbers. The main hope in all this, however, is that increasing permanency of electric railway employment will permit whatever measures are used to be reasonably effective.

What a Six-Day Week Would Mean

IN AN EDITORIAL in the Feb. 15 issue of this paper we warned electric railway interests to be on their guard against the agitation for eight-hour laws in the various state legislatures. We called attention to the fact that what the unions really wanted was a "basic" eight-hour day, or time and a half or double time for all work extending over that period. In other words, this was a camouflaged attempt to add to the wage burdens which already weigh so heavily on these public utility companies.

Another bid for more wages, also under the guise of a plea for conservation of human energy, is now being pressed in certain sections of the country. This is known as the six-day labor week. Its effect, to make the employer bear all the additional expense of the proposed change, is frankly admitted in a recent issue of the official organ of the Amalgamated Association. The editor of that paper believes that employing companies are opposed to such legislation because it would mean increased payroll expense, and he says frankly that a six-day week instead of a seven-day week would mean a 16⅔ per cent increase in wages.

The writer also makes the point that the companies in arbitration cases "always endeavor to cover the injustice of the seven-day week by creating the presumption with the arbitration board that the work is of such type that men can easily endure the continuous employment that working 365 days per year requires." The fact is, as we understand it, that in the usual arbitration proceedings, it is contended that electric railway employees have steady employment, offering work every day in the year, and that with fair allowance for occasional days off duty these men are able to secure an annual income greater than that of many workmen in trades which offer a higher hourly rate of pay.

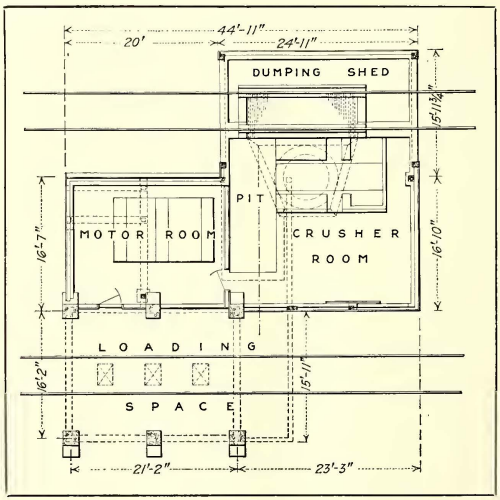
This proponent of the six-day week also argues that the "patriotic impulse" should induce these companies to adopt this method of extending employment, because "it would mean the employing of not less than 115 men where 100 are employed under the seven-day week privilege." It is well that the case of the employees is so frankly stated. There is no camouflage in this argument, but it contains a plain admission that these companies which are already so hard pressed because of the high cost of operation and inadequate fares would have to pay their present employees 16⅔ per cent more in wages and add 15 per cent to their number—probably with a guaranteed minimum wage to all the extra men.

The employing companies should be equally frank in showing what this additional weight to their wage burden under present financial conditions would mean. Briefly, it would imply bankruptcy for a large percentage of the properties, and inferior service from those that survived, on the theory that none should be required to furnish service beyond their financial ability. Of course this would react on community development and, in the end, would affect adversely the men who depend on these utilities for their livelihood. It is a plain case of a vicious circle. We would suggest to the editor of that paper that his association might better use its influence toward securing a living return for these companies before asking that they do what is now impossible.

Detroit United Railway Builds Large Stone Crusher Plant

Crushers Taken from an Abandoned Quarry Are Used to Equip a Plant of 500 Cubic Yards Per Day Capacity in Salvaging Waste Materials for Ballasting

EVERY electric railway of any considerable size needs a stone crusher. Whether it be portable or a permanent structure depends upon the size of the property, the amount of material to be crushed per year and other local conditions. In former years much material, such as broken concrete, old brick, paving blocks, etc., has been hauled to a dump and used for filling-in purposes, sometimes thereby becoming of some use, but in many cases the disposition being considered only as a part of the necessary expense of maintenance and rehabilitation. With the advent of the necessity of every kind of economy, many railways have come to realize that this material is worth something and can be salvaged for further use. The Detroit United Railway operates 857 miles of city and interurban track. The latter, especially, requires large quantities of ballast both in maintenance work and for new construction, amounting perhaps to an average of 25,000 cu.yd. in a normal year. It is believed that 15,000 cu.yd. of this can now be furnished from salvaged waste material made available by a new crusher plant which was placed in operation in May, 1918, at the Oakwood yards of the company.



FLOOR PLAN OF DETROIT UNITED STONE CRUSHING PLANT

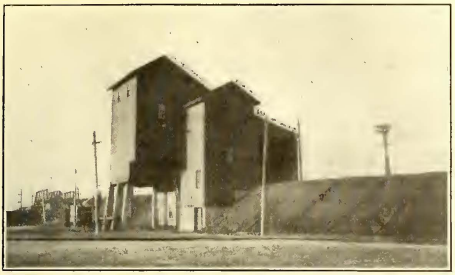
The plant is located on the southwest side of the Oakwood yard, immediately adjacent to the main line of the Detroit, Monroe & Toledo Short Line Railway, an interurban line operated by the company. This location not only has the advantage of simplifying the transportation and handling feature, but also made available a site which entailed no trestle construction and a minimum amount of fill as is indicated in accompany illustrations.

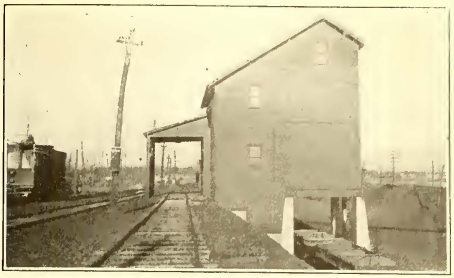
The general layout of the plant is shown in the floor plan. The foundations are of concrete carried down to a hard clay bed, the base of the foundation being reinforced with old 56-lb. rail. The superstructure of the plant is of wood heavily reinforced and braced with steel angles, channels, I-beams, tie rods and built-up sections. The roof is shingled and the building is covered with wood sheathing. The greatest height of the building, from the top of rail of the loading track to the peak of the roof, is approximately 56 ft.

A train of several side or center dump cars may be pushed by a motor car, up the dumping track incline into the dumping shed. Side dump, hopper dump or ordinary flat cars can be used. The side dump cars, air and electric operated, unload direct to the hopper of the crusher. To facilitate the use of hopper dump cars, neither floor nor ties have been placed between the track rails in the shed, the rail being laid on an oak sill on the outer side and on a built-up steel section on the crusher side. The material drops on to a slide made from inverted old rail imbedded in an 8-in. concrete slab and placed at such an angle that the material passes by gravity into the crusher hopper. If it is necessary to resort to hand unloading, the operation is, of course, longer and the motor may be withdrawn. As each car is unloaded, the brakes are released and the car passes down the incline, the next car taking its place over the hopper. The cars are then shunted into position under the storage hoppers on the loading track.

The large crusher into which the material first passes is an Austin No. 5 gyratory type removed from the Newport quarry owned by the company, but as mentioned before, now abandoned. The crushed material is discharged into a Stephens-Adamson continuous bucket elevator by means of which it is elevated to the top of the building and discharged into a standard 42-in. diameter No. 3 revolving screen made by the same company. This screen, which is 21 ft. long, is set with a slope of 1 in. to the foot and is divided into three sections, perforated to pass 1-in., 1½-in. and 2-in. sizes respectively. The screen revolves at the rate of 16 r.p.m.

The crushed stone and screenings pass into storage bins having a total capacity of 125 cu.yd. At the present time there is but a single hopper, although provision is made to separate the three sizes if de-





TWO VIEWS OF STONE CRUSHER PLANT OF DETROIT UNITED RAILWAY, SHOWING BOTH LOADING AND UNLOADING TRACKS

sirable. The storage hopper is formed of 10-in. x 10-in. Southern pine timbers braced with steel tie rods and lined with 2-in. x 12-in. Northern pine plank. The slope of the bottom is practically 1 to 1, the discharge into the cars being made through three openings each 24 in. x 32 in. These openings are closed by steel plates operated horizontally on roller bearings by rack and pinion controlled by a chain wheel at the side. Any material which is too large to pass through the screen is discharged into an open chute through which it passes by gravity to an Austin No. 2 gyratory crusher, also originally installed at the abandoned quarry. The material is discharged from this crusher down an incline to the foot of the elevator, where it passes back through the screen into the storage hopper.

The entire plant is driven by a 350-hp. Westinghouse motor, operating at 550 volts. This motor is far in excess of the needed capacity which is approximately 70 hp., but due to the introduction of individual motor drive in the Monroe shops of the company, this motor was thrown out of immediate service and its use here thus saved the purchase of a new machine. The motor is connected by belt to a shaft pulley, 11 ft. above the foundation. Connected to this shaft by belts are the No. 5 crusher, the No. 2 crusher and a second shaft. The second shaft is connected by belts to the elevator drive and to a pulley which drives the screen through a beveled gearing.

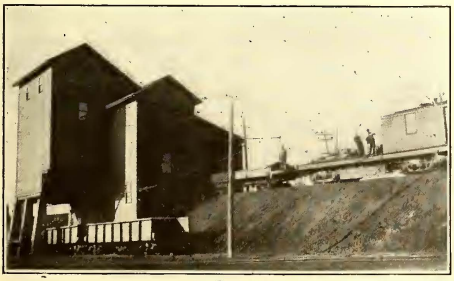
Construction work on the foundation of the plant was started in November, 1917, but no work was done during the winter months. The plant was completed and placed in operation in May, 1918, after approximately two months of construction work. Practically all the material crushed in the plant is old concrete, brick, paving blocks, etc., and this is used entirely for interurban track ballast. Since the plant was placed in operation, approximately 7000 cu.yd. of material has been crushed. One foreman and three men operate the plant, and with dump cars can handle 500 cu.yd. per ten-hour day. The plant does not operate during the winter months, as there is no refuse material for disposal from reconstructed tracks. About 150 days in the summer months would cover the period of operation. As these men spend most of their time on other work, the actual time of operation is all that is chargeable to the crushing. The total cost of the plant was $17,000. Allowing 20 per cent per year for depreciation, and 6 per cent per year on the investment, $3,000 per year for maintenance, and operating the plant 150 days ten hours per day, the cost per cubic yard may be found by the following formulæ:

$$\left(\frac{\text{Depreciation + interest on investment + maintenance}}{\text{number of operating days} \times \text{number of cu. yds. crushed per day}} + \frac{\text{number of hours worked per day} \times \text{wage per hour}}{\text{number of cubic yards crushed per day}}\right)$$

In numbers this would amount to:

$$\left(\frac{3400 + 1020 + 3000}{150 \times 500} + \frac{40 \times 0.50}{500}\right) = \text{approximately 14 cents.}$$

In a letter to the members of the Electric Railway Section, National Safety Council, Chairman H. B. Adams points out that there is one expenditure in the accounts of electric railways which brings no return, namely, the settlement of accident claims. The elimination of the causes for such claims should demand closest attention on the part of those interested in the welfare of a company, and furnishes an avenue for the active employee to make himself most valuable. Safety propaganda is one of the greatest means of saving that can be used by an electric railway company.



AT LEFT, TRAIN UNLOADING MATERIAL INTO CRUSHER WHILE OTHER CARS ARE BEING LOADED; AT RIGHT, SIDE DUMP CAR UNLOADING INTO CRUSHER

Zone Tickets Adopted for Portland

Novel Ticket System Handles 97 Per Cent of Passenger Business—Frank Campaign Before New Schedule Became Effective Secured Understanding of New System and Appreciation of Company's Problems

A NEW fare system based upon tickets went into effect on March 2 on the lines of the Portland (Me.) Railroad, operated by the Cumberland County Power & Light Company. The system, which embodies various novel features, was designed by the railway to accord with orders issued by the Public Utilities Commission of Maine under dates of Jan. 7 and Feb. 3, 1919.

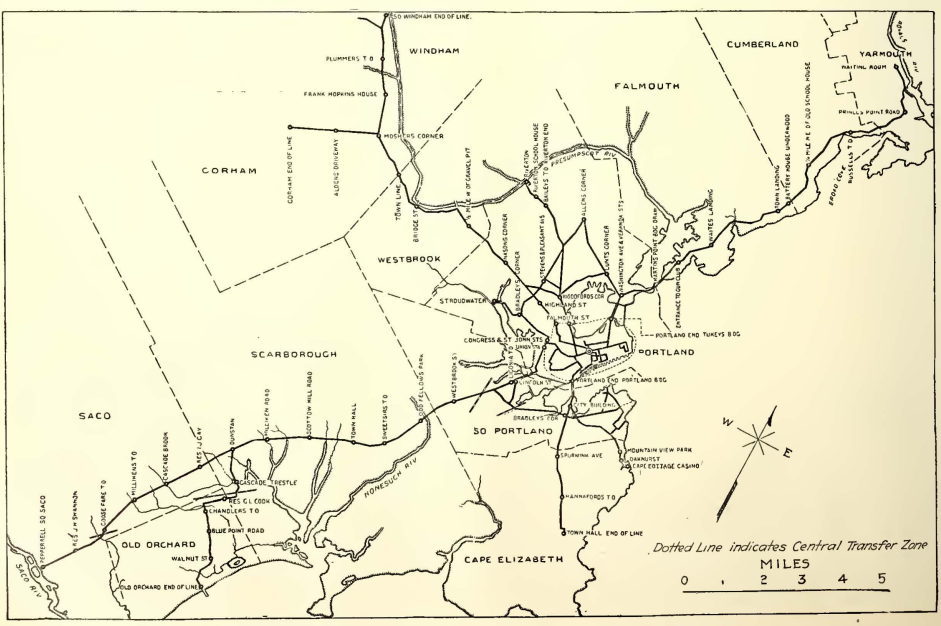
On July 25, 1918, it will be recalled, the commission authorized the establishment of a central zone from 2.5 to 4 miles in radius, and the subdivision of all exterior lines into zones of varying lengths. The fare in the central zone was 5 cents, and the fare units in the outer zones were 2, 4 and 6 cents, with a minimum fare of 6 cents and an average rate of about 2 cents per mile.

During August and September, 1918, there was an actual net revenue gain of $1,686 a month as contrasted with the sum of approximately $10,000 a month agreed to be necessary. The company therefore petitioned for 6-cent fares on its city lines. Before the hearings were completed, the War Labor Board ordered an increase in wages causing an estimated deficit of more than $20,000 a month. There being no expectation that 6-cent fares on the city lines would provide anywhere near the increased revenue required, the necessity existed for constructing an entirely new fare schedule. The one adopted on March 2 represents the outcome of an exhaustive study of local conditions by the company and the commission, with the benefit of outside expert criticism.

Tickets Have Replaced Cash Fares

The new system provides for the use of tickets in place of cash fares. The lines have been divided into a series of fare zones of as nearly equal length as possible (see accompanying map). The ticket fare for each zone is 2 cents, and the minimum fare in every case is 6 cents whether the passenger rides through one zone or three zones. The new fare limits are practically the same as the old ones, with the modification that the 6-cent central zone is subdivided into three fare zones and all 6-cent and 4-cent zones outside of the old central zone are also subdivided into three or two fare zones respectively.

There are several kinds of tickets, as illustrated herewith, to insure maximum convenience to the public. They are all transferable. Those designated as "ordinary" tickets are for 6-cent fares. A "zone" ticket is used in conjunction with the 6-cent fare ticket to pay fares which are more than 6 cents. "Through" tickets are used to accommodate those who ride fre-



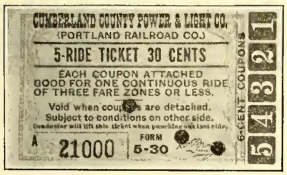
NEW TICKET ZONE SYSTEM OF PORTLAND (ME.) RAILROAD

quently between points where the fare is 8, 10, 12, 18, 22 or 30 cents.

The ticket chiefly used is based on the 6-cent ride, five rides being sold in a block for 30 cents. No ticket for a single ride is sold. Each 6-cent coupon entitles the holder to ride through three fare zones. These tickets may be purchased from the conductors and at the Monument Square waiting room (the traffic center of the system).

The "zone" ticket is provided for "change." It has fifteen 2-cent coupons and sells for 30 cents. It is used with the ordinary 6-cent coupon in paying fares above 6 cents where the passenger does not regularly pay such fares; or with the 6-cent fare ticket to pay a fare through an odd number of zones, such as seven, where the fare would be 14 cents. In the latter case the conductor punches one of the coupons in the 6-cent ticket, which entitles the passenger to ride through three zones, and then punches four of the 2-cent coupons on the zone ticket. The zone ticket can be used to pay a 6-cent fare, in which case three of the 2-cent coupons are punched by the conductor. It can also be used to pay any fare up to 30 cents at the option of the passenger. These tickets are sold by conductors and at the Monument Square waiting room.

The "through" tickets are issued in the form of five rides selling for 40, 50, 60, 90 cents, $1.10 and $1.50 respectively. At present, with one exception (conductors on the Westbrook line), these tickets are sold only at Monument Square. After the plan has been in operation for awhile, if there seems to be a demand for the sale of through tickets by conductors on other lines, the company plans to make the necessary arrangements to meet that demand.



(A)

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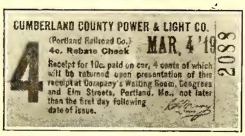


(D)

FARE TICKETS USED FOR ITS NEW ZONE SYSTEM BY THE PORTLAND RAILROAD

(a) Basic Ticket with Five 6-Cent Coupons.

(b) Supplementary Zone Ticket with Fifteen 2-cent Coupons.

(c) Specimen of Through Five-Ride Ticket.

(d) Four-cent Rebate Check Used with 10-cent Cash Fare for Three-Zone Ride or Less.

Use of Rebate Checks

When a cash fare is offered by a passenger in lieu of a ticket, the fare for a three-zone or minimum ride is 10 cents. A passenger paying 10 cents receives a 4-cent rebate check, which may be redeemed before midnight of the following day at fifteen points on the system, including the company's office (waiting room), hotels, Union Station news stand, terminals, etc.

A passenger without a ticket who rides more than three zones pays 3 cents a zone in cash. For each 3-cent fare the conductor issues a 1-cent rebate check, redeemable not later than the close of the following day at one of the designated points. Thus, a passenger who boards a car without a ticket and rides through six zones pays the conductor 18 cents and receives six 1-cent rebate checks.

In all cases the passenger is entitled to receive a sufficient amount in rebate checks to reimburse him for the difference between the cash fare rate and the ticket rate. Conductors are not allowed to accept rebate checks for passage or to redeem them. The color of both kinds of rebate checks is changed daily, and each day's supply bears the date of issue.

Registering Fares and Handling Transfers

Conductors lift all tickets when punching out the last ride and register such tickets on the cash side of the register, making one registration for each ticket lifted. They register all transfers and free tickets on the transfer side of the register, lifting one employee's ticket for passage in or through each collection area. In punching coupons from tickets the conductors use a special square punch which enables them to work only from right to left, or from the first coupon to the last, in order.

The minimum fare, as before stated, is 6 cents in every case. A passenger paying 6 cents on a given line and riding only one zone, or 2 cents worth, on that line, is entitled to the balance of his 6 cents' ride on some other connecting line. This is why the old central zone was divided into three 2-cent zones. In addition the transfer feature provides for a central transfer zone (see map) with Monument Square as its central point. The limits of this central transfer zone are the outer limits of the first fare zone from Monument Square.

The transfer provides for punches of none, one, two or three zones. A passenger inbound to Monument Square who has paid 6 cents or more is entitled upon request when paying fare to a transfer permitting him to ride to any point within the central transfer zone. In the case of a passenger outbound from Monument Square who boards a car at any point within the central transfer zone, his journey is assumed to have begun at Monument Square. When paying his fare such a passenger upon request receives a transfer punched for "Zone 3." If a passenger boards a car in "Zone 1," the conductor punches out "Zone 3" on his transfer; if he boards it in "Zone 2," the transfer is punched out " one 2," and if in "Zone 3," it is punched out "Zone 1," the proper destination point being punched out in each case. If a passenger has ridden his full three zones, the conductor punches out "Zone 0."

Practically all outbound cars from Monument Square are "pay-leave" cars. When inbound to Monument Square, the passenger pays as he enters. This arrangement permits passengers to board and leave cars in Monument Square much more rapidly than formerly, and greatly reduces congestion at this important point.

162—2-'18.

Cumberland County Power and Light Company RAILWAY DEPARTMENT

REPORT OF TICKET SALES

DIV. LINE DATE 191

KIND OF TICKETS	ON HAND Serial Starting No.	ON HAND No. of Tickets	TICKETS RECEIVED No. of Tickets	TICKETS RECEIVED Serial Starting No.	Total No of Tickets	BAL. ON HAND No of Tickets	BAL. ON HAND Serial Starting No.	No of Tickets Sold	Unit Price	AMOUNT FOR TICKETS SOLD
1c REBATE									.03	
4c REBATE									10	
2c.-(15-30)									30	
6c.-(5-30)									.30	
8c-(5-40)									.40	
10c-(5-50)									50	
12c.-(5-.60)									.60	
18c-(5-90)									.90	
22c.-(5-1.10)									1.10	
30c-(5-1.50)									1.50	

TOTAL AMOUNT OF TICKET SALES

1c RECEIVED WITH 5c. TICKETS

1c WITH 8 & 5 TRANSFERS

CONDUCTOR

No. TOTAL CASH

CONDUCTOR'S REPORT OF TICKET SALES ON PORTLAND RAILROAD

The form used for a conductor's report of his ticket sales is reproduced herewith. The conductor's day card provides on the back for a report of tickets and transfers registered.

HUMANIZING THE PORTLAND RAILROAD

The new tickets were placed on sale eleven days in advance, but more than this was done. Before the new system was put into effect, the public was somewhat out of sympathy with the company's efforts to provide service in the face of mounting costs of operation. A. H. Ford, vice-president and general manager of the Cumberland County Power & Light Company, came to the conclusion that through direct personal contact with the public the management might make its purposes and difficulties understood. To effect this result, a series of nine district meetings was arranged in the outlying sections and the more thickly populated areas.

These meetings were held in the evening, at halls hired by the company, and were advertised in the press and by reading notices well in advance. The public was invited to offer criticism, whether destructive or constructive. The local superintendent, the general superintendent, the assistant to the vice-president and the general manager attended each meeting, and so great was the interest that every meeting lasted more than two hours.

On these occasions Mr. Ford put before the local public the essential facts as to the company's finances and explained either personally or through his staff the workings of the proposed new ticket system. The public was given an opportunity to examine the tickets at leisure and to study how each district would be served and how the fares would be altered. The local press was also utilized through advertisements to explain the new system and to set forth points brought out at the meetings, and front-page news "stories" were carried by the papers both morning and evening in connection with the meetings. These of course were of great value in reaching the larger public which could not be accommodated at the meetings. An example of the company's frankness in approaching the public is shown in the accompanying advertisement regarding the rebate checks.

At each meeting the company's representatives welcomed criticisms and suggestions bearing upon the service and in some cases were able to put the latter into effect soon afterward, to the great satisfaction of the local communities. In other cases, it was necessary to take the criticisms and suggestions under advisement, or it was possible to explain at once why various operating changes could not be made. Hostility to the company was dispelled very rapidly by these meetings, and the public now is generally convinced that the management welcomes its suggestions and will give them careful consideration.

TALK NO. 8

To the Patrons of the Portland Railroad Company:

The public meetings we have been holding, which have been well attended, have been of great value to the Portland Railroad Company. At these meetings some suggestions have been made for improving our service. We have adopted several of these suggestions and are giving careful consideration to all of them.

We have had some criticism of the ten cent fare with the four cent rebate check. It is the only feature of the new plan which the Public Utilities Commission has ordered the Railroad Company to put into effect which has been the subject of criticism. We think the people understand why this ten cent cash payment for a single ride is necessary. We have been ordered to use tickets instead of money for the payment of fares. Everyone can see that if the Company sold single trip tickets for six cents it would defeat the whole ticket plan which the Company has been ordered to put into effect.

We have obtained permission to modify the original order of the Public Utilities Commission and return a rebate check to the passenger worth four cents if presented at the redeeming points named, before the close of the day following the collection of the fare. We know this appears to be an awkward plan and will be something of an inconvenience to some of our patrons. The inconvenience can be avoided, of course, by purchasing the five ride six cent tickets for thirty cents. This is what the great majority of the people will do.

We frankly admit, however, that we are not sure that the rebate check plan is the best one that can be devised. We have another plan under consideration which would eliminate it but there are some objections to it which we are striving to overcome. We have submitted the alternate plan to experts and expect a report upon it soon. In the meantime we will go ahead with the ten cent fare, four cent rebate idea and see how it operates. Later if the alternate plan is deemed feasible we will adopt it.

Our whole idea is to serve our patrons just as well as we can and to put them to the minimum amount of inconvenience. We are much pleased with the good spirit with which the public has accepted our plans and the manner in which all are trying to help us out of our difficluties and it is our intention to show by our efforts our appreciation of the good feeling which exists.

A. H. FORD,
Vice-President and General Manager.

HOW THE PORTLAND RAILROAD TALKED FRANKLY TO THE PUBLIC

The company also took good care of the public as the new fare system was being installed. For example, an article in the newspapers directed attention to the following:

That the campaign of education through the advertising columns of the newspapers and experience meetings held in various sections has familiarized people with practically every feature of the ticket system was shown by the readi-

ness with which they adapted themselves to the changed conditions yesterday.

The new transfer, which was expected to provide the most difficulty, seemed to have been mastered by the great majority, and only a few mistakes in this connection were made by the conductors. People who received the wrong number of zones on their transfers applied to the office of the company to have the matter straightened out, and in an advertisement this morning the management asks all who have trouble of this sort to come to the office for adjustment. Within a very short time everything will be running smoothly so far as the transfers are concerned.

Another thing to which the management wishes to direct attention relates to the purchase of the wrong kind of tickets. It has come to the knowledge of the officials that some have bought the kind of tickets that are not best suited for the trips which they are in the habit of making, and if these people will come to the office the mistake will be adjusted.

Very Little Riding Being Lost

Owing to the radical departure of the new schedule from the former system, together with certain new features pertaining to it, it is not as yet possible to form any positive opinion as to its operating success. The receipts in the first nineteen days' operation show an increase of 16 per cent over 1918.

It appears that the company is losing very little riding on account of the increase in fare from 5 to 6 cents on the short-haul city lines. This is attributed in considerable measure to the good feeling engendered by the public meetings in the various communities.

The number of rebate checks issued amount in money to about 3 per cent of the total passenger business; therefore about 97 per cent is ticket business. The company estimates that nearly half of the rebate business originates on the Union Station line, the rebate check being chiefly used by transients. The "pay-leave" plan for cars outbound from Monument Square is working out most satisfactorily.

War Experience of Lyons Tramways

AT THE BEGINNING of the Great War the mobilization took about 1850 of the total of 3459 of the employees of the Compagnie des Omnibus et Tramways de Lyon, according to a recent issue of *The Electric Railway and Tramway Journal.* In the early part of 1915 the company had to engage women employees. The employment of women as conductors was tolerated, but in a general way they hardly gave satisfaction in this capacity. Recruiting of women workers had the following variations:

Calender Year	Number Recruited	Number That Became Efficient	
		Conductors	Drivers
1915	560	*1,129	..
1916	1,417	1,045	47
1917	1,627	976	61
1918 (first half)	934	...	...

*Ed's Note. Evidently includes some recruited during 1914.

The diminution in the efficients in spite of the more numerous engagements is said to prove that the new personnel was of very mediocre quality and found itself eliminated very rapidly.

In order to replace the 1850 men mobilized, the company up to Jan. 1, 1917, engaged 9230 employees, including 2312 women. Of the total 9230 there remain with the company 1950, the 7280 others being dead or out of the company's service on account of the successive mobilizations of the younger classes. With a staff so unstable, it is said to have been difficult to maintain good service.

The rolling stock suffered, on the one hand, from the heavy overloads it had to carry and, on the other hand, from the wear of the track and the running of the cars by inexperienced hands. The company suffered particularly from the deterioration of motor armatures and field magnets. The expert winders not being available, the company was forced to engage women. It had great difficulties also in getting materials for repairs, particularly during 1918, and a large part of the rolling stock must be repaired before it can be placed in operation.

Elements of a Successful Outdoor Substation*

In Wisconsin Electrical Association Paper the Author Outlined the Merits and Shortcomings of the Several Pieces of Equipment

By Alfred Alsaker
Consulting Engineer Delta-Star Electric Company, Chicago, Ill.

OUTDOOR substation equipment was primarily developed for small substations but has later been partially adapted for large substations. For the latter the outdoor equipment is very similar to that used in indoor installations. For example, in the case of oil switches there is a difference in the bushings and a slight one in construction. Lightning arresters are correspondingly similar. For small substations, however, the equipment is entirely different in that high-tension oil switches and other costly apparatus are eliminated. In most cases the two functions that would ordinarily be performed by the oil switch, namely, manually opening the circuit and automatically opening it in case of overload or other trouble, are performed respectively by the outdoor-type air-break switch and the high-tension outdoor fuse.

Air-break switches are of two types, horizontal and vertical break. The horizontal-break switches are, in turn, of two types, one with a single break per phase and one with a double break. The vertical-break switches are all single-break up to 88,000 volts. All air-break switches are provided with arcing horns to prevent burning of the main contacts. As to relative breaking capacity of these switches, this is as yet largely a matter of opinion. Mine is that the single-break horizontal switch will not break the arc as effectively as the single-break vertical switch, but the double-break horizontal switch should naturally be able to break heavier loads than either type of single-break switch.

Fuses Can Be Made with Very Short Time Element

The most important equipment for the operation of outdoor substations is the high-tension fuse. Of these there are several types. The horn-gap fuse is an ordinary fuse wire strung between two arcing horns mounted on insulators. For small systems this is a useful device, but where there is large power capacity beyond the fuse its use is not so practicable. By its very nature of operation the horn-gap fuse has a long time element. The simplest form of inclosed fuse is a wooden stick with a fuse wire inside. Another type consists of a fiber or glass tube with ferrules on the end connected by fuse wire. The first type has now been

*Abstract of paper read at meeting of Wisconsin Electrical Association, March 27, 1919.

abandoned, the other has a comparatively long time element.

The expulsion type of fuse consists of a treated fiber or porcelain tube, with a fused wire inside having a reduced cross-section near the closed end of the tube. This fuse has a shorter time element than the others mentioned and has a wide application especially for small and moderate-sized systems. The carbon tetrachloride fuse consists of a glass tube with a metal ferrule at each end. A very short fuse is fastened between the upper ferrule, and a strong spiral spring is fastened to the lower and holds the fuse in tension. There is a cork around the fuse element which prevents the arc from communicating to the glass, and just below the cork is a nozzle or liquid director which is fastened to the spring. A flexible copper lead is run inside the spring to the lower ferrule and serves to conduct the current and keep it from heating the spring. The tube is filled with carbon tetrachloride, which is simply a high-grade fire extinguisher. When the fuse melts the spring pulls the nozzle away and squirts the carbon tetrachloride on the flame, thus extinguishing it. This fuse like all others has its advantages and disadvantages. The first cost is moderate but that of re-fusing is higher than for the expulsion type. It has a very small time element and will clear a circuit in as little as 0.004 second.

There are several types of high-tension lightning arresters used in outdoor substations, the simplest form being the plain horn gap. This is effective because it gives lightning an unobstructed path to ground but the dynamic current which follows is often large enough to trip the switch at the source of power. To cut down the rush of dynamic current some manufacturers use resistance in series with the ground horn, but this stops the lightning discharge as well as the dynamic current. By using a number of resistance units in series with the ground horns, it is possible to arrange them in such manner that lightning has a direct path to ground through several gaps.

The electrolytic arrester is primarily a horn-gap arrester, but instead of resistance in the ground circuit it has a series of electrolytic cells, which automatically build up a resistance or counter electromotive force as the dynamic current passes. It might be defined as a horn-gap arrester with a current-limiting device, having a definite break-down value and a definite recovery value. This type is too expensive, however, to be used on small outdoor substations; furthermore, it requires attendance, as it should be charged at least once a day. The oxide-film arrester is a new type which has the characteristics of the aluminium-cell arrester but does not require any charging.

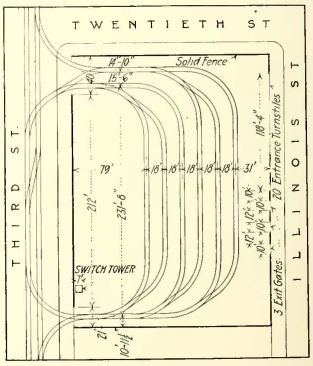
When Is a Fuse More Economical Than a Switch?

In closing I shall discuss a little further the question of high-tenson oil switches *vs.* fuses for outdoor substations. It being assumed that it is possible by means of a fuse having an exceedingly short time element to obtain the same degree of protection as is provided by the best class of oil switches, the question then arises as to the conditions under which it is proper to use oil switches and when fuses should be used for the high-tension side of the transformers. In a very large substation containing several banks of transformers and several lines, the oil switch is undoubtedly the best thing to use. Where there is but a single bank of transformers, the question is settled by the presence or absence of an attendant. If an attendant is available, power can be restored undoubtedly more promptly when an oil switch is used. On the other hand, an oil switch opens comparatively often while the fuse blows seldom.

When no attendant is present the situation is different. It may take the operator fifteen minutes to get to the substation in case of trouble, and one minute to determine what has happened and close the high-tension switch again. If a fuse is used he will require the same time to get to the substation and may take five minutes to open up the air-break switch and replace the fuse. It is up to the engineer to decide whether the four-minute difference is worth the extra cost of the oil switch. This comparison is for interruptions caused by the blowing of high-tension fuses. In a properly designed substation the low-tension automatic switch will trip oftener than the high-tension fuse will blow, so that for most of the interruptions there are time-saving features with the oil switch. Probably for most cases the best proposition is the combination of quick-break fuse on the high-tension side and a cheap automatic oil switch on the low tension.

Prepayment Area in San Francisco

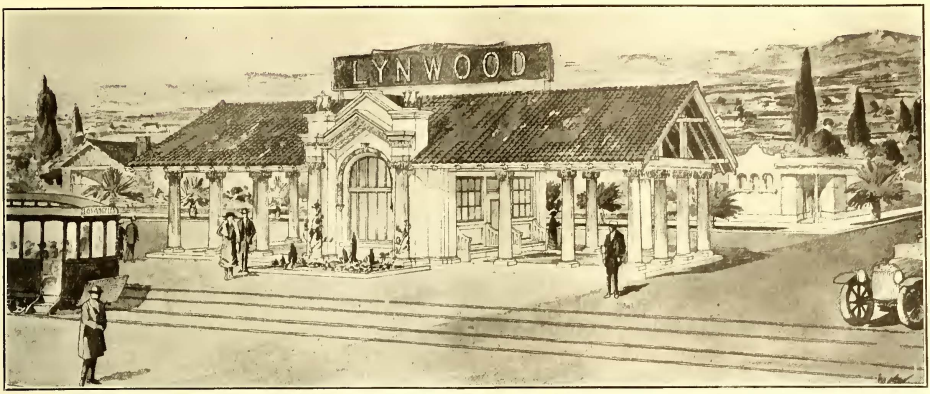
AN ACCOUNT was published on page 454 of the issue of this paper for March 8 of a prepayment area with six loop tracks, built by the United Railroads of San Francisco near the Union Iron Works in San Francisco to expedite the handling of the employees of that company. In the plan of the area published,



PLAN OF PREPAYMENT AREA IN SAN FRANCISCO

however, one of the tracks on Third street was omitted, so that a corrected drawing of the prepayment area is presented herewith.

Briefly, the arrangement of loops is such that southbound cars move over the three inner loops while northbound cars are loaded on the three outer loops. The capacity of the loops is thirty cars, allowing lanes between cars of width sufficient to afford easy access to the inner tracks. The cars move out of the yard on a twelve-second headway. The switches leading from the incoming track to the several loops are controlled by hand operation from the tower at the corner where the tracks enter the yard. The area measures 200 ft. x 273 ft.



ELABORATE PASSENGER STATION BUILT BY REAL ESTATE PROMOTERS ON LINE OF PACIFIC ELECTRIC RAILWAY

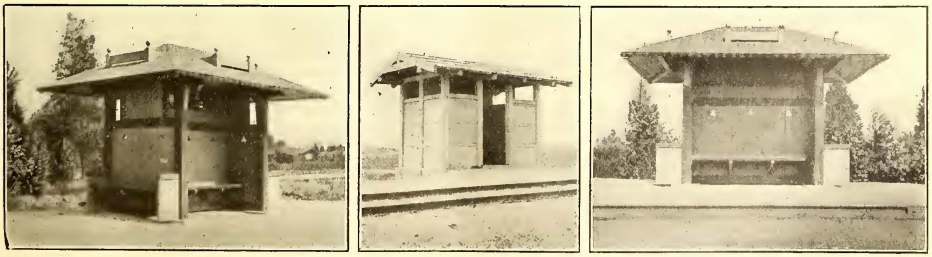
Shelters and Stations on Pacific Electric's Interurban Lines

The Author Gives Construction Details of a New Type of Shelter Used on the Pacific Coast and Tells of the Conditions Under Which Shelters and Stations Are Provided

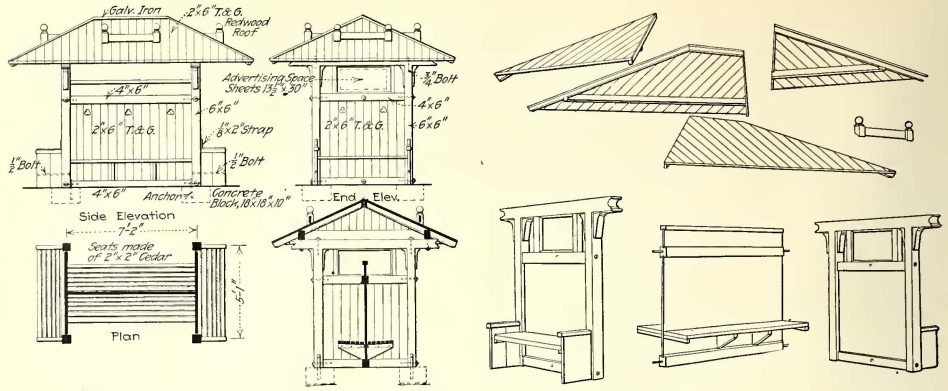
BY CLIFFORD A. ELLIOTT
Cost Engineer Maintenance of Way Department, Pacific Electric Railway, Los Angeles, Cal.

SINCE the construction of its line in 1902 the Pacific Electric Railway has placed small waiting shelters of various types at numerous stops on its interurban lines. Many of these were erected because specified in right-of-way contracts, while others were provided on account of traffic requirements. Usually the persons from whom rights-of-way were secured favored some particular type of station used by the company elsewhere on its line, or they favored a type, such as the mission type so extensively used in southern California, in keeping with the architectural style prevalent in the neighborhood.

The company has made it a policy to discharge its obligations to the traveling public by erecting commodious waiting shelters at important junction points whenever the travel warrants so doing. No contributions toward the expense of such shelters are sought from near-by residents, the company depending upon traffic checks to determine when and where shelters are needed. However, a consistent policy must be followed in this matter because, in addition to important junction stops on the line, there are more than 1000 minor stops. The company has established a fixed policy, therefore, that when patrons in the vicinity of such a stop petition for the erection of a shelter, the committee of petitioners, usually numbering from fifty to 100 patrons, is expected to contribute one-half the cost of the shelter. The committee is required to deposit this amount in advance of construction of the station. All shelters constructed at the joint expense of the patrons



TWO OUTER VIEWS, PASSENGER WAITING SHELTERS OF FRAME CONSTRUCTION TYPE ON PACIFIC ELECTRIC RAILWAY INTERURBAN LINES; CENTER VIEW, UNIT-SLAB CONCRETE WAITING STATION FORMERLY USED BY THE COMPANY



DETAILS OF NEW FRAME CONSTRUCTION PASSENGER SHELTER SHOWING CONSTRUCTION OF UNITS

and the railway company are maintained by the railway company.

Recently the company adopted a new ornamental type of small waiting shelter, as shown in an accompanying illustration. The public has been well pleased with this, and its cost is moderate. Six shelters of this type have been erected to date, in two cases the local patrons providing one-half the cost and in four the company erecting the shelters to meet right-of-way obligations or traffic requirements. These shelters are made up of units which are constructed in the shop so that they can be turned out in quantities, a procedure which results in reducing first cost and providing a stock of parts available for prompt shipping to a selected location. Such promptness is especially desirable when patrons have contributed toward the cost of the shelter. The accompanying drawings show clearly how the units are made up and assembled.

For four years prior to the adoption of the new type of station the company had been erecting its "Type E No. 10" unit-slab concrete shelters. These were constructed under royalty contract with the Unit Construction Company of San Francisco, and the sets of concrete members constituting the shelters were cast at the railway company's bridge and building shop. Several complete sets were always cast ahead to meet demands. The concrete stations cost somewhat more than those of the later frame type, which feature, of course, is objectionable to patrons who pay part of the expense of construction.

MATERIAL LIST FOR FRAME CONSTRUCTION OF PASSENGER SHELTER

Number	Size, Inches	Length, Ft. and In.	Dressed to, Inches	Location	Detail Number
1	4x6	6—10	3½x5½	Sill bottom	1
1	4x6	6—10	3½x5½	Sill top	2
4	4x6	4—8	3½x5½	Sill top and bottom	3
4	6x6	6—6	5½x5½	Posts	4
2	6x6	8—0	5½x5½	Caps	5
2	4x6	10—4	3½x5½	Plates	6
2	4x6	7—3	3½x5½	Plates	7
30	2x6	4—4	T. and G.*	Sides	8
7	2x6	4—4	T. and G.*	Sides	9
1	2x10	7—1½	1½x9½	Sign	
1	3x3	7—1½	2½x2½	Sign	10
4	3x3	1—6	2½x2½	Seat ends	10
15	1x6	1—6	T. and G.* floor	Advertising boards	...
4	¾	10—0	Quarter round	Advertising boards	...
8	4x4	1—2	.....	Brackets	11
32	2x6	12—0	T. and G.* redwood	Roof	12
8	2x3	8	1½x2½	Hip rafters	13
2	2x3	4	1½x2½	Ridge	13
8	4x4	1—2	Turned	Roof signs	14
4	2x6	2—6	1½x5½	Roof signs	...
4	3x3	1—6	2½x2½	Advertising signs	...
8	2x8	2—0	1½x7½	Seat ends	...
8	2x3	1—6	1½x2½	Cleats under seats	...
6	2x10	1—6	Sawed	Brackets under seats	...
12	2x3	7—0½	.....	White cedar seats	16
24	2x3	4—11½	.....	White cedar seats	16
4	⅜	12		Bolts	Thread and nut each end
16	½	14		Bolts	Thread and nu teach end
24	½	Cut washers			
8		Brackets as per detail			
4		½ in. x 2½ in. x 1 ft. 4 in. anchor bolts			
		Log screws, wood screws, nails, etc.			
		37 lin. ft. of No. 24 galvanized iron 4 in. wide			

*Tongued and grooved.

No Glass Windows Are Provided

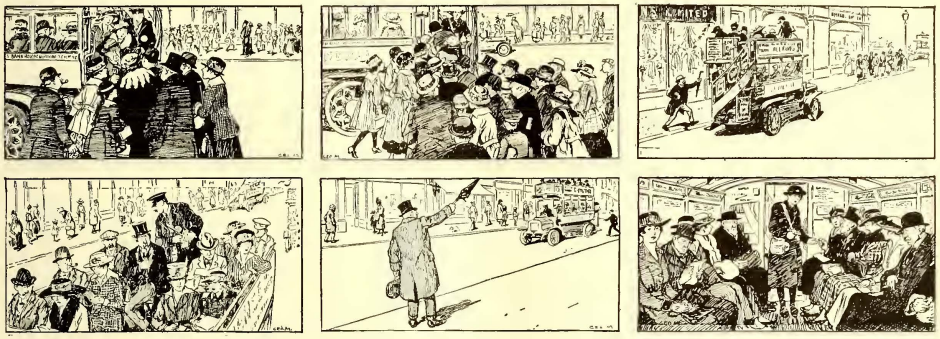
In neither type of shelter described are there any glass windows, as climatic conditions do not make them necessary. This feature eliminates the window glass maintenance problem, which is one that cannot be solved satisfactorily because tramps and mischievous small boys find window glass in small stations to be an appealing target at which to throw stones. The company installs no electric lamps in its small shelters, unless the conditions are exceptional. When electric lamps are used two are placed inside and three on a pole outside. Maintenance expense and cost of power are so great as to render this station lighting very objectionable.

While I am discussing the subject of shelters it may not be out of place to mention briefly the more pretentious stations which are used on the company's lines at a few points. At several stops on the lines, during the years when real estate subdivision activities were at their height, real estate companies secured the approval of the railway for the erection of stations in the interest of the real estate developments. In two cases very elaborate stations were erected, and in type and size they were in advance of the traffic demands at the time they were constructed and made ample provision for the growth of the territory which they served. They were, however, constructed entirely at the expense of the real estate companies. The illustration shown at the head of this article made from an architect's drawing shows an artistic passenger waiting station erected at a cost of $4,653 by the Lynwood Company, builders, owners and promoters of Lynwood townsite on the Santa Ana line of the company. This station was erected in 1917.

London Publicity on Rules of Conduct in Traveling

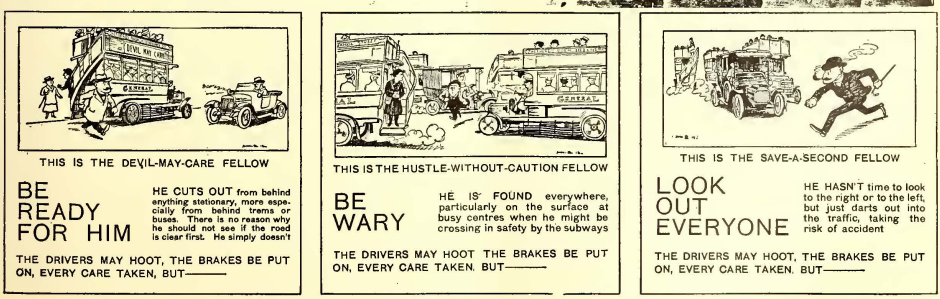
IN THE PAST the publicity of the Underground Railways and the London General Omnibus Company has been notable for its ability to create travel. During the past four years, with the shortage of men and materials, the burning question has been how to handle a greatly increased travel with more safety and dispatch. For this reason the advertising department of these companies has been giving its energies to preparing publicity that will be as effective in accelerating travel and promoting safety as the other publicity was effective in building custom.

For this work no color has been used other than tinted backgrounds for the station posters, but in accord with its policy the management has continued to employ high-class artists. Thus two of the series ema-



These views illustrate rules of conduct for travel on buses

Three posters designed to shorten station stops on the Underground Railway



Cautions to the careless pedestrian when crossing streets

RECENT PRODUCTS OF THE ADVERTISING DEPARTMENTS OF THE LONDON UNDERGROUND AND GENERAL OMNIBUS COMPANIES

nate from a regular artist of *Punch*, the famous humorous weekly, and the pictures have just that element of native wit that attracts the passenger's attention without reprobation. As a matter of fact, the poster entitled "Do Not Attempt to Enter a Crowded Car" satirizes the artist himself! The other pictures in the station poster series are: "Passengers Off the Car First, Please"; "Hurry Off, Please"; and "Pass Right Down the Car, Please." The artist who drew the station posters is also responsible for the accompanying half-dozen sketches relating to rules of conduct for travel on buses. These drawings appear in newspaper advertisements.

Another ingenious series is that of the different kinds of "fellows"—the avoid-the-light, save-a-second, absent-minded, hustle-without-caution, hustle-without-aim and the devil-may-care varieties.

C. E. R. A. Committees Appointed

New "Brown Book" of Central Electric Railway Association and Allied Bodies Just Issued

"BROWN BOOK NO. 9" of the Central Electric Railway Association has just been published. It gives the officers for 1919, already noted in this paper in connection with the annual February meeting of the association; the president's address and the report of the secretary-treasury, copies of various bulletins, committee appointments and other matters of local interest. The personnel of the various committees follows:

CENTRAL ELECTRIC RAILWAY ASSOCIATION

Auditing—Walter Shroyer, Anderson, Ind., chairman; L. T. Hixson, Indianapolis, Ind., and E. O. Reed, Lima, Ohio.

Annual Transportation—H. A. Nicholl, Anderson, Ind., chairman; S. W. Greenland, Fort Wayne, Ind.; C. K. Minary, Benton Harbor, Mich.; C. J. Laney, Akron, Ohio, and C. O. Sullivan, Lima, Ohio.

Bureau of Standards—Adolph Schlesinger, Indianapolis, Ind., chairman; G. H. Kelsay, Cleveland, Ohio; L. G. Tighe, Akron, Ohio; M. J. Kehoe, Springfield, Ohio; E. J. Burdick, Detroit, Mich., and Prof. D. D. Ewing, Purdue University.

Constitution and By-laws—A. W. Brady, Anderson, Ind., chairman; C. L. Henry, Indianapolis, Ind.; E. F. Schneider, Cleveland, Ohio; J. F. Collins, Jackson, Mich., and A. C. Blinn, Akron, Ohio.

Finance—F. D. Carpenter, Lima, Ohio, chairman; W. H. Forse, Jr., Anderson, Ind.; F. R. Coates, Toledo, Ohio; Harry Reid, Indianapolis, Ind., and T. A. Ferneding, Dayton, Ohio.

Hotel and Arrangement—S. D. Hutchins, Wilmerding, Pa., chairman; H. A. Nicholl, Anderson, Ind.; L. G. Parker, Cleveland, Ohio; F. R. Coates, Toledo, Ohio; John Benham, Chicago, Ill.; James H. Drew, Indianapolis, Ind.; H. E. Rasmussen, Indianapolis, Ind.

Interurban Freight and Motor Truck Competition—A. Swartz, Toledo, Ohio; chairman. Indiana: Bert Weedon, Indianapolis, Ind., chairman; J. A. Greenland, Fort Wayne, Ind., and James H. Drew, Indianapolis, Ind. Michigan: W. S. Rodger, Detroit, Mich., chairman; F. W. Brown, Grand Rapids, Mich., and F. N. Root, Kalamazoo, Mich. Ohio: F. R. Coates, Toledo, Ohio, chairman; E. F. Schneider, Cleveland, Ohio, and S. D. Hutchins, Wilmerding, Pa.

Membership—John Witt, Cleveland, Ohio, chairman; J. M. Enright, Toledo, Ohio; S. W. Greenland, Fort Wayne, Ind.; Harry Reid, Indianapolis, Ind.; C. F. Smith, Findlay, Ohio; R. A. Crume, Dayton, Ohio; J. B. Stewart, Jr., Youngstown, Ohio, and W. H. Douglas, Willoughby, Ohio.

Program—C. L. Henry, Indianapolis, Ind., chairman; R. T. Sullivan, Youngstown, Ohio; F. D. Carpenter, Lima, Ohio; W. H. Bloss, Mansfield, Ohio; H. G. Gilpin, Springfield, Ohio; W. S. Rodger, Detroit, Mich., and W. K. Morley, Grand Rapids, Mich.

Publicity—E. R. Kelsay, Toledo, Ohio, chairman; H. F. Kenfield, Chicago, Ill., and C. J. Laney, Akron, Ohio.

Readjustment—C. L. Henry, Indianapolis, Ind., chairman; W. S. Rodger, Detroit, Mich.; A. C. Blinn, Akron, Ohio; J. A. Van Osdol, Anderson, Ind.; W. K. Morley, Grand Rapids, Mich.; W. S. Whitney, Springfield, Ohio; Harry Reid, Indianapolis, Ind.; W. H. Bloss, Mansfield, Ohio, and L. E. Gould, Chicago, Ill.

Resolutions—A. W. Brady, Anderson, Ind., chairman; F. D. Carpenter, Lima, Ohio, and A. C. Blinn, Akron, Ohio.

Rules Governing Interchange of Equipment—H. A. Nicholl, Anderson, Ind., chairman; Harry Bullen, Detroit, Mich.; A. Swartz, Toledo, Ohio, and J. W. Glendenning, Jackson, Mich.

Standardization—R. C. Taylor, Albion, Mich., chairman; H. H. Buckman, New Albany, Md.; F. J. Foote, Springfield, Ohio; Charles Sigler, Warsaw, Md.; F. Heckler, Fremont, Ohio; W. E. Ralston, Michigan City, Ind.; Terrence Scullen, Cleveland, Ohio; S. Potter, Detroit, Mich.; C. A. Brown, Toledo, Ohio, and K. A. Simmons, Pittsburgh, Pa.

Uniform Charges for Repairs to Interchanged Equipment—H. G. Gilpin, Springfield, Ohio, chairman; Irwin Fullerton, Detroit, Mich., and S. R. Dunbar, Anderson, Ind.

Supply Men—S. D. Hutchins, Wilmerding, Pa., chairman; L. G. Parker, Cleveland, Ohio; W. H. Bloss, Mansfield, Ohio; L. E. Gould, Chicago, Ill.; E. C. Price, Springfield, Ohio; J. Alexander Navarre, Minneapolis, Minn.; E. C. Folsom, Chicago, Ill.; S. W. Crawford, St. Louis, Mo.; H. C. Decamp, East Pittsburgh, Pa.; E. F. Wickwire, Mansfield, Ohio; F. N. Root, Kalamazoo, Mich., and E. J. Smith, Detroit, Mich.

Transportation—G. K. Jeffries, Indianapolis, Ind., chairman; E. Smith, Fostoria, Ohio; H. G. Gilpin, Springfield, Ohio; C. E. Morgan, Grand Rapids, Mich.; J. F. Keys, Detroit, Mich.; J. C. Schade, Warsaw, Ind.; C. C. Collins, Cleveland, Ohio; W. K. Morley, Grand Rapids, Mich., and R. R. Smith, South Bend, Ind.

Track and Roadway—T. R. H. Daniels, Indianapolis, Ind., chairman; T. H. Sundmaker, Springfield, Ohio; John Kerwin, Detroit, Mich.; L. A. Mitchell, Anderson, Ind.; A. V. Brown, Sandusky, Ohio; H. D. Sanderson, Jackson, Mich., and W. F. Carr, South Bend, Ind.

CENTRAL ELECTRIC RAILWAY TRAFFIC ASSOCIATION

Standing Auditing—Walter Shroyer, Anderson, Ind., chairman; L. T. Hixson, Indianapolis, Ind., and E. O. Reed, Lima, Ohio.

Booster—F. D. Norveil, Anderson, Ind., chairman; C. O. Sullivan, Lima, Ohio; J. H. Crall, Indianapolis, Ind.; O. H. Murlin, Dayton, Ohio, and J. H. Pound, Benton Harbor, Mich

Conference—F. D. Norveil, Anderson, Ind., chairman; C. O. Sullivan, Lima, Ohio, and J. A. Greenland, Fort Wayne, Ind.

Conference with Central Freight Association and Central Passenger Association—J. H. Pound, Benton Harbor, Mich., chairman; F. D. Norveil, Anderson, Ind.; W. S. Whitney, Springfield, Ohio; C. O. Sullivan, Lima, Ohio, and J. H. Crall, Indianapolis, Ind.

Constitution and By-Laws—C. J. Laney, Akron, Ohio, chairman; Bert Weedon, Indianapolis, Ind.; E. Hamprecht, Findlay, Ohio; James Rollins, Evansville, Ind., and J. F. Keys, Detroit, Mich.

Freight Rates—F. D. Norveil, Anderson, Ind., chairman; J. S. Moore, South Bend, Ind.; W. S. Whitney, Springfield, Ohio; C. C. Collins, Cleveland, Ohio; N. Rumney, Detroit, Mich.; Bert Weedon, Indianapolis, Ind., and C. J. Laney, Akron, Ohio.

Interchangeable Penny Coupon Ticket—W. S. Whitney, Springfield, Ohio, chairman; O. H. Murlin, Dayton, Ohio, and J. H. Crall, Indianapolis, Ind.

Interline Baggage—O. H. Murlin, Dayton, Ohio, chairman; C. O. Sullivan, Lima, Ohio; J. A. Greenland, Fort Wayne, Ind.; J. F. Keys, Detroit, Mich., and J. O. Motto, Warsaw, Ind.

Joint Passenger Tariffs—W. S. Whitney, Springfield, Ohio, chairman; F. D. Norveil, Anderson, Ind.; J. F. Starkey, Sandusky, Ohio; J. H. Crall, Indianapolis, Ind., and J. F. Keys, Detroit, Mich.

Joint Freight Tariffs—J. H. Pound, Benton Harbor, Mich., chairman; H. R. Biery, Scottsburg, Ind.; C. B. Kleinhans, Toledo, Ohio; C. C. Collins, Cleveland, Ohio, and J. O. Bradfield, Columbus. Ohio.

Military Traffic—F. D. Norveil, Anderson, Ind., chairman; W. S. Whitney, Springfield, Ohio; J. H. Pound, Benton Harbor, Mich.; C. O. Sullivan, Lima, Ohio, and J. H. Crall, Indianapolis, Ind.

Official Classification—W. S. Whitney, Springfield, Ohio, chairman; J. A. Greenland, Fort Wayne, Ind.; N. Rumney, Detroit, Mich.; F. D. Norveil, Anderson, Ind., and C. J. Laney, Akron, Ohio.

Joint Exception Tariff—G. O. Sullivan, Lima, Ohio, chairman; J. H. Crall, Indianapolis, Ind.; H. R. Biery, Scottsburg, Ind.; G. M. Patterson, Kendallville, Ind.; J. H. Pound, Benton Harbor, Mich.; W. S. Whitney, Springfield, Ohio, and F. D. Norveil, Anderson, Ind.

Joint Weight and Inspection Bureau—J. H. Crall, Indianapolis, Ind., chairman; F. D. Norveil, Anderson, Ind.; W. S. Whitney, Springfield, Ohio; O. H. Murlin, Dayton, Ohio; N. Rumney, Detroit, Mich.; C. P. Ryan, Kokomo, Ind., and F. W. Brown, Grand Rapids, Mich.

Official Interurban Map—G. M. Patterson, Kendallville, Ind., chairman; J. H. Crall, Indianapolis, Ind.; O. H. Murlin, Dayton, Ohio; W. S. Whitney, Springfield, Ohio, and J. H. Pound, Benton Harbor, Mich.

Official Interurban Guide—C. O. Sullivan, Lima, Ohio, chairman; J. H. Crall, Indianapolis, Ind.; F. D. Norveil, Anderson, Ind.; J. F. Starkey, Sandusky, Ohio, and J. A. Greenland, Fort Wayne, Ind.

Rules Governing Settlement of Freight Claims—F. D. Norveil, Anderson, Ind.; chairman; J. S. Moore, South Bend, Ind.; J. S. Clark, Bluffton, Ind.; C. B. Kleinhans, Toledo, Ohio; C. O. Sullivan, Springfield, Ohio; N. Rumney, Detroit, Mich., and C. J. Laney, Akron, Ohio.

Storage and Demurrage—C. O. Sullivan, Springfield, Ohio, chairman; J. A. Greenland, Fort Wayne, Ind.; N. Rumney, Detroit, Mich.; Bert Weedon, Indianapolis, Ind., and E. Hamprecht, Findlay, Ohio.

CENTRAL ELECTRIC RAILWAY ACCOUNTANTS' ASSOCIATION

Compiling—L. T. Hixson, Indianapolis, Ind., chairman; I. E. Guthrie, Indianapolis, Ind.; H. F. McColgin, Scottsburg, Ind.; A. R. Baxter, Indianapolis, Ind., and A. L. Neereamer, Indianapolis, Ind.

Constitution and By-Laws—A. R. Baxter, Indianapolis, Ind., chairman; O. A. Small, South Bend, Ind., and J. P. Longon, Dayton, Ohio.

Freight and Excess—Walter Shroyer, Indianapolis, Ind., chairman; L. W. Van Bibber, Springfield, Ohio, and James Sweeney, Akron, Ohio.

Light and Power—H. T. Ledbetter, Toledo, Ohio, chairman; James Sweeney, Akron, Ohio; K. A. George, Kokomo, Ind.; H. E. Vordermark, Fort Wayne, Ind., and J. S. Minary, Benton Harbor, Mich.

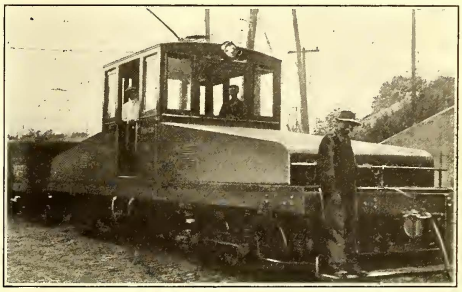
Membership—O. A. Small, South Bend, Ind., chairman; C. B. Baker, Findlay, Ohio, and J. F. Strattan, New Albany, Ind.

Program and Arrangement—E. O. Reed, Lima, Ohio, chairman; J. B. Hooper, Detroit, Mich., and G. H. Wilson, Evansville, Ind.

Readjustment—W. H. Forse, Jr., Indianapolis, Ind., chairman; J. P. Longon, Dayton, Ohio, and G. B. Dobbin, Akron, Ohio.

Steel Body Electric Locomotive Rebuilt

THE Georgia Railway & Power Company has recently built a new steel-body steeple-type locomotive in its shops to haul coal cars from the steam railroad to its Davis Street power plant. The body was rebuilt from a motor car and the electrical equipment and trucks are the same as previously used. The locomotive has four GE-1000 motors with 15:69 gear ratio mounted on Peckham trucks. One K-35-G controller is used. The air brakes are Westinghouse type AMM with a 12-in. brake cylinder. The locomotive is equipped with Janney couplers and Golden Glow headlights. The total weight is 45,000 lb. The accompanying table gives some of the principal dimensions:



LOCOMOTIVE HAULING A LOADED COAL CAR

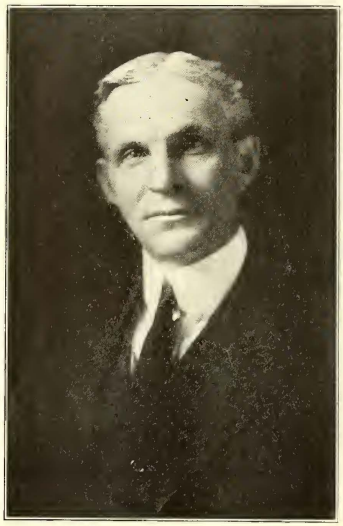
Length of body	34 ft. 0 in.
Width of body	8 ft. 2 in.
Height over all	12 ft. 8 in.
Bolster centers	17 ft. 6 in.
Wheelbase	4 ft. 0 in.
Wheels	Cast iron; 33-in. diameter; 3-in. tread; 4-in. axles.

The theory of commission regulation is well understood. Utilities, as well as the public, must be protected. The law permits them a fair return upon the value of their property. The obligation to increase a rate when it is shown to be too low is as imperative as it is to decrease a rate when it is too high.

An Optimistic Talk on Street Railways by Henry Ford

From an Interview with an ELECTRIC RAILWAY JOURNAL *representative, April 9, 1919*

ELECTRIC railway men who have been bewailing the decline and early death of their industry should be shocked into a joyous frame of mind when they are told that Henry Ford—yea, Henry Ford of all others—emphatically does not believe that the days of the railway are no more. Nay, further, he believes that the street railway, in particular, can be of greater usefulness in the immediate future than it ever was in the brightest days of the past.



HENRY FORD

But, and there is the rub — that greater usefulness cannot come, he says, until the industry flings traditional practices to the winds. The twofold absurdity of carrying five to ten times as much wood and iron as the weight of the passenger and of failing to give service and fares that would attract the vast number of pedestrians must stop. Although the railway field was not his specialty, he was going to prove at his own expense that it is possible, practicable and profitable to build a car that will hold the same relation to other street cars as the Ford for the millions does to the automobile for the thousands. This car will be so light that its fuel consumption on rails will be extremely low, and furthermore it will not require heavy expense for track construction and up-keep. Nor would this lightness be secured at the sacrifice of strength. Even automobile steel would not be good enough for him, because the steel which had been developed for the Fordson tractor was still stronger. Why use a 4-in. or 5-in. axle when 2-in. of a better steel would serve; and so with the trucks, the wheels and other parts?

A light car meant frequent service; yet frequent service alone was not enough to develop the greatest possible travel. Let the user of such a car work on the maxim "Nobody Walks" by beginning with the lowest base fare possible. From what he had seen and learned Mr. Ford ventured to prophesy that street railway traffic would be doubled at least if short headways and low graduated fares went hand in hand. It was up to the street railway men to see that the service was so good and so cheap that the owner of the automobile would use street railway service habitually instead of occasionally. Then the number of railway cars would rise from a hundred thousand to a quarter million or more.

Although the street car which Mr. Ford's staff is now developing is intended for direct gasoline drive, he saw no reason why the principle of using the strongest available materials should not be applied to cars with electric-motor drive.

The success already achieved with the one-man safety car surely bears out the sound sense of what Mr. Ford has to say on light weight and frequent service. In fact, he was amused to learn that the safety car had instinctively been nicknamed the "Ford of the Street Car Business."

Detroit Refuses to Pay the Price

Purchase of Detroit City Lines for $31,500,000 Voted Down 70,271 Against 63,883 Despite Fact that Charter Calling for Municipal Ownership of Traction Lines Was Accepted at a Seven to One Vote in June, 1918—What Mayor Couzens and Other Prominent Detroiters Have to Say on the Causes of Rejection

TO THE OUTSIDER who has watched the long-drawn-out struggle between the people and the street railway of Detroit to come to some settlement, the rejection of the latest purchase plan at the election of April 7 must have come as a great surprise. Perhaps in no other large city have so many prominent men of business forgotten their usual antagonism toward municipal ownership for the sake of ending an intolerable situation. The traction problem had been a political football so long that both sides were heartily tired of negotiation and counter-negotiation. Finally, the Detroit United Railway on the one side and the Mayor and Street Railway Commission on the other agreed on a compromise valuation of $31,500,000, whereupon the voters of Detroit were asked to vote upon its acceptance or rejection.

Despite the strong sentiment for the municipal ownership of the street railway system, the election of Monday, April 7, not only failed to get the three-fifths vote necessary, but actually failed to win one-half of the votes cast, the "Nays" numbering 70,271 and "Yeas" 63,883. In view of the importance of the election, the ELECTRIC RAILWAY JOURNAL had already sent one of its representatives to Detroit to interview Mayor Couzens and others on the meaning of the people's decision whichever way the election should turn out.

MAYOR COUZENS SOUGHT A BUSINESS MAN'S SETTLEMENT

When seen on April 8, the day following the election, Mayor Couzens did not hesitate to express disappointment at the rejection of the compromise valuation. It was true that during the past decade or more every plan offered had been negatived at the polls. Nevertheless, he had hoped that the education in working together for general social betterment, promoted by the war, would manifest itself in the desire of the people of Detroit to examine the basis of the traction settlement in a broad way regardless of politics and prejudices. There seemed to be all the more reason for this expectation because the people had accepted by the overwhelming ratio of seven to one a new charter in June of last year, by which the forty-two-member board of estimate and council and the twenty-one-member board of education had been replaced by much smaller bodies, and by which charter also so much power had been centered in the mayor that actually even the tax rates were up to him. Beyond all this, the charter made street railway ownership and operation mandatory. His Honor did not assert that the price was the very lowest that might possibly be obtained, but if he had been negotiating in private business under the same circumstances he certainly would believe that it was worth a couple million dollars to settle on a compromise basis. It surely would be worth this money to get rid of what had been for so long the stumbling block in Detroit politics—the street railway system.

One criticism that the mayor had to offer of the Detroit United Railway was that it knew very well that its franchises would expire after thirty years. Therefore, its policy toward the public should have taken this fact into consideration. The company could hardly expect to receive any high price for its property because property on leased ground certainly was not as valuable as property on land owned in fee.

In conclusion the mayor said that he was not prepared to express himself as to the next move. He wanted time to reflect as to what was the best course of action in the interests of the public.

OTTO KIRCHNER ANALYZES DIVERSITY OF OPPOSITION VOTE

Otto Kirchner, former Attorney General of the State of Michigan, who drew up the traction agreement as counsel for the city administration, pointed out that the vote against the purchase was an anti-municipal-ownership vote only in small part. The general public felt that it had not been treated right by the Detroit United Railway and its predecessors. After litigation on almost every request made by the city, they had come to the conclusion that it was useless to do anything that would make the railway under private management a permanent institution. The result was that the larger part of the company's franchises within the city limits had expired by limitation except the 3-cent lines, and even these would go in 1923. Therefore, the company had no vested rights but was simply occupying the streets on sufferance because the city had nothing apparently with which to secure the same transportation facilities quickly.

Aside from the presumably small number of people opposed to municipal ownership as a matter of principle, regardless of circumstances, the opposition had recruited many votes from people who were opposed to practically anything that gave a seeming concession to the Detroit United Railway. The average man who owned little or no property would not understand that there could be a difference of several million dollars between the valuations reached by the experts of the opposing sides. Yet the difference in so large a transaction really was comparatively so small that even the compromise figures could be considered low. Mr. Kirchner thought the Detroit commissioners had acted like business men rather than politicians. Another large element that was in evidence was composed of voters who lived along the 3-cent lines and others who were getting the eight-for-twenty-five-cent workmen's tickets. These voters feared that they would have to pay a higher fare as soon as the city took over the lines. There was also an exaggerated and erroneous idea concerning the privilege of the Detroit United Railway interurban lines to come in over the municipalized tracks. In the first place, the Michigan Railroad Commission would have had the right to com-

pel the city to permit the interurban cars to come into town instead of dumping their passengers at the city limits. In the second place, the interurban cars ought to be welcomed into the city because they were an important source of Detroit's business prosperity. In the third place, the agreement did not permit the company to do any purely city business and it would have been obliged to pay actual cost plus 30 per cent for the privilege of running over the city tracks. Mr. Kirchner also believed that, while the measure was wholly non-partisan, many politicians had fought the purchase because they were not willing that Mr. Couzens should have the credit of having solved the street railway problem.

In view of the fact that the Detroit United Railway was now on the streets largely through sufferance, it had no vested rights such as might be claimed for a street railway with actual franchises. Therefore it was entirely proper, in his opinion, for the city to have competitive services. The idea of piecemeal construction of an opposition street railway was impracticable, but the suggestion had been made that a number of motor buses be installed on certain streets or parallel to them where traffic conditions were most in need of relief. In fact, R. W. Meade, formerly of the Fifth Avenue Coach Company of New York, was already trying to arrange for such service.

Elements of Opposition As Set Forth by David A. Brown

To determine the opinions of some representative business man widely known for his civic patriotism, the ELECTRIC RAILWAY JOURNAL representative called upon David A. Brown, president General Ice Delivery Company. Mr. Brown's analysis of the opposing vote covered the five reasons following in the order of their importance.

1—Many people feared that the city was not committing itself merely to an expenditure of $31,500,000, but to an eventual outlay of double or triple that amount, which would mean heavy increases in taxes. This fear was all the more justified by the fact that the voters were also asked to (and did) approve other large expenditures for public purposes at this election.

2—Others had the impression that the city was being asked to pay too much money for worn-out or partially obsolete equipment.

3—Still others feared that municipal ownership would deprive them of exceptionally low fares.

4—Some did not want to approve an arrangement that gave the Detroit United Railway perpetual rights for the entrance of interurban cars.

5—Finally, the decision of a number of voters had been affected by Henry Ford's announcement that he was working upon a gas-drive car that would make much electrical equipment out of date.

The interview concluded with a heart-to-heart talk with one of the officials of the Detroit United Railway. This official has been with the company for many years, and like many of his co-workers he has shown his faith in Detroit by investing all his savings there. He stated that when the present administration took over the property nearly a quarter century ago it inherited a number of perplexing and trouble-breeding problems. Many efforts had been made to solve them, but it seemed simply inevitable that the Detroit United Railway was deemed to remain a "houn' dog" to be kicked around by every selfish politician looking for a sure-fire issue.

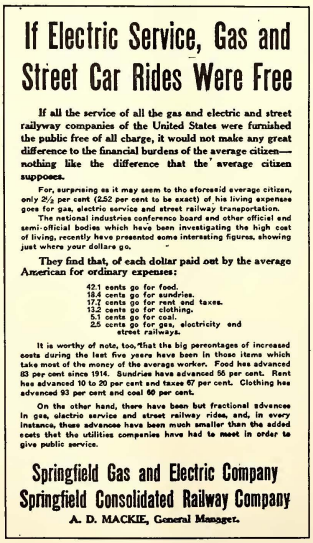
As to the election just past, no other course than patient waiting was open to the company. It had agreed to a compromise that did not allow a cent for going concern and the like. Following this there was nothing more to do than to await and abide the will of the people. He was sure that Mayor Couzens and the Board of Street Railway Commissioners had worked earnestly and sincerely, for the best interest of the city, even if he did believe that the property was worth more than they did.

There surely were many directions in which Detroit's electric railway service could be improved, especially re-routing, but what bankers would loan money in the present uncertain state of the company's future? As a Detroiter proud of his city's growth, he felt this choking down of its essential transportation facilities even more keenly than he did as a railway operator.

The Mountain or the Molehill?

IN A RECENT series of newspaper advertisements the Springfield (Ill.) Consolidated Railway has brought out in an unusually striking way the moderation of electric railway pleas for adequate revenues and the comparatively small effect the payment of a just fare would have upon the public.

According to one set of nine advertisements the public in order to get real relief from high cost burdens



If Electric Service, Gas and Street Car Rides Were Free

If all the service of all the gas and electric and street railway companies of the United States were furnished the public free of all charge, it would not make any great difference to the financial burdens of the average citizen—nothing like the difference that the average citizen supposes.

For, surprising as it may seem to the aforesaid average citizen, only 2½ per cent (2.52 per cent to be exact) of his living expenses goes for gas, electric service and street railway transportation.

The national industries conference board and other official and semi-official bodies which have been investigating the high cost of living, recently have presented some interesting figures, showing just where your dollars go.

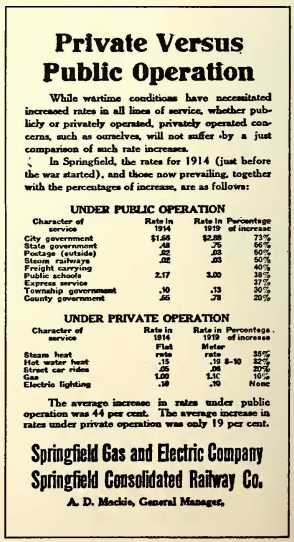
They find that, of each dollar paid out by the average American for ordinary expenses:

42.1 cents go for food.
18.4 cents go for sundries.
17.1 cents go for rent and taxes.
13.2 cents go for clothing.
5.1 cents go for coal.
2.5 cents go for gas, electricity and street railways.

It is worthy of note, too, that the big percentages of increased costs during the last five years have been in those items which take most of the money of the average worker. Food has advanced 83 per cent since 1914. Sundries have advanced 56 per cent. Rent has advanced 10 to 50 per cent and taxes 67 per cent. Clothing has advanced 93 per cent and coal 60 per cent.

On the other hand, there have been but fractional advances in gas, electric service and street railway rides, and, in every instance, these advances have been much smaller than the added costs that the utilities companies have had to meet in order to give public service.

Springfield Gas and Electric Company
Springfield Consolidated Railway Company
A. D. MACKIE, General Manager.



Private Versus Public Operation

While wartime conditions have necessitated increased rates in all lines of service, whether publicly or privately operated, privately operated concerns, such as ourselves, will not suffer by a just comparison of such rate increases.

In Springfield, the rates for 1914 (just before the war started), and those now prevailing, together with the percentages of increase, are as follows:

UNDER PUBLIC OPERATION

Character of service	Rate in 1914	Rate in 1919	Percentage of increase
City government	$1.68	$2.88	73%
State government	.48	.75	56%
Postage (outside)	.02	.03	50%
Steam railways	.02	.03	50%
Freight carrying			40%
Public schools	2.17	3.00	38%
Express service			37%
Township government	.10	.13	30%
County government	.05	.06	20%

UNDER PRIVATE OPERATION

Character of service	Rate in 1914	Rate in 1919	Percentage of increase
	Flat rate	Meter rate	
Steam heat			35%
Hot water heat	.15	.12 8-10	82%
Street car rides	.05	.06	20%
Gas	1.00	1.1C	10%
Electric lighting	.10	.10	None

The average increase in rates under public operation was 44 per cent. The average increase in rates under private operation was only 19 per cent.

Springfield Gas and Electric Company
Springfield Consolidated Railway Co.
A. D. Mackie, General Manager.

HOW THE SPRINGFIELD CONSOLIDATED RAILWAY IS SETTING THE PUBLIC ARIGHT

should seek relief from the 97.5 cents which it spends out of every dollar for food, clothing, taxes, etc., rather than from the 2.5 cents which it pays out for gas, electricity and street car fares.

Thoughtless persons, it was said, may be persuaded to mistake the molehill for the mountain. Thoughtful persons, however, will hardly permit themselves to be deceived as to the needs of the electric railways, for these carriers want no more relief than governmental divisions and publicly operated concerns have taken.

The second series of eighteen advertisements was printed in a uniform size of type, beginning "Do you know" and in most cases ending with "Suppose you check the figures by your own bills." They emphasized such points as this:

Do you know that the U. S. Government says that it now costs $16.59 to buy as much living necessities as $10.00 would buy five years ago and that, of this $6.59 increase on each $10.00 of living expeness, only 11 cents have gone for gas, electricity and street railway rides! Why not check the figures by your own bills!

Can Effect of Fare Increase Be Predicted?

Relation of Stable to Unstable Traffic Determines Limits Between Which Fare Increase Will Result in Revenue Increase

BY C. E. SCHUTT

Engineer Krehbiel Company, Chicago, Ill.

REPORTS by electric railway companies of the increase in revenue derived from increased fares indicate that these companies have a difficult situation confronting them in that the increase in revenue has not been as great as expected and that there seems to be no way of telling in advance even approximately what the amount of increase in revenue will be.

It is customary to speak of the theoretical or possible per cent increase in revenue as directly proportional to the increase in rate of fare. Of course such an increase in revenue cannot be considered as probable nor even within the range of expectation, since it would be based on the assumption that the number of fares would not be effected by increasing the rate of fare. It has been the general experience that the numbr of fares has been very materially decreased by an increase in fare.

This situation presents an interesting problem which unlike engineering problems is not susceptible of exact mathematical solution, but it is possible to determine certain limits between which we may expect results to fall and thereby to furnish a basis for estimates, from which adjustments can be made as experience is gained. Such a plan is outlined in this article which it is hoped may prove suggestive in furnishing a basis for calculations which will give results more nearly consistent than those heretofore obtained.

If 100 per cent of the street car travel in a given city were a necessity to the patrons, *i.e.*, if it were necessary that 100 per cent of the patrons use that means of going to and from work, a change in fare would result in an immediate proportional change in revenue. If on the other hand the car service could be used at will by the patrons, there would be an immediate decrease in travel following an increase in rates. Obviously, then, an electric railway company sells a necessity to those who must use the cars, and a convenience or a luxury to those who may or may not use the cars as they choose. It is the latter class of service that produces a portion of the income most difficult to estimate under conditions of changing fares. These two classes of traffic will be referred to hereafter as stable and unstable traffic.

The stable or necessary traffic may be assumed to produce an immediate increase in revenue in proportion to the increase in rate of fare. Ultimately, however, we should expect some reduction in the number of fares due to readjustment of industry and living if it were found necessary unduly to increase rates to meet operating expenses.

The unstable traffic cannot be expected to show increased revenue proportional to a fare increase on account of a natural decrease in travel. Optimistically we may expect that the revenue from this class of traffic will remain substantially the same within reasonable limits of fare change. This will give a basis for estimating the maximum expectation. The lower limit of expectation from unstable traffic may be estimated conservatively by assuming that doubling the fare will cut traffic practically to zero while giving free rides will double the traffic, with corresponding effects in between. This lower limit will represent more nearly the immediate expectation while the upper limit will represent the ultimate expectation for increase in revenue from unstable traffic after it has become adjusted to and accustomed to increased fares.

On the above basis some curves have been worked out and are shown here. Fig. 1 shows, in per cent of travel at a five-cent fare, the upper and the lower limits of total travel when 30:70 is the ratio of stable to unstable traffic. Fig. 2 shows the upper and lower limits of expectancy in revenue increase (or decrease)

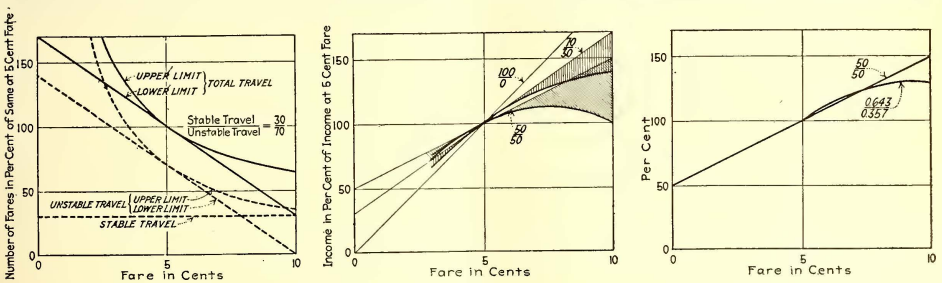


Fig. 1 Fig. 2 Fig. 3

DIAGRAMS SHOWING EFFECTS OF INCREASES IN ELECTRIC RAILWAY FARES

—At 5 Cents— Stable Traffic per Cent of Whole	Unstable Traffic per Cent of Whole	Per Cent Increase in Fare	Total Number of Fares in per Cent of Number at 5 Cents Upper Limit	Total Number of Fares in per Cent of Number at 5 Cents Lower Limit	Total Income in per Cent of Increase at 5 Cents Upper Limit	Total Income in per Cent of Increase at 5 Cents Lower Limit	Per Cent Increase in Revenue Upper	Per Cent Increase in Revenue Lower
100	0	—40	100	100	60	60	—40	—40
		—20	100	100	80	80	—20	—20
		0	100	100	100	100	0	0
		+20	100	100	120	120	+20	+20
		+40	100	100	140	140	+40	+40
		+50	100	100	150	150	+50	+50
		+60	100	100	160	160	+60	+60
		+80	100	100	180	180	+80	+80
		+100	100	100	200	200	100	+100
70	30	—40	120	112	72	67.2	—28	—32.8
		—20	107.5	106	86	84.8	—14	—15.2
		0	100	100	100	100	...	...
		+20	95	94	114	112.8	+14	+12.8
		+40	91.4	88	128	123.2	+28	+23.2
		+50	90	85	135	127.5	+35	+27.5
		+60	88.7	82	142	131.2	+42	+31.2
		+80	86.6	76	156	136.8	+56	+36.8
		+100	85	70	170	140	+70	+40.
50	50	—40	133.3	120	80	72	—20	—28
		—20	112.5	110	90	88	—10	—12
		0	100	100	100	100	0	0
		+20	91.7	90	110	108	10	8
		+40	85.7	80	120	112	20	12
		+50	83.3	75	125	112.5	25	12.5
		+60	81.3	70	130	112	30	12
		+80	78.5	60	140	108	40	8
		+100	75	50	150	100	50	.....
30	70	—40	146.6	128	88	76.8	—12	—23.2
		—20	117.5	114	94	91.2	—6	—8.8
		—0	100	100	100	100	...	...
		+20	88.3	86	106	103.2	+6	+3.2
		+40	80	72	112	100.8	+12	+0.8
		+50	76.6	65	115	97.5	+15	—2.5
		+60	73.8	58	118	92.8	+18	—7.2
		+80	69	44	124	79.2	+24	—20.8
		—100	65	30	130	60	+30	—40

as the rate of fare is varied in one step in either direction from a fixed standard to which the traffic is accustomed. These curves are shown for the ratios 100:0; 70:30 and 50:50 of stable to unstable traffic. The accompanying table gives further comparisons.

In applying these curves to a specific case, consider a company which collects in round numbers 240,000 fares per day, 60,000 of which or about 25 per cent, are collected between 5 a.m. and 9 a.m. If this can be taken as an indication of the amount of stable traffic, and assuming that all of these riders will again ride on the cars later in the day, a ratio of stable to unstable traffic of 50:50 is obtained. Referring to the curves in Fig. 2 it will be seen that an increase of 40 per cent in fare would give a minimum expectation of 12 per cent increase in revenue and a maximum (probable, ultimate) of 20 per cent increase.

With operating companies which have experimented with fare increases and have actual data pertaining thereto a further check and closer results can be obtained. A certain operating company estimates its stable traffic, with a 5-cent fare, at 50 per cent. It finds that a 40 per cent increase in fare has produced a 20 per cent increase in revenue. This is the maximum of expectation for the above ratio; the minimum is 12 per cent. This company is now in possession of data with which to get a view of the problem from a different angle, *i.e.*, of adjusting the estimate of ratio of stable to unstable traffic in accordance with results.

Consider now the extremes of traffic which would produce the above result. The 20 per cent increase in revenue may be considered as falling on the upper limit of expectancy of traffic having a ratio of stable to unstable of 50:50, or it may be considered as falling on the lower limit of some ratio *A:B*. Taking the two points 100:5 (*i.e.*, 100 per cent and 5 cents) and 120:7 (*i.e.*, 120 per cent and 7 cents) as two points on the lower-limit curve, the ratio *A:B* is found as 64.3:35.7. The curve extended is shown in Fig. 3 on which a fare of 8 cents shows 25.7 per cent minimum increase in revenue with 30 per cent maximum.

White Bricks Replace Painted "Danger Lines" on Pavement

WHERE the United Railroads cars round the loops at the foot of Market Street in San Francisco, there is very heavy pedestrian traffic across the tracks, particularly during the morning and evening rush hours. As the front and rear ends of the cars swing out well beyond the rails on the sharp curves it has been the custom to keep a white stripe painted on the pavement to mark the limit of the danger zone. But these lines last only a few weeks and in fact are at their maximum efficiency as markers only for the first few days because the contrast in color quickly wears off, particularly in wet weather.

A plan of making these lines permanent by inlaying in the pavement intermittent rows of white enameled bricks has recently been carried out, and as no maintenance is anticipated, it is expected that this will be

DANGER LINES SHOWN BY WHITE BRICK

cheaper in the long run than the use of paint. Holes were cut in the asphalt a trifle larger than the bricks which were then grouted in with neat cement. The use of a dotted line was considered more striking to the eye than a continuous line would have been. About 330 bricks were used for all three loops. These bricks, which cost $110 per thousand, would not be suitable under vehicular traffic, but are expected to give satisfactory service at this point where nothing but pedestrian traffic crosses the pavement.

The words "Danger, Keep Off" were put in two places just inside the white brick line, set flush with the pavement surface. The letters were made 12 in. square and were cast at the company's shops, the facing material being marble dust and white cement. The letters are 2 in. thick, of which only the upper half is the white composition, the remainder being common concrete reinforced with No. 12 galvanized wire. The letters were cast face down, the marble compound being put into the forms first and on this a solid concrete base 12 in. square was cast on all letters alike.

When the letters had to be put in basalt-block pavement a section of the blocks was removed and the letters were set in asphalt. Asphalt was filled in the inclosed parts of the letters before they left the casting yard. The bricks and letters were laid by the street repair crew without difficulty.

The work was done under the direction of B. P. Legare, engineer maintenance of way, United Railroads.

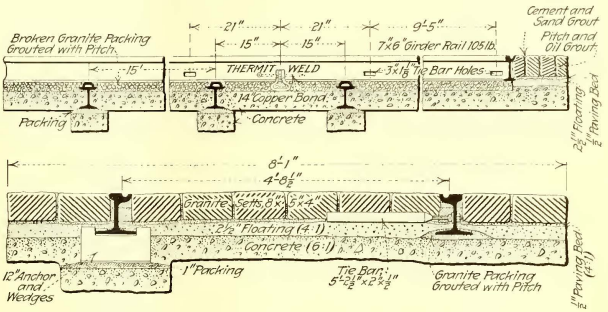
British Track Laid Without Ties

Leeds Practice Quoted as an Example—Instances of Use of Ties on High-Speed Lines or with Poor Subsoil

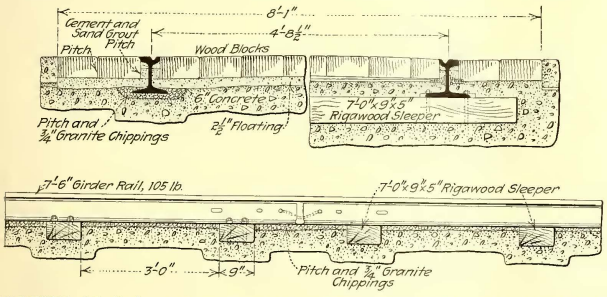
BOTH American way engineers and American manufacturers of way material should be interested in the following particulars of city track construction at Leeds, inasmuch as it is typical of the latest British practice which is radically different from anything done in the United States or Canada. Possibly the most fundamental difference is that cross-ties, so common with us, are the exception in the United Kingdom. Instead, the rails are laid on a concrete bed with nothing more between the base and the concrete than some pitch-grouted packing. The construction shown in an accompanying illustration was put down by R. Bickerstaffe Holt, who, until March, 1919, was highways and permanent way engineer of Leeds but is now a member of the staff of C. P. Sandberg, consulting engineer, London. Mr. Holt is the author of "Tramway Track Construction and Maintenance" (March, 1915) and a recognized authority on the subject.

The construction in question shows concrete laid all the width of the track for situations where the subsoil is clayey and hard to drain. The mix 6 : 1 means four parts of broken stone two parts of sand and one part of cement. The depth of this base is approximately doubled at the rail anchorages, which are spaced 15 ft. centers ordinarily and 10 ft. on the higher-speed lines. Except at these anchorages the rail bases are imbedded in a granite packing grouted with pitch or some patented compound like "Fibrastic." Between the concrete subbase as a whole and the paving bed, there is used a 4: 1 mix (four parts of sand to one part of cement) which is not actually a floating mixture but a moist mixture pounded in. The ½-in. paving bed for the granite block paving is also of this moist cement. Once this has set it will tend to prevent water from surging under loosened rails or paving. In this connection, Mr. Holt points out in his book that: "It is a mistake to suppose thata sand paving bed affords any advantage in the nature of a cushion beneath the paving, after the setts (or paving blocks) have been rammed; the bed is perfectly hard and unyielding, and in any case it is undesirable to have a resilient cushion between the setts and the foundation. If resiliency is desired it should be obtained at the surface of the paving, not beneath it." Where wood blocks are used, as in front of churches and elsewhere, they are laid exactly as granite. On suburban roadways the top covering is 4½ in. tar and macadam.

The 7-in. 105-lb. rail used in Leeds is a special design registered by Mr. Holt. Its web is $\frac{1}{16}$-in. thicker than the web of the British standard rail of equal weight and is directly beneath the center of the rail tread. The tread is convex and is inclined toward the groove, the convexity and inclination arrived at being the result of hundreds of gagings of partly-worn rail and wheel tire sections. In this form of the tread, Mr. Holt anticipated the design ordered by the Brooklyn Rapid Transit Company in 1915, although his reason for wanting a coned tread is not the same. It will be recalled that the Brooklyn section was changed in order to reduce such corrugation as seemed due to over-stressing the metal in the rail tread because of insufficient areas of contact between wheel and rail. In Leeds, the change was made to insure longer life and better traction quite regardless of any one factor of destruction. It is not asserted in Leeds that the particular curvature used there should be universal, because differences in rolling stock, brake rigging and brakeshoes, characteristics of rail and wheel metal, etc., must all have some influence in the determination of the most efficient curvature or tread-to-tread contact on a given railway. More than 7000 English tons of this section have been laid since January, 1910, at Leeds. No extrusion of metal has been observed to date although as many as 2,000,000 cars averaging 11 English tons each empty and 15 loaded have passed over one route so equipped.



STANDARD TRACK CONSTRUCTION IN LEEDS



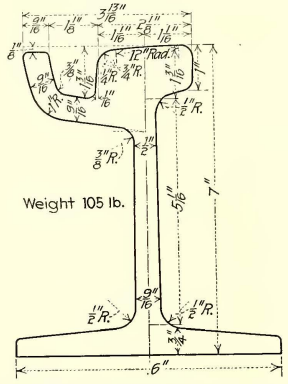
SLEEPER OR CROSS-TIE CONSTRUCTION OCCASIONALLY USED FOR PAVED STREETS IN CLAYEY SOIL AND ON HIGH SPEED LINES

The rails are helped to stay to gage by means of 3-in. x 1⅛-in. tie bars or rods spaced 3 ft. 6 in. The standard rail connection is the thermit weld, some 20,000 welds having been made in Leeds since 1902. In fact, Leeds was the first big undertaking to apply thermit for the elimination of the joint, and it has adopted every im-

provement which seemed desirable in the light of its own experience or the experience of others. The welds made in recent years show a great improvement in freedom from breakage over those of earlier years. In the opinion of Mr. Holt, it is time that city rails were made of compositions and to sections more suitable for welding. It is unfair to expect perfection when the profiles are designed for fish-plate joints and the web is too thin to withstand molten metal without liability of damage. Most of the breaks that have occurred in thermit welds were in rails that had previously been weakened by being bored for mechanical joints. As a matter of precaution, a 14-in. No. 0000 copper bond is used to insure an uninterrupted return in case of breakages. In recent welding of fish-plate joints and repairs of broken thermit welds, the Leeds City Tramways has used home-made electric welds. However, for all new work the thermit process remains standard.

Cross Ties Desirable with Bad Subsoil

While cross-tie, or transverse-sleeper, construction is comparatively scarce in Great Britain, it is accepted by many engineers as desirable where the subsoil is bad. Elsewhere the only advantage of the ties is to act as



SECTION OF LEEDS SPECIAL RAIL

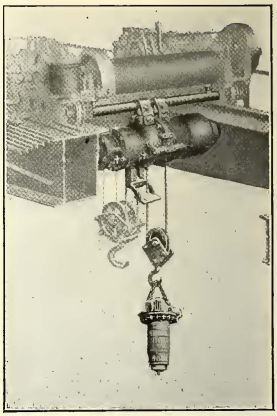
anchors when the track is floated and by their resiliency to absorb some vibration. But it is thought that all of the latter advantage is lost if rails between the ties rest on a rigid foundation. Thus, in Leeds, there is a short section of track resting on ties where the foundation between the ties consisted originally of cement and granite chippings. In the course of time this foundation required attention, and it was replaced under the rails with pitch and chippings, as indicated in one of the drawings. The standard construction is also shown.

The Leeds system is one of the first users of the Sandberg "sorbitic" process of hardening the head of a rail in place. The pioneer installation amounts to about 2400 ft. on Park Row and elsewhere. On Park Row more than 250,000 cars have run over this hardened rail in two years, yet Mr. Holt has found no evidence of wear. Better still, the incipient corrugations in the rail at the time the hardening process was applied have since disappeared. The hardening need not extend to a depth greater than $\frac{3}{16}$ in. It is not comparable exactly with case-hardening as one molecular granulation blends into the next instead of presenting a line of cleavage.

Auxiliary Hoist for Traveling Cranes

AN AUXILIARY hoist for attaching to any standard overhead electric traveling crane, as shown by the illustration, has recently been developed by N. B. Payne & Company, New York City.

The hoist does not require additional room overhead nor does it shorten the travel of the trolley on the bridge nor interfere with the accessibility of the main hoist. It is pointed out by the manufacturers that the average traveling crane in a day's work usually handles a far greater number of light loads than heavy loads. Since cranes for lifting heavy loads are slow-moving, their use results in a serious loss of time if they also handle the light loads. Thus a 20-ton crane, with a hoisting speed of 12 ft. per minute per load will handle a 3-ton load at but slightly greater speed. But with the auxiliary hoist a light load of say 3 tons may be handled at a speed of from two to ten times that of the main crane.



AUXILIARY HOIST APPLIED TO CRANE

Very often the hook and block of the main crane together weigh more than some loads frequently handled. The auxiliary hook and block being much lighter require less power. The labor saving with the auxiliary hoist is another important item, especially when a gang of men must wait for a small piece to be slowly moved by a large crane. By the application of this auxiliary attachment any standard single hoist electric traveling crane may be equipped with two lines for drop-bucket service. The control may be arranged from cage, floor or pulpit to suit the crane to which it is applied.

New Type of Solderless Connector

THE accompanying illustrations show a new type of solderless connector for splicing small wire which has recently been placed on the market by Dossert & Company, New York. This is designated as type "D" two-way connector and consists of male and female threaded parts acting upon a slotted tapered sleeve or

TYPE D, NO. 8 CONNECTOR; TYPE D, NO. 14 CONNECTOR

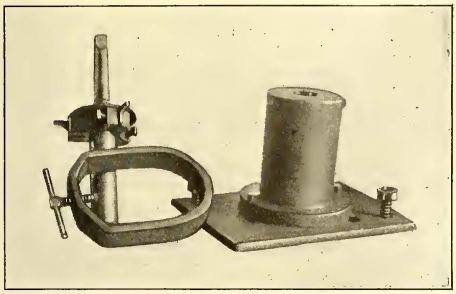
bushing, making the splice by compression. This connector is supplied in two sizes—No. 8 being for use on No. 8 and No. 9 wire and No. 14 being for use to connect No. 10, No. 12 or No. 14 wire as desired.

The illustrations show the actual sizes of the connectors as well as the details of their construction. Either solid or stranded wire can be connected.

Boring Machine for Journal Brasses Made from Old Axle

Machine Used in Chicago Which Turns Out Four Brasses a Minute and Needs No Experienced Labor to Operate It

THE Chicago Elevated Railways at the Wilson Avenue shops of the Northwestern Division have made from an old axle a very effective piece of equipment for boring out journal brasses. Prior to the construction of this machine several methods were tried but as none proved either satisfactory or efficient

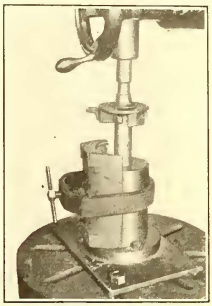


END MILLING TOOL DISASSEMBLED SHOWING VARIOUS PARTS

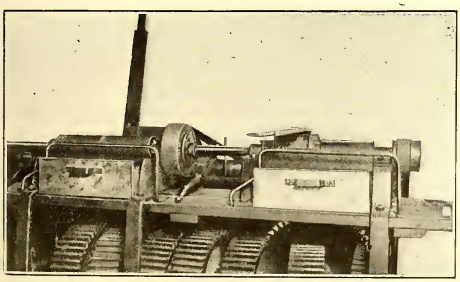
boring out the brasses by machine was given up and the filing after babbiting was done by hand, a process which took a great deal of time. It was realized that if the proper machine could be developed not only could considerable time be saved on the post-babbiting operation but brasses could be bored out and placed back in service several times before rebabbiting was necessary, thus resulting in both an additional saving in time and a saving of babbit as well as doing away with the hand operation of filing just referred to.

The machine as developed is shown in the accompanying photographs and drawing. It consists first of a piece of 4¼-in. axle 37 in. long shown on page 746. For a length of 13 in. on one end this was turned down to a diameter of 1⅛ in. and threaded twelve threads to the inch for 11 in., the remaining 2 in. being left for a bearing surface. For 8¾ in. beyond this, the axle was turned down $\frac{15}{32}$ in., leaving a diameter of $4\frac{7}{32}$ in. A groove 1 in. wide and ½ in. deep was then made in the axle and a hole and keyway made for a cutting tool. The next 8⅛ in. of the axle was left at a diameter of 4¾ in. and then the last $7\frac{3}{4}$ in. was turned down to 1½ in. in diameter, 2 in. of this length being used for the second bearing surface and the remainder for attaching the driving pulley.

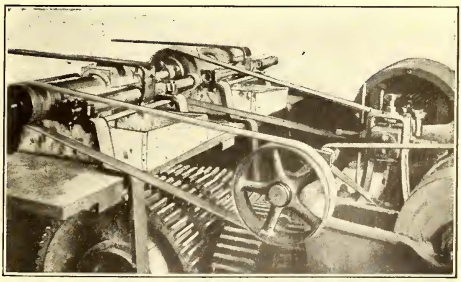
The axle in its finished form is mounted on a table built from two 11-in. x 1½-in. planks and four 2½-in. x ¾-in. strips of iron. Just back of the axle and mounted on bearings is a 1½-in. bar of iron, on one end of which is fastened a 2-in. square piece of iron 15 in. long, one end of which is formed into a handle. A groove is made in this block at the proper distance from the end and with the proper diameter so that when babbit is poured into it threads may be formed to fit the threaded end or feed screw of the axle bar. At the middle of the 1½-in. bar onto which this handle is fastened is attached a 3-in. x ½-in. strip of iron bent into such shape that when lowered it will hold the journal brass in position on the axle. The machine as built was a double one, for boring two bearings simultaneously. For this purpose a 4-in. axle was used on one side and a 4¼-in. axle on the other because these two sizes chiefly are in use on the system. It will be noted in an accompanying illustration that different holding arrangements for the brasses have been necessary. The two equipments are driven from a single pulley by means of a flange collar as shown. The large wooden pulley is split and fastened by ½-in. studs while the collar is shrunk onto the end of the second machine, the thread being turned off for a short distance, and is held to the pulley by four bolts. This boring machine is driven by an electric motor the control switch for which is placed on the wall beside the machine in a convenient location for the operator.



MILLING DEVICE FOR END FILLITING OF NEWLY BABBITED JOURNAL BRASS



BORING MACHINE SHOWING HANDLE WHICH WORKS ON FEED SCREW AND DRIVES BRASS OVER CUTTING TOOL

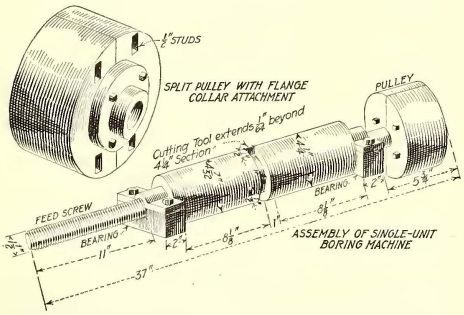


DOUBLE BORING MACHINE FOR JOURNAL BRASSES AS BUILT IN CHICAGO ELEVATED RAILWAYS SHOP

The operation of the machine is so simple that experienced labor is not necessary and the individual who

inspects the journal bearings and finds a worn brass bores one out and returns it to the same position without delay. The brass is laid on the section of axle which is $\frac{1}{32}$ smaller than the standard and the iron lever is brought down to hold it fast. The machine is placed in operation by throwing the switch and the iron handle is brought up into contact with the feed screw of the shaft. This starts the 1½-in. bar and iron lever, consequently the brass which it holds in position is moved horizontally and passes over the cutting tool and immediately onto the standard section of journal. Sometimes the brass needs to be run over the machine twice. The single operation takes about fifteen seconds so that ordinarily two minutes is consumed in boring or reboring brasses for an entire truck. Pans are used under the machine to catch all babbit and this is saved and used in rebabbiting. The brasses are bored on every general overhauling and also on inspection when found necessary.

As an auxiliary to this boring equipment an end milling device for end filliting of brasses has been developed for use on rebabbited 4¼-in. journal brasses. This also has been made from pieces of old axle. The bottom section is 6¼ in. in diameter for 1 in. and 4¼ in. in diameter for 6½ in. This is fastened by two bolts to a 12-in. x 8-in plate which is held on the drill press by two additional bolts. The top section is 1½ in. in diameter for 5½ in. with the next inch 4 in. in diameter cut out and keyed as shown so as to accommodate three ¼-in. x 1-in. high-speed Novo steel cutting tools. A



ASSEMBLY DRAWING SHOWING DIMENSIONS OF SINGLE UNIT BORING MACHINE

$\frac{3}{16}$-in. plate 4 in. in diameter is shrunk on at this point and the remaining 6 in. of the axle is turned to fit a No. 4 Morse taper shank.

The journal brass is held in position by the screw clamp as shown and the babbit on both ends of the brass is milled out in about one minute. This operation was formerly done by hand and took approximately one-half hour to the brass. This double milling permits the use of either end of the brass against the fillet of the axle and prevents a mistake due to haste or ignorance which will later result in a hot journal. A sheet tin guard is placed around the drill press and the babbit is saved by catching it in pans placed under the machine. In the finishing operation enough babbit is obtained from the milling of twelve brasses to rebabbit two additional brasses.

Plundering by the Germans

INTERESTING sidelights upon the experiences of Belgian tramways in war-time are given in recent articles published by *The Electric Railway and Tramway Journal.* The three cases cited, those of Antwerp, Malines and Namur, show the harmful effects of the occupation of Belgium by the Germans.

In the case of Antwerp, the bombardment of Oct. 8 and 9, 1914, and the subsequent fires destroyed or greatly damaged the track in many places, broke or destroyed the overhead lines and damaged the carhouses and rolling stock. The Germans forced the company to suppress several lines and reduce the service considerably. They also requisitioned all the copper work on the cars, the brake handles, the controller plates and handles, the door handles, the guard bars of the windows, the grab handles, the copper bearings, the copper trolley wheels; all tin, antimony, etc.; all cotton, section and other wires; the bell straps, the wires of the lines in the stations and the telephone guard wires.

All the elements necessary for the upkeep of the rolling stock were replaced by substitutes furnished by the Germans (except when they had none!). The engine cylinder oils and engine lubricating oils were only oils in name, so that during the period of the occupation the steam sets were more worn and damaged than during fifteen years of regular service. The same applies to the bearings of the cars, the axles and the fuses of the armatures.

All the anti-friction metals were replaced by "war bronze," a composition of zinc, lead and a trace of tin. The trolley wheels were of zinc. At the maximum they gave one day of service, equal to, say, 150 km. run. The company could get no wrought iron, cast iron, sheet iron, wood, colors and paints, cotton, gasoline or scarcely anything else. The situation at Antwerp is said to be still very troublesome. The company cannot yet obtain the necessary materials to put in a proper condition the track and rolling stock. What little it is able to secure is at prices which are five or seven times those of 1913.

At Malines the service was interrupted from September, 1914, to March, 1915, and in October, 1917, it was completely stopped. The Germans carried off all the overhead copper wire, all the bronze or brass fittings and all the leather work of the cars. It is said to be impossible to resume the working of the lines at Malines until the receipt of the necessary copper wire and accessories, which must come from abroad. The rolling stock still remains at Malines.

In 1914 the Germans dismounted a part of the electric equipment of one of the Namur lines in order to reestablish a line which had been destroyed by the fires lighted by their soldiers. Later came their general requisition of copper, whereby they took 24,695 meters of overhead wire and underground cable.

These measures led to a serious drop in tension which augmented the chances of accident to the motors. This was aggravated by the dismounting of one of the two trolley wires except in the center of the town. Altogether the Germans took down 24,800 meters of trolley wire, and it was necessary to replace copper wire in the stations by iron wire. The enemy also appropriated more than 25,000 meters of wire serving as protection for telephone circuits, all the copper fittings of the cars, and the straps used for working the ticket stamps.

LETTERS TO THE EDITORS

What the Questionnaire Taught

April 5, 1919.

To the Editors:

It occurs to me that the ELECTRIC RAILWAY JOURNAL has performed a helpful service to the industry in presenting an "analysis of public thought" on important questions affecting our business. I refer to the summary of answers to your questionnaire as published in your issues of Feb. 22, March 1 and March 29, giving the views of public service commissioners, mayors, representatives of chambers of commerce and civicists on the fare and franchise situation. This was truly a case of holding the looking glass up so that we might see ourselves as others see us, and if the men who control our utilities are so blind as to see nothing in this reflection they must indeed be beyond salvation. There are probably many such individuals—men who are still living in the past, men who believe the public does not know what it is talking about, men who will persist in the old rut of their "public be damned" policy.

Assuming, however, that the great majority of leaders in the industry are honestly trying to do the right thing, the opinions elicited from "the opposition," in your experience of feeling the public pulse, must be of great assistance. Undoubtedly there have been, and still are, mutual misunderstandings on the part of the railways and the public on many of these disputed points. Your questionnaire covered a wide field, and it has helped to reveal what a certain portion of the public thinks on the question, "What is wrong with the railways?" If the public is right in some of these opinions then the railways should be prompt to set themselves in the proper course. If the public is wrong it is a duty of our railway men to undertake a campaign of education to set it right.

Touching first on the question of increased fares, it appears that some of the leaders on "the other side" believe that the companies have profiteered or made more than a reasonable return in the past. The public would hold them accountable for the sins of the past. Undoubtedly this indictment is true in some cases, and it is a hard condition to correct because the persons who were guilty of profiteering when that practice was more common may long since have passed out of control of the properties. Again, the public raises the question of overcapitalization, which undoubtedly exists on some properties. This can be remedied by submitting to a new valuation. And so on with the other complaints which are made. Some situations can be corrected and others cannot, but the honestly organized and conservatively managed company should not be made to suffer for the errors of another.

Taking up next the matter of publicity, it seems that even in this particular there is much to learn. Perhaps this was covered just as well by Ivy Lee in a talk at the 1916 convention when he said that "a man who goes into a policy of publicity must believe absolutely that he is right and that he can justify his policy upon the theory that 'truth loves open dealing,' and that he can rely absolutely upon the refining and sterling value of the truth." First of all public distrust has to be overcome. Then if the management will show by deeds that it means well, happier results may be expected.

The committee on readjustment of our association is performing a splendid service in trying to save the industry from disaster. Is it not possible that it would find a valuable guide to public opinion in the series of discussions referred to in this letter? There is much food for thought in what "the other fellow" thinks.

MANAGER.

Mr. Schaddelee's Commutation Plan

NEW YORK CITY, April, 9, 1919.

To the Editors:

I have just read the article on the fare plan proposed by Mr. Schaddelee, published in your last week's issue, by which the greater part of an electric railway fare increase will be placed on the casual rider rather than on the person who uses the service a large number of times a month. The idea is ingenious in its method of application, and is well worthy of discussion, especially in view of our disastrous past experience with fare increases made without consideration of their reaction upon the various classes of riders and, through these, upon net revenue.

Reduced to simplest terms, a successful fare increase must have two elemental qualifications; it must apply to a sufficient number of patrons to provide an appreciable gain in gross revenues despite the inevitable decreases in patronage, and it must conserve net earnings by affording a minimum of discouragement to the most profitable classes of patrons. In other words, the patrons who are driven away should be those who are carried at a loss anyway, like the long-haul and rush-hour riders. Devoid of these characteristics, any plan for increasing fares is likely to be as dangerous as a souvenir hand grenade.

The proposed plan has several outstanding advantages. One is that it increases the rate without requiring the conductor to make change with pennies. Another is that it places the greatest increase in the rate upon those who pay fares infrequently and who presumably would suffer the least hardship from higher fares. Hence, its introduction ought not to be difficult, comparatively speaking.

Its disadvantages are equally pronounced. One of these is that it perpetuates, without alteration, the wrong principles of the old flat fare which has let the industry into such evil days through its neglect of the vital factors of length of ride and failure to differentiate between rush-hour and non-rush-hour traffic.

Properly speaking, of course, the casual rider who makes only one trip a year, let us say, could be charged with the same annual readiness-to-serve cost as the man who rides twice daily. And if the cost of readiness to serve were 3 cents per trip for the latter, the book cost of the casual rider's single trip would be about $18! Actually, however, the casual riders, in the aggregate, appear to approximate a normal load on the average street railway because they seem to be pretty generally spread out over the year's business. If this condition really applies, the casual rider properly should pay no more readiness-to-serve charge than the regular patron. If charged much more, his patronage will be discouraged. Such an outcome would be desirable only if he were, in the aggregate, an unprofitable patron.

But is the casual rider always an unprofitable patron? Is he not, as a matter of fact, quite frequently found during off-peak hours and among the short-haul traffic? If so, he would be a profitable rather than an unprofit-

able patron, and it is a question whether he should not be encouraged by a lower fare rather than discouraged by a higher one. It is an open question, also, whether the casual riders exist in sufficient numbers to make the proposed plan conform to the first elementary requisite of a successful fare increase and really make a difference in gross revenue. Consequently, until the status of the casual rider (of whom no statistics appear, at present, to be available) has been determined, a fare increase based merely upon his ability to pay more and upon the simplicity of the plan for charging him more would be a repetition of the industry's leap in the dark when it tried out the flat-fare increase with such unsatisfactory results. TRAFFIC ENGINEER.

[EDITOR'S NOTE. Is not every fare increase largely a leap in the dark? Each change to a higher fare will undoubtedly turn away some passengers, but how many depends on the psychology of the patron affected and the state of his pocketbook. The more systems which promise a reasonable chance for success that are tried, the better. We hope that somebody will give Mr. Schaddelee's plan a fair trial.]

AMERICAN ASSOCIATION NEWS

Attendance of 1500 at Toledo Section Entertainment

ON MARCH 28 in the Coliseum Theater, the Toledo joint company section held an "open" meeting of an entertainment character, attended by 1500 members and guests. Entertainers from the local Keith Theater, from the company's ranks and elsewhere gave a vaudeville performance. One feature was music by the Railight Orchestra, made up of employees of the Toledo Railways & Light company.

Committee on Compensation for Use of Terminals

A MEETING of the Committee of the Transportation & Traffic Association on "Proper Basis of Compensation to City Companies by Interurban Companies for Use of Terminals," which was held in Cleveland on Wednesday, April 9, at the Hotel Cleveland.

The meeting was attended by G. T. Seely, assistant general manager Metropolitan West Side Elevated Railway Company, Chicago, sponsor for the committee's activity; R. T. Sullivan, general manager Mahoning & Shenango Railway & Light Company, chairman; J. F. Collins, general manager Michigan Railway, and James W. Welsh, special engineer American Electric Railway Association.

The association had prepared a compilation of existing contracts between city and interurban companies as well as other data on this subject, including clippings from the technical press. In view of the fact that there had been no previous committee report on this subject, the committee decided to present abstracts of a number of typical existing contracts, showing the principal elements heretofore considered essential in such agreements. It is recognized, of course, that in most cases such agreements are the result of negotiations between the interested parties.

The committee spent considerable time in discussing the fundamental principles which should form the basis of such contracts. In view, however, of the general adoption of service-at-cost principles, the committee expects to work out a proposed standard form of contract embodying these elements with the view of securing equitable conditions from both the city and interurban points of view.

The Struggle Against Increasing Costs

AT A MEETING of the Windsor, Conn., Business Men's Association on Feb. 4, J. K. Punderford, explained very frankly the situation in which the Connecticut Company, of which he is general manager, finds itself at present. Among many other interesting things he showed what the company is doing to keep down maintenance costs, for example, he said: "We have established at New Haven what we call a reclamation shop for the entire property where modern devices for welding, etc., have been installed[1]. By the use of these facilities we have saved large sums of money in rendering defective equipment usable. During December, 1918, this shop rewound motor and air-compressor armatures and field coils, welded gear cases, motor shells, etc., and did work at an estimated saving of nearly $6000 over what it would otherwise have cost. In the track department[2] we have purchased electric and steam shovels by which we have excavated material at 7 cents per cubic yard instead of paying 60 cents for hand work. By the use of these shovels the time which would have been lost by teams waiting for loads was largely decreased. We have purchased various forms of rotary and reciprocating grinders by which we have saved corrugated rails. Large savings have been made by the use of welding machines. In five years we have reclaimed rail which would have cost more than $200,000 to renew and at the same time we have saved the additional cost of new ties and pavement. Broken rails have been repaired at about one-tenth the cost of replacing. Much special work also has been repaired. For example, in one case the repair cost $90 whereas under former methods the expense would have been more than $3,600. We have also purchased pneumatic tie-tamping machines by the use of which one man can do the work of six as compared with the old method of hand tamping. These machines are also available for breaking up old concrete pavement economically. Through the use of power-saving recorders and awards made to motormen large economies have been obtained in the line of power consumption. We are now putting into service a few safety cars[3] in an endeavor to lessen power and maintenance costs."

Hakone, Japan, the site of the famous hot springs of the same name, is to be connected with the capital, Tokyo, by electric line in the near future. The springs are located in the mountains, accessible only with great difficulty. The electric railway extension, although but 5½ miles long, presents great construction difficulties on account of the steep grades necessary and the twelve tunnels which must be bored through the mountains. When the extension is completed it is expected that Hakone will become Japan's greatest summer resort.

[1] See ELECTRIC RAILWAY JOURNAL, Aug. 31, 1918, page 365.
[2] See ELECTRIC RAILWAY JOURNAL, Dec. 14, 1918, page 1053.
[3] See ELECTRIC RAILWAY JOURNAL, Feb. 15, 1919, page. 316.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

Strike Threat in Brooklyn

Receiver of Brooklyn Rapid Transit Refuses to Deal Outside of His Own Organization

Organized labor is marking time with respect to the demands made recently on the management of the Brooklyn (N. Y.) Rapid Transit Company. Meanwhile the Mayor his been asked to use his good offices with Receiver Garrison. This the Mayor has promised to do, but he has warned the men that the railway is subject to federal authority through the courts and that he does not want to seem to be interfering with such authority.

Want Sixty Cents an Hour

The proposed agreement submitted to Mr. Garrison was adopted on March 28 by the unionized employees. The demands include, besides recognition of the union, 60 cents an hour for platform men during a nine-hour day, 60 cents for a nine-hour swing during rush hours, 53 cents for blacksmiths and structural workers, 45 cents for shopmen for an eight-hour day, and time and a half for overtime.

In his reply to the unionized employees Mr. Garrison directed attention to the notice of the company to all employees dated March 11 in which reference was made to the two recommendations of the War Labor Board of March 6, 1919, and Oct. 24, 1918. While the board in these recommendations said that as a matter of plain right and justice the company should give full and free permission to all its employees to organize, it held that under the principles of the board "the company, not being bound otherwise by any contract or agreement with the union, may refuse to see and deal with any committee but one of its own employees."

Will Treat With Employees Only

After directing attention to these facts Mr. Garrison in his reply to the recently-organized union accordingly expressed his willingness to meet a committee of the employees, but said that "it would not be consistent with the policy above mentioned, or with the best interests of the employees or the management to take up for consideration the agreement you have submitted, which in form is between the company and its subsidiaries and only members of a particular labor union, and does not include all the employees."

Mr. Garrison concluded his communication to the union as follows:

> The management will not deal with any outside organization, whether the same be, as mentioned in its notice of March 11, 1919, religious, patriotic, benevolent, political or labor. It will always be ready to deal with its employees directly through committees selected by the employees in respect of any matters of mutual concern to the employees and the management.

The Mayor's promise to the men was made as a result of a call upon him by a committee which urged him to intercede with Mr. Garrison in an effort to persuade the receiver to meet a delegation of union men. The committee warned the Mayor that unless the receiver greeted their demands in a more conciliatory fashion there would be a strike.

At Mr. Garrison's office on April 9 it was stated there that the receiver had made his position in the case clear in a letter to James Sheridan, chairman of the committee selected by the men, and that he would not recede from his position. In this letter Mr. Garrison declared that the Amalgamated Association was an "outside organization" when it came to situations arising between the company and its men and that he would not deal with the association of its representatives, as such.

Self-Determination for Kansas City Men

In accordance with the new policy of the Kansas City (Mo.) Railways of dealing direct with its men in the future, the employees held a meeting on April 7 and elected their committees. The representation which went into effect on April 1 provides for committees from each division of the transportation department, shops, substations and power plants. Philip J. Kealy, president of the company, will name one day in each month on which he will meet these committees and receive reports and hear complaints from them. The general manager, superintendent of transportation and the head of every other department will also appoint a day on which to meet the committee.

In any case in which a matter does not appear to have been settled in a manner satisfactory to the men they are empowered to reopen the matter direct with the president. The company promises not to open any welfare or benefit features on a compulsory basis. No employee is to hold seniority rights in more than one department. Such rights are to be based on continuous service. Employees of long standing who find that they are unable to do heavy work may be transferred to other and lighter work in a different department from the one in which they have been serving and still hold their seniority standing. The minimum wage for extra motormen and conductors is fixed at $75 a month.

Stands Its Ground on Women

Cleveland Railway to Abide by Its Agreement with Union—Incident Now Closed

The Cleveland (Ohio) Railway recently decided to abide by its agreement with the union not to employ women conductors, notwithstanding the order of the National War Labor Board of March 18 directing the company to reinstate sixty-four conductorettes. Former President William Howard Taft and Basil M. Manly, joint chairmen of the War Labor Board, signed the order for the reinstatement of the women. They concluded their decision as follows:

> The evidence discloses that the company is still short of employees and that there are places vacant to which these sixty-four women can be restored. Indeed, it was made clearly to appear, by the only evidence submitted at the hearing where all the parties were notified to appear, that the company may restore to their places in the service all men who have been absent in military service during the war and still have vacancies sufficient to give employment to these women applicants.
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> The board feels an injustice was done to the women applicants in making the order of Dec. 3, 1918; that it was made upon the application of the Mayor of Cleveland and in the absence of the women who were affected and who had not understood the issue was before the board and on its merits. In other words, the women did not have their day in court. That requires that this board should re-establish the status which existed before the order was made.
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> A ruling was made by the joint chairmen in Detroit that under the contract which bound the company and the men in that case, the time had arrived when the company was not justified in continuing the employment of women, because such employment was limited by the contract to the existence of the necessity for their employment, but that the women already employed and in the service should continue there until, in the ordinary course, their employment should cease either by voluntary withdrawal or by discharge for cause or other sufficient reason. We feel the principle which obtained in the Detroit street railway case should apply here.
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> The only question before us is whether these women who were discharged on March 1 should have been discharged by reason of any contract between the company and the men. We think the terms of their employment justified them in believing that their employment would continue until normally ended by their voluntary withdrawal or the failure on their part to render proper service, or other sufficient reason. We have drafted this opinion in accordance with the resolution of the board, as follows:
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> That the matter be referred to the joint chairmen with direction to frame an order declaring the similarity between this and the Detroit case, approving the principles held in the Detroit case, and on the basis of that case, directing that the sixty-four women heretofore discharged by the company be reinstated to their employment.
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> For these reasons, the present order will be that the order or recommendation of Dec. 3, last, be set aside, and that the company be directed to restore these women, discharged March 1, last, to the position they had in seniority and other privileges.

The various steps in connection with the Cleveland case affecting women employees have been reviewed from time to time in the Electric Railway Journal and there was a summation of the matter some time ago in these pages.

Why Company Claims Damages

United Railroads of San Francisco and City File Briefs on Encroachment Case Before Supreme Court

Briefs have been filed by the United Railroads of San Francisco and the city in the damage case which was argued in the United States Supreme Court on March 25. This case, as stated in the ELECTRIC RAILWAY JOURNAL of Dec. 21, 1918, is the result of the claim of the company for $6,870,130 of damages because of the construction of parallel outside tracks on Market Street and on Church Street.

The case arose through an appeal from a district-court decision in effect dismissing the company's bill for want of equity. The Constitution of California requires payment in advance for the "taking" or "damaging" of private property for public use, and the company asked for relief by injunction from the operation of municipal railway cars until compensation for damages to the privately-owned property was paid.

THE COMPANY'S PLEA

In reiterating its assertions in the present appeal, the company in its brief adopts the following general line of argument:

1. The railway franchise is exclusive for all exceeding five blocks on any street, and it constitutes an irrevocable contract, the obligation of which is impaired by the parallel operation of the municipal cars.

2. Municipal competition deprives the United Railroads of its property without due process of law and takes it without just compensation.

3. Municipal competition damages the company's property, through loss of patronage from difficulty and danger of access to the company's cars.

4. The city has no reserved right to operate its cars so as to impair access to the company's cars and cannot under the police power justify destructive competition.

5. The civil code of California does not permit one railway to cross another's tracks without compensation.

WHAT THE CITY HOLDS

The brief of the city maintains that no explicit authority was given to the city to grant an exclusive franchise to the company, and that grants of special privileges are to be construed strictly in favor of the public. The issue may be narrowed to the question whether the operation of the city cars causes such physical interference with the company's rights as legally to entitle it to relief. The only damage the company necessarily suffers, the city brief says, will result solely from the occupation at times, by passing city cars, of a space in the public highway needed at the same time by the company for its passing cars. This damage, it is asserted, is not private but common to all the public using Market Street.

Furthermore, it is alleged that the operation of both roads is demonstrated to be not impracticable under reasonable rules. It is true that the franchises of the United Railroads would depreciate to the extent of the inconvenience and the delay occasioned, but the company cannot complain of such depreciation because its own grant was dependent upon the conditions that its tracks should be constructed and operated so as not to interfere with the public use of the street, and the city purposes by its additional tracks to subject the streets to this character of use and this alone.

It is stated that the rule governing one road occupying the same space as another road seems to rest upon clear legal foundation, but the principle cannot be extended to embrace the interference which normally and unavoidably occurs from competing operation upon outer tracks. It is a far cry, the city contends, to claim that the private railway "may assert, as against the general or the traveling public or as against those legally using the remaining portions of the street, an absolute ownership which would enable it to dictate the specific uses of the highway."

One-Man Control for Britain's Utilities

Revolutionary Changes in Britain's Transport and Power Through Proposed Ministry of Ways and Communications

(From Our Regular Correspondent)

At the end of February the British Government's radical proposals for dealing with all public means of transport were revealed to Parliament and the public. The Home Secretary, Mr. Shortt, introduced "a Bill to establish a Ministry of Ways and Communications and for purposes connected therewith," to bring under one national control and co-ordination all methods of transport in the country. At the same time no hard-and-fast scheme is put forward. The keynote is to give the new minister (who is to be Sir Eric Geddes, formerly of the North Eastern Railway) great and far-reaching powers to do whatever is necessary to bring the desired end about. The bill opens up possibilities of nationalization; on the other hand the minister will have discretion as to best course to take.

The minister is to take steps to improve the means and facilities of locomotion and transport. To him are to be transferred all powers and duties of any government department in relation to railways, light railways, tramways, canals, roads, bridges, and ferries and vehicles and traffic thereon, harbors, docks, and piers, and to supply of electricity. This does not increase present government powers of control but simply transfers them to one minister and his department, which is a valuable unification. To afford time for consideration and formulation of the policy to be pursued as to the future position of undertakings, it is provided that for two years after the passing of Bill, all railways which during the war have been in possession and under control of government may remain in and under that of the new minister. The latter is also enabled (word is "may," not "shall") to take possession of any other railway, or of any light railway, tramway, canal or harbor.

That is a transitory arrangement. The permanent one is that the King may by Order in Council authorize the minister to purchase by agreement or compulsion and work any railway, light railway, tramway, canal, harbor and dock; to authorize the Minister to establish and work any such undertakings, and to lease any such undertaking. The Order however is not to authorize purchase otherwise than by the agreement of any tramway belonging to a local authority, or purchase without consent of the local authority any tramway which a local authority is entitled to purchase under section 43 of the tramways act of 1870.

The bill also allows of other procedure, because it allows the Minister to make advances to local authorities or companies for construction, improvement or maintenance of various means of communication already mentioned. In regard to electricity supply, it is noteworthy that the only substantial provision in the first draft of the bill is that control of such supply is one of the powers that the new government departments may take. These powers are limited, and certainly some further proposals in this direction may be expected. If the bill passes a revolution in transport affairs in Britain seems likely.

In the meantime a most useful scheme promises to come to fruition for settlement of labor disputes in the British tramway field. The system of Joint Industrial Councils for each industry, recommended a year or so ago by the so-called Whitley committee, has already been referred to in these pages, and it has been adopted in a number of industries. An attempt to bring it into operation in the tramway business was for a time not successful, because London tramway employees did not agree to it. That opposition has been overcome, and it was announced in the beginning of March that a National Joint Industrial Council for the industry has been approved by the constituent associations — namely, the Tramways & Light Railways Association, Municipal Tramways Association and the National Transport Workers' Federation. The Council will consist of forty-four members, twenty-two for the employers, and twenty-two for the employees. On the former, fourteen will represent municipal undertakings and eight company undertakings.

Few New Laws in Indiana

Authority of State Commission Regarded as Check to Need for New Legislation

Very few laws of particular interest to the public utilities were enacted during the recent session of the Legislature of Indiana. The new State tax law which was enacted provides, among other features, that all public utilities shall be assessed originally by the State board of tax commissioners. An amendment in Senate enrolled act No. 316, provides that a utility that contracted to furnish "free service, or service at special rates" shall do so even though it has surrendered its franchise and has received in lieu thereof an indeterminate permit. Such service is to run until "such time as the franchise would have expired had it not been surrendered."

CHANGE IN LEASING LAW

House enrolled act No. 470 amends the law of 1913 which authorizes railroad companies to lease, sell or purchase non-competing lines of railroads subject to the approval of the Public Service Commission. Under the old law a railroad could lease or be leased by a non-competing line if both parties were organized under the laws of Indiana. And where one company held a lease of another forming a through railroad line, then either of the companies could sell or convey its railroad to the other with the approval of the stockholders owning not less than two-thirds in amount of the capital stock of the respective companies becoming parties to such purchase and sale. The old law also provided that no railroad company not organized under the laws of Indiana could purchase any line in Indiana.

The 1919 amendments to the 1913 laws provide that a railroad organized under the laws of this State "may lease its railroad in Indiana to a railroad organized under the laws of another state or states, whose railroad forms a through line, or which is connected with the railroads of the company organized as aforesaid under the laws of this State." The same consent of stockholders is required as under the old law. The leased road must be operated in this State and "shall remain liable as if it operated the road itself, and both the lessor and lessee shall be jointly liable upon all rights of action," and may be jointly or severally sued in the courts of this State.

LAW FIXING FARE LIMITS REPEALED

House enrolled act No. 238 repeals the law which limits passenger fare on steam railroads to 2 cents a mile.

Senate enrolled act No. 287 authorizes any street railway company to "increase or reduce or modify the terms and conditions of its capital stock, or any class thereof, to create, authorize and issue one or more new classes of stock and to specify the amounts thereof and the preferences and other rights granted to them, or otherwise amend its articles of association, by the amount of the holders of two-thirds of the class or classes of its outstanding capital stock affected thereby, declared at any regular or called meeting thereof held pursuant to the by-laws of the corporation." It is provided that the Public Service Commission must approve before such changes in stock may become effective.

Cleveland Franchise Renewed

The City Council of Cleveland, Ohio, with but one dissenting vote, has passed the franchise extending the Tayler grant of the Cleveland Railway for a period of ten years and causing it to expire twenty-five years from May 1.

The Council, in making the extension, passed the McGinty ordinance as a substitute for the ordinance of Mayor Davis, which provided for an extension of one year only. The McGinty ordinance was introduced a week ago.

The legislation just passed contains few changes from the original Tayler grant enacted ten years ago. The changes include the elimination of repetitions.

The new ordinance also provides for a 7-cent fare for that section of Cleveland east of Ivanhoe road. The fare now is 15 cents.

The new ordinance will not go into effect until about May 10.

Council took no action on Mayor Davis' ordinance for municipal ownership of the lines of the Cleveland Railway. Councilman John Reynolds made an effort to amend the Mayor's legislation, by calling for an election on May 28. A motion to adjourn prevented consideration of the Reynolds motion.

Ohio Association Organized

A group of electric railway executives in Ohio have organized the Electric Railways Association of Ohio whose object will be the mutual benefit and advantage of the electric railway industry of the State of Ohio, the study of transportation conditions and the devision of methods for their betterment and development and the improvement of service and enlistment of the aid and cooperation of the public in effecting such improvements. Any individual, copartnership, association or corporation which may now or hereafter own, operate or manage within the State of Ohio, for public use, a street or interurban railway is eligible for membership.

Representatives from about thirty companies attended the organization meeting at which the following officers were elected: President, F. W. Coen, Sandusky; vice-presidents, Dana Stevens, Cincinnati, and F. R. Coates, Toledo. The secretary and treasurer have not yet been elected. The executive committee consists of fifteen members, including the president and two vice-presidents, the others being selected so that all parts of the State will be adequately represented.

As a Commissioner Sees It

Mr. Whitney Finds Need for Changes in New York's Dual Contracts in Interest of City and Railways

In reply to the request from "Passenger" in the New York *Evening Sun*, Travis H. Whitney, acting chairman of the Public Service Commission for the First District of New York prepared a statement discussing the local transit situation with respect to higher fares. In this statement the commissioner said in introducing the matter:

> Any business, to continue, must be either self-sustaining or rely on contributions. If the business be transportation, the revenue must be, likewise, sufficient to pay operating and maintenance expenses sufficient to give adequate service with safe and proper equipment, to extend the service as necessities require, and to give a proper return on the investment. This revenue must come either from the fare payers or the taxpayers. At the present time and for some time past the revenue from the fare payers has not been sufficient to pay the proper expenses and to give a return upon the investment.

Declaring that all transit lines should have the same fare or so balanced as to get the maximum efficiency from each, Commissioner Whitney said that while the companies are not getting sufficient revenue to care for the proper items of expense and fixed charges on investment, thus necessitating consideration by fair-minded men of an increase in fare, yet, on the other hand, there are concessions that should be made by the companies as a part of any agreement by the city that fares may be increased. On this point the commission said:

> For example, experience has shown that there are provisions in the dual contracts that can well be modified. As it is now, the companies are entitled to their entire preferentials ahead of any return to the city. If an increase in fare were to be granted sufficient to make the dual system self-sustaining and thus without recourse to taxation, it would be fair to the city that all, or at least a part, of the preferential should be postponed until after the city has received its fixed charges. Otherwise there would be no incentive for the companies, with increased fares, to so manage their business that, after they receive their expenses and fixed charges, the city should surely secure its fixed charges. Giving the city's fixed charges priority, however, over all or a part of the companies' preferentials, would insure such management by the companies that the increased fare would make the enterprise self-sustaining both to them and to the city.
>
> Likewise, in relation to the interface companies, there should be a consolidation of the various subsidiary companies in each system so that there should be one company in the case of each system and with provisions that, after the company has obtained from the increased fare its proper expenses and return on its investment, the city should be entitled to all or a considerable percentage of the remaining revenue, to go into a rapid transit fund, usable for either rapid transit extensions or acquisitions of additional transportation lines.
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> In order that the city may be in a proper position to enter into negotiations and agreements with the companies, I have felt that the city should be clothed with additional rights in respect to municipal ownership. Not that the city should, necessarily, enter into an extensive program of municipal ownership of all utilities, but because in negotiations involving large matters it is important that the two sides should be on an equal basis in respect to powers; because of this, I can see no serious objection to a municipal corporation having the same rights that a private corporation has in respect to activities that are clothed with a public interest to the extent that, for example, transportation is in the city of New York

Municipal Line's Plans

Seattle Road Lays Down Preliminary Rules to Govern Service and Employees

General Order No. 1 of the Seattle Municipal Railway as enlarged by the purchase on April 1 of the railway lines of the Puget Sound Traction, Light & Power Company notified the trainmen that, with the exception of the heads of departments, all employees of the Traction Company would continue to perform the same duties for the city until notified otherwise. Superintendent of Public Utilities Murphine states that no change in the schedules or routing of cars would be made for about ten days, but some improvements in service are expected.

In closing the railway deal, the Puget Sound Traction, Light & Power Company was represented by A. W. Leonard, president, and J. B. Howe, attorney. The city was represented by Thomas F. Murphine, superintendent of public utilities, and Harry W. Carroll, city comptroller. Title to the property is guaranteed the city by a title insurance policy of $1,000,000, said to be the largest policy of the kind written on the coast.

By taking over the property before April 1, the city hoped to be relieved of the payment of the 1919 general taxes. The valuation of this class of property is not fixed in the ordinary course of procedure until May 31, and although State Tax Commissioner Jackson has announced that the property has been placed on the assessment rolls at a valuation of $12,000,000 the city holds that it should not be taxed, as the property had passed to city ownership at that time. It is expected the question will have to be settled by a court order.

Express service for the outside districts night and morning is one of the improvements contemplated a little later. This service will apply to the West Side, Ballard, Fremont and Woodland Park districts. Plans have also been worked out to connect every line in the city with the elevated, enabling the operation of the express cars from every part of the city to the Harbor Island West Side industrial districts.

The question of a possible increase in fares has become a live one. Superintendent Murphine is of the opinion that the city can operate on a 5-cent fare and meet every obligation. He will make a strong effort to continue the 5-cent fare.

Buffalo Problems Acute

Negotiations are under way between E. G. Connette, president of the International Railway, Buffalo, N. Y., and representatives of the union platform employees regarding the back pay question. The employees had $300,000 in back pay due them on April 1 under a decision rendered six months ago by the War Labor Board. The company has not the funds with which to make payment. There is talk of a strike, but officials of the company hope that payment can be delayed until after the city's traction problems are settled.

The company has defaulted in the payment of city taxes amounting to almost $100,000 and is now paying interest on the taxes. The property can be advertised for sale to cover the taxes at any time.

No agreement has yet been reached as to who will be the third member of the board of arbitration to solve the differences between the city of Buffalo and the International Railway. Albert S. Richey, the city's member of the board, conferred in New York during the week ended April 5 with James E. Allison, Jr., St. Louis, the company's representative.

Sees City Ownership Ahead

United Railways Has Settled Many Problems, but City Ownership Seems Likely

In an editorial in the March number of *The Bulletin*, official publication of the United Railways, St. Louis, Mo., Richard McCulloch, president, writes that he believes that when the valuation of the company's properties has been completed, the acquisition of the company by the city will "be merely a matter of arrangement of payments." Mr. McCulloch reviews the affairs of the company in part as follows:

The two controversies which have long existed between the city and the United Railways have been settled by agreement. The company is to pay the current mill tax quarterly, and is to pay the accrued mill tax in ten annual installments. The first of these annual installments has already been paid.

The controversy as to the validity of the Jefferson Avenue franchise has also been settled, and there is now no question as to the company's rights on the streets. The former controversies have been settled and are out of the way, and the highest court in the State has sustained the authority of the Public Service Commission to determine all other matters which might, at some future time, possibly lead to controversy.

A valuation of the company's property is now being made by the State Public Service Commission, and will probably be completed within a short time. The Public Service Commission is authorized by law to make such a valuation, and is the only regulating body that is so authorized. It is anticipated that this valuation, when completed, will form the basis of a reorganization of the company's finances, and will also be the determining factor in the rate of fare which will be authorized by the commission.

The Public Service Commission, in its order of May 15, 1918, laid down the principle that the rate of fare should be such as will enable the company to pay operating expenses, taxes, replacements and a reasonable return on the investment. Having once determined the investment and the rate which the company should be permitted to earn on this investment, it will be a simple matter of calculation for the commission to determine, from time to time, the proper rate of fare, taking into account wages, and all other operating expenses, taxes, replacements and other variable charges.

The valuation of the company's property will also simplify the purchase of the property by the city. The advantages of public ownership and operation have been pointed out frequently in these columns, and when the valuation of the property is finally established, the acquisition of the property by the city will be merely a matter of arrangement of payments.

Engineers of the Public Service Commission are now making a survey of United Railways property on which the valuation will be determined.

New Franchise Wanted

President Lowry of St. Paul Company Suggests Service-at-Cost Grant as Only Way Out

The St. Paul (Minn.) City Railway, included in the system of the Twin City Rapid Transit Company, has asked for a new franchise. The request is in a letter from President Horace Lowry. Further information will be asked from Mr. Lowry and when he is ready to confer with the City Council a full meeting will be called, including the Corporation Counsel. The petition was filed with the Council on April 2. Mr. Lowry's letter reads:

Under date of May 31, 1918, we addressed a communication to your honorable body requesting an increase in the rate of railway fare, and again on Aug. 15, 1918, we addressed you on the same subject.

Your commissioner of public utilities has asked the representatives of this company in public meetings if the company would be willing to surrender its present franchise if a new franchise based on the cost of service were duly granted to us by the city, and we have replied to such question by stating that we would do so. No steps, however, have been taken to draft such a franchise and we now take this means of making formal application for a new franchise in lieu of the franchises under which we are now operating in St. Paul.

Your honorable body is fully advised as to the financial condition in which this company finds itself, the same being fully revealed in the recent report of audit made by Bishop, Brissman & Company. You are also fully informed of the demands of the city of St. Paul for extensions of lines and for new paving.

Unless something is done to restore this company's financial condition it will be impossible to finance any of the expenditures which we will be called upon to make for paving and extensions, or to render to the people of the city the high standard of service which the company desires to give.

We believe the only way the situation can be remedied is for the city of St. Paul to accept from the company a surrender of its present franchises and grant in lieu thereof a new contract based on the cost-of-service plan, under which fares will increase when costs are high and decrease when costs are low.

If your honorable body is willing to approve this plan, and will pass the necessary resolution, requesting us to do so, we will be pleased to submit at an early date tentative draft of a cost-of-service franchise, which can serve as the basis for conducting negotiations.

M. O. Bill Passed

Acting Governor Louis F. Hart at Olympia, Wash., recently signed the bill amending the municipal ownership statute to empower cities to acquire, as well as extend, own and operate railway lines 8 miles beyond city limits instead of three as heretofore. The city of Seattle thus secures permission to acquire the Seattle, Renton & Southern Railway, which will be made a part of the municipal railway system. The extension limit was placed to 8 miles to permit Tacoma to extend its city line to American Lake.

The purchase of the Seattle-Renton System was under consideration following the closing of the deal to purchase the railway lines of the Puget Sound Traction, Light & Power Company. Although a tentative understanding between the city and owners of the Rainier Valley lines was reached, there was doubt of the city being legally able to operate the southern end of the lines which extend about 4 miles from Seattle.

News Notes

Service Resumed After Strike.—The Wichita Falls (Tex.) Traction Company resumed operation on March 26 after having been tied up for three weeks on account of a strike of motormen and conductors. The men received a part of their demands and yielded others. All the old men were taken back.

Transit Bills Reported.—Bills providing for a single commissioner of rapid transit and for a single commissioner for the regulation of public utilities were reported on April 9 by the Senate committee on public service. The separated commissions are to be substituted for the board of five Public Service Commissioners in New York city if the bills become law.

Men in Winnipeg Want More.—The employees of the Winnipeg (Man.) Street Railway demand that a new agreement shall go into effect on May 1 and ask 55 cents an hour, compared with the present wage of 47 cents an hour. In addition men ask for a minimum wage of $25 a week while learning, for the closed shop and a week's holiday at the company's expense.

Would Force Report on Municipal Ownership Measure.—Assemblyman J. E. Gill has filed a petition signed by fifteen members of the House of Assembly to force the municipal corporations committee to report House Bill 38, which would enable the city of Trenton to acquire and operate its railway system and the lines running into surrounding communities.

Melting-Pot Classes Among Railway Men.—The St. Paul (Minn.) City Railway is conducting "melting-pot" classes at employees' headquarters. Each class lasts forty-five minutes and is chiefly a lecture by a public school principal on some phase of the government. Informal discussion is a feature. A similar system is followed in Minneapolis. The members of the classes are foreign born.

Hudson Vehicular Tunnel Bill.—The Senate of New York on March 27 passed the Adler bill, providing for the construction of the vehicular tunnel from New York to Jersey City. The measure appropriates $1,000,000 for starting the work. New York State's share will be $6,000,000 and the State of New Jersey will expend the same amount. The bill goes to Governor Smith now.

Wage Readjustment Up at Springfield.—It is stated unofficially that the men in the employ of the Springfield (Mass.) Street Railway are seeking a flat rate of $5 for an eight-hour day. The company, on the other hand, proposes a reduction of the present wage schedules, which it contends are too high. The present agreement expires on June 1. Discussion is expected soon between the representatives of the men and the officers of the company.

Atlanta Company Wins Power Suit.—A verdict has been returned for the Georgia Railway & Power Company, Atlanta, Ga., in the Cobb County Superior Court, in the suit brought in behalf of the Laurel Woolen Mills Company against the power company for $152,000 damages. The plaintiff claimed damages on the ground that the building of the Bull Sluice dam at Morgan Falls, several years ago, reduced its own power supply. This contention was not sustained.

Men in St. Louis Want More.—Formal demand for 55 cents to 65 cents an hour and the basic eight-hour day has been made by members of the union, in a petition presented to the United Railways, St. Louis, Mo. The petition is to open the contract made with the men at the conclusion of the strike in February, 1918. The men ask for the opening of the contract for discussion of wages and hours only. The present wage scale is 35 cents to 42 cents an hour, on the basis of a nine-hour day.

Wage Increase in Spokane.—The employees of the Spokane & Inland Empire Railroad on the city lines in Spokane, Wash., have been awarded increases in pay of 6 cents an hour, or 60 cents a day, by the War Labor Board. The increase is retroactive to Aug. 8, 1918. The receiver for the company has until Nov. 1 to meet the back pay. The War Labor Board has also recommended that the company be allowed to charge higher fares. The present maximum wage of trainmen is 39 cents an hour.

Duluth Against Municipal Ownership.—Municipal ownership of the lines of the Duluth-Superior Traction Company in Duluth, Minn., was rejected two to one at the city election on March 31. The vote really was to ascertain the sentiment of the people with respect to the making of a valuation of the railway property with a view to acquiring the lines by negotiation and purchase. On April 1, Superior, Duluth's sister city, overwhelmingly indorsed the purchase of the local water and gas, the electric light and power plants.

New Albany Mechanics Strike.—The linemen and substation men of the United Gas & Electric Company, the Louisville & Northern Railway & Lighting Company and Louisville & Southern Indiana Traction Company, which are operated under one system, went on strike recently. The men demand back pay from last October, while the company has paid an increase only since March 4, when the War Labor Board decided the matter. The company contends that it is not responsible for back pay from the time the protest was lodged.

Cleveland Subway Report Expected.—The Rapid Transit Commission of Cleveland, Ohio, which started an investigation a year ago to find the best subway system for Cleveland, expected to meet during the week ended April 12 to make a final report. Four tentative plans for the subways include underground tracks from the Public Square to East Ninth Street on Euclid Avenue, between the same points on Superior Avenue, from the Public Square to the Central Market district on Ontario Street and an extension of the tube from the high level bridge to the Square.

Brooklyn Motorman Acquitted.—Edward Luciano, motorman of the Brooklyn (N. Y.) Rapid Transit Company train in the Malbone Street tunnel disaster, was acquitted of manslaughter on April 4 after the jury had been out nearly five hours. The prisoner was at once discharged by Justice Seeger. District Attorney Lewis did not say whether he would go on with the prosecution of Col. Timothy S. Williams, John J. Dempsey, John H. Hallock, and William S. Menden, officers of the company, who were also indicted for manslaughter and now await trial, but his attitude was taken to indicate that he considered it hopeless to proceed with these trials.

Municipal Ownership Bill Reported.—Amended in many particulars, the Fowler municipal ownership bill, sponsored by the State Conference of Mayors, was favorably reported on April 9 by the public service committee of the New York Senate. Under one of the amendments, the consent of the Public Service Commissions would not be required for the acquisition of public utilities, the commissions being given only power to assist in determining a fair valuation of the properties. It is understood that as amended the measure has the support of New York City authorities, who objected to the broad powers vested in the Public Service Commissions in the original draft.

Programs of Meetings

National Electric Light Association

The forty-second convention of the National Electric Light Association will be held at Atlantic City, N. J., on May 19-22, 1919. The meetings will be held on the Million Dollar Pier, where there will also be an exhibit of electrical apparatus and supplies, supplemented by a special exhibit under the auspices of the lamp committee illustrating the evolution and application of the tungsten lamp.

Central Electric Railway Association.

The Central Electric Railway Association will hold a boat trip this year. The steamer *South American* will leave Toledo, Ohio, on June 30 at 9 o'clock. The party will go to Detroit on Monday and up the river into Lake Huron, spending Tuesday in Georgian Bay. Mackinac Island will be reached on Wednesday morning and Benton Harbor Thursday morning. The route will thence be to Chicago which city will be reached about 4 p. m. Thursday, July 3.

Financial and Corporate

London Traffic Heavy

English Group Show 16 Per Cent Advance in Gross Revenues and 21 Per Cent in Net Revenues

For the year ended Dec. 31, 1918, the combined gross revenue of the five operating subsidiaries of the Underground Electric Railways of London, Ltd., London, England, was £7,743,451, a gain of £1,081,589 or 16.2 per cent over 1917. In spite of high prices and scarcity of labor, the companies distributed higher dividends than for a long time past, the two main reasons being an ever increasing volume of traffic and in some cases an increase in fares.

DISPOSITION OF NET INCOME OF LONDON LINES FOR CALENDAR YEAR 1918

	Metropolitan District Railway	London Electric Railway	City & South London Railway	Central London Railway	London General Omnibus Company, Ltd.
Balance forward from 1917	£29,029	£30,656	£21,266	£11,147	£38,548
Net income	583,703	650,604	152,404	227,571	595,553
	£612,732	£681,260	£173,670	£238,718	£634,101
Interest, rentals and other fixed charges	347,971	299,150	47,003	59,633	108,412
Balance	£264,761	£382,110	£126,667	£179,085	£525,689
Reserve for contingencies and renewals	35,000	35,000	25,000	20,000	285,000
Dividends	198,430	313,506	72,100	141,000	179,758
	£31,331	£33,604	£29,507	£17,185	£60,931
Further reserve for contingencies and renewals	£10,000	£10,000	£5,000	.....	.....
Balance carried forward to 1919	£21,331	£23,604	£24,567	£17,485	£60,931

The aggregate amount retained by the five companies for "revenue liabilities," which include working expenses, prior charges, reserves and other items of a similar nature, as outlined in the London electric railway facilities act of 1915, was £7,111,760. This was an advance of £970,234 or 15.8 per cent over 1917. The gain in revenues from more traffic and slightly higher fares, however, was sufficient to give a net balance of £631,690 for 1918 as compared to £520,336 for 1917, an advance of £111,354 or 21.4 per cent.

This net amount in each year was credited to the "common fund." This fund, in accordance with the agreement of 1915, was apportioned among the five companies as follows: City & South London Railway, 6 per cent; Central London Railway, 20 per cent; London Electric Railway, 30 per cent; Metropolitan District Railway, 12 per cent, and London General Omnibus Company, 32 per cent. The accompanying table shows briefly how the net income was used.

The traffic carried by each of the four railway companies was exceedingly heavy in 1918, and arrangements have been made to obtain delivery as soon as possible of rolling stock, some of which was ordered in 1914. The total number of passengers carried in 1918 by the five companies is estimated to have been 901,000,000, exclusive of through inward passengers to the Metropolitan District Railway from other railways controlled by the government. Owing to the Metropolitan District Railway being under such control, the average fare per passenger for the five companies is not given.

An arrangement has been made between the Central London Railway, the London Electric Railway and the City & South London Railway, whereby the London Electric Railway bears all the expense of maintaining and operating the three railways, receiving advances from time to time as necessary. At the close of each year the total expenses are allocated on an agreed statistical basis. It is thus possible to deal with the maintenance and operation of the three tube railways as if in fact they were one railway, and considerable economies in the keeping of accounts are being effected.

Many of the omnibuses of the London General Omnibus Company were taken over by the government, and the remainder require replacement. The company has in hand, in capital and reserve funds, £2,300,000 toward the reinstatement of the whole lot. During 1918 this company acquired a controlling interest in the Associated Omnibus Company, Ltd., and subsequently agreed to purchase its entire undertaking.

International Defaults Interest

Preliminaries have been started by the bondholders' committee of the International Traction Company of New Jersey, to take over the stock of the International Railway, Buffalo, N. Y. Elliott C. McDougal, president of the Bank of Buffalo and chairman of the protective committee, says that something must be done immediately by the city or State to help the International Railway to increase its gross income to prevent a multiplicity of court actions.

On April 1, the International Traction Company defaulted in the payment of interest on $16,500,000 of bonds covering the property of the International Railway. The interest was due on Jan. 1, 1919, and on April 1 the ninety days of grace expired. As collateral for the bond issue, the International Traction Company holds the capital stock of the International Railway.

The proceedings started by the bondholders of the International Traction Company do not mean receivership, according to views expressed by Mr. McDougal, but simply the sequestration of the stock of the railway company, with the present bondholders of the traction company becoming stockholders of the railway. Mr. McDougal is quoted as follows:

> Under the law we would have the right to sell the railway at public auction. We are trying to adjust matters so this will not have to be done. The bondholders do not seek a costly litigation. They simply want protection for their money and action to rehabilitate the system.

York Expenses Up

The increases in cost of operation which the York (Pa.) Railways experienced in the year ended Nov. 30, 1917, were continued during the latest fiscal year. The receipts, however, did not materially gain, and about the middle of the year the company reached the point where the traffic was on the decrease, largely on account of the number of men withdrawn for military service. Moreover, both the railway and the lighting receipts were seriously affected by the influenza epidemic.

The gross earnings for the fiscal year ended Nov. 30, 1918, at $1,091,711 showed an increase of $40,239 or 3.8 per cent over those for the preceding year. While taxes at $85,160 showed a slight decrease, the operating expenses at $598,809 and the allowance for depreciation at $74,529 took such a jump that the total expenses increased by $102,685, or 15.6 per cent, to $758,498. The net earnings at $333,213, therefore, fell off $62,445. This loss was increased by a slight rise in interest and bond discount to $252,195, so that the net income at $81,018 represented a loss of $63,000.

A 6-cent fare and a 25 per cent increase in freight rates became effective on Aug. 8, 1918, with the result that August showed a 10 per cent increase in railway gross receipts; September, an increase of 14 per cent; October (owing to the influenza), a decrease of 16 per cent, and November, an increase of 13 per cent. A change in working conditions leading to increased labor costs necessitated a further increase in fare, and a 7-cent fare with four tickets for a quarter became effective on Nov. 20.

The total cost of new construction for the latest fiscal year was $75,281. Of this amount $49,442 was for the railway department. The surplus balance on Nov. 30, 1918, after the payment of $80,000 in dividends, was $241,931.

Higher Fare Stems Tide

Rising Costs in Cleveland Stopped by Franchise Amendment—Interest Fund in Last Half of 1918 Starts Slowly Up

The outstanding point of the experiences of the Cleveland (Ohio) Railway for the calendar year 1918 was its final success in securing a fare which reversed the tendency of the interest fund to disappear in the face of higher costs of operation. The interest fund dropped below the franchise minimum of $300,000 in November, 1917, and it has since remained below that sum. The payment in July, 1918, of the increased wages from May 1 overdrew the fund nearly $250,000, but gains were gradually made under a higher fare until on Dec. 31 there was a balance of $23,700 to the good.

Fares Changed Frequently

On Dec. 26, 1917, rate "c" (4 cents cash fare, three tickets for 10 cents, 1-cent transfer, no rebate) was placed in effect. This was continued until April 3, 1918, when rate "b" (4 cents cash fare, seven tickets for 25 cents, 1-cent transfer, 1-cent rebate) was installed. After seven-days' trial resort was had to the final rate "a" (4 cents cash fare, seven tickets for 25 cents, 1-cent transfer, no rebate). The subsequent heavy increase in wages, however, necessitated an amendment to the Tayler grant to permit still higher fares, and on Aug. 4 rate "2" (5 cents cash fare, five tickets for 25 cents, 1-cent transfer, no rebate) became effective. This rate is still used. The fare amendment is effective until six months after the end of the war. When the interest fund exceeds $700,000, the city has the right to ask for a fare reduction.

The transportation revenue during 1918 increased $2,145,505 or 21.41 per cent, to which were added gains of $6,560 or 6.13 per cent in revenue from other railway operations and $24,655 or 30.67 per cent in non-operating income. The total income, therefore, rose $2,187,435 or 21.33 per cent.

Higher Cost Allowances

The increase in the expenditures for maintenance and operation, including the amount charged off for obsolete equipment, was $1,409,477 or 17.43 per cent. This was brought about mainly by increases of 25.13 per cent in maintenance of equipment, 34.26 per cent in conducting transportation and 41.98 per cent in obsolete equipment. The taxes increased 12 per cent and the interest charges 3.5 per cent.

The Council, early in 1918, increased the ordinance allowance for maintenance 1 cent and the operating-expense allowance 1½ cents per car-mile, both dating from Jan. 1. Later the operating-expense allowance was raised 3 cents more, from May 1. The special allowances of the year, to make good the insufficient allowances of earlier years for maintenance and operating expenses and to provide for the disappearance of obsolete or wornout property, amounted to $1,413,370, an increase over the previous year of $373,768 or 36 per cent.

War Shortage Cut Service

The ordinance car-miles (with trailers at 60 per cent) in 1918 totaled 35,081,583 and the actual car-miles 36,875,603. The fares numbered 273,944,346, transfers, 1,603,495 and deadheads 1,603,495—a total of 375,570,360 rides, equal to those in 1916. The service, measured in ordinance car-miles, was 2 per cent less than in 1917. It varied monthly, from an increase of 3 per cent in May to a decrease of 6 per cent in November. These decreases in service were due mainly to the company's inability to get men to run the cars. There were fewer rides, however, than in 1917 by 5.73 per cent. The monthly differences varied from an increase of 1 per cent in March to a decrease of 17 per cent in December.

Capital Account Increased $577,091

The Cleveland Railway in 1918 spent $577,091 on capital account. The expenditures for viaduct improvement amounted to about $125,000. New cars cost about $240,000. The company spent $40,000 for additional sub-station equipment, $4,700 for improvements at the viaduct power-station, nearly $20,000 for extensions of tracks and buildings, and $3,500 for changes in operating stations necessitated by the employment of women as conductors.

In regard to the future the annual report says in part:

> There will be some delay in bringing industry back from the abnormal conditions of the war period. There will probably be some unemployment, varying in duration and extent in different occupations. The seriousness of this period of readjustment upon the business of the company will depend, of course, upon how long a time shall elapse before the restoration of manufacturing and other businesses to the steadier conditions that prevailed in 1913 and earlier years.
>
> The cost of living will decline, but the decline will not be sudden. The return of the soldiers to their old employments, or to new employments, and the transfer of men and women from the work of producing

COMPARATIVE INCOME STATEMENT OF CLEVELAND RAILWAY FOR CALENDAR YEARS 1917 AND 1918

I—Based on Ordinance Allowances

	1918 Amount	1918 Cents per Car Mile	1917 Amount	1917 Cents per Car Mile
Operating revenues:				
Revenue from transportation	$12,225,385	.....	$10,069,164	.....
Revenue from other operations	113,521	.....	106,961	.....
Total operating revenues	$12,338,906	35.17	$10,176,125	28.41
Expense allowances:				
Maintenance	$2,078,713	5.92	$1,770,074	4.94
Operating	6,438,290	18.35	5,194,275	14.50
Total	$8,517,003	24.27	$6,964,349	19.44
Balance	$3,821,903	10.90	$3,211,776	8.97
Special allowances	1,413,371	4.02	1,039,602	2.90
Net operating revenue	$2,408,532	6.87	$2,172,174	6.07
Non-operating income	105,044	.29	80,388	.22
Gross income	$2,513,576	7.16	$2,252,562	6.29
Taxes	720,413	2.05	643,107	1.80
Net income	$1,793,163	5.11	$1,609,455	4.49
Interest	1,995,500	5.69	1,928,856	5.38
Deficit	$202,337	.58	$319,401	.89

II—Based on Actual Expenses

Operating revenues	$12,338,906	35.17	$10,176,125	28.41
Actual expenses:				
Maintenance of way and structures	$1,117,294	3.18	$1,089,883	3.04
Maintenance of equipment	1,184,517	3.38	946,604	2.64
Maintenance of power plant	60,906	.17	32,211	.09
Total maintenance	$2,362,717	6.73	$2,068,698	5.77
Power	$2,138,999	3.25	$1,094,942	3.06
Conducting transportation	3,877,569	11.05	3,120,295	8.71
Traffic	.....	.....	500	.....
General and miscellaneous	1,372,530	3.91	1,277,902	3.57
Total operating	$6,389,098	18.21	$5,493,639	15.34
Total expenses	$8,751,815	24.94	$7,562,338	21.11
Balance	$3,587,091	10.23	$2,613,787	7.30
Obsolete property	744,000	2.12	524,000	1.46
Net operating revenue	$2,843,091	8.11	$2,089,787	5.84
Non-operating income	105,044	.29	80,389	.22
Gross income	$2,948,135	8.40	$2,170,176	6.06
Taxes	720,413	2.05	643,109	1.79
Net income	$2,227,722	6.35	$1,527,067	4.27
Interest	1,995,501	5.69	1,928,856	5.39
Surplus	$232,221	.66	*$401,788	1.12

* Deficit.

munitions of war to other occupations, may result in such a large increase in the number of workers in advance of the possibility of their employment during the readjustment period that a decrease in rates of wages may follow.

Contingent upon the increased fare received, large increases in wages were granted to the employees of the company. These advances absorbed the greater part of all the relief granted.

The circular states that it is not unreasonable to hope that the increase in fares granted by the commission, together with a continued improvement in the business of the company, will yield a sufficient return to permit the payment of the bond interest as soon as the large expenditures have been competed covering rebuilding of equipments, conversion of the car equipments for prepayment service, installation of fare boxes and other improvements.

COST STATISTICS OF CLEVELAND RAILWAY FOR CALENDAR YEARS 1914 TO 1918

	Cents per Car-Mile					Cents per Fare				
	1914	1915	1916	1917	1918	1914	1915	1916	1917	1918
Maintenance expenses..	5.97	5.27	5.66	5.77	6.74	0.8379	0.7104	0.7039	0.7119	0.8647
Obsolete equipment....	0.37	0.64	1.13	1.46	2.12	0.0521	0.0869	0.1408	0.1803	0.2723
Total.....	6.34	5.91	6.79	7.23	8.86	0.8900	0.7973	0.8447	0.8922	1.1370
Operating expenses....	12.22	12.56	14.00	15.34	18.21	1.7168	1.6952	1.7382	1.8905	2.3383
Taxes.....	1.44	1.50	1.71	1.80	2.05	0.2029	0.2030	0.2124	0.2213	0.2636
Int. on bonds and notes.	0.95	0.88	0.91	0.87	0.84	0.1328	0.1185	0.1125	0.1075	0.1089
Interest on capital stock	4.32	4.85	4.74	4.51	4.84	0.6068	0.6538	0.5889	0.5562	0.6214
Total cost.....	25.27	25.70	28.15	29.75	34.80	3.5493	3.4678	3.6667	3.4967	4.4692
Gross income.....	23.93	26.34	28.34	28.63	35.47	3.3611	3.5535	3.5189	3.5295	4.5542
Surplus.....	1.34*	0.64	0.19	1.12*	0.67	0.1882*	0.0857	0.0222	0.1382*	0.0850

*Deficit

Rhode Island Bill Hearing

At a joint public hearing held before the corporations committees of the House of Representatives and the Senate of the Rhode Island Legislature, the passage of the bill chartering the United Electric Railways, designed to become the holding company of all the electric railway properties in the State, was urged as a public necessity.

Attorney General Herbert A. Rice, who drafted the bill at the request of the receivers for the Rhode Island Company, appeared at the hearing and explained that the transportation affairs in the State have come to a crisis and that a reorganization is absolutely essential if the public is to be served. The act, he said, was merely a vehicle to permit the reorganization and the fact that the charter is to be issued to three State officials, including the Governor, indicated that the public's rights would be adequately safeguarded until such a time as an effective and satisfactory reorganization of the properties was completed. He ridiculed the idea of public ownership. The present plight of the Rhode Island Company he attributed largely to conditions arising out of the war.

The hearing was largely attended and although about a dozen expressed their opinions, there was no adverse comment. The general belief was that the time had come for some drastic action if service is to be continued and the passage of the bill, safeguarded so satisfactorily, offered the best solution of the problem.

Interest Payment Postponed

The Indianapolis Traction & Terminal Company, Indianapois, Ind., has temporarily postponed payment of the interest on its $5,000,000 of first mortgage 5 per cent bonds, which was due on April 1. In the circular issued to the bondholders under date of March 24, the company recites the difficulty it experienced in obtaining a hearing before the Public Service Commission of Indiana to obtain the discontinuance of its low rate ticket fares and the granting of a 5-cent cash fare, which was not obtained until October, 1918, after a year's delay in the courts.

St. Louis Results Still Unsatisfactory

The report of operations of the United Railways, St. Louis, Mo., for February, made by President Richard McCulloch to the Public Service Commission, points out the following:

That in the nine months in which the 6-cent fare has been in effect, the rate increase of 20 per cent produced only 14.44 per cent more revenue, while the number of paying passengers decreased 4.40 per cent.

That an estimate of twelve months' operation under the 6-cent fare, based on figures for nine months, indicates the city lines will fall short $821,560 of earning 6 per cent on an investment of $52,800,000.

That the county lines, on the same basis, will fail to earn 6 per cent on an investment of $7,200,000 by $734,895.

That the total by which the city and county lines will fail to earn 6 per cent on an investment of $60,000,000 is estimated at $1,556,455.

Praise for Receiver Meloon

The work of W. G. Meloon as receiver of the Portsmouth, Dover & York Street Railway, Portsmouth, N. H., is coming in for public recognition. The Portsmouth *Herald* of March 19 said:

From a generally run-down electric railway to a full service equipment in much less than a year, has been the record of W. G. Meloon, receiver of the Portsmouth, Dover & York Street Railway Electric Lines. The service on the lines across the river has been fully restored and what was once in bad shape is now thoroughly overhauled and service at all times to meet the public demand is being rendered.

The war found the line with run-down equipment and inadequate cars, but this has all been overcome. Courteous employees man all the cars and good time is maintained. The road will be constantly improved from day to day. The public has noted the steady gain and this paper is glad to say a good word for a road that means so much to this territory.

The traveling public can assist in this good work by doing their part. Electric lines belong to the people and it is up to the people to help keep them as near perfect as possible.

Financial News Notes

Foreclosure Proceedings Begun.—The underlying bondholders of the Southern Traction Company, a subsidiary of the Pittsburgh (Pa.) Railways, have begun legal proceedings for the foreclosure of the $4,000,000 of first mortgage bonds of the company.

Increase in Common Stock.—The stockholders of the Charleston Consolidated Railway, Gas & Electric Company, Charleston, Ill., have voted to increase the authorized common stock by the issuance of 30,000 shares. The stockholders have until April 19 to subscribe to the new stock, par value $50, pro rata.

Wants Receiver at Chattanooga.—Application for a receiver for the Chattanooga Railway & Light Company, controlled by the Clark interests, of Philadelphia, has been filed in the United States District Court by the Commercial Trust Company, Philadelphia, Pa., representing the holders of $2,790,000 of the company's first mortgage bonds.

Wants to Refund W. F. C. Loan.—The United Railways, St. Louis, Mo., has applied to the Missouri Public Service Commission for permision to issue $2,160,000 of 7 per cent notes, the proceeds of which will apply to the payment of the $3,235,000 loan granted by the War Finance Corporation. The commission was expected to act on the matter on April 7.

Will Pay on Deferred Coupons.—Holders of the general mortgage 4½ per cent bonds of the New Orleans Railway & Light Company, New Orleans, La., have been notified that the Jan. 1 coupons will be paid upon presentation at the office of the New York Trust Company, New York. Three months' interest in addition to the amount of the coupons will be paid.

Memphis Note Holders Organize.—Owners of the two year 6 per cent collateral notes of the Memphis (Tenn.) Street Railway, which passed into the hands of a receiver in January, have formed a protective committee consisting of Mortimer N. Buckner, J. C. Neff, S. F. T. Brock, Charles Counselman, George T. Ordway and John A. Langan. Holders of the notes are urged to deposit them with the New York Trust Company under an agreement dated March 12, 1919.

Mr. Lippincott a P. S. C. Director.—At the annual meeting of the stockholders of the Public Service Corporation of New Jersey, Newark, N. J., on April 7, Heulings Lippincott, Camden, was elected a director to succeed Horatio G. Lloyd, Philadelphia, resigned. The other directors were re-elected. At the annual meetings of the subsidiary

companies, the Public Service Railway, the Public Service Electric Company and the Public Service Gas Company, retiring directors were re-elected.

Income Bond Interest Passed.—As a result of the showing of the Chicago (Ill.) Railways for the fiscal year ended Jan. 31, 1919, the directors of the company on April 2, by taking no action in the matter, passed the annual interest of 4 per cent payable on May 1 on the $2,500,000 of income bonds. The meeting on April 2 was the regular date for voting this interest, but since it was not earned it will not be paid.

Short Illinois Road Leased.—The Rock Island Southern Railway, Monmouth, Ill., has leased the Galesburg & Western Railroad and will operate both lines as a single system. The Galesburg & Western Railroad was formerly the Rock Island Southern Railroad, operating from Galesburg to Monmouth. The Rock Island Southern Railway operates from Monmouth to Rock Island. In order that the different companies might not be confused the name of the Rock Island Railroad was recently changed to the Galesburg & Western Railroad. There will be no change in the personnel.

Sale of Municipal Railway Bonds Proposed.—The utilities committee of the City Council of Seattle, Wash., has recommended the sale of $150,000 of electric railway bonds, to facilitate the making of necessary improvements in the operation of the railway system recently taken over by the city from the Puget Sound Traction, Light & Power Company. The committee has recommended the construction of tracks to connect with both ends of the Eastlake Bridge, and the loan of money from the general fund to the railway construction fund to keep the work going until the bonds are sold.

Receiver for Jackson Company.—The Jackson Light & Traction Company, Jackson, Miss., a subsidiary of the American Public Utilities Company, Grand Rapids, Mich., has filed a petition in bankruptcy and E. E. Hindman, an attorney of Jackson, has been named receiver by Federal Judge Edwin Holmes. Electric railway service was discontinued temporarily, but has been resumed on order from the court. Officials of the company have been striving to increase power, light and gas rates and to raise fares to 7 cents, but the City Commission demanded that service be improved without increasing rates.

Cities Service Stock Increase Approved.—At the annual meeting of the Cities Service Company, New York, N. Y., held on April 8 in Dover, Del., all retiring directors were re-elected. The new board will meet for organization in New York on April 16, when it is expected the present officers will be re-elected. The stockholders of the company approved the increase in the authorized amount of preferred capital stock from $100,000,000 to $150,000,000. This stock will be held for future corporate requirements of the company, including the conversion of $30,000,000 principal amount of 7 per cent convertible gold debentures now outstanding.

$200,000 Note Issue Approved.—The Board of Public Utility Commissioners of New Jersey has approved the application of the Trenton & Mercer County Traction Corporation, Trenton, for the issuance of $200,000 of five year 6 per cent guaranteed gold notes in accordance with the trust agreement of March 1 last. The company needs the money for improvements, included among which are the following: Carhouse, $12,000; new unit at power house, $20,000; oil reservoir and time clock at the carhouse, $7,000; carpenter shop machine tools, $3,000; additional power house equipment, $10,000; ten air equipments for cars, $4,600; J. G. White, appraisal, $5,000; eighty-five fare boxes, $6,375.

Interborough-Metropolitan Engineering and Accounting Inquiry.—G. M.-P. Murphy, chairman of the protective committee for the holders of the Interborough-Metropolitan Company, New York, 4½ per cent bonds, has sent out a circular to holders of the bonds calling attention to the fact that interest due on April 1 has been defaulted. The circular states the position of the holders of the bonds, and adds that the committee has arranged for a thorough investigation of the property by the engineering firm of Stone & Webster and by Price, Waterhouse & Company, certified accountants. It was stated that when the reports were received the committee would endeavor to form some plan for reorganization.

Common Stock Dividend Passed.—At their meeting on April 2 the directors of the United Railways & Electric Company, Baltimore, Md., failed to declare any dividend on the common stock for the present quarter, and postponed action on the dividend until July. For the month of February the company in its report to the Public Service Commission actually shows a deficit of $50,077 in fixed charges. The item of "fixed charges" includes the interest on the 5 per cent funding bonds and on the income 4s. The interest on the income 4s, in accordance with the indenture, is payable only if earned, but it has long since come to be regarded as an actual fixed charge, and is cumulative. The report shows that for the month of February the company carried 17,540,547 cash fare passengers, and 6,125,681 transfer passengers. The report also shows that approximately 75 per cent of the gross income was distributed directly to service rendered the public and to taxation. Nelson, Cook & Company, Baltimore, bankers, in commenting on the affairs of the company in their weekly review dated April 5, said: "W do not for a moment consider that the United Railways & Electric Company is in danger of receivership; but we do think that when the experts now going over the company's books present the final results to the Public Service Commission, the necessity for prompt action will be clear cut and convincing."

Electric Railway Monthly Earnings

AURORA, ELGIN & CHICAGO RAILROAD, AURORA, ILL.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Feb., '19	$179,364	*$152,362	$27,002	$38,822	†$11,820
1m., Feb., '18	140,915	*123,039	17,786	35,654	†17,778
2m., Feb., '19	366,018	*319,628	46,390	77,622	†31,232
2m., Feb., '18	268,587	*279,319	†732	71,305	†72,037

CITIES SERVICE COMPANY, NEW YORK, N. Y.

1m., Feb., '19	$1,767,276	$58,096	$1,709,180	$150,099	$1,559,081
1m., Feb., '18	1,849,610	33,521	1,816,089	213	1,815,876
12m., Feb., '19	22,019,868	576,817	21,443,051	530,261	20,912,790
12m., Feb., '18	19,579,248	368,180	19,229,068	2,681	19,226,387

CLEVELAND, PAINESVILLE & EASTERN RAILROAD, WILLOUGHBY, OHIO

1m., Jan., '19	$47,536	*$33,477	$14,059	$16,118	†$2,059
1m., Jan., '18	40,772	*27,973	92,799	11,321	1,478

FEDERAL LIGHT & TRACTION COMPANY, NEW YORK, N. Y.

1m., Jan., '19	$333,629	*$235,873	$97,756	$52,099	$45,657
1m., Jan., '18	310,344	*212,003	98,341	50,184	48,157

INTERBOROUGH RAPID TRANSIT COMPANY, NEW YORK, N. Y.

1m., Feb., '19	$3,499,170	*$2,361,834	$1,137,336	$1,548,037	‡†$364,638
1m., Feb., '18	3,256,310	*1,812,533	1,443,777	1,171,141	‡324,159
8m., Feb., '19	27,265,978	*19,030,215	8,235,763	11,828,122	‡†3,197,327
8m., Feb., '18	26,494,347	*14,871,566	11,622,781	8,823,332	‡3,153,799

* Includes taxes. † Deficit.

LAKE SHORE ELECTRIC RAILWAY, CLEVELAND, OHIO

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Jan., '19	$191,454	*$152,434	$39,020	$35,840	$3,180
1m., Jan., '18	141,554	*115,307	26,247	36,025	†9,878

NEW YORK (N. Y.) RAILWAYS

1m., Jan., '19	$962,263	*$878,817	$83,446	$280,028	‡†$153,155
1m., Jan., '18	865,377	*720,601	144,776	287,627	‡†92,933
7m., Jan., '19	6,561,098	*5,811,051	750,047	1,947,335	‡†891,283
7m., Jan., '18	7,171,482	*5,418,664	1,752,818	1,978,796	‡132,634

SAVANNAH (GA.) ELECTRIC COMPANY

1m., Jan., '19	$114,114	*$89,991	$24,123	$26,579	†$2,456
1m., Jan., '18	93,374	*63,183	30,191	25,210	4,981
12m., Jan., '19	1,203,631	*882,959	320,672	304,317	16,355
12m., Jan., '18	986,494	*657,868	328,626	291,680	36,946

TAMPA (FLA.) ELECTRIC COMPANY

1m., Jan., '19	$104,648	*$59,808	$44,840	$5,295	$39,545
1m., Jan., '18	86,449	*52,210	34,239	5,083	29,156
12m., Jan., '19	1,080,745	*627,874	452,871	61,645	391,226
12m., Jan., '18	995,445	*568,169	427,276	56,948	370,328

TWIN CITY RAPID TRANSIT COMPANY, MINNEAPOLIS, MINN.

1m., Feb., '19	$829,499	$638,641	$190,858	$147,167	$43,691
1m., Feb., '18	780,372	604,534	175,838	144,919	30,919
2m., Feb., '19	1,704,083	1,303,460	400,623	309,345	91,278
2m., Feb., '18	1,622,096	1,266,698	355,398	305,435	49,963

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

Traffic and Transportation

Suburban Fare Readjustment

Flat Suburban Rates Suggested in Rhode Island to Replace Commutation or Excursion Fares

A flat reduction in fares on eight of the long-haul suburban lines of the Rhode Island Company, Providence, R. I., approximating 10 cents between terminals in most instances, is suggested in a new schedule of rates filed by the company on April 1 with the Public Utilities Commission. The lines affected by the proposed rates include the Buttonwoods, Chepachet, Providence-Woonsocket, Providence-Washington, East Greenwich, Riverside, Warren & Bristol, Riverpoint-Rocky Point and the Woonsocket-Pascoag lines.

FLAT FARE CONSIDERED BETTER

The new tariffs are offered to the commission in compliance with its order that the company propose some form of excursion or commutation rate on the long-haul lines of heavy traffic. The trustees of the road believe a flat rate better for the public than the ordinary commutation or excursion rates.

The present rates will continue in effect until May 1. The proposed rates merely suggested as a basis for a readjustment of the fares on the heavily traveled suburban lines. It is suggested that they be tried for three months for the purpose of building up business, as they are lower than the company can offer on the present volume of business.

Long-haul lines upon which a fare of more than 10 cents is charged, which are not included in the changes suggested, include the Providence and Danielson, Sea View, Smithfield Avenue, Pawtucket-Crescent Park, Pawtucket-Cumberland Hill, Oaklawn and the Centerdale-Esmond, via Smith Street and Manton Avenue.

PRESIDENT POTTER EXPLAINS

A. E. Potter, president of the company in his letter of transmittal of the tariffs to the commission, says:

> A commutation rate is usually fixed by reducing the price for each zone traveled, while the rates in the accompanying tentative form of tariff effect a reduction by a lengthening of the zone.
>
> It is believed that the submission of these reduced rates in place of commutation tickets or excursion tickets is desirable on the grounds that the experience of this company and other electric railways with tickets indicates that tickets can be handled only at a large expense for printing and for proper accounting by conductors and the auditing department, and it is believed that this expense should be obviated and the passengers given the benefit of a reduced rate which includes no expense for the printing and handling of tickets.
>
> These rates are lower than the mileage rate of 3-cents on the steam lines as now operated by the United States Railway Administration, and are as low as or lower than, most electric railway rates for similar service throughout New England.
>
> These rates are lower than the company can afford to offer on the present volume of business, and are offered as an experiment for three months trial, in the hope that the lines affected will be so well patronized, on account of the low rates, that the amount derived from the business will be sufficient to cover the cost of service.

With the reduction of the fare between terminals of 10 cents on six of the eight lines, the company in its proposed rate has made a readjustment of the fares in intermediate zones by extending the length of the zones.

Inquiry Into Des Moines Service

In an effort to prove that the Des Moines (Ia.) City Railway is not compelled by financial reason to make the cut in service recently authorized by Federal Judge Martin J. Wade the city of Des Moines has a force of experts and accountants going over the books of the company. The investigation is being conducted under the direction of Prof. E. W. Bemis, who is assisted by Walter Bemis of the Chicago Rate & Utility Company, George H. Mathews of the firm of Andrew Sangster & G. H. Mathews, and Charles H. Pugh, Chicago.

Scott Goodrell, newly-chosen railway supervisor of Des Moines, has presented a demand to the City Council for drastic changes in the service now being furnished by the Des Moines City Railway. Among other complaints Mr. Goodrell protests against the skip-stop plan and states that it has done more to cause complaint from patrons than the recent reduction of service. He urges that it be abolished. He asks the City Council to establish two car-loading berths at all important near-side stops, having them marked on the pavement. No parking of cars in these berths would be allowed, according to Mr. Goodrell's plans. Mr. Goodrell also proposes additional fare collectors on cars at congested points so that both ends of the cars could be used for loading and unloading. Protection of car-riders from motorists is also urged.

The Council has as yet taken no action of Mr. Goodrell's recommendations.

Platform Labor More Plentiful

Platform men are available now in such numbers that the Portland Railway, Light & Power Company, Portland, Ore., is practically back to old standards of efficiency, but mechanics, machinists and painters are still so scarce that it is almost impossible to keep the force up to strength. So long as the promise is for fairly steady work at the shipyards the mechanics prefer such work.

Ten-Cent Fare Suggested

Professor Richey Advocates Dividing Washington Into Two Five-Cent Zones

A zone system calling for the payment of an extra fare of 5 cents by patrons riding on cars into the city from the outer sections was suggested by Prof. Albert S. Richey, an expert witness for the Washington Railway & Electric Company, Washington, D. C., in the hearing before the Public Utilities Commission of the District of Columbia on the company's application for financial relief. The extra fare would be cut down to 3 cents by commutation. The zone line would be 2¾ miles from the center of traffic.

RELIEF OR RECEIVERSHIP

Professor Richey was called to the stand by the company following testimony by its officers to the effect that the financial affairs of the company were in a desperate condition, and that unless relief should be granted, the company would be obliged to cease its practice of making good the deficits of the various subsidiary companies which serve the suburbs. Such a course would mean a receivership for these lines.

Professor Richey said that a zone system of fares as outlined by him, together with a 1-cent charge for all transfers, would realize the company additional revenue of about $600,000 a year. Patrons riding wholly within either zone would pay a fare of only 5 cents. Those crossing the zone line would be charged an additional fare of 5 cents, but this would be cut down by the issuance of commutation tickets for 3 cents each. The commutation tickets would avoid the necessity of making change at the zone line and insure a rapid and easy collection of the extra fares. The witness said that such a system was working successfully at Springfield, Mass., and Holyoke, Mass., and that a similar plan had been worked out for Boston, but had not yet been put in operation in that city.

PRESIDENT HAM'S VIEWS

William F. Ham, president of the company, testified that in his opinion the only solution of the problem, provided assistance was not given the company, would be the taking over of the lines by the government and the payment of deficits out of the public purse.

When Mr. Ham completed his testimony, representatives of the citizens' associations will be heard. The latter have announced their opposition to any increase in fares and will probably suggest that the commission cannot act with fairness until after the actual valuation of the property is determined.

The commission completed the valuation hearing only a few days ago and every indication was given at the time that there would be no decision until there was a court ruling on the matter of the valuation of the Potomac Electric Power Company.

La Crosse Six-Cent Fare Order Vacated

Circuit Court Judge Holds That Failure to Earn Fair Return on Property Value Did Not Create "Emergency"

An important decision regarding emergency fares was handed down on March 21 by Judge Ray E. Stevens of the Circuit Court of Hare County in the case of the Wisconsin Railway, Light & Power Company. The Wisconsin Railroad Commission had on Sept. 12, 1918, granted a 6-cent fare for this company in La Crosse upon the ground that an emergency existed because the old rate was insufficient to cover operating expenses, taxes and a 7½ per cent return on the property value.

Judge Stevens now holds, however, that the grant of a higher fare was unlawful because no emergency existed within the meaning of the law. His general argument is that a utility has no right to an emergency rate that will maintain its normal rate of income, and that the fact that a utility has set aside a substantial surplus is one of much weight in determining whether an emergency exists.

Return on Investment Not Considered

After citing various cases (*Re* Indianapolis Water Company, P. U. R. 1919, A448,460; *re* Lincoln Traction Company, P. U. R. 1919, D168-171; *re* Public Service Railway, P. U. R. 1918, E910,915; *re* The Milwaukee Electric Railway & Light Company, 18 W. R. C. R. 681,685; State *vs.* Lewis (Ind.), P. U. R. 1918, F111,118), Judge Stevens remarks that it is not suggested in any of these cases that the failure to pay a return on the fair value of the property is an element to be considered in determining whether an emergency exists. No single fact, in his opinion, is more thoroughly established than that a utility has no right to an emergency rate that will maintain its normal rate of income. (*Re* Empire Gas & Electric Company (Mass.), P. U. R. 1918, D912; *re* Long Island Railroad (N. Y.), P. U. R. 1918, A649, 654; *re* Public Service Railway, P. U. R. 1918, E910, 915; *re* Queens Borough Gas & Electric Company, P. U. R. 1918, F672, 881.)

Judge Stevens found but one case in which returns on capital invested were considered in fixing emergency rates, and then only upon the ground that such returns were essential to "sustain its credit . . . to the end that essential capital for additional facilities to meet the public demands or needs may be secured upon reasonable terms." (*Re* Georgia Railway & Power Company, P. U. R. 1918, F624, 632.) There is no proof, he says, that capital is needed to make extensions or procure additional facilities to serve the public at La Crosse. Even under such a state of facts the most that should be considered in determining whether an emergency existed is the amount of interest payable upon the funded debt properly chargeable to the electric railway property, but not a return of 7½ per cent on the value of the property.

Railway and Lighting Surplus Affects Case

During the six years 1913-1918 the company, after deducting operating expenses, taxes and depreciation, earned an average of 7.03 per cent on the property value. On June 30, 1916, it had a surplus of $111,626, and on June 30, 1918, a depreciation reserve of $93,797 and a sinking fund reserve of $22,249. In October and November, 1918, the operating revenues under the new 6-cent fare exceeded operating expenses and taxes by only $1,129, an amount insufficient to provide for 3 per cent depreciation.

Judge Stevens believes that under such a financial record it cannot be said that an emergency existed. He adds that the setting aside of a substantial surplus is a fact of much weight in determining the existence of an emergency and that no commission has stated the rule more clearly than the Wisconsin Railroad Commission, when it said:

> Where a utility has been able to accumulate a proper surplus after meeting the charges entering into the cost of service, including a fair return on the investment, consumers may be said to have insured the utility against fluctuating conditions of a more or less temporary nature. In such cases, in order that emergency relief might reasonably be granted by the commission, there would have to be a showing that the emergency alleged was of a more serious nature and the losses incident thereto greater in relation to the total business than would be required to constitute an emergency in the case of a utility which had been operating with little or no margin above the actual cost of service.

The facts found by the commission in the La Crosse case, therefore, are considered by Judge Stevens to fail to establish an emergency which threatens "serious loss or inconvenience to the public directly, or indirectly through loss to the company involved." This is the test which the Wisconsin commission prescribed in the Manitowoc Gas Company case (19 W. R. R. 832, 835), quoted above. The 6-cent fare order is therefore vacated.

Twelve-Day Suspension in Saginaw

Peanut Politics in Fare Case Disrupts Business Life of Entire Michigan Community

Local electric railway service has been restored in Saginaw, Mich., by the Saginaw-Bay City Railway after a cessation of twelve days. To be exact the shut down lasted from midnight on March 15 to noon on March 28. The story is one in which local politics played a large part, with the railway company deciding to suspend entirely rather than submit to unreasonable demands or permit itself to be used as a buffer. It is a study in peanut politics such as has made men like Bryce doubt the efficiency of the American political system as it concerns local municipal administration.

The Story Unfolds Itself

Interwoven in the story is much local history. It properly has its beginning on March 12, 1918, when the railway petitioned the City Council asking for authority to increase fares to 6 cents. At that time, the cash fare in Saginaw was 5 cents, with regular tickets at six for 25 cents and school and labor tickets at eight for 25 cents. Regular tickets were good at all times, labor tickets were accepted between the hours of 5.30 a. m. and 7.30 a. m. and 5.30 p. m. and 6.30 p. m., and school tickets were accepted from children attending public schools on school days. These rates were fixed in the franchise to the company granted on Oct. 16, 1893.

On the same date that the company filed its petition with the City Council, it began a series of educational talks in the daily newspapers, setting forth in detail all facts connected with its operation and showing why the increase in fare was necessary. The City Council engaged Prof. M. E. Cooley of the University of Michigan, to appraise the railway property in Saginaw and verify the statements made by the company with reference to the costs of operation, etc. A complete report upon the situation was presented to the City Council on June 24, 1918, by Professor Cooley. This report showed conclusively that the 6-cent fare requested by the company was fully justified.

Accordingly the City Council on July 2, 1918, passed an ordinance granting the company the relief asked for and establishing a straight 6-cent fare for all passengers in place of the former rates of fare. The ordinance became effective on July 16, 1918, and, on this date, the company inaugurated the 6-cent cash fare, selling tickets at the rate of five for 30 cents merely as a matter of convenience for the public.

In the fall of 1918, a vacancy occurred in the City Council and a new commissioner was elected. This new commissioner made an effort to have the City Council revoke the 6-cent fare ordinance, but his efforts were unsuccessful. He then instigated petitions providing for the submission to the people of a measure to revoke the ordinance. The charter of the city of Saginaw provides that any ordinance shall be submitted to the people if 25 per cent of the electors petition to have the same done. The new commissioner secured the requisite number of signers to the petitions and the ordinance to repeal the 6-cent fare ordinance was submitted to the electors on March 5 and was passed, to become effective on March 16.

The company had previously stated to the City Council and also to the pub-

lic through the newspapers that, if the 6-cent fare was revoked, it would be obliged to cease operation, as it was financially unable to operate at the old rates of fare. At midnight, therefore, on March 15, the cars were run into the carhouses and the operation of all city railway service in Saginaw was discontinued.

PERSONAL ENCOUNTER IN COUNCIL

The City Council then served notice on the company that, if service was not resumed, the franchise would be forfeited. Two days later, the City Council found that the franchise provided that thirty days' notice was necessary, in order to forfeit the grant and this action of the Council did not, therefore, tend to relieve the situation in any way. The company was still continuing to operate its interurban lines in and out of the city and the City Council then served notice upon the company that it would apply to the courts for an injunction to stop the interurban cars. This threat it was found impossible to carry out as the operation of the interurban cars could not be discontinued as long as the company held its franchise in the city.

Meanwhile the daily meetings of the City Council reflected much bitterness. Hostility was evinced toward the new commissioner by the other members of the City Council. One of these meetings ended in a personal encounter between the newly-elected commissioner and the city attorney. On the following morning the city attorney resigned, leaving the city without any legal advisor in the controversy.

The commercial and industrial life of the city was, of course, very seriously affected and a meeting of the directors and members of the Saginaw Board of Commerce and Saginaw Manufacturers' Association was held, in order to see if anything could be done to provide for the resumption of service. The business interests and other intelligent members of the community favored the retention of the 6-cent fare by the company, but the radical element bitterly opposed this course. The business interests, therefore, felt that a few days more without railway service would demonstrate to everyone the need of service and educate many people to the fact that they must pay a fair price for railway accommodations in case they wanted the company to continue to operate.

A proposition was then brought forth by the Saginaw Board of Commerce and the Saginaw Manufacturers' Association providing for the circulating of petitions asking the City Council to grant a temporary compromise rate of fare of 6 cents cash, with regular tickets at nine for 50 cents and school and labor tickets at five for 25 cents.

ORDER AGAIN PREVAILS

The Saginaw County War Board, which had taken charge of the different Liberty Loan and Red Cross campaigns, was called together and started out to secure the signatures of some 15,000 or 20,000 names to these petitions. Meanwhile, several days had elapsed and the City Council had retained the services of another attorney and decided to apply to the Saginaw Circuit Court for a mandatory injunction to compel the company to resume operation at the old rates of fare. Application was made to the court for this injunction on March 28, and a temporary order was issued. Service was then resumed at noon on March 28, the old rates of fare being in effect until the case is heard and a decision has been rendered by the courts.

Columbus Withholds Relief

The railway relief ordinance introduced in the Council of Columbus, Ohio, by Councilmen A. E. Griffin on March 17, failed of approval in Council committee session on April 4 by a vote of four to two.

The two ordinances provided for six tickets for a quarter with transfers on payment of 5-cent cash fare and the Columbus Railway, Power & Light Company had agreed that if they were passed it would spend $500,000 for betterments. One of the ordinances covers the Central Market lines and the other remainder of the lines operated by the company.

In voting for the ordinance, Councilman Lamneck explained that he was against the 5-cent transfer provision, but did not wish to be a party to the wrecking of any industry. He asked why the issue was not submitted to a referendum. Councilman Weinland said that he was in favor of giving some form of relief to the railway but could not approve the terms embodied in the Griffin ordinance.

Charles L. Kurtz, president of the company, and John L. Wilson, its attorney, spoke in favor of the ordinances. President Kurtz said that unless relief was granted immediately the company would go hopelessly in debt and the service would suffer.

Pacificator Wanted for Iowa

With the end in view of bringing to a close the difficulties existing between the city of Des Moines and the Des Moines (Ia.) City Railway the Chamber of Commerce of Des Moines has petitioned the Legislature of Iowa for the appointment of a commission or other body whose duties would be to settle disputes between municipalities and their public utilities.

The petition states that a body is needed which is free from political influence to act as the judge in such cases and urges that on account of the condition now applying in Des Moines action should be taken before the adjournment of the present session of the Legislature.

The petition in part asks for a body to "fix and determine fair and reasonable rates of fare under such rules and regulations as will protect and safeguard the interests of the people and at the same time permit sufficient earnings to take care of all operating costs, reasonable depreciation and fixed charges, and insures adequate and satisfactory service unaffected by political influence."

A bill to increase the size and powers of the present Railroad Commission of Iowa was introduced early in the present session, but was fought by the municipalities. It was withdrawn several weeks ago without reaching debate before the Legislature.

Commission Regulates the Jitney

The Public Service Commission of Massachusetts has issued an order amending local rules and regulations governing the operation of jitneys in Malden, Salem, Lynn, Lawrence, Haverhill, Newburyport, Brockton, New Bedford, Nahant and Swampscott. The action was taken under the statutes which give the board the power to review, approve or amend such regulations. The order consists of 19 sections, including much detail of no general interest. The principal regulations are as follows:

Jitneys shall be mechanically inspected before licenses are issued for their operation, and once every six months thereafter. They must be kept in a safe and sanitary condition at all times. Their operators shall be not under twenty-one years of age and shall pass an examination as to fitness for the work. Each vehicle shall carry signs telling its route, fare charged and schedule of trips.

Individuals or companies operating jitneys must give bonds sufficient to meet final judgments for injury or death to persons injured in consequence of accident in which the car was involved or for damage to property. The amount of these bonds shall range from $2,500 for a vehicle seating five persons or fewer and $500 for each additional passenger seat. Carrying more than the seating capacity of a car is prohibited. Vehicles must be operated regularly for not less than twelve consecutive hours every day, and must be equipped with extra tires, with skid chains, etc. Rules are prescribed relative to the character of operators and their deportment while operating their cars.

Seattle Stops Free Riding

Several of the recommendations made by Superintendent Thomas F. Murphine for improvements in the operation of the Seattle (Wash.) Municipal Railway have met with strong opposition. The announcement that no more free rides would be furnished on the municipal railway system brought a storm of protest from the members of the police and fire departments, who state that they were assured by Mayor Ole Hanson last fall that the practice of free rides for them would be continued. In a report on traction earnings submitted in October of last year, Superintendent Murphine showed that the railway lost approximately 4,000,000 fares in 1918 on account of free rides to firemen, policemen, general city employees, etc.

The proposed new traffic ordinances recommended by Mr. Murphine are also meeting with opposition. The Chamber of Commerce Civic Bureau, in opposing the measure, states that it is too drastic and would work unnecessary hardships, and expresses the belief that a more conservative amendment may be worked out that will bring satisfactory results.

Transportation News Notes

Wants Return to Five-Cent Fare.—The Council of Ottumwa, Ia., has passed an ordinance recommending a return to a 5-cent fare. A 6-cent fare was allowed the Ottumwa Railway & Light Company on Dec. 23.

One-Man Cars Considered for Boston.—The trustees of the Boston (Mass.) Elevated Railway are making an exhaustive study of the one-man car with reference to possible use on lines of lighter traffic.

Six Cents in Lawrence.—The Public Utilities Commission of Kansas has authorized the Lawrence Railway & Light Company to charge 6 cents for a period of six months. At the end of that period the commission will decide whether the rate is to be continued.

Files Ten-Cent Fare Tariff.—The Massachusetts Northeastern Street Railway, Haverhill, Mass., has filed a tariff with the Public Service Commission proposing to increase the single cash fare from 6 cents to 10 cents, effective May 7. There will be no increase in the price of tickets.

Six Cents in Spokane.—The Public Service Commission of Washington has authorized the Spokane & Inland Empire Railroad and the Washington Water Power Company to charge a 6-cent fare. This order followed the request of the companies for an increase in fare from 5 cents to 7 cents.

Ten-Cent Fare Unprofitable.—The Tiffin, Fostoria & Eastern Electric Railway will not remove its tracks in Tiffin until the Chamber of Commerce and industrial heads hold a conference. An effort will be made to persuade the company to continue operating cars at a 10-cent fare. The company says it is losing money.

Fare Bill Passed by Assembly.—The so-called Carson-Martin fare bill has passed the New York Assembly with one vote to spare. This measure is designed to amend the Public Service Commission law by extending the jurisdiction of the Public Service Commissions over the rates, fares and charges of electric railways fixed by agreement with local authorities, notwithstanding limitations that are imposed in their franchises.

Collision on Washington Interurban.—Two interurban cars, one running from Everett and the other to Everett, met in a head-on collision at Lake Ballinger on March 24. No passengers were killed, but every one was more or less seriously injured. The impact of the two cars resulted in their being telescoped. One car was of wood, and the other of steel. The cars were the property of the Puget Sound Traction, Light & Power Company.

Ten Cents in Yakima.—After the hearing in regard to the proposed 100 per cent increase in fare on city passenger lines of the Yakima Valley Transportation Company, North Yakima, Wash., E. F. Blaine, chairman of the Public Service Commission, announced a rate of 10 cents cash fare, 8 cents for tickets and 4 cents for children would go into effect on April 1. Those fares will be in effect, unless a change appears necessary, for a period of one year thereafter.

Attractive Employment Offered in Detroit.—The Detroit (Mich.) United Railway is advertising for men available to act as motormen and conductors. The shortage is relatively as great now as it was when, owing to the scarcity of men who had joined the fighting forces or entered munition and allied plants, the way was opened for the employment of women as conductors. Since then, however, schedules have been materially increased. The opening up of other fields of endeavor has resulted in a realignment of the working forces with the result that the company has many vacancies.

I. T. S. Increases Freight Service.—The Illinois Traction System, Peoria, Ill., will add three fast freight trains to its service, these trains to operate between St. Louis and Peoria and St. Louis and Decatur. Officials of the Illinois Traction System found that increasing business necessitated greater hauling capacity and more especially rapid service. A fast freight will leave Peoria at 9 p. m. and will arrive in St. Louis at 6 a. m. and the same time will be made by a train running from St. Louis to Peoria. A fast freight will leave St. Louis at 9 p. m. and will arrive at Decatur at 7.30 o'clock the next morning.

Real Estate Owners and Railways.—P. S. Arkwright, president Georgia Railway & Power Company, Atlanta, Ga., in a recent address before the Atlanta Real Estate Board explained in detail the financial needs of his company and the reasons why home-owners should be interested in its welfare. The speech made a strong plea for the removal of the fare question from politics and for a fair settlement upon its merits. Although the Georgia Railroad Commission and the War Labor Board both emphasized the urgent need of a higher fare through a franchise modification, the City Council of Atlanta has steadily, it is said, refused to hear the company's case.

Mobile May Ask More.—The Mobile Light & Railway Company, Mobile, Ala., is advertising a meeting of the stockholders for April 28 to amend the charter of the company so as to eliminate reference to a fixed fare of 5 cents and to insert in lieu thereof the provision: "The compensation which shall be charged and received for the carriage of passengers shall be such as may from time to time be fixed by contract with the city of Mobile, or, in the absence of such contract, by the Alabama Public Service Commission. The directors of the company have already adopted a resolution declaring that such amendment is desirable. It now remains only for the stockholders to act, and the company will go before the City Commission, it is expected, asking for a fare of 6 cents or more.

Injunction in South Carolina Fare Case.—A temporary injunction has been issued restraining the Railroad Commission and the Attorney General of South Carolina from taking steps to enforce the order of the commission relative to the rates on the Charleston-Isle of Palms Traction Company's line at Mount Pleasant, Moultrieville, Atlanticville and on the Isle of Palms. In an order promulgated recently by the Railroad Commission the petition of the Charleston-Isle of Palms Traction Company for an increase in fares was refused, and the matter was turned over to the Attorney-General to force compliance with the order of the commission of Oct. 2, 1918, directing that not more than 3 cents be charged for transportation over the railway. The company considered this unreasonable and confiscatory and appealed to the courts for relief.

New York City's Belligerent Attitude.—An affidavit by Corporation Counsel William P. Burr of New York City concerning the attitude of the city toward the New York Railways, now in the hands of a receiver, and the action the city will take should the Legislature vest the Public Service Commission with authority to increase fares has just been put at the disposal of the court, the receiver, the commission, and others who may have direct interest in the matter. If the Legislature acts favorably on the pending bill providing for a fare increase it will meet with the active opposition of the city and steps will be taken to test the validity of the act in the courts. There is also a warning to the receiver with regard to the attitude of the city should it be decided by the railway interests involved to segregate the properties now leased.

Wants Increase Pending Final Determination.—The International Railway, Buffalo, N. Y., on April 4, made an application to the Public Service Commission for the Second District, for a modification of its order suspending until April 30 interurban fares and asking that it may be permitted to put the suspended fares into operation provided the company gives a bond and makes provision to refund amounts in excess of amounts finally determined as legal fares. The commission's investigation of the tariff against which complaints were filed by Lockport, Tonawanda, North Tonawanda and La Salle was interrupted on March 27 when Justice Sears' order was served upon Chairman Hill in proceedings for a writ of prohibition against the commission and the railway. This order has since been modified. The railway claims that it has operated its interurban division at a net loss of $116,000 a year and that the suspension order prevents the company from receiving increased fares of approximately $23,000 a month.

Personal Mention

New P. R. T. Operator

G. A. Richardson Is Made Superintendent of Transportation Following Call to Philadelphia on Special Assignment

G. A. Richardson, general superintendent of the Puget Sound Traction, Light & Power Company, Seattle, Wash., as announced briefly in the ELECTRIC RAILWAY JOURNAL for April 5, has accepted the position of superintendent of transportation of the Philadelphia (Pa.) Rapid Transit Company. It is expected that he will assume the duties of his new office on April 16.

Mr. Richardson has been unusually successful in his handling of transportation matters on the Pacific Coast and on other properties with which he has been connected with the result that his

G. A. RICHARDSON

advice and help have been solicited in connection with the solution of problems in a number of cases arising in other cities. In some of these instances he has acted merely as consultant, while in others has fallen to him the task of supervising the whole undertaking.

More than a year ago the Emergency Fleet Corporation summoned Mr. Richardson to Philadelphia to help solve the transportation problem of the Hog Island shipyard. In September, 1917, Hog Island was an uninhabited marsh on the lower Delaware with no transportation facilities, and was in this condition when it was selected as the site for the world's largest shipyard. The system of transportation devised combined steam, electric and ferry service. Five months after Mr. Richardson's visit Hog Island had 80 miles of tracks and 18 miles of roadway within the confines of the yard.

Long before his retention in connection with this work, however, Mr. Richardson's unusual talent had received recognition outside the organization with which he was permanently connected. Thus he was asked to assist in connection with the affairs of the Rochester (N. Y.) surface lines, and in 1914 made an extensive investigation and report on the transportation facilities of the Chicago Elevated Railways. When F. P. Royce was made general manager of the Brooklyn (N. Y.) Rapid Transit Company, following the receivership, he summoned Mr. Richardson to New York to investigate and report as to the facilities of that company. He was unable to investigate anything but the elevated and subways, however, owing to other demands upon his time, but he gave more than a month to that work.

Mr. Richardson was born in Boston, Mass., in 1882. He was educated in the public schools of the cities of Newton and Boston, Mass., and was graduated from the Mechanic Arts High School in 1900. He returned there and took a post-graduate course in machine shop work and mechanical drafting until February, 1901, when he entered the employ of the Boston (Mass.) Elevated Railway at the Sullivan Square shops, working on the installation of electric equipment in the new elevated cars up to and shortly after the time the elevated division began operation. He was later transferred to the train service as a motorman, at the same time giving his spare time to working on car repairs with the mechanical department on surface cars at the North Cambridge carhouse, where he was located. During 1902 and 1903 he worked in the power stations of the company in various capacities. During the summer of 1903 he was transferred into the electrical engineering department and remained there until September, 1904, when he accepted a position with the Boston & Northern Street Railway as inspector of car repairs in charge of the Lynn Division. In May, 1905, he went to work for Stone & Webster as assistant superintendent of the Houghton County Street Railway, Houghton, Mich. On Nov. 1, 1906, he was promoted to the position of superintendent of that company and remained at Houghton until Jan. 1, 1910, when he was transferred to Seattle as assistant superintendent of transportation. On Dec. 1, 1910, he was promoted to superintendent.

Seattle Operating Heads Announced

Operating heads of the municipal street railway at Seattle, Wash., have been announced as follows:

Superintendent—Thomas F. Murphine.

Assistant superintendent — Edward D. O'Brien.

Superintendent of transportation—D. W. Henderson, formerly with the Puget Sound Traction, Light & Power Company.

Assistant superintendent of transportation—R. E. Furse.

Construction and maintenance—chief engineer—J. J. Wettrick.

Mechanical department—superintendent of rolling stock and shops—A. D. Campbell, formerly with the Puget Sound Traction, Light & Power Company.

Assistant superintendent of rolling stock and shops—A. Flanigan.

General carhouse foreman—H. J. Stith.

Georgetown general shop foreman—Albert Pohl.

Accounting department—Auditor—Allan B. Hiatt.

Clerical department—head clerk—Mrs. W. J. Biggar.

Thomas F. Murphine, superintendent of public utilities of the city of Seattle, Wash., became the active head of that city's extended municipal electric railway system, with a trackage of 224 miles, on April 1, when the city completed the purchase of the railway lines of the Puget Sound Traction, Light &

T. F. MURPHINE

Power Company. Mr. Murphine was previously superintendent of the 18-mile municipal railway line which the city had installed. He thus becomes the principal operating official of perhaps the largest city electric railway system of the Pacific Coast and by far the largest municipal electric railway property in the United States. Mr. Murphine was born in Hillsboro, Ohio, on July 7, 1878, and settled in Seattle in April, 1883. He was graduated from the University of Washington at Seattle, with the degree B. A. in 1898, and from the School of Law at the University of Washington in 1907. He was a member of the 1913 and 1915 sessions of the Washington State Legislature and was a leader of the Progressive and municipal ownership forces in these two sessions. During the 1917 session of the Legislature he was Assistant Attorney General, assigned to the bill drafting department. He continued in this capacity until April 1, 1918, when he was appointed superintendent of public utilities at Seattle, by the present Mayor, Ole Hanson.

Col. Joseph Alexander, former assistant to John J. Stanley, president of the Cleveland (Ohio) Railway, and identified with the quartermaster's department at Washington during the war, expects to be mustered out of service soon and resume his former duties with the railway.

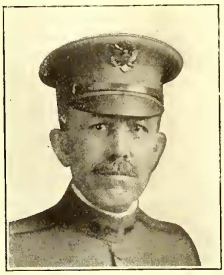
George A. King, Newark, N. J., master mechanic of the Central division, has been made division master mechanic of the Essex division of the Public Service Railway, Newark, N. J., to take the place of C. F. Bachman. John Finton, of the Newark shops, will be the successor to King on the Central division.

J. S. Pevear of the Birmingham Railway, Light & Power Company, Birmingham, Ala., will be general manager of the operating department of the American Cities Company. Headquarters of the operating department will be opened at once in Birmingham by Mr. Pevear. The American Cities Company operates public utilities in Birmingham, New Orleans, Memphis, Little Rock, and other cities. The operating headquarters have heretofore been in New Orleans.

Harry H. Hansen has been appointed general superintendent of the Middlesex & Boston Street Railway, Newtonville, Mass. Mr. Hansen's work has been previously identified with the Boston (Mass.) Elevated Railway transportation department service. He was assistant to the superintendent of rapid transit lines at the time of his departure from the Boston company, and had worked his way upward from a conductor's berth through the superintendency of various divisions on the surface system before becoming associated with the rapid transit division of the service.

David W. Henderson, for seven years head of the transportation department of the Puget Sound Traction, Light & Power Company, Seattle, Wash., has been made superintendent of transportation of Seattle's municipal electric railway system. Next to the general superintendency, which position Mr. Murphine, the city superintendent of public utilities, will fill, the post is the most important connected with the operation of the enlarged city railway system. Mr. Henderson has been with the Puget Sound Traction, Light & Power Company, in various capacities, for seventeen years. He was born in Dumfermline, Scotland, in 1873, and came to America with his parents in 1881. He lived at Randolph, Wis., until he went to Seattle in April, 1902. His connection with the traction company began that month, when he started work as motorman. He was appointed inspector in 1908 and in May, 1912, he was promoted to division superintendent in charge of the north end district, including Ballard and Queen Anne hill. On Nov. 1, 1912, Mr. Henderson was made superintendent of transportation, which position he has held continuously since that time. Greater responsibility attaches to the place of superintendent of transportation than to any other position in the electric railway department. Upon the incumbent of this office will largely depend the success or failure of the municipal lines.

Col. Peter Junkersfeld, who received his discharge from the Army on March 4, resigned on March 31 as assistant to the vice-president of the Commonwealth Edison Company, Chicago, Ill., in charge of contract, operating, electrical and construction departments, to become engineering manager of Stone & Webster, Boston, Mass. Colonel Junkersfeld was graduated in 1895 from the School of Electrical Engineering of the University of Illinois, which in 1907 conferred upon him the post-graduate professional degree of electrical engineer. He has been connected with the Commonwealth Edison Company, Chicago, and its predecessors for more than twenty-three years. He served the company, at first as assistant to the mechanical engineer, in charge of the drafting department. From 1906 to 1909 he was electrical engineer and from 1909 to 1917 he was for a few years assistant to the second vice-president and then to the vice-president, who is in charge of operating, contract, construction and electrical departments. In addition to this Mr. Junkersfeld was for a number of years chairman of a monthly engineering construction and operating conference of various public utilities operating in several states. Mr. Junkersfeld was one of five reserve majors called into the service in June, 1917. He was assigned to the office of the Cantonment Division. A few months later this developed into the Construction Division of the Army, which handled construction work of almost every conceivable character in the United States, amounting to approximately $800,000,000. Nine months after entering the service Mr. Junkersfeld attained the rank of colonel. During the time Mr. Junkersfeld was connected with the Commonwealth Edison Company, he organized and managed several manufacturing and other concerns. He has been active in association work in both the electric light and the railway fields and has contributed many valuable papers and reports to the literature of the electrical industry.



PETER JUNKERSFELD

James B. Dugan, Kenton, chief inspector of the State Public Utilities Commission of Ohio, will give up his official position on April 15 to become general manager of the Lima district of the Ohio Electric Company, with headquarters at Lima. Mr. Dugan has been in the inspection department of the commission since its creation more than a decade ago.

Philip F. Maguire, formerly assistant to the superintendent of maintenance of the Public Service Railway, Newark, N. J., has been appointed as superintendent of the Central Division of the company to succeed John J. Gettings, who died recently. Mr. Maguire has been holding the position of superintendent temporarily. Mr. Maguire entered the employ of the railway in 1896, as a conductor on the horse cars which were operated at that time in Plainfield. He served in that capacity for several years and was later transferred to Elizabeth, N. J.

F. A. Bailey has been appointed assistant general superintendent of the Consolidated Railway & Lighting Company, Charleston, S. C. Mr. Bailey was formerly superintendent of the Bergen and Southern Divisions of the Public Service Railway, Newark, N. J., for twelve years. He was educated at the Rushford, (N. Y.) High School and the Buffalo State Normal School and followed teaching for a time. He then laid the foundation of his future work by filling various positions in the operating department of the International Railway, Buffalo. In 1902-1905 Mr. Bailey gained experience in high-speed interurban railroading with the Columbus, Buckeye Lake & Newark Traction Company, Newark, Ohio, and the Columbus. London & Springfield Railway, Columbus, Ohio. In 1906 he was appointed superintendent of the Central Market Street Railway and the Columbus, Grove City & Southwestern Railway, Columbus, Ohio, leaving this position in May, 1907, to become connected with the Public Service Railway.

A. Jay Boardman, who soon after the outbreak of the war in 1917 resigned his position as division superintendent of the Terre Haute, Indianapolis & Eastern Traction Company, Terre Haute, Ind., to accept a commission as captain in the Ordnance Department, U. S. A., has just returned from France. At the time of the signing of the armistice, Captain Boardman was acting as artillery armament officer in charge of all artillery repairs of the Second United States Army at Toul, France. It was his fortune to be one of the few American army officers to be shown all the secret details of the famous 75-mm. and 155-mm. (6-in.) G. P. F. guns. Later he did considerable work on these and the other French artillery material with the fourth, first and third French armies and the First United States army at Chateau Thierry and during the St. Mihiel offensive. After a year's service overseas he received his discharge in March.

Manufactures and the Markets

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

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Car Window Glass Shows Decline

Prices Back to Those of Six Months Ago—Domestic Demand Light, Export Good

For sometime past manufacturers of window glass have not been holding closely to quoted discounts, although prices and discounts have not been changed openly. It is therefore possible to quote other discounts which more nearly represent current prices. Car window glass, single strength, first three brackets, both A and B quality is now 80 per cent against the former 77 per cent, while double strength, all sizes, A quality is 81 per cent compared to the former 79 per cent. These prices are the ones which were discontinued last September.

The demand for glass from the building trade has not been very satisfactory so far. There is much promise, however, of a greatly improved demand in the near future, and the restricted production should prevent any great decline in prices. The export demand is good and shows a constant increase.

Stability of Rail Market Shaken

Refusal of Railroad Administration to Accept Prices Retards Work of Industrial Board

Following the disagreement last week of the Railroad Administration and the Industrial Board of the Department of Commerce over the price at which rails should be bought and sold, there has been an uneasy feeling in the steel market as to the immediate future of the rail market.

The Industrial Board was created by authority of the President to confer with producers of steel and other commodities and assist them in coming to some conclusion as to a fair price for their products. Regarding the steel industry, prices were considered too high to attract any considerable amount of buying. The rail market, the biggest outlet of any market for steel, was at a low ebb, and means were sought to stimulate activity in this important commodity.

If the Railroad Administration received a favorable price on rails it would undoubtedly buy. The question arises as to whether or not the Industrial Board received any intimation as to what price the Administration would consider favorable. If such intimation were received the action taken on it was such as to leave considerable discrepancy between it and the final price.

The industry sought a steel price which would stabilize the market. The government was to lead the way through its purchases, which should react upon the public to restore their confidence and assist in this stabilizing process. But co-ordination between government departments was lacking and the result is an unsettled market which some believe to be in worse condition than before, because of shaken confidence.

The prices of Bessemer T rails, open hearth T rails, high rails and girder rails were each reduced approximately $10. The Railroad Administration has refused these prices and the electric as well as the steam roads feel the effects of this action.

Steady Movement of Maintenance Equipment

Repairs to Old Apparatus and Replacements Continue—Equipment Bonds Provide Necessary Capital

Maintenance is providing a steady market for equipment and materials of all kinds; especially is there considerable activity in parts. Railway motors of an old vintage which would normally be scrapped for new are undergoing considerable repairs. The old equipment is not so easy on the coal pile as the new would be but the lack of ready money prohibits new purchases. The reboring and rebabbitting of bearings and the replacement of field and armature coils find added activity. Obsolete brushholders must be again produced to permit motors twenty years old to continue their service.

The repair of old equipment is not to be deprecated except in that its efficiency may be much below that of present day equipment. But necessity is again doing the next best thing when capital is so lacking.

Many traction companies are financing their improvements through the flotation of equipment bonds. The most recent to come to notice is for a company in New Jersey where these bonds have been authorized to provide for shop equipment to keep the properties in good running condition. This company, however, enjoys an increased fare.

Trolley wire is being bought in small lots for repair and replacement work. Weatherproof wire has a similar call, and so has signal wire.

Galvanized stranded wire and telephone wire have both declined in price about 5 per cent within the last three weeks. One line of friction tape declined about 35 per cent and another about 15 per cent, bringing the price of these two brands together.

Effects of Artificial Standard of Price

Abridging of Economic Laws by Industrial Board Leads Sooner or Later to Instability in Business

When the new and lower iron and steel prices were announced a few weeks ago, it seemed as though the signal had been given for industry to proceed. In fact, that was what was expected when the Industrial Board was asked to lend its aid to stabilize the market by establishing a fair price. Numerous manufactured products made largely of iron and steel were reduced in price almost immediately. On other products producers were figuring costs preliminary to lowering prices during the opening days of April. Orders to go ahead on a number of building projects were given, and industry generally became quickened.

Then the railroad administration and other government and buying departments came forward with the statement that they had never promised to be bound by the board's prices. In fact, the railroad administration does not purpose at the present time to pay the proposed price on rails.

As a result industry is again hesitant. The lower prices still prevail, but buyers are waiting to see if this fundamental raw-materials market is to be free and open or tied up by agreed prices to be maintained until 1920.

Each time there has been an attempt on the part of the government to abridge the laws of economics and establish false and arbitrary standards of price, business has found itself in a hesitant mood. During the war there may have been justification for such action to prevent profiteering.

Just now, however, when industry was beginning to find itself, when the retail trade was once more buying, when building was slowly opening up, when spring was starting the seasonal tide of business—in other words, after the worst is past—it is not so easy to understand why there should be this interference.

Such action might bring about confidence on the part of business in the immediate future, but what of the fall and winter months?

There are many who are calling for a free and open market in iron and steel. Such people believe in the fundamental laws of economics. They believe that industry will be strengthened if it cures its own ills. It does seem now that business generally will be on a better basis with less chance for future hesitation if such artificial standards are not utilized.

Track Specialties Lower

No General Prices Given, However, Due to Varying Characteristics of Specialization

Prices of practically all track specialties such as cross-overs, switches, frogs, plates, etc., have recently decreased in price. No general amount of decline can be given, however, because each item is as a rule made according to special characteristics. Pages of data are required to arrive at a price for most pieces of this equipment on account of the varying characteristics required by the different railways. This takes account of the conditions of traffic, the kind of service to be rendered, spacings, curves and the varying amount of manganese that may be required to fulfill certain varying conditions.

No assurance has been given by one prominent manufacturer that there will be any further drop in track specialty prices due to the refusal of the Railroad Administration to accept the steel prices which they consider now too high. For the traction companies the question of finances is uppermost. In a recent interview between the representative of a track specialties producer and a New England electric railway official, the representative asked of what service he might be. The answer was to find a means of financing the construction work necessary for that property.

Gear Manufacturers to Meet In Cleveland

President F. W. Sinram of the American Gear Manufacturers' Association announces that their annual convention will be held at the Hotel Statler, Cleveland, Ohio, April 14, 15 and 16. The organization includes in its membership representative companies engaged in making gears in the United States and Canada and promises to be of unusual interest to the manufacturing world. For some years past the American Gear Manufacturers' Association has been striving earnestly to affect an organization that would develop definite means for standardizing their products. The coming convention will center its attention on this problem.

Papers will be presented as follows: "Gear Steels," by Dr. Parker of the Carpenter Steel Company; "Proper Sizes and Materials for Gears"; "Worms and Worm Wheels," by a representative of the Timken-Detroit Axle Company.

Officers of the association are: President, F. W. Sinram, of the Van Dorn & Dutton Company, Cleveland, Ohio; vice-president, H. E. Eberhardt, of the Newark Gear Cutting Machine Company, Newark, N. J.; secretary, Frank D. Hamlin, of the Earle Gear & Machine Company, Philadelphia, Pa.; treasurer, Frank Horsburgh, of the Horsburgh and Scott Company, Cleveland, Ohio.

Rolling Stock

Middlesex & Boston Street Railway, Boston, Mass., expects to introduce safety cars of the latest type early this month. It is reported the company has purchased six of these cars.

Recent Incorporations

Miami Beach Electric Company, Miami, Fla.—Application has been made by the Miami Beach Electric Company for a charter to construct an electric line at Miami Beach. Capital stock, $250,000. Incorporators: Carl G. Fisher, C. R. Cummins, J. H. McDuffin, Arthur G. Newby and George R. Kline.

Franchises

Fort Worth, Tex.—A franchise has been granted by the County Commissioners' Court of Tarrant County to E. P. Turner and associates of Dallas to construct an electric interurban line from Fort Worth, Texas, to Mineral Wells. A franchise for the line in Palo Pinto county has also been granted by the County Commissioners of that county. The terms of the franchise set forth that the construction of the interurban line must begin within twelve months and the line completed within a reasonable length of time.

Track and Roadway

Pacific Electric Railway, Los Angeles, Cal.—An extension will be built by the Pacific Electric Railway to its La Rambla car line through the Peck tract.

Daytona, Fla.—L. Armstrong and associates contemplate the construction of a belt line street railway to connect Daytona Beach and Seabreeze.

Berkshire Street Railway, Pittsfield, Mass.—Work will soon be begun by the Berkshire Street Railway on the reconstruction of its tracks on Southworth Street, Williamstown.

Detroit (Mich.) United Railway.—It is reported that the Detroit United Railway has under consideration the construction of a line from Flint to Davison and Potter's Lake and extensions to Elba, Lapeer and Imlay.

Granite City Railway, St. Cloud, Minn.—This company expects to reconstruct 1 mile of track with 60-lb. T-rail.

St. Croix Valley Electric Railway, St. Paul, Minn.—Plans have been submitted by Robert McKnight, engineer, to business men and bankers in St. Paul for the construction of an electric line from Prescott to St. Croix Falls.

Kansas City, Mo.—The city has awarded a contract to A. S. Hecker Company, Cleveland, Ohio, for the construction of the Twenty-third Street Viaduct. The cost of the construction will be shared by five railroads. The contract price for building the viaduct and paving with wood block was $731,000, or paving with brick or bitulithic, $716,000.

Kansas City (Mo.) Railway.—An extension of the Independence cross-town line of the Kansas City Railways from the present northern terminus at Liberty and Moore Streets to Sugar Creek, about 2½ miles, is expected to be built this summer. P. J. Kealy, president of the Kansas City Railways, has accepted a proposition of the business men of Independence, headed by Mayor Christian Ott and A. J. Bundschu, to loan the company $50,000 for ten years at 6 per cent interest, the money to be used in building the new line. The new line will be called the Independence & Sugar Creek Railway, but will be operated by the Kansas City Railways.

Interborough Rapid Transit Company, New York, N. Y.—The Public Service Commission for the First District of New York has received bids for the erection of the elevated portion of the Pelham Bay Park branch of the Lexington Avenue subway, extending from a point near the Bronx River east through Westchester Village to the southerly end of Pelham Bay Park. This line was begun in 1916, but war conditions and the failure of the original contractor to carry out his agreement has delayed the work and required the letting of a new contract. A part of the work is already done. The lowest bidder for the erection of the steel work was the firm of Terry & Tench, New York, whose offer was $586,700.

Cumberland Railway & Power Company, Fayetteville, N. C.—The Cumberland Railway & Power Company has been organized by Herbert L. Jones of Richmond, Va., and associates, with a capital stock of $200,000, to take over and complete the old street railway system at Fayetteville, owned by the municipality, extending it to Camp Bragg and also adding to it 3 miles of line within the city. The company has authorized an issue of $500,000 of bonds, with the Bankers Trust Company of Norfolk as trustee. Construction work will be begun at once and it is expected the line will be placed in operation within six months.

Lake Shore Electric Railway, Cleveland, Ohio.—The rumored removal of the Lake Shore Electric Railway tracks from the Maumee Pike, between Fremont and Genoa, was revived when announcement was made that the company contemplates purchasing right-of-way paralleling the New York Central Railway. It would give a shorter route to Toledo. If the new road is constructed, Hessville, Gibsonburg and Woodville would be shut off from connection by Interurban with Fremont, while the new road would give connections with Lindsey and Elmore.

Philadelphia, Pa.—Bids were recently received by the Department of City Transit for the construction of 68 column foundations of concrete in Front Street from above Arch Street to Callowhill Street, for the Frankford ele-

vated line. The lowest bidder was the Brown-King Construction Company, Philadelphia, Pa., at $32,058. Sealed proposals will be received by William S. Twining, director of the Department of City Transit, until April 22 for furnishing and erecting the steel superstructure for a continuation of the Frankford Elevated Railway in Front Street, from near Arch Street to Callowhill Street.

Power Houses, Shops and Buildings

Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.—Arrangements are being made by the Terre Haute, Indianapolis & Eastern Traction Company for improving the electric lighting service in Brazil and vicinity. The company will erect a transmission line from the Water Street Station in Terre Haute to a point where the Clinton and Brazil high-tension lines diverge. It is also proposed to extend the high-tension line south of Terre Haute into the coal fields of Sullivan County and back through Clay City to Brazil.

Elmira Water, Light & Railroad Company, Elmira, N. Y.—Plans are being contemplated by the Elmira Water, Light & Railroad Company for the enlargement of its power plant on East Water Street.

Richmond Light & Railroad Company, New York, N. Y.—The Richmond Light & Railroad Company has recently completed the construction of a new 6600-volt transmission line from its power plant at Livingston to Tottenville, and arrangements are now under way for the installation of transformers and auxiliary equipment. At the present time the company is installing a new booster station in the Arthur Kill Road.

Northern Ohio Traction & Light Company, Akron, Ohio.—The construction of a new substation is contemplated by the Northern Ohio Traction & Light Company, to cost about $15,000.

Lake Shore Electric Railway, Cleveland, Ohio.—The electric plant and substation of the Lake Shore Electric Railway at Berlin Heights was recently destroyed by fire, causing a loss of about $15,000.

Jackson Railway & Light Company, Jackson, Tenn.—A report from the Jackson Railway & Light Company states that the company has placed contracts for the construction of a new carhouse and repair shop.

Puget Sound Traction, Light & Power Company, Seattle, Wash.—Plans are being made by the Puget Sound Traction, Light & Power Company for the construction of a large warehouse in which will be stored machinery and equipment owned by the company and not included in the purchase contract with the city of Seattle when the car lines are taken over. The structure will be 220 x 56 ft., costing about $15,000.

Trade Notes

Aspromet Company, Pittsburgh, Pa., has changed its name to the H. H. Robertson Company.

H. G. Lewis, sales manager of the Electric Service Supplies Company, Philadelphia, has been elected vice-president of that company. He will continue his work as vice-president and sales manager.

Charles F. Ames & Company, New York City, have been appointed to act as the New York sales department of the Platt Iron Works of Dayton, Ohio, manufacturers of pumping and power plant equipment.

The Terry Steam Turbine Company, Hartford, Conn., announces that its reduction gears are again on the market. They were not obtainable during the last year owing to the concentration of the company almost entirely on turbines for destroyers.

Okonite Company on April 1 moved its entire executive staff from 501 Fifth Avenue, New York City to the company's plant at Passaic, N. J., where the company's main office will hereafter be located. A sales office will be retained at 501 Fifth Avenue, New York.

B. A. Wagner, manager of the Electric Agencies Company, Inc., has secured the Pacific Coast agencies for the Collyer Insulated Wire Company, manufacturer of rubber-covered and weatherproof wire, and the Tubular Woven Fabric Company, manufacturer of "Duraduct."

George K. Heyer is the new assistant telephone sales manager of the Western Electric Company, having been advanced from the position of railway sales engineer. He has been with the company in New York since 1902 and will remain there with headquarters at 195 Broadway.

A. P. Green Fire Brick Company of Mexico, Mo., has opened an Eastern district sales office in New York City at 30 Church Street. Howard C. Thayer, formerly field mechanical engineer for the J. G. White Engineering Corporation at United States Nitrate Plant No. 2, is in charge.

Lieut.-Com. H. J. Elson, United States Naval Reserve, has been released to inactive status and has resumed his civilian work as secretary and treasurer of the Walter A. Zelnicker Supply Company, St. Louis, where he is in charge of internal management and manufacturing operations.

A. L. Humphrey has been elected president of the Westinghouse Air Brake Company to succeed John F. Miller, who has resigned some of his active duties. Under Mr. Humphrey's management the business of the company has increased more rapidly and its interests have expanded and developed more than ever before. Mr. Humphrey's greatest triumph as a manufacturer came through the war when he succeeded, in the completion of contracts for war material for this country and the Allies, in establishing enviable records. The following board of directors was elected: B. V. Becker, James D. Callery, E. M. Herr, A. L. Humphrey, John F. Miller, John R. McCune, John R. McGinley, Charles McKnight, M. S. Rosenwald, W. D. Uptegraff and H. H. Westinghouse.

New Advertising Literature

Penn Electrical & Manufacturing Company, Irwin, Pa.: Bulletin No. S-10 on safety panels and cabinets.

Bates Expanded Steel Truss Company, Chicago, Ill.: A mailing folder about its steel poles for various services.

Locomotive Superheater Company, New York City: Bulletin No. T-1, on superheaters for stationary power plants.

Ballman-Whitten Manufacturing Company, St. Louis, Mo.: Folder showing and describing flush and surface type direct-current ammeters.

A. F. Daum, Pittsburgh, Pa.: A folder about the refillable cartridge fuses as well as a leaflet about the Daum refillable fuse plug.

Barrett Company, New York City: Booklet entitled "Long Life for Wood at Low Cost," which tells when, where and how to use "Carbosota" creosote oil.

General Electric Company, Schenectady, N. Y.: An index dated April 1, 1919, to its descriptive bulletins and sheets and one to its supply-part bulletins.

Babcock & Wilcox Company, New York City: "Principles of Combustion in the Steam-Boiler Furnace," outlines the principles involved in the study of what happens in the combustion chamber of furnaces.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.: catalog, made up of 1264 pages of description pertaining to all electrical products of the company. There is a cross index, index to style numbers, and table of "Approximate Cost Multipliers," which enables one to figure the approximate cost of all supplies listed. There is also a vast amount of information of a technical and engineering nature. It is planned to issue this catalog annually.

American Steam Conveyor Corporation, 110 West Fortieth Street, New York City, and 326 West Madison Street, Chicago: A 160-page book entitled "Modern Methods of Ash Disposal." This is a presentation of methods of moving ashes, soot and combustion waste from boiler room to disposal station. Advantages and drawbacks of the different systems are very completely discussed in the front portion of the book, while the rest of it is devoted to photographs and information about various "American" fittings and installations of these devices. Interesting data on the coals of the United States and other tables are included in this publication.