Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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Don't Think of the Electric Railway in the Past Tense

ANY tendency, if such exists, to feel or assume that the electric railway has done its best work and must look forward to early retirement should be emphatically discouraged. The electric railway in which the present generation is interested is the railway of the future. And the industry is as yet a mere infant in point of years as compared with transportation as a whole. Just a third of a century covers its whole commercial career, of which the most useful part is spanned by two decades. Thirty years ago the electric railway had the field to itself, now there is vigorous competition. But fair competition is the life of every industry and it ought to be the life of transportation. Let us not forget that Oliver Wendell Holmes said that when the individual becomes retrospective he is showing signs of age. Surely this business is not turning gray at thirty-three.

All Means for Helping the Industry Must Be Utilized

THE two topics considered at the Great Lakes cruise meeting of the C. E. R. A. are indicative of the thinking, and acting, too, of the industry at this time. The paper on safety cars aroused lively and continued discussion. This was due to the fact that the men who are operating the electric railway utilities are looking for means to enable them to give an approximation to the service which the people demand, knowing that if they can do this it will be much easier to secure the relief from taxation and fare-limitation burdens which they so much need.

The paper outlining the development which has led to the present inequalities in financial and other burdens, with the supplement thereto by A. W. Brady, painted a rather gloomy picture of the situation from what might be termed the "negative" side. This side must be considered with a view to securing readjustment, and so long as politics plays so important a part in public relations as it does to-day, the industry will be under the necessity of keeping its case directly before the public.

The discussion at this meeting once more emphasizes the fact that the traction business must be put upon its feet by using all of the three available means, namely, (1) adjustment of fares to fit the purchasing power of money and the quantity and quality of the service; (2) adjustment of direct and indirect taxation in all fairness to the railway user and non-user, to the security holder and the non-security holder; (3) improvement of output so that expansion of business will reduce the unit cost of furnishing it.

The industry is shaking itself preparatory to a mighty forward move. Realizing the essentiality of electric railway transportation the public is, reluctantly but positively, recognizing the need for higher fares. The federal government has at last provided a mechanism to permit the people as a whole to appreciate the nature and needs of the business. The interest in the safety car reflects the desire of both public and operators for better service. These encouraging signs are stimulating and presage, to our mind, a general improvement in the situation. As the French say: *"En avant!"*

One-Man Cars Must Be Laborless and Safe

IT IS a little discouraging in examining the statistics of one-man car installations, as presented by S. W. Greenland on July 1, at the meeting referred to in the preceding editorial, to find that so many of these cars have been put into operation without decreasing but rather augmenting the work of the car operator. We do not refer, of course, to stub-end operation or other lines averaging only two passengers per car-mile, but rather to those cases where a speeding up of the service would bring more dollars to the company and more satisfaction to the platform man and the public.

For example, those managers who express satisfaction because nobody is complaining are uttering a merely negative opinion. If they add air brakes to their cars, they are taking the first step in higher schedule speed, in greater safety inside and outside the car and in less work for the operator. If they add air-operated doors and steps to their cars, they take a second step forward, particularly in reducing standing time and in permitting better collection of fare. If they take the third step of interlocking all the operating appliances of the car, they have attained the highest degree of operating economy, the safest attainable schedule speed and the maximum satisfaction to both the patron and the platform man.

Now each step, made individually or collectively, will cost money, but wasted platform time also costs money. The trouble is that because we think of the expense in dollars and of the waste in cents, the real economies tend to become obscured. Let us assume, for instance, that the car with all the speed-up and safety appliances is good for 10 car-miles more a day. Then the faster car would earn say $2 a day more if the average revenue was only 20 cents per car-mile. More than half of this would be sheer profit because the wages in both cases would be for hours and not for miles. Even if we made a liberal allowance for the extra weight of the speed-up equipment and the energy required therefor, the surplus would surely run between $1.25 and $1.50 a day on any line with something better than interurban schedules. Does it require a knowledge of the higher mathematics to figure out how quickly the automatic apparatus would pay for itself?

In all this we have said nothing about the reduction of the accident expense. Any electric railway surely would be willing to pay a good premium per annum per car to any casualty company that would be willing to accept the risk. Why not then treat part of the cost of automatic appliances as if it were an insurance premium. It is all very fine to boast that no accidents have occurred despite the absence of modern safety appliances, but if the accident does come the cost of the settlement will depend very largely upon the defendant's ability to prove the best and most comprehensive devices that its operating conditions justified. The ultimate economy of putting safety first is but a matter of dollars and cents and common sense.

The Use of Manganese Steel In Curved Rails Is Not Always Economical

THE use of manganese steel and other alloyed steel in special track work, including curves, upon electric railways was a rather fixed practice before the steam railroads began to take an interest in the subject. In fact it took a long time to prove to them that even a trial would prove its worth. Once convinced, the steam roads have become large users of this material for some kinds of work. Meanwhile the electric railways had gained considerable experience in comparative wear of manganese steel as against bessemer and open-hearth steel, especially in curves, and some street railway engineers were long ago bold enough to voice the results of these experiences, which were to the effect that for plain curves the conditions must be exceptionally severe to warrant the added expense of the manganese, even at the pre-war price differences. Some electric railways have found that they could afford to renew a curve three times with open-hearth steel for the same total expense as was involved in one manganese curve. The tendency in the use of expensive manganese curves is also toward permitting the curves to remain in service long beyond the time when good maintenance would call for their removal.

Similarly it was found that only in certain exceptionally severe locations was it advisable to install the excessively expensive manganese special track work. The steam roads are beginning to find out the truth of this matter also, if the reports of tests on alloyed steel rails in service in curves, as recently rendered by the committee on rails of the American Railway Engineering Association, can be taken as a guide. Here, two different railroads report that when the high cost is considered, the proposition can hardly be considered economical. It is also noted that the manganese rails become distorted more easily than bessemer or open-hearth rails, an observation which confirms electric railway experience. In fact, in electric railway service, the distortion has been the real cause of removal in several instances, rather than direct abrasion. Similarly, in special work for steels in many cases so-called soft centers (medium-steel or sometimes chromium-steel) will serve the purpose better than manganese at less cost.

The lesson to be learned from these combined experiences seems to be that a very careful study of conditions should be made before a decision is had as to the advisability of substituting manganese steel in curves and other special work, since it will often be found that some other alloy-steel or even open-hearth steel will eventually prove more economical.

What the Committee of 100 Can Do

IF THE plans of the American Electric Railway Association and its committee of one hundred in connection with the presentation of its case to the Federal Electric Railways Commission are carried out, the work will be most exhaustive. No such comprehensive review as that proposed has probably ever before been made of any industry, because parallel conditions in any other have not occurred. The investigation and testimony will necessarily be largely along financial lines because the present crisis is a financial one. Nevertheless, the inquiry will necessarily also cover to an extended degree questions of engineering, law, social betterment, government and banking.

The task which the industry, through the association and its committee of one hundred, has set for itself is outlined in the program presented on July 10 by the committee on presentation, and published elsewhere in this issue. Briefly this program may be divided as follows:

1. To describe the present status of the industry,
2. To outline the causes which have led up to the present condition,
3. To prove the continuous social need of urban and interurban transportation service.

The duty of supplying the data covered by these three divisions belongs to the committee on presentation, while that of suggesting means of escape from the existing tangle is the work of the committee on recommendations.

In a general way the facts covered by the three paragraphs given above are known to most men in the industry, but they are known only in a general way. In consequence the data which the association and its experts are collecting ought to be most instructive even to men actually engaged in railway service, as it will be derived not only from operating sources but from every collateral direction. Incidentally, we believe, the inquiry will accomplish a great deal of good in addition to proving the need of greater financial return for electric railway properties. It should prove the close connection between community prosperity and that of the local transportation system and the advantages of active co-operation between municipal and railway authorities for the common good. It ought also to explode some popular misconceptions about the prevalence of water in electric railway capitalization and the profits of railway operation.

From the evidence thus presented by the association it will be the duty of the federal commission to make recommendations, and if we assume that the industry proves its case in regard to clause (3), i.e., that there is a continual social need for urban and interurban electric railway transportation the recommendations of the federal commission on the presentation of this evidence will have to be constructive. At present railway construction is not only at a standstill, it is going backward, and electric railway credit is dead. The work of the commission, therefore, if its members accept the electric railway as a necessity, will be to suggest such means that a reasonable return will be earned on utility capital, not only in the immediate future but at all times. In this way only can electric railway credit be restored so that urban and interurban properties of the country can expand their facilities to accord with the community needs.

On Editing a Technical Journal

THE editors of this journal are not endowed with powers of omniscience. They sometimes wish that they could be, to the extent that they might have a more all-seeing knowledge of things which are going on in the electric railway industry. Possessed of such power, the task of editing and producing a paper which will best cover all phases of the business would be greatly simplified. In the absence of such ability and being merely human, the editors must depend upon their personal contact with the men in the industry for most of the information which is necessary, in order to keep in touch with the progress in such a many-sided industry.

That progress may obtain, it is the chief function of a technical or trade publication to gather and disseminate news and information which principally is of interest as a record of progress. In the gathering of such matter, the tendencies of the trade activities are focused or centralized in the editorial office. From this center of information, the editors attempt to select articles which will be of interest to the greatest number of readers. Incidentally they attempt, from time to time, to direct attention upon matters of timely interest by comment in these columns.

The task of issuing a paper of this character fifty-two times a year is no light one and the editors wish again to remind the readers of the JOURNAL that its columns are at all times open to the discussion of timely topics. The receipt of communications from the men in the field, either for publication or for information and use editorially is always appreciated and the editors will be glad to have the feeling prevail that the JOURNAL aims to be of the utmost possible service to the individual as well as to the industry as a whole. The motto of the JOURNAL is "Service."

Transfer Charge Granted in New York

THE approval of Public Commissioner Nixon of the first district, New York, to a charge of 2 cents for transfers at 99 points on the surface lines in Manhattan is a most encouraging sign of the times. It can hardly be said greatly to relieve the situation in which the railway systems have been placed by the rising costs of labor and materials. But it will bring in some additional revenue and, what is more, it will establish a precedent for further public recognition of an intolerable situation and encourage the security owners to work toward substantial rehabilitation. The form of relief granted, a charge for transfers, is that for which the companies originally petitioned and is one to which the general plan of New York with its distinctive longitudinal and crosstown avenues and streets makes it better adapted than would be the case with a fan-shaped city.

The opponents of the charge for transfers are loud in their complaints of the additional "burdens" placed on the traveling public, but have no substitute except municipal ownership. That there is really an additional burden, we do not admit. The fare is nominally higher, it is true, but actually it is not as high as before the war, and the slight additional charge is not a burden if recognized as a substitute for the only other courses open, namely, dissolution of the New York Railways into its constituent elements with a separate fare on each, serious deterioration of the service or municipal ownership and operation. Of these especially the last would be a very onerous burden on the city of New York whose large investment in the dual subway agreement is not only entirely unproductive, but is having piled against it a constantly increasing amount of preferred charges, simply because the city will not recognize changed business conditions in its rapid transit investments. The 2-cent charge for transfers is the first ray of light since the war began on the New York Railways situation.

Take Traffic Checks of the Non-Riders

TRAFFIC studies of the non-riders, as a source of data that might show the way to an inauguration of service which would attract many of the pedestrians to the street cars, was a suggestion made by Chairman Ainey of the Pennsylvania Public Utilities Commission at the recent meeting of the Pennsylvania Street Railways Association. He referred to these potential riders as representing the unearned increment of the electric railway business.

The suggestion offers possibilities. The idea has been presented before, but no one has really gone into it extensively, so far as we know, since the days of prospecting new lines. Now that there is a decided trend of thought through the industry along the line of selling transportation as a merchandising proposition, this idea of seeking out new sources of riders may perhaps be more feasible. Its value goes hand in hand with the ability of a company to supply transportation of a kind and quantity and at a price which will induce these walkers to ride. That means fast, frequent and fairly low-priced service. As Mr. Fairchild well said in the discussion, the railway company, like the merchant, must be ready to furnish the kind of merchandise that is wanted, but the size of package will vary. And when one thinks of those requirements, he immediately associates with them, for most municipalities, the safety car.

To get a traffic check of a reasonable proportion of the walkers offers some difficulties, for it is hardly practicable to trail each individual found walking on the street. But there are undoubtedly localities in every community where there are considerable numbers of factory or office employees who walk in a few fairly well defined common paths from work to home and thus form a movement that a traffic checker may readily analyze. Having plotted on a map or chart the various main courses of these pedestrians, the cause of the excessive walking may be determined and the practicability of meeting that condition with a suitable service studied.

It seems logical to assume that at least all persons (excluding those who ride in automobiles) who must walk in excess of one mile between their home and work, may be considered as car riders. And if the traffic study shows that there is a large percentage of such persons among the walkers, then it should serve as good evidence that additional business can be secured and how much. Mr. Ainey has done the industry a service in emphasizing in the Harrisburg meeting and also in the address presented by him at the Chamber of Commerce meeting last May the essential merchandizing phase of the electric railway industry.

The Zone Fare in Practice

LEEDS, PART II

Recent Fare Increases of from 50 to 100 Per Cent Have Borne More Heavily on the Clerical than on the Working Class—Despite Higher Fares and a Cut in Service, Traffic Fell Off Only 3.4 Per Cent and Revenue Jumped 23.3 Per Cent Last Year

BY WALTER JACKSON

IN THE last issue of this paper an account was published of the development of the housing conditions and tramway system at Leeds, the important manufacturing city in the midlands of England. The purpose of this article is to describe the present tramway operating conditions in Leeds and how the tramways increased fares 50 per cent and decreased its car mileage more than 4 per cent, yet its decrease in passengers carried was less than 3½ per cent. The present article includes a statement of the local labor conditions in the city.

Up to June 10, 1918, a ½d. ticket was available for general riders to a distance of ½ mile, while the standard penny ticket was good for an average of 2 miles. In its day, the ½d. ticket was a great success in getting people to ride extremely short distances. It is significant, however, that when experimentally the ½d. rate privilege was extended to permit a ride of about ⅔ mile, it had to be restored to the ½-mile basis because a ⅔-mile ride for a ½d. cut too deeply into the 1d. riders. This example from Leeds' experience is simply another illustration of the opportunity which the zone-fare principle provides for scientific traffic analysis and development.

PARK ROW, AN IMPORTANT STREET IN THE BUSINESS DISTRICT OF LEEDS

A LIVELY DAY ON A LEADING THOROUGHFARE IN THE CITY OF LEEDS

A 50 TO 100 PER CENT INCREASE HAS NOT DISCOURAGED TRAFFIC

For the year ended March 31, 1918, the earnings per car-mile were 14.746d. on the basis of ½ mile for ½d., 2 for 1d., 2½ miles for 1½d., 4 miles for 2d. and 6 miles for 3d. With the great increase in cost of tramway operation, Leeds could no longer afford to give a general fare of ½d. It was therefore necessary to go to the 1d. fare as a starting point. In making the change, the management generally consolidated two of the old ½d. fare stages so as to give about 1 mile for 1d. The 2 miles formerly given for 1d. now cost 1½d. The highest regular fare is now 10½d. for the 13.62 miles between Guiseley (White Cross) and Roundhay. In general, fares above 1d. have been increased about 50 per cent. In one sense, the substitution of a 1d. for a ½d. fare meant an increase of 100 per cent; but when averaged out the increase was less inasmuch as it did not effect at all those passengers who rode between ½ and 1 mile.

The only ½d. fare that remains now is a ticket good before 7.45 a.m. for workmen and at any time for children between five and twelve years of age. The ½d. ride for a penny privilege is also granted to children up to fifteen years of age in going to and from school. The 1½d. ride is available to children for 1d., the 2½d. ride for 1½d. and so on, but no special tickets are used in such cases as the conductor simply punches the ticket forward for the appropriate additional number of stages.

Special rates for workmen also include afternoon return or round-trip tickets up to 10½d. The last represents the Guiseley-Roundhay ride previously mentioned. Here is a case where a workman pays only 10½d. for 27.24 miles, whereas the ordinary passenger has to pay 21d. Although the workmen's return half must be used the same day, as hereinafter explained, it is obvious that the concession is more than generous. Here, again, it may be emphasized to those who associate congestion with zone fares and the laborer, that it is precisely the workman who has had less-than-cost transportation for years. Even though the proportion of workmen's fare travel in Leeds is only 10 per cent of the total revenue or 17 per cent of the total passenger rides, it costs the Leeds system at least £12,000 a year

more than the revenue. This is in reality a subsidy to one class of the population at the expense of the rest.

As is admitted by all, the greatest sufferers from war are the clerical classes. In Leeds, the effect of the increase in fare was to interfere appreciably with the riding habit of this portion of the population. Many shop clerks and others who had been in the habit of riding home for lunch seem to have adopted the expedient of bringing it with them. Moreover, it is evident from the traffic returns that some of the old penny riders are walking at least one way because they feel that they cannot afford to pay 1½d. Conditions of this sort indicate unfair the archaic rate for workmen has become.

Table II herewith shows the weekly traffic return for the week ended Feb. 8, 1919, compared with the same period of the preceding year. To the original figures on Table II has been added the consumption of tickets report for the week ended Feb. 9, 1918, to show how the proportions of the different classifications have been shifted by the change in fares.

In 1918, for the week under consideration, the most popular full-rate ticket was the 1d. one, amounting to 63 per cent of the total; in 1919 it was the 1½d. ticket, amounting to 43 per cent of the total. What might be defined as "the average ride passenger," therefore, dropped in numbers to the extent of 20 per cent. The actual drop of passengers overall was only 9 per cent, as the number of passengers paying a higher rate than 1½d. was naturally augmented by the advancement from the lower-rate classifications. At the same time, it is to be observed that the number of maximum ride passengers at 7½d. was less than at 5d., from which it is apparent that even the long rider can cut down on his traveling if necessary.

From the same table it will be noted that the 2d. ticket for both one-way and workmen's return use has been eliminated. The thought that lay behind this was that the passenger who has to travel at least 1½d. worth will not be likely to get off and walk the rest of the way in order to save a penny.

The fiscal year of the Leeds City Tramways ends March 31, and as the fare increase did not become effective until June 10, 1918, complete comparative results are not available. Table II, on page 58, giving the statement for the year ended March 31, 1919, however, shows an increase of 23.36 per cent in receipts as compared to the normal increase of 11.7 per cent from April 1 to June 9, 1918, before the increase in fare. In spite of the 50 per cent increase in fares and abolition of halfpenny fares, the number of passengers carried was only 3.426 per cent less despite a cut of 4.109 per cent in mileage. The actual cut in mileage on individual lines was much greater than this average indicates, because on lines with war industries it was actually necessary to increase the service. Thus the actual cut on the lines of lesser industrial importance was severe enough to have a bad influence on the retention of short-haul riders, who must have a frequent service regardless of the rate of fare. The results cited for the last fiscal year, however, indicate that traffic will return once it is possible to restore the compulsory cuts in service.

TABLE 1.—LEEDS TRAFFIC RETURN FOR WEEK ENDED FEB. 8, 1918 AND 1919

Route	Passengers	Number of Regular Cars	Miles Run	—Total Receipts— 1919, £	1918, £	Average Receipts per Car Mile 1919 d.	1918 d.	Previous Week in 1919, d.
Hunslet (Leeds cars)	61,440	.....	.....	293	277	.....	.....	.....
Hunslet (Wakefield cars)	60,200	.....	.....	301	261	.....	.....	.....
		9	6,477	595	538	22.04	19.40	22.37
Cardigan Road and Balm Road	134,255	10	8,189	730	571	21.41	16.81	21.33
Dewsbury Road and Beckett Street	245,682	18	14,370	1,222	1,007	20.42	15.89	20.92
Beeston, Woodhouse, and Belle Vue Road	229,915	21	15,181	1,173	938	17.23	15.33	19.48
Morley and Meanwood	141,109	18	13,313	1,040	807	18.74	14.64	19.22
	.....	3	.....	.....	.....	.....	.....	.....
Domestic Street and Circular Route	64,289	6	4,546	323	260	17.06	13.95	18.10
Whitehall Road and Harehills Road	11,703	2	1,251	54	52	10.40	8.94	7.56
Lower Wortley and Easy Road	101,853	9	7,017	529	486	18.17	16.65	18.78
Upper Wortley and Halton	217,638	25	16,990	1,319	1,033	18.63	14.61	19.32
Pudsey and Stanningley	101,469	9	8,520	733	512	20.67	14.26	20.21
Leeds and Bradford (Leeds cars)	61,395	7	6,940	471	265	16.30	16.00	17.18
Leeds and Bradford (Bradford cars)	.....	4	.....	.....	200	.....	.....	.....
				471	466			
Rodley and Corn Exchange	57,964	8	6,439	426	351	15.91	13.24	16.14
Guiseley, Horsforth, and Roundhay	405,412	47	38,540	2,826	2,105	17.60	13.10	17.90
Lawnswood and Street Lane	305,813	33	25,367	2,070	1,513	19.02	14.22	20.02
Farnley (rail-less)	7,409	.....	1,421	65	45	11.05	7.55	11.15
Otley and Burley (rail-less)	7,691	.....	1,688	91	81	13.00	12.34	12.67
Shadwell Motor Bus	1,248	.....	272	10	.....	9.65	6.00	10.21
	2,222,028							
Parcels	.....	.....	.....	.....	21	.....	.....	.....
Miscellaneous receipts	.....	.....	.....	.....	.....	.....	.....	.....
Conductors' shorts collected	.....	.....	.....	21	35	.....	.....	.....
	.....	222	176,521	13,647	10,830	18.55	14.72	19.05
Overs	.....	19–18–11	.....	.....	.....	.....	.....	.....
Shorts not charged	.....	1– 2– 6½	.....	.....	.....	.....	.....	.....
		18–16– 4½						
Shorts	.....	.....	.....	51	.....	.....	.....	.....
				13,698				
Decrease on previous week	.....	.....	.....	.....	.....	.....	£87	.....
Increase on corresponding week last year	.....	.....	.....	.....	.....	.....	£2,817	.....

Consumption of Tickets:	—Week Ended Feb. 8, 1919—		Week Ended Feb. 9, 1918	
	1 d.	535,387	½ d.	355,933
	1½ d.	953,258	1 d.	1,542,891
	2 d.	287	1½ d.	102,314
	2½ d.	142,684	2 d.	155,094
	3 d.	102,719	2½ d.	10,198
	4 d.	15,283	3 d.	52,591
	4½ d.	36,684	4 d.	6,399
	6 d.	5,420	5 d.	5,285
	7½ d.	3,747	6 d.	.....
Workmen's	½ d.	57,413	½ d.	21,089
Workmen's	1 d. return	56,770	1 d.	20,826
Workmen's	1½ d. return	98,200	2 d.	55,624
Workmen's	2½ d. return	20,759	3 d.	9,707
Workmen's	3 d. return	20,070	1 d. (exchange)	13,610
Workmen's	4 d. return	4,762	2 d. (exchange)	1,088 / 50,184
Workmen's	4½ d. return	4,021	3 d. (exchange)	8,666
Through tickets	1½ d. child's			502
Through tickets	3 d.			3,518
Through tickets	3 d. workmen			437
Through tickets	3 d. exchange			264
		2,037,455		2,418,220
		184,573*		
		2,222,028		

* This represents the number of return tickets issued, being included twice to get the total passengers.

LEEDS CITY TRAMWAYS.
CIRCULAR & DOMESTIC STREET.—WAYBILL.

Motorman ..... *Date* .....
Conductor ..... *Duty No.* .....

Journey.	Actual Time of Leaving Terminus.	Fares.	CITY SQUARE.	HYDE PARK, or DOMESTIC ST.	Actual Time of Leaving Terminus.	Journey.	Actual Time of Leaving Terminus.	Fares.	CITY SQUARE.	HYDE PARK, or DOMESTIC ST.	Actual Time of Leaving Terminus.
		1d.						1d.			
		1½d						1½d.			
		2½d.						2½d.			
		3d.						3d.			
		½d. Child's						½d. Child's			
1		1d Workman				5		1d. Workman			
		1½d. Workman						1½d. Workman			
		2½d. Workman						2½d. Workman			
		3d. Workman						3d. Workman			
		3d.						3d.			
		½d. Child's						½d. Child's			
11		1d. Workman				14		1d. Workman			
		1½d. Workman						1½d. Workman			
		2½d. Workman						2½d. Workman			
		3d. Workman						3d. Workman			

First Numbers.	Letter	Finishing Number.	Letter	Quantity Sold.	Fares.
					1d.
					1½d
					2½d.
					3d.
					½d Child's
					1d. Workman
					1½d. Workman
					2½d. Workman
					3d. Workman

Cashier's Initials .....
Workman's Return Letter .....

CONDUCTOR'S WAYBILL FOR COMPLETE DAY'S WORK IN LEEDS

As previously intimated, no attempt is made to carry separate ½d. tickets for workmen and children respectively, or to have special tickets of higher denominations for children only. The workmen's return ticket, however, does call for special treatment. The rule in connection with these reduced-rate tickets is that they must be presented for the return trip on the same day as issued. The conductor on getting his waybill when beginning his day's work is advised by a rubber-stamp initial thereon that such initial is the one he is to punch that day when issuing a return ticket. The conductor who gets the ticket in the afternoon can see at once whether or not it is valid. Before returning the ticket to the passenger for use as a receipt, the second conductor cancels it against re-use by punching to the hour and quarter hour in the spaces provided on the back of the ticket. This cancellation is made with a separate pricker to avoid confusing the count of the ball punch, which is employed only in the issuance of tickets. In this way no exchange tickets are required—an advantage of more importance on a large system in simplifying the number of tickets than any possible abuse of the return-ticket privilege.

LEEDS CITY TRAMWAYS.
TRAFFIC DEPARTMENT.

Route .... '19
Conductor .....
..... *Depot.*

A comparison of your Punch Register, Tickets, and Cash Return shows deficit as under.

You will please sign and return to Depot Inspector immediately, making any explanation you can offer.

You may see the Way Bills and obtain any other information you desire by calling at the Traffic Office, Swinegate, first opportunity during relief.

It is important you should attend promptly.

J. B. HAMILTON, General Manager.

£	s	d

A Deficit in Money amounting to ... ...
A Deficit of..... ..Tickets, amounting to...
Do. ... ... do. do. ...

EXPLANATION.

.....
.....
.....
.....
.....
.....

Depot. .....
Pay Check No. .....
Name .....

HOW A LEEDS CONDUCTOR IS NOTIFIED OF SHORTS

The general control of the correct use of tickets is effected in the customary manner through thirty-six ticket inspectors. These men average sixty cars a day, the same car being boarded by different men three or four times a day. Their visits are always attested by the signature of the conductors. The ticket inspectors work nine hours each, but their shifts are so arranged that all are on hand during the heavy hours. Besides handling their ticket-check duties, these men help to correct irregularities in traffic, running time, etc.

Since the Leeds system gets its tickets from an outside printer, the plan of using individual serial numbers for conductors until 10,000 of each kind have been exhausted is not followed. Instead, the ticket boxes issued daily to the conductors are filled from a common stock (kept up three weeks ahead) to the extent that traffic fluctuations on the given routes justify. These boxes, together with punches and waybills, are forwarded to the inspectors at the several depots. The waybill, as shown herewith, is divided to cover a full day's work, individual journey bills not being considered necessary. The depot inspectors issue the boxes to conductors as they book on for duty.

In the matter of cash returns, a conductor may make his turnover either at the central cashier's office downtown or to his depot inspector. In most cases the conductors hand the returns, including tickets and waybills, to the night depot inspector, who checks the cash in their presence and delivers receipts out of his dupli-

TABLE II.—COMPARATIVE STATISTICS OF LEEDS CITY TRAMWAYS FOR THE YEAR ENDED MARCH 31, 1918 AND 1919

	1919	1918	Increase or Decrease	Percentage Change
Total receipts	£723,022-3-11*	£586,086-8-9	+£136,935-15-2	+23.364
Number of miles run	9,155,355†	9,547,670	—392,315	—4.109
Number of passengers carried	120,252,950*	124,519,119	—4,266,169	—3.426
Receipts per mile (d.)	18.953*	14.732	+4.221	+28.652
Average fare paid per passenger (d.)	1.418*	1.110	+0.308	+27.747
Population served	542,000*	542,000	.....	.....
Number of times population carried	222*	230	—8	—3.478
Amount paid per head of population	26/3*	21/3	+5/0	+23.529

*Fares increased 50 per cent and ½d. fares abolished, June 10, 1918.
†Shortage of rolling stock owing to inability to obtain repair parts and sufficient labor.

LAWNSWOOD and STREET LANE.

Time *Leave Depot* *Route No.*

LAWNSWOOD. Depart.	WEST PARK. Depart.	HEADINGLEY. Depart.	Hyde Park.	Boar Lane.	Reginald Terrace.	"Queen."	Moortown.	STREET LANE. Arrive.	STREET LANE. Depart.	Moortown.	"Queen."	Reginald Terrace.	Boar Lane.	Hyde Park.	HEADINGLEY. Arrive.	West Park. Arrive	Lawnswood. Arrive.

Both Driver and Conductor are responsible for the Car running to the times stated above, and any deviation therefrom will have to be strictly accounted for.
LEEDS CITY TRAMWAYS. BY ORDER.

TIME POINT BOARD CARRIED ON EVERY LEEDS CAR

cate receipt book. Cash does not get into the ticket department at all but is forwarded to the cashier at the central office. Here it is counted independently, checked against the totalized receipts of each depot inspector and tallied against the statements of the ticket department. The cashier's office is open from 6 a.m. to 9 p.m. In it there are, besides the cashier, three male assistants and twelve girls. Two of the assistant cashiers are always on duty during the busy periods.

In the ticket department there are thirty-seven employees, all female except two laborers. Of this number twelve take care of ticket boxes and four handle the punches. Miscellaneous duties include the preparation of the daily and the weekly traffic returns similar to those shown in Table I. For 557 conductors 1050 punches are required. These are supplied by the Bell Punch & Ticket Company, London, at a rental of 9s. a year each, including upkeep, transportation, etc. It may be appropriate to say here that punchings are counted so seldom that this tedious work does not call for all the time of even one girl. The employees required at the seven depots in connection with the miscellaneous transportation and ticket and cash-handling duties number fourteen.

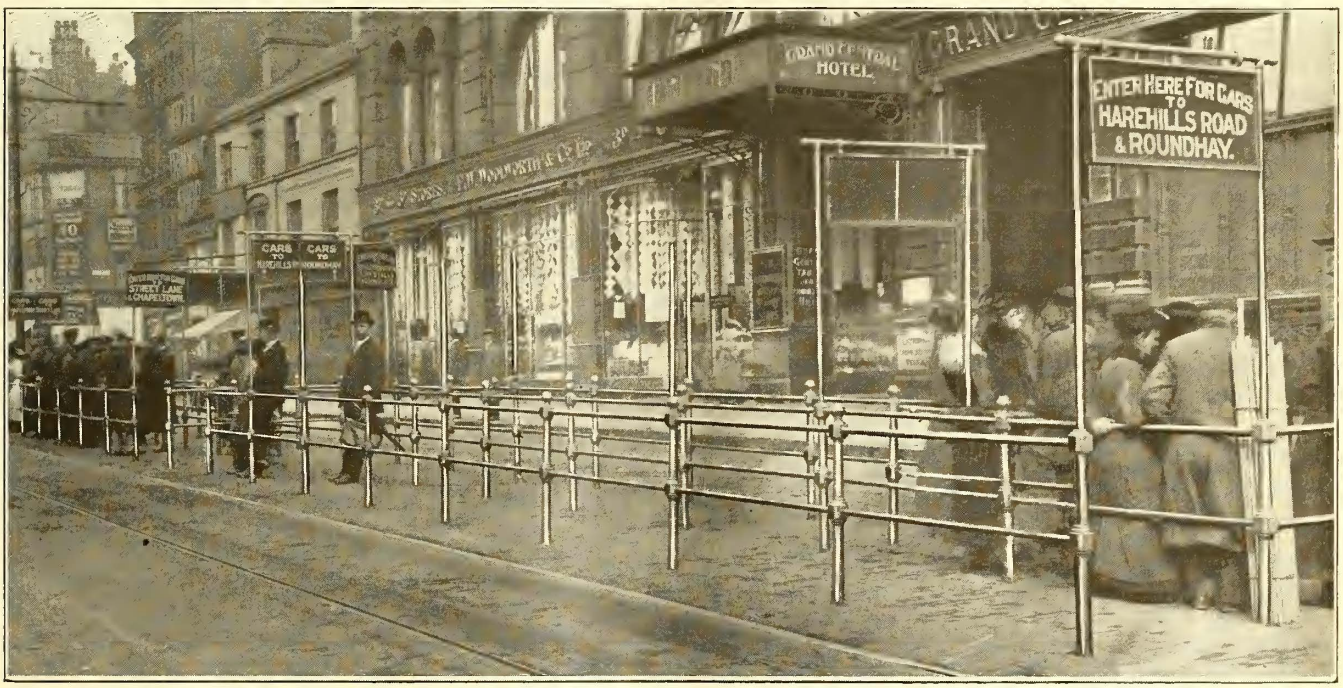
COST OF TICKET CHECK ON THE LEEDS CITY TRAMWAYS

	1913–1914 Total Cost £	1913–1914 Cost per 100 Passengers d.	1917–1918 Total Cost £	1917–1918 Cost per 100 Passengers d.
Tickets, ticket boxes and repairs	1,149	0.294	4,277	0.825
Punch seals and hire of punches	399	0.102	438	0.085
Ticket inspectors	2,509	0.643	3,689	0.711
Ticket-room and punch-room staff	1,224	0.313	2,571	0.494
Sundries	81	0.921	249	0.048
Total	5,362	1.373	11,224	2.163
Per cent of revenue		1.27		1.95

British tramways, which use the uniform system of accounting adopted by the Municipal Tramways Association, place all charges strictly due to the ticket system under Account No. 7, "Ticket Check," covering "cost of tickets, conductors' punches, wages of ticket inspectors, clerks in punch and ticket office, less deductions from receipts from advertisements printed on back of tickets." The summary herewith shows the exact distribution of expenses under "Ticket Check" and the relationship to general revenues.

"Ticket Check" does not include the cashiers. These come under Account No. 1, "Superintendence," since the cash would have to be handled in any event. Moreover, no account is taken of the depot clerks or inspectors, who would also be required under any fare system. Their wages are charged against Account No. 3, "Wages of Other Traffic Employees."

The Leeds City Tramways follows the usual British practice in the assignment of duties for the platform employees, but the management has gone a step farther for the convenience of the men by printing both the "rotation of duties" sheet posted at the depot and the more detailed "duty sheet" (see illustration). The latter is also printed, route for route, in book form for the employee to carry in his pocket. The lists are made out for weekdays, Saturdays and Sundays to show a man with a given duty (run) number at what times and places he is to report. The booklet also contains a miniature of the "rotation of duties" sheet, so that on and off days and the total hours to be worked in one week can be seen at a glance. In addition, a time-point board is also put on each car by the first motorman of the day. Bundy time recorders are installed ½-mile from twelve terminals for ringing in and out.



RAILED LANES FOR SEGREGATING PASSENGERS AT IMPORTANT LOADING POINT IN LEEDS

As stated in the "duty sheet" booklet, the following times are granted to motormen and conductors in addition to actual time on the car, so as to allow for examining the car, reporting at depot or cash office, etc.:

Fifteen minutes when taking car out of depot.
Fifteen minutes when taking car into depot.
Ten minutes when commencing duty on route.
Ten minutes when finishing.
Five minutes when relieved for meals.
Five minutes when leaving or taking up a car not at meal times.

Before the war fifty-four hours was a normal working week, but by arrangement with the men a sixty-

LAWNSWOOD & STREET LANE.

ROTATION OF DUTIES. *Week ending.....19* **CHAPELTOWN DEPOT.**

NAMES.	FRIDAY	SATURDAY.	SUNDAY.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	Total Hours.
	Duty. Hours.	Duty. Hours.	Duty Hours.	Duty. Hours	Duty. Hours.	Duty. Hours.	Duty. Hours.	
	10 .. 12½	10 .. 13¾	Off Duty	1 .. 9	1 .. 9	1 .. 9	.. 9	62¼
	6 .. 11	6 .. 10¼	2 .. 8½	13 .. 8¾	Off Duty	10 .. 12½	10 .. 12½	63½
	5 .. 9¼	13 .. 8¾	Off Duty	6 .. 11	6 .. 11	6 .. 11	6 . 11	62½
	2 .. 9½	2 .. 9½	8 .. 10	12 .. 9¾	12 .. 9¾	12 .. 9¾	Off Duty	58¼
	13 .. 8¾	16 .. 10	Off Duty.	2 .. 9½	2 .. 9½	2 .. 9½	2 . 9½	56¾
	9 11½	9 .. 10¾	9 .. 9½	16 .. 10	16 . 10	Off Duty.	12 .. 9¾	61½
	17 .. 9½	17 . 9¾	Off Duty.	5 .. 9¾	5 .. 9¾	9 .. 11½	9 .. 11½	61¾
	Off Duty.	5 .. 8¾	5 .. 12¼	17 .. 9½	17 .. 9½	17 .. 9½	17 .. 9½	59
		19 .. 9½	Off Duty.	9 .. 11½	9 .. 11½	5 .. 9¾	5 .. 9¾	
	1 .. 9	1 .. 9	1 .. 8¼	Off Duty.	14 .. 10¼	14 .. 10¼	14 .. 10¼	57
		7 .. 10						

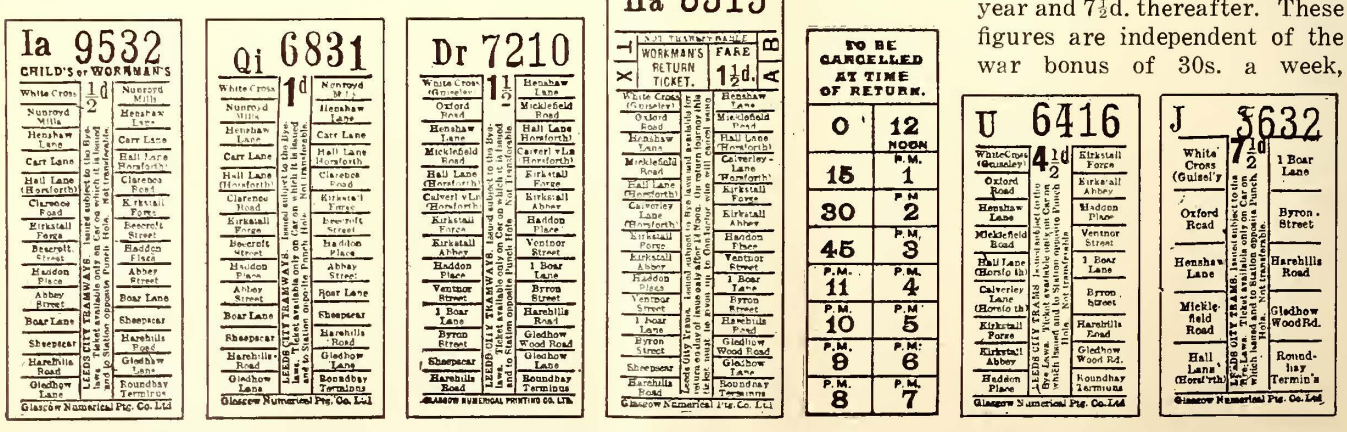
ROTATION OF DUTIES IN PRINTED FORM FOR A LEEDS DEPOT

hour week has been the rule during the period of man shortage. At this writing, negotiations are in hand that will seriously modify both working hours and wages. The following additional facts may, however, be information of value and prove of interest to the American operator:

Platform employees receive uniforms, great coat, mackintosh and other outer clothing free. Rest days are one in seven. One week's holiday with pay is granted after twelve months' service, but during the war if a man elected to work during his vacation he received double pay. Christmas work also earns double pay, but as that holiday is a great home-festival in England a man is at liberty to ask someone else to take his run. One and a quarter overtime rate is paid for any excess over fifty-eight hours a week. Spare conductors or extras are guaranteed five and one-half days work out of a six-day week.

As for spreads for any class of platform men—when the spread does not exceed twelve hours, a margin or off-duty period of three hours is agreed upon with no deduction for meal time. On all duties exceeding a twelve-hour spread and up to fifteen hours, a margin of two hours is allowed. On all duties exceeding a fifteen-hour spread a margin of one hour is allowed. On all duties exceeding twelve hours, a half hour is deducted for meal time.

Conductors start at 5½d. an hour, advance to 5¾d. after six months and then to 6d. and 6½d. in the following two years. If advanced to the position of motorman, they receive 7d. an hour for the first six months, 7¼d. for the following year and 7½d. thereafter. These figures are independent of the war bonus of 30s. a week,



SOME VARIETIES OF LEEDS FARE RECEIPTS, INCLUDING RETURN TICKETS WITH TIME LIMITS

so that the actual earnings an hour are practically double the rates given. Platform men who have served seven years wear a chevron and receive an additional shilling a week. Platform instructors receive 3d. an hour extra while teaching.

Women conductors begin at the same rate as men but are not advanced at the same rate. Their war bonus is 24s. a week. With regard to the matter of retaining women in the service, Mr. Hamilton points out that this rests largely with the employees themselves. The women are full-fledged members of the union, and they see no reason why they should make way for men unless they have failed to make good themselves. One woman conductor said: "My man was a conductor. He went into the army, leaving me with two children, and I took

LEEDS CITY TRAMWAYS.

Ticket Inspector's Report *for* ..... *day, the* ..... *day of* ..... *19* .....

Route Letter No.	Time. H.	Time. M.	Conductor's Signature.	Badge No.	Joined Car at	Left Car at	Remarks

FORM OF REPORT FOR USE BY LEEDS TICKET INSPECTOR

his place. I am sorry to say that he'll never come back. I wouldn't think it unfair if I had to give up this job to a tramwayman who did come back, but I wouldn't care to give it up to anybody else. I like the work and I need the money."

Good Food Conduces to Good Work

Strangely enough, it was not until women conductors were employed in large numbers that the management found it highly desirable to see that employees got plenty of nourishing food. Whereas the men always brought or purchased solid nutriment, the women were inclined to get along on a cup of tea and a cream puff with dire results to themselves and the duty sheets. The management consequently arranged to offer first-class meals at a first cost of 7d. (since increased to 9d. and 10d. because of rise in food prices). The Corporation of Leeds furnishes the necessary equipment and labor without charge. The food is so good and so well cooked that it is regularly furnished to the officers' mess. The officers pay a few pence more to get coffee, cheese or other extras.

Beside these meals at the central office and depot, fully-cooked meals are sent out hot to four mess-rooms at other depots. Men on early runs are also supplied at nominal cost with hot soup purchased from the national kitchens. Leeds, to be sure, is not the first electric railway to supply meals at or below cost, but the Leeds management also realizes that nothing but the best will do. If other executives would eat the same meals as the rank and file, there might be less grumbling about the ungrateful platform man.

A British contemporary states that in one of the industrial districts of Manchester a crowd on two successive nights recently stopped the tram cars to call attention to the insufficient supply of liquid refreshment in the local public houses. The nucleus of the crowds consisted of workingmen who were disgusted at the frequent display of "No Beer" signs.

Transporting Shipyard Workers at Quincy

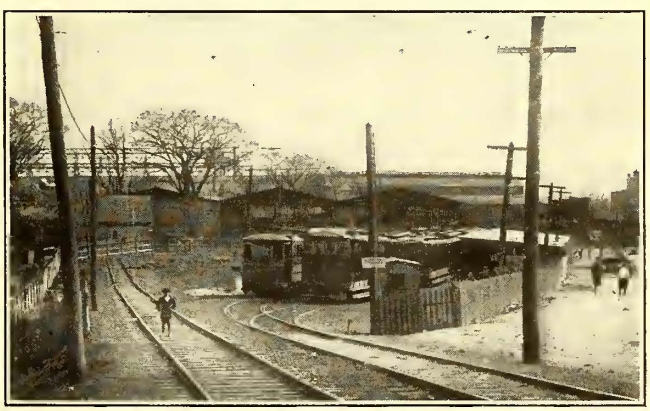
Bay State Street Railway Is Handling Throngs at Fore River Shipyard in Spite of Impracticability of Using "Split-Shift" Plan

By W. B. Conant
Concord Junction, Mass.

THE Fore River shipyards of the Bethlehem Steel Corporation are located on Weymouth Fore River, in the city of Quincy, Mass., 4 miles more or less from the outer limits of Boston. From 12,000 to 15,000 workers are employed at the yards. About 50 per cent of the working force come from distances which necessitate the use of public transportation facilities. A large number live in Boston and in the suburbs to the north of the city. These use the Boston Elevated lines as far as the junction with the Bay State system at Neponset Bridge, which is about 4 miles from the plant.

When the war broke out the shipbuilding company employed about 3,000 persons. Of these the Bay State Street Railway, which is the only line reaching the works, was called upon to carry 1000 to 1100. The cars ran between the plant and the central square in Quincy over a single-track road, which was totally inadequate to handle the additional load. From Quincy Square, the half-way point. the route in the direction of Boston, via Neponset Bridge, was also limited to a single track on the bridge. The condition of the roadbed and the rolling stock of this railway, which has for some time been in the hands of a receiver, made the task of handling the workers one of great difficulty.

With the entrance of the United States into the war, the plant at Fore River increased its force rapidly, and



LOOP AT FORE RIVER SHIPYARD, QUINCY, MASS.

it was apparent that a constructive plan of some magnitude would have to be worked out in order to meet the transportation situation. A contract was entered into between the railway, the Emergency Fleet Corporation, agent for the federal government, and the City of Quincy for the financing of the construction of a double track and the widening of the street between the plant and Quincy Square, a distance of 1½ miles; for the construction of a double-track loop at the shipbuilding plant, with a prepayment inclosure; for the construction of a loop at the square; for the building of a new substation, and for the double-tracking of the line on the Neponset River Bridge and the establishment of a prepayment station at Neponset where the Bay State system joins the Boston Elevated system. The company

agreed to repay the funds advanced on the basis of fares collected at the terminal.

About the middle of January, 1918, the double track and loop at the works were first used, and within a month the daily traffic had increased about 2000 arrivals and 2400 departures. At this time all departments of the works opened at 7 a.m. and closed at 4.30 p.m., except that many workmen worked overtime, until 6 p.m. The night force came to work at 6 p.m. and left at 6 a.m. The number of employees increased rapidly, so that on April 22 the opening and closing hours were so changed as to spread over an hour morning and night. The change provided that certain departments opened at 7 a.m. and closed at 5 p.m., while others opened at 8 and closed at 6. The night shift began work at 6 p.m. and left at 5.30 a.m. On Saturdays, the hours were from 7 a.m. to 12 m. and 8 a.m. to 1 p.m. It was hoped that this "split-shift" plan would help to relieve the congestion at the times of peak load.

In the meantime a new rescheduling and rerouting of lines had been effected in Quincy to improve the rush-hour conditions. A new through double-track route from Neponset Bridge had been opened, and a special depot car service had been established between the plant and the New Haven Railroad station at Quincy.

"Split-Shift" Plan of Operation Had to Be Advanced

Unfortunately the "split-shift" plan was strenuously objected to by the employees, who deplored the loss of the daylight hour in the evening, "when they wished to work in their war gardens." The men, too, were dissatisfied because they believed that the difficulty could be met in some other way. On two occasions a strike was narrowly averted from this cause. The shipbuilding management, moreover, held that the plan caused loss of efficiency through one crew having to wait for the coming of another in the morning, and because tasks could not be completed in the late afternoon after a part of the men had left. The departments so overlapped that it was impossible to make up separate groups of workers without a loss in efficiency and co-operation which was estimated to be equivalent to 6000 to 8000 man-hours daily. It was thus seen to be very desirable to return to the old system of one shift, and the plan was abandoned on Aug. 19, 1918, after about four months of use, although transportation experts from the Emergency Fleet Corporation had reported to Washington that it was impossible properly to handle the traffic with but one opening and one closing hour.

The joint shop committee of the shipbuilding Company, however, issued a circular letter to the employees in which the co-operation of the men was solicited. They were asked to take early cars for the works in the morning, to avoid later congestion which had resulted in about 20 per cent of the employees being late to work; to buy tickets in advance so as to aid ticket sellers and conductors, and to make way quickly in boarding cars and in moving inside the works gates.

A card index was made up of the places of residence of the employees, showing whether they came by trolley, jitney or private conveyance, or walked to and from work. Each rider was assigned to his proper car by the proper routing. The loop at the works, which was of two tracks separated by ordinary spacing, was spread so as to form a double loading space, with 8 ft. of space between tracks. A total of about sixty trips morning and evening through the loop was thus made possible. Of these cars, forty are now moved in fifteen minutes. A portion of the outgoing cars had previously started from a street area with no prepayment facilities, resulting in a great loss of revenue to the road. These cars were brought inside a second prepayment inclosure near the main office by means of other tracks. Four cash turnstiles and six ticket entrances were provided at the works loop, and three ticket booths were opened in the yard from which eight women of the Bay State, Boston Elevated and New Haven sold tickets every noon and evening. The cost of this service was borne by the shipbuilding company.

FORE RIVER SHIPYARD WORKERS ENTERING BAY STATE PREPAYMENT STATION, QUINCY, MASS.

One of the main reasons for the successful working of the "Quincy plan" is the readiness with which the shipyard workers have adapted themselves to the situation. They have recognized the fact, as shown them by the joint shop committee, that it is best to subordinate personal conveniences to the general good, with the result that all are better served than otherwise would be possible. In addition, the improved power situation brought about the presence of the new substation; the addition of thirty-seven new cars of the double-truck type and large capacity operated in trains, and the double-tracking of the principal routes to the yard and on the bridge have relieved a situation which government experts, and indeed the officials of the railway, had despaired of, with the single opening and closing system in effect.

C. E. R. A. Cruises on Great Lakes

At Meetings Held on Board S.S. "South American," Discussion Centers Around Safety Car and Relief for Electric Railway from Illegitimate Burdens

AS LAST WEEK'S issue of this paper went to press the Central Electric Railway Association was concluding its summer cruise from Toledo to Chicago via Perry Sound, Mackinac Island, Harbor Springs, Macatawa and Benton Harbor. Three hundred and sixty persons made up the party and every possible provision was made for their comfort, entertainment and instruction by the committee of arrangement. This comprised S. D. Hutchins, Westinghouse Traction Brake Company, chairman; John Benham, International Register Company, secretary; James H. Drew, Drew Electric & Manufacturing Company, in charge of entertainment; F. R. Coates, Toledo Railways and Light Company; H. A. Nicholl, Union Traction Company of Indiana; L. G. Parker, Cleveland Frog and Crossing Company, and H. E. Rasmussen, Indianapolis Electric Supply Company. Dr. R. C. Harpster, Toledo Railways and Light Company, served as ship's surgeon.

A humorous daily, *The Central Daily Spray*, was issued during the cruise under the direction of H. H. Norris and L. C. Paul of the ELECTRIC RAILWAY JOURNAL staff, with the assistance of other present and former newspaper men in the party and of L. E. Earlywine, assistant secretary of the association. This served to supplement the formal program and also served to encourage informality and good-fellowship.

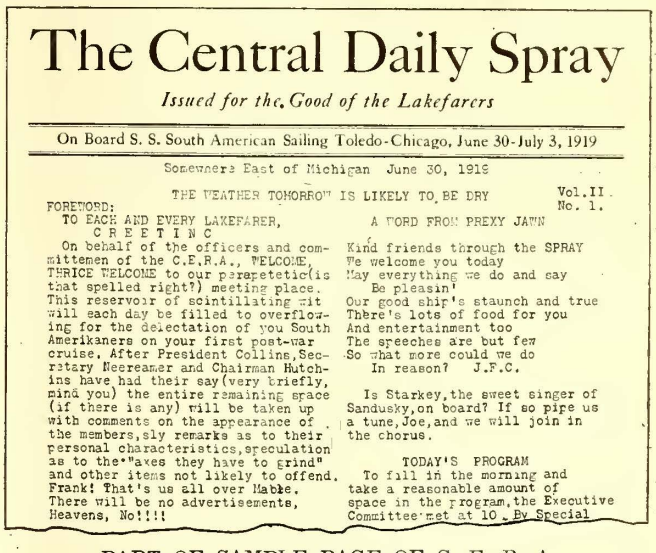
An interesting feature of the meeting was the presentation to C. L. Henry, Indianapolis and Cincinnati Traction Company, and F. D. Carpenter, Western Ohio Railway, of traveling bags, in recognition of their long and fruitful service to the association. Mr. Henry celebrated his seventieth birthday anniversary and Mr. Carpenter his sixty-ninth, on July 1. In responding to addresses of felicitation the former said that the "Central" is the best association in the country, and the latter dwelt upon the changes which have occurred in the industry during the time of his connection with it.

ONE-MAN CAR OPERATION HAD THE FLOOR TUESDAY AFTERNOON

A paper on "One-Man Car Operation" was presented by S. W. Greenland, general manager Fort Wayne and Northern Indiana Traction Company, on July 1. The paper is abstracted elsewhere in this issue. In introducing Mr. Greenland President J. F. Collins, vice-president Michigan Railways, said that two subjects of great importance today are one-man cars and higher fares. He said, however, that one-man cars alone cannot run a railway and that that which is needed most is organization and co-operation. The employees must be educated and this fact is just as important as the increased fare and the one-man car. In connection with the paper Mr. Greenland said that his company is planning a line extension on which only one-man cars are to be used. The track for this will probably be made lighter than the usual type to take advantage of the light weight of the cars. It is expected that by fall all of the eighty-five cars in Fort Wayne will be equipped for one-man operation. He said that his company had not found the use of safety devices necessary, but their use might be warranted if necessary to "sell the idea" to public and employees.

The discussion was opened by a communication prepared by F. J. Moore, general superintendent Ohio Electric Railway, and read by L. A. Mitchell, Union Traction Company of Indiana. This will be abstracted in a later issue.

The next speaker was E. M. Walker, general manager Terre Haute lines, Terre Haute, Indianapolis and Eastern Traction Company. He outlined the experience at Terre Haute as covered in the article in the issue of this paper for June 28, copies of which were distributed at the meeting. In that city the people want



The Central Daily Spray

Issued for the Good of the Lakefarers

On Board S. S. South American Sailing Toledo-Chicago, June 30-July 3, 1919

Somewhere East of Michigan June 30, 1919

THE WEATHER TOMORROW IS LIKELY TO BE DRY

Vol. II No. 1.

FOREWORD:

TO EACH AND EVERY LAKEFARER, GREETINC

On behalf of the officers and committemen of the C.E.R.A., WELCOME, THRICE WELCOME to our peripetetic(is that spelled right?) meeting place. This reservoir of scintillating wit will each day be filled to overflowing for the delectation of you South Amerikaners on your first post-war cruise. After President Collins, Secretary Neereamer and Chairman Hutchins have had their say(very briefly, mind you) the entire remaining space (if there is any) will be taken up with comments on the appearance of the members, sly remarks as to their personal characteristics, speculation as to the "axes they have to grind" and other items not likely to offend. Frank! That's us all over Mable. There will be no advertisements, Heavens, No!!!!

A WORD FROM PREXY JAWN

Kind friends through the SPRAY
We welcome you today
May everything we do and say
Be pleasin'
Our good ship's staunch and true
There's lots of food for you
And entertainment too
The speeches are but few
So what more could we do
In reason? J.F.C.

Is Starkey, the sweet singer of Sandusky, on board? If so pipe us a tune, Joe, and we will join in the chorus.

TODAY'S PROGRAM

To fall in the morning and take a reasonable amount of space in the program, the Executive Committee met at 10. By Special

PART OF SAMPLE PAGE OF C. E. R. A. CONVENTION DAILY

the whole property put on a safety-car basis. Mr. Walker expressed his disbelief in the advisability of using converted cars; both public and employees want something better than this. He favors light cars, which, he said, will prove durable with proper care. To illustrate the truth of the principle that "service increases business" Mr. Walker cited the experience in Terre Haute where the replacing of four cars on ten-minute headway by six cars on six-minute headway brought in $35 of additional revenue per day.

In reply to a query Mr. Walker said that the safety cars are adaptable to zone fare collection with the aid of a fare box. For example, on a two-zone line passengers boarding in the first zone would pay one fare upon entering, those leaving in the second zone would pay one fare upon leaving, these being the only collections necessary.

W. S. Rodger, Detroit United Railway, said that his company is using one-man converted cars in several small cities on its system.

J. M. Bosenbury, Illinois Traction System, traced

briefly the story of the modern safety car. His company had been operating cars with one man since 1892, but in 1911 it became apparent that something must be done to produce a car especially suited to one-man operation. A car was designed, which, however, the local city authorities did not consider safe, but they agreed to permit its use if operation were duly safeguarded. The Westinghouse Air Brake Company was asked to cooperate. Cars weighing, at first 32,000 lb., later 16,500 lb., were placed in operation in 1913, and orders were later placed for a total of sixty-two Birney cars. Mr. Bosenbury's experience has been that the cities demand the use of safety appliances.

Safety Car Lends Itself Readily to Standardization

Following Mr. Bosenbury, the general principles of the safety car were explained by Carl H. Beck, Westinghouse Traction Brake Company. Of course, said he, this car is an innovation in street railway practice or it would not be up for discussion at this time. It is suitable for use in cities of any size. Standardization has been an essential but "ticklish" element in connection with its development. The new car contains so many new elements that there was an excellent opportunity for standardizing in the construction of the car unit and in its operation. As a result the car has been standardized to a remarkable extent and Mr. Beck expressed the hope that the standardization will be maintained. In approaching the subject on the basis of standardizing the car unit it is necessary that the best possible obtainable unit be put on the city streets as the car must be "sold" to so many interests. Otherwise all that is possible cannot be secured from it.

Mr. Beck pointed out that the "safety" car is not the "one-man" car. It is the safest unit used in any form of transportation to-day. It is necessary to prove to commissions that this is the case. For safety it is essential that the motorman should "perform some conscious act" to keep the car in operation, that otherwise the automatic apparatus shall bring it to a stop. After going into some detail of the equipment of the car, which has been covered in earlier issues of this paper, the speaker said that the public and the employees must share in the benefits if the new type of car is to succeed. If they do the result is sure. The matter of weight of car is secondary, but all of the benefit is lost without standardization. The operating men simply must get together with regard to it.

Walter Jackson Gives Results of Observations at Home and Abroad

The safety car and related topics were next taken up by Walter Jackson, formerly business manager ELECTRIC RAILWAY JOURNAL, who explained that he had visited safety car installations as rapidly as they had been made. It would seem unnecessary to argue nowadays regarding the benefits to be derived from its use, but there are heard certain notes of dissonance which indicate that operators have not all grasped its real meaning. Referring to Spokane he said that in this city previous to the coming of the safety car, the cars in use were exceedingly heavy. This was typical of the liking of the industry for heavy cars at that time. The importance of developing the riding habit was not then realized. With the development of safety appliances it was possible to produce with the small car the same effects as with the long car. All of these devices save time and the small car sometimes yields more seats per unit of time than the large ones.

Mr. Jackson said that in Spokane the large cars, when operated by one man, made a low schedule speed. They could, in some cases, make only one trip during the "peak" whereas the small cars could make two. It is, he said, very important to automatize the operation of the car, without which he considered the car as of the "stone age" of electric railway operation. Mr. Jackson urged increase of business as an essential feature of safety-car operation, reduction of expenses being far from the whole story. Jitney and automobile competition have brought real competition into the business. A rider in an automobile is like the lion who has tasted human flesh, he wants more. In England even municipally-owned lines cannot secure protection from bus lines, and the only remedy is the giving of service of a quality that the jitney cannot match.

The speaker deplored the tendency to increase weights of safety cars, pointing out that it is not now necessary to use the same materials as entered into car construction ten years ago, as better materials have been develepod. The question is then not how much heavier the car should be, but rather how much better it can be built. Increased weight means greater energy consumption, and energy is very expensive now. Mr. Jackson said further that remodeled cars are not safe. It certainly strengthens the case of a railway, on the occurrence of an accident, if a railway can say that it has the best obtainable equipment.

In conclusion Mr. Jackson discussed the fare situation. Why, said he, have fare increases failed to produce the desired effect? His answer was that the emphasis is in the wrong place; it should be on increase in service. On one property where a 6-cent fare prevails, safety cars were introduced with a 50 per cent service increase. The result is 50 per cent more traffic. In England fares have been increased more than in this country and with better success, due to the wide development of short-haul traffic. The inhabitants of the two countries are not substantially different, and Americans will ride for a few blocks if service is increased and the zone fare system introduced. In Aberdeen 25 per cent of the passengers ride but 0.6 mile. In Reading short-haul traffic is still further developed. In a certain town in this country the flat fare is 5 cents, but the railway is operated by a merchant as a side line and he sells tickets at 3⅛ cents each in quantity. Such reduction develops traffic.

A. W. Brady Sounds a Note of Encouragement

On Wednesday C. L. Henry read for R. F. Rifenberick, Detroit United Railway, a paper on "Burdens from Which We Should Be Relieved." This also is abstracted elsewhere this week. The discussion on this paper was opened by a communication sent by Arthur W. Brady, Union Traction Company of Indiana, and read by L. E. Gould, Economy Electric Devices Company. Mr. Brady said that Mr. Rifenberick had set forth clearly and forcibly a number of factors which enter into the electric railway problem, but are often overlooked or receive insufficient weight even by electric railway men. The fundamental difficulty, he said, with the relations between the electric railways and other public utilities on the one hand and the public on the other is mentioned

at the beginning of the paper. Every student of utility problems knows that "the consumer pays the cost," but there is a large part of the public, including many of its leaders, who do not know or realize the effect of this principle. The people applaud the imposition of undue taxes, the return of excessive verdicts, the encouragement of unrestricted jitney competition, the establishment of unwise regulations, and other similar measures, as attacks on that which the common people hate above almost all else—monopoly. They fail to see that every unfair burden cast on a utility must be paid for. Payment may be made by increased rates, by reduced or insufficient service, or by the checking of development essential to the growth and prosperity of the country; yet payment is always made. Even though the utility may seem at the time to be the payor, ultimately, it is the public itself that foots the bill. This is true even though the utility be pushed to the wall, for the effects of a mistaken or unjust policy in the treatment of the utilities are likely to be felt for years after the original sufferers have disappeared from the boards.

That "the Consumer Must Pay the Cost" Is Increasingly Recognized

In the times there are some signs to encourage the electric railway man, in spite of the unwillingness manifested by the voting public in some important cases to assume any part of the burdens cast on electric railways by the war. There are other indications, however, of the drift of the public mind which carry hope. The increasing of railroad, express, telephone and telegraph rates by the federal government has opened the eyes of many who once saw not. These increases were necessary to meet advancing costs, as was announced by the government as the reason for them. What the government was forced to do, it recommended to the state and municipal authorities of the country that the privately operated utilities be permitted to do. Commissions have very generally adopted these recommendations to a greater or lesser extent. The public has, as a rule, recognized the fairness of the action taken, and accepted uncomplainingly these increases as necessary. It can safely be asserted that never before has a greater proportion of the American people recognized the principle that the consumer must pay the cost, and that if the cost be not paid in rates the consumer nevertheless must pay in some other way. It is the duty and the interest of every man connected directly or indirectly with the electric railway industry to see that this elementary yet often overlooked truth is so well known by the public that it will be acted on as a matter of course by their chosen representatives.

Following the reading of Mr. Brady's letter, W. S. Rodger, Detroit United Railway, stated that on Aug. 14 of this year all electric railways in Michigan reporting earnings of less than $8,000 a mile will be permitted to charge 2½ cents a mile. When the earnings reach $10,000 a mile the rates must be reduced to 2 cents a mile. The rate for children will be 1½ cents a mile and baggage will be carried free. The new rates will be under the jurisdiction of the new Public Utilities Commission of Michigan.

R. N. Hemming, Fort Wayne & Northern Indiana Traction Company, then announced that from Sept. 29 to Oct. 1 the electric railway sessions of the National Safety Council will be held at Cleveland, Ohio, and urged a representative attendance.

The business of the convention was purposely limited in order that all might thoroughly enjoy the trip. A short meeting of the executive committee was held on Monday morning at which time the handling of mail on interurban cars was discussed and a meeting was called to be held at Indianapolis within a few days to decide upon a general plan to be presented at Washington. Interurban freight and motor truck competition was also taken up. At a business session on Monday afternoon the applications of eight new supply members were accepted. This brings the total supply membership to 151, the largest by two in the history of the association. On motion of Harry Reid, president Interstate Public Service Company, it was decided to send A. L. Neereamer, secretary of the association, as a delegate of the association to the Atlantic City convention of the American Electric Railway Association in October.

Social Features Keep Everybody Happy

The social program was ably handled so that none ever found time hanging heavily with nothing to do. Each evening an entertainment was held in the "grand salon." The program included moving pictures, story telling, vocal music, community singing, sleight-of-hand, a mock wedding, a lecture on some of the American battles of the great war, and local talent exhibited in various ways. The entertainment was over at ten each evening following which a dance was held in the ballroom. Moving pictures were also taken on the boat and at the various stopping places. An open air, wire-enclosed playground provided amusement for the many "kiddies" aboard.

The opportunity to visit a number of points of historic interest was appreciated by the party. The town of Parry Sound, Ontario, was inspected briefly on Tuesday. On Wednesday morning a three-hour stop was made at Mackinac Island, and most of the members of the party visited historic and other interesting points on the island such as old Fort Mackinac, Sugar Loaf Rock, Arch Rock, etc., and otherwise passed the time in purchasing curios and other trinkets for the folks at home.

Two hours were spent at Harbor Springs, Mich., on Wednesday afternoon and a short stop was made at Macatawa, Mich., early Thursday morning. Benton Harbor was reached about 11 a. m. and here special interurban cars from Indiana, Ohio and Michigan met those who wished to reach home for the Fourth. At Macatawa Mr. Collins' private car was in waiting and took a large party, via Holland, Grand Rapids and Battle Creek, to Jackson, whence its members scattered in all directions. Many continued on to Chicago and the trip officially ended at the Municipal Pier about 4.30 p.m. on Thursday, July 3.

All in attendance agreed in extending congratulations to the committees in charge of the arrangements, particularly to Messrs. Hutchins, Benham and Drew on whom fell the heaviest responsibilities of the cruise and entertainment, to Chas. L. Henry, chairman of the program committee, and to Secretary A. L. Neereamer.

The steamship *South America* proved to be well adapted to the purposes of the C. E. R. A. cruise. There was sufficient reserve in capacity to prevent crowding, and captain, steward and purser and their subordinates vied with each other to insure the comfort of the passengers. Fortunately the weather was such that the voyage was unmarred by cases of sea-sickness.

Burdens from Which We Should Be Relieved*

Five-Cent Fare Should Be Retained Until All Possible Operating Cost Reduction Has Been Achieved

By Robert B. Rifenberick
Consulting Engineer, Detroit (Michigan) United Railway

THE present-day electric railway industry is of recent origin, and has improved so rapidly in the science of its art, that only lately has time and opportunity afforded or necessity required a careful analytical study of its cost of service, and of the elements that constitute such cost. This study has been brought to a scientific, logical and economical conclusion, but for political reasons government officials have not as yet wholly availed themselves of such conclusion. Under these circumstances it is very probable that in many instances the consumer of such service did not and is not now paying in full the cost of service received. This fact, however, in no sense impairs the logic of the axiom: "The consumer pays the cost."

If the electrical railway industry is to be kept off the rocks of complete financial disaster (and it appears to be the aim of some politicians and newspapers to put it there) it is up to every member of the C. E. R. A., to every employee of all the utilities of which the industry is composed and also of all our allied industries to acquire this knowledge, then to impart it to the public without any further waste of time.

The most economic basis of fare applies to the single coin, and as our national government has not as yet produced a single coin of greater value than its 5-cent and less value than its 10-cent coin, we should use every endeavor to continue as long as financially possible the 5-cent coin as the basis of a single fare. To permit this, relief from the numerous unjust burdens to which the industry as a whole is now encumbered must be had.

Regulation Should Be Simplified

Electric railway utilities should be relieved from the burden of being subject to and regulated by the numerous regulative bodies which now have supervision over their various functions. Such diversified regulation with the heterogeneous burdens imposed is necessarily expensive, and for this largely unnecessary expense the patrons pay the cost. As a natural public utility monopoly the industry should properly be reasonably controlled, but such control should be judicial to pass upon complaints concerning the reasonableness and adequacy of rates, passenger and traffic, and to prescribe a uniform system of accounts. The executive and administrative duties of operation should rest in the management of the properties, subject only to such judicial rulings as above prescribed.

The promiscuous, conflicting and excessively burdensome regulation under which many electric railway utility properties are being operated today, seriously restricts the natural development and resources of these properties and is in fact, and in some instances deliberately, forcing them onto the rocks of bankruptcy.

Electric railway utilities should be relieved of the numerous political investigations, surveys and appraisals of their property to which many of them have been subjected. To my own knowledge one electric railway utility has in the past ten years been compelled to expend over $500,000 and the city in which it operates has spent more than $200,000 for such purposes to no end whatsoever to date. The game of making this utility the stepping-stone to public office has been going on for twenty-five years, during all of which time the utility has continued to render to its patrons the best service the management could devise under such irritating and adverse conditions.

Taxation Needs Adjustment to Insure Fairness to All

Electric railway utilities should be relieved from the burden of all taxes, state, county, city and national, except possibly the usual taxes on such property of the utility as is devoted exclusively to furnishing service to its patrons, namely, real estate and personal property other than foundations for tracks, and paving in public streets and thoroughfares. In the days of the horse railway the burden of paving in and adjoining its tracks was imposed wholly on the utility. There was some logical reason for this because the horses of the company were, supposedly at least, the greatest users of such paving. However, then as to-day the best paving of the street was generally in the car tracks, which naturally drew the vehicle-using public to the use of the tracks. Thus an unjust burden was imposed on the patrons of the utility in paving requirements, which to have been equitable, should at least have been apportioned between the general public and the street railway car rider.

To-day there is no reason for the continued imposition of this burden on the patrons of the utility. Furthermore, vehicles other than electric railway cars should be absolutely prohibited from the use of the tracks, and such use by these other vehicles should be at their own risk and damage liability.

Electric railway utilities should be relieved from the burden of paying for damages to vehicles, and for injury to persons occupying them, caused by collision with their cars, because these cars have an absolutely fixed line of travel on which they have the right of way. If the utilities, in case of a collision between a vehicle and its car, would bring suit against the owner of such vehicle for damage to their property, and the court would render judgment for such damage, these unnecessary collisions would very soon disappear.

Other tax burdens from which the patrons of the utility should be relieved, that are wholly in the nature of exclusively class taxation, are franchise, gross income and license taxes, which penalize the patron for requiring electric railway utility transportation.

Another serious, unjust and expensive burden from which the utility patron should be relieved is that of free transportation of policemen, firemen and other public officials. Further, street lighting, sprinkling and street cleaning should not further continue to be a burden on the utility patron, exclusively as such, but the cost of these should also be paid from the general taxation.

Electric railway utilities should be relieved of the burden of building extensions in advance of such extensions being self-sustaining. They should be relieved of the burden of such limited term grants, the existence of which by their very nature require the accumulation

*Abstract of paper read at meeting of Central Electric Railway Association, S. S. "South American," on Great Lakes Cruise, July 2, 1919.

of a large amortization fund, paid by its patrons, during such limited term, to protect its investment at the end of such term. They should be relieved of the burden of carrying the mails without just recompense for the service rendered.

Should Present Fares Include Provision For Ultimate Purchase of Utility?

Another penalty imposed on the user of electric rail way transportation from which he should be relieved, is that of requiring him to pay a profit to the city for the privilege of being transported by the utility. That efficient and prudent utility management should be rewarded is a good economic policy for the consumer; but by what law of economics can it be sanely reasoned that A, B and C should pay enough for transportation to the electric railway utility, so that at some future time D, E, F and the rest of the alphabet should own such utility? Wherein lies the reason for placing such an unjust burden on the present generation? Each generation must take care of its own social, political and economical problems as they arise, but no present generation should shift such burden onto a future generation or relieve, at its own expense, a future generation from the problem that rightly belongs to it to solve.

Electric railway utilities should be relieved from the burden of competition, whether from competing lines, jitneys, motor buses, or otherwise, to the end that its patron shall not be required to pay an iota more for his transportation than is economically necessary. If this statement is unsound, the proposition that a public utility is natural monopoly is also unsound. It seems only necessary to bring into review the operating and financial methods of a day long since passed, to prove the logic for, and necessity of, a public utility being recognized as a natural monopoly and being protected as such for the economical benefit of the user of its service.

The electric railway utility should and must be relieved of the burden of the political and newspaper hazard that so often causes the utility increased operating and capital expenses, for which its patrons must pay. This hazard is wholly unnecessary and unjust.

Summary and Conclusions

I have endeavored to outline the principal burdens from which the electric railway industry must be relieved if any successful attempt is to be made to maintain the 5-cent coin as the single unit of fare. It is a grave question whether the removal only of the burdens outlined, including any which may have been omitted, will make possible the use and continuation of the 5-cent fare, but the experiment is well worth a trial.

Should such trial prove that still further revenue is necessary, then must come a charge for a transfer, with this transfer charge increasing, if necessary, until it reaches a practical maximum; and finally before getting away from the 5-cent fare, should come a more restricted zone in which this rate of fare would apply.

In closing I would emphasize the fact that the repressing burdens herein outlined, have made it impossible for the electric railway utilities to obtain capital for the improvements and extensions so urgently needed to render the service required, or properly to maintain their existing properties. The limit of oppression is reached. A reaction must set in that will provide such just and reasonable rates of fare as will enable the utilities to exist and perform their functions to their patrons; otherwise such of our utilities as are not already in the hands of receivers, will speedily land there to the irreparable damage, not only to the owner of and investors in these properties, but to the patrons of the service.

One-Man Car Operation*

The Author Gives Recent Data Showing That the Light-Weight Car with One Operator Is a Demonstrated Success

By Sam W. Greenland
General Manager, Ft. Wayne & Northern Indiana Traction Company, Ft. Wayne, Ind.

THERE are 102 cities and towns in this country and Canada where 1164 one-man cars of all descriptions are being used. This number has increased rapidly during the past two years on account of the conditions through which our industry has passed. Undoubtedly the one-man car is at least one of the good things coming to the industry out of this experience.

The development of the art has brought us the prepayment type of car, the light-weight motor, the fare box, the low or stepless car and the elimination of the conductor. If with these are combined the light-weight car-body and truck construction, we have the modern one-man car. This development has proceeded step by step.

There seems to be no limit to the use of the one-man car, so far as the population of a community is concerned. Probably the smallest community in which this type of car is being used at present is Columbus, Ind., where five cars are serving a population of 3000. The largest city in which it is being used extensively is Spokane, Wash., where eighty-five cars are operated to serve a population of 135,000.

The one-man car is not a "cure-all," or a car that can be operated under absolutely all conditions. There are, however, lines in almost every community where its use will improve service.

Local conditions exist with all companies, which at times we feel cannot be changed, but in reality a number of these can be changed. For example, the problem of flagging railroad crossings can be solved in a number of cases by the electric railway companies paying one-half of the steam railroad companies' expenses for flagmen. In some cases, the operator of the one-man car can do his own flagging, say at railroad crossings where the use is infrequent by the steam railroad.

While we all look upon the one-man car as being new, the following companies have been operating one-man cars for more than ten years: East St. Louis & Suburban Railway, Beaver Falls Traction Company, Hattiesburg Traction Company, Owensburg City Railroad, and Salina Street Railway.

These companies, of course, have not had the latest type of one-man car, but have been operating the regular single-truck car, designed in such a way that the entire operation is in charge of one man. On an average ninety-eight companies in the country have operated one-man cars about three years, so that the specially designed and built one-man car has surely passed the trial or test period.

There are in service as one-man-operated cars the

*Abstract of paper read at meeting of Central Electric Railway Association, S.S. "South American," on Great Lakes cruise, July 1, 1919.

converted car, the Birney car, and other one-man designed cars. In the converted car, the saving is in the operators' wages. In the Birney car, the saving is in the reduction of power consumed as well as operators' wages. In the other type of one-man cars, the savings are the same as in the Birney cars and in addition to these savings, the comfort and convenience of the passengers are very much improved.

In the above comparison it is assumed that the converted cars are equipped with platform doors, which have reduced the number of boarding and alighting accidents.

Energy Is Saved in Proportion to Weight

Power consumption has, of course, been one of the principal items considered in the designing of the latest type of cars. This consumption varies, naturally, with the weight of the car. Some information has been obtained in a typical Middle West city, where several types of single-truck cars are being operated, the energy consumption being taken at the car and including only that used for motors and compressors. The readings obtained were as follows:

Weight of car, lb.	Number and capacity of motors	Average kilowatt-hours per car-mile
26,900	2—40 hp.	2.32
21,000	2—25 hp.	1.30
13,500	2—25 hp.	1.05

The average reduction in power consumption by all companies using the Birney type of car in the country, was 51.2 per cent. On the converted type of car, the power consumption remains the same as when the car was operated by two men. In some cases, this consumption has been increased, as cars have been equipped with air brakes in order further to reduce the work of the motorman.

Most Companies Pay Higher Wages

The rate of pay to trainmen for the operation of one-man cars varies throughout the country. A number of companies do not pay any additional amount for one-man operation; other companies pay an additional amount per hour ranging from two to ten cents. Some companies have found it advisable to place this matter on a percentage basis ranging from 10 to 30 per cent of the existing rate. This is governed entirely by local conditions, but inasmuch as additional duties are assigned to the operator some increase in pay should be granted. Furthermore, it is necessary to have operators of a higher grade on the one-man cars, if they are to be operated properly.

In many instances it appears that a conductor develops into a more efficient one-man-car operator than a motorman because he has had the general experience of dealing with the public, making change and issuing transfers. It is therefore only necessary for him to learn physically to operate the car. The motorman has much more to learn. This, of course, does not hold good in all cases.

Schedules Can Be Improved with One-Man Cars

With the placing in service of one-man cars it has been necessary in many instances to revise the schedules. According to reports from ninety-four companies, sixty-four have not increased the number of cars operated, while twenty have done so. Of the companies making increases in their schedules, the increase has averaged fifty per cent. Some of the increases, however, have been much greater, and in a number of cases reductions in running time of 15 to 20 minutes have resulted. It is undoubtedly necessary in most cases to increase schedules and furnish more frequent service if the full advantage of the car is to be realized. During these days, when the automobile is so generally used, more frequent service will to a certain extent be justified, because the operation of the one-man car so materially reduces the operating expense. This frequent service will assist very considerably in meeting "jitney" competition and in some cases it has been known entirely to eliminate it.

Reports from forty-three companies show they have had an increase in earnings from the operation of one-man cars, while thirty-five companies report that their earnings have not been affected either way by such operation. It seems to be invariably true that where the converted cars have been used there has been very little, if any, increase in earnings. The greatest increases in earnings are shown where the new type of car has been placed in service. This is not surprising when one considers the viewpoint of the public. In most cases the cars that have been converted still retain the same general appearance, with the undesirable longitudinal seats and high steps. Practically all that has been done has been to install additional doors and, possibly, air brakes. With the new type of car the public is immediately impressed by the low step, cross seats and other items of improvement. While this may be a purely psychological effect, the increase in earnings surely justifies the adoption of the new rather than the converted type of car.

One illustration of increased earnings where the new design of car has been installed is in the Central West, where a population of 20,000 is being served by eight regular cars with a daily mileage of 135 miles per car. Formerly this system operated with the same number of cars on the same schedule, the cars being of the converted type with longitudinal seats and platforms protected by doors manually operated. During the five months from Jan. 1 to June 1, 1919, the earnings were $40,980, or 25.3 cents per car-mile. For the same period in 1918 the earnings were $25,522, or 18.5 cents per car-mile. The increase is $15,458, or 60.6 per cent, the greater portion of which is, in the opinion of the operators of this property, due to the one-man cars of new design. Similar reports have been received from other communities.

It should not be understood that increased earnings will be shown immediately when the new cars are placed in service, as there are a number of improvements that must be installed on a system where the service is frequent if the public is to be better served and all of the advantages realized. The following changes and improvements appear to be necessary prior to the placing in service of this type of car: (1) An educational campaign for the benefit of the public. (2) Training of the operators. (3) The adoption of the simplest form of transfer possible. (4) The provision of change racks for the operators, where fares are other than five cents. (5) The installation of automatic blocks instead of hand-operated blocks for protection on single track. (6) The installation of electric track switches.

In considering the question of accidents from the operation of one-man cars, the relative values of the data depend entirely upon the classes of equipment

operated previously. When the platforms have been protected by doors in the past, the reduction in accident expense has not been material. With the loading and unloading of passengers under the supervision of one man, the operator should be able to reduce to the minimum the boarding, alighting and platform accidents. Collisions with automobiles and other vehicular traffic have been somewhat reduced because the lighter car is under excellent control. The employment of a better class of operators, as previously referred to, will materially reduce collision accidents.

As to cost of maintenance, both on cars and track, the little information available is largely an estimate on the part of the officials of the operating companies. However, with the reduction in weight there undoubtedly will be less track maintenance. Apparently no operating company has attempted to construct its track for the special operation of the lighter cars. This undoubtedly will be done in the extending of present tracks and in rebuilding. The one-man car has come to stay and changes in the design of track construction will follow.

Cars Can Now Be Purchased on Car Trust Certificates

In the total of 102 companies now operating the 1164 one-man cars, there are in service 620 converted cars, 443 Birney cars and 111 other one-man cars, so that more than 50 per cent of the present cars operated are of the converted type. This undoubtedly is due in many cases to the inability of the operating companies to secure new cars. Arrangements have been made by the car builders whereby the new type of car can be purchased on car trust certificates, with an initial payment of 25 per cent. These certificates run for three to five years, the unpaid portion of the certificates bearing interest at 6 or 7 per cent. There is available at the present time, therefore, a plan which permits of the purchase of these safety cars on a fairly liberal basis.

The weight of the one-man car has probably been discussed more than any other phase of this subject and it is interesting to note that the newly designed car was built, in some instances, with a total weight of 10,000 lb. The standard Birney car to-day, I am advised, weighs 13,500 lb.

On specifications which have been recently prepared by one of the larger eastern companies for one-man cars, the weight has been placed at 16,000 lb. From the experience we have had on our system, where twenty-five of these newer type of cars have been operated, it is our opinion that a reasonable weight for a car of this type would be approximately 18,000 lb. The manufacturers who furnish the motors state that this is the maximum weight to be handled by their present design of motor. This weight permits of a sufficiently large platform to provide both entrance and exit doors at the front; provides for a double floor, comfortable, reasonably wide seats, and an aisle of ample width. All of these items are of great importance for the convenience of passengers.

While it undoubtedly will require more power to operate this car, weighing 350 lb. more than the present standard, the difference will not be serious when the question of the public's comfort and convenience is considered. Therefore in designing standards it may be necessaory to have cars of two weights.

Pacific Claim Agents Hold Large Meeting

Automobile Accidents and Analysis of Human Nature in Making Claims Demand Principal Attention of the Association

RESUMING pre-war activities, about 100 members of the Pacific Claim Agents' Association met at the Hotel Oakland, Oakland, Cal., on June 19 to 21 for the tenth annual convention of that body. The three-day meeting was presided over by President H. G. Winsor, Tacoma Railway & Power Company, Tacoma, Wash. By way of diversion from the business meetings the members were entertained with luncheons at the Hotels Oakland and Claremont and a dinner at Canyon Inn, a theater party, a street car ride over the scenic route in San Francisco, an automobile ride to Canyon Inn and another over Sky Line Boulevard in San Francisco.

The first paper read at the Thursday afternoon session was by J. H. Handlon, claim agent United Railroads of San Francisco, on "The Psychology of Claim Adjustment," an abstract of which will appear in an early issue. At this session a paper by F. J. Lonergan, attorney Portland Railway, Light & Power Company, on "The Claimant, the Claim Department and the Physician and Surgeon," was read. This was followed by two papers on "Motor Vehicle Accident Investigation and Adjustment," by S. A. Bishop, claim agent Pacific Electric Railway, Los Angeles, and by V. Laursen, solicitor British Columbia Electric Railway, Ltd., Vancouver.

More Safety Must Be Taught

"The Safety Problem" from the viewpoint of the companies and of the public was presented respectively in papers by Thomas G. Aston, claim agent Washington Water Power Company, Spokane, Wash., and Police Lieut. H. S. Lewis, in charge of the police traffic bureau of Portland, Ore., and occupied the attention of the members on Friday morning. A written discussion of these papers was presented by Charles A. Blackburn, claim agent Butte (Mont.) Electric Railway. In his paper Mr. Lewis remarked that, speaking generally, he had found the owner of an insured automobile to be more careless or indifferent in his handling of motor vehicles than the uninsured, for he feels that if an accident occurs the insurance company will pay the bill, and it is therefore no concern of his. After much study and investigation of the subject of automobile accidents Mr. Lewis said he was convinced that every city should establish a board of examiners for automobile drivers, and refrain from issuing certificates until the applicants had shown proficiency in handling the wheel and brakes, passed a reasonable eye test, and demonstrated a thorough knowledge of traffic laws. He believed this to be the foundation of any plan for the prevention of accidents. His conclusion from much study of this question was that traffic bureaus should be established in every city for the purpose of handling and solving the problems of traffic only. The members of the bureau should be specialists in their subject and should meet from time to time with members of the traffic bureaus of other cities, in convention, or otherwise, in order that the very best results might be obtained through the interchange of ideas and viewpoints.

In his written discussion of the safety problem Mr. Blackburn lamented that our great nation, leader in

practically everything pertaining to the sciences and industry, is suffering annually the economic loss incident upon 14,000,000 casualties, while the public is so apathetic that disciplinary measures, coercion, if you please rather than education, have been found to be most effective in dealing with this tragic condition. He said the trend of modern safety work as applied to the public, as well as to the employer, was in that direction. He called attention to how ineffective education had been among automobile owners, how strenuously individual owners and automobile clubs have objected to traffic regulations, and how prone they are to disregard and violate not only the moral obligations resting upon them to avoid careless practices but also the statutes and ordinances enacted by the authorities.

Nevertheless, the educational work must be persistently and methodically continued. But more must be done. The co-operation of the public must be sought, and a corrective education promoted. Every accident should serve as an object lesson and should be used as a text in training employees and the public. In no sort of industrial work, and particularly in electric railway operations, can the employment of men who are personally incapacitated for the work, who become negligent due to laziness or thoughtlessness, indifference, because of the monotony of their calling, or because of willful negligence, be continued.

The responsibility of the railway management, he pointed out, does not end with the bare instructions and admonitions to the men to practice the safety-first principles. A man must be shown the correct way to work, and then by frequent inspection and careful observation, the management must see to it that the correct method is followed. The men must be made to understand that they must maintain a certain standard of efficiency in the matter of accident prevention, as well as in other matters, and this is about the only way to answer the question of how to keep the employees interested in the safety-first work. The end sought should be to have all employees so imbued with the safety movement that the careful workman will insist upon his co-worker being careful and will report him (turn him in) for carelessness just as he now turns in a report concerning a defective machine or appliance. The fear, now quite general among workmen, that if they do this they will be considered by their fellow workmen as a "snitch" or "stool pigeon," must be overcome, not alone by appealing to pride and self-interest, but also through fair treatment and consideration, and by making an honest effort to correct improper efforts by other than disciplinary measures.

Office Suggestions—Benefits of Association

On Friday afternoon, Thomas A. Cole, claim agent, Los Angeles Railway Corporation, read a paper on "Office Kinks in Claim Departments," in which he called attention to the great desirability of settling as many claims as possible in the company's claim offices, saying that in that manner one man could dispose of more cases or make more settlements in one week than a field man could make in one month. He also thought that it was important that the offices of the claim department should be attractively furnished. He could not agree with the old-time idea that it was necessary to impress claimants with the poverty of the company by having dilapidated chairs, bare floors and bare walls with which to receive them. On the contrary, he felt that the offices should be so equipped and furnished that they would impress the claimant with the comfort, attention and courtesy of the place, and indicate to him that the department was run in a business-like manner, and that the company had abundant resources for defense.

At this session a paper was also read by Frank D. Oakley, attorney Tacoma Railway & Power Company, on "How to Handle Fraudulent Claims and Actions Having No Merit." This session was closed by a paper by Secretary B. F. Boynton on "Benefits of the Pacific Claim Agents' Association," in which he reviewed at quite some length the accomplishments of the association and the benefits derived by its membership from its activities. By way of emphasizing the great importance of the safety work of the association, Mr. Boynton quoted some figures showing the tremendous toll of life taken through accidents in this country. He said that during the nineteen months of our participation in the war, while there were 56,227 American troops killed on the field of battle and in the various ways pertaining to war activities, there were killed in peaceful America, where we have plenty, with no uprisings, 126,654 through accidents. In other words, 70,427 more people were killed by accident in peaceful America in various ways than were killed in the great war, and also, during that same period more than 2,000,000 people were injured sufficiently severely so that a record was made of the case. This meant that there were 220 people killed or injured every day, or one every twenty-two seconds.

The Saturday morning session of the association was devoted to an open discussion of "Claim Department Problems," and this discussion was led by A. M. Lee, claim agent Northern Pacific Railway Company, Seattle.

Officers Elected

The following officers were elected: President, W. H. Moore, claim agent San Diego (Cal.) Electric Railway; first vice-president, Charles A. Blackburn, claim agent Butte (Mont.) Electric Railway, and secretary-treasurer, B. F. Boynton, claim agent Portland Railway, Light & Power Company, Portland, Ore.

Americanization—What Is It?

The National Safety Council recently sent out a letter on Americanization, which is suggestive for the electric railways which are taking, or will take, an active part in this important movement. The letter says, in part:

Americanization is not simply conducting classes in English for foreigners, or even putting them through the ceremony of naturalization. It is much more than that.

Americanization means accepting the immigrant as a brother, and in the spirit of brotherhood, helping him to understand us, our traditions, ideals, standards and institutions. It is an effort to establish contacts and to provide facilities whereby he may more easily adjust humself to his new environment and become an integral part of our nation. The alien comes to our shores with great expectations of enjoying the benefits and privileges of a free man in a free country. Americanization aims to help him share those benefits, and to fit him for his responsibilities and duties as a citizen. The final purpose of every Americanizing influence is to instill in his heart a love for America, so that he will desire always to remain here and serve the country of his adoption loyally, and in the whole measure of his power.

It is just as important for Americans to understand the peoples who come to them from foreign lands as it is for those peoples to understand us. All these foreigners who have chosen to live and labor under our flag bring more than hands with which to toil. They bring personal qualities, traditions, customs, ideals, new points of view, experience in other forms of social organization, many of which may become valuable contributions to American culture.

Cleveland Rapid Transit Report

No Rapid Transit Recommended Now — Downtown Surface Car Subways to Relieve Congestion — Unification of Street Car and Ultimate Rapid Transit a Necessary Step in Financing

THE report to the Rapid Transit Commission of the City of Cleveland on a rapid transit system which has been in course of preparation by Barclay Parsons & Klapp, consulting engineers, and directly in charge of H. M. Brinckerhoff, since September, 1918, was made public last week. The general object of the report is defined as being primarily to suggest a means of relief for the present street railway, vehicle and pedestrian congestion in the center of the city, and secondarily so to plan this relief as to form a logical nucleus for the development of a rapid transit system for the city as it may grow in the future.

As the result of their study, the engineers arrived at conclusions which may be summed up in the following ten recommendations:

1. A definite plan should be decided upon under which the city rapid transit line may be built as part of or co-ordinated with the city controlled surface lines, in order to eliminate the duplication of investment which would result from building competing lines and secure to the traveling public the greatest variety of routes and transfer privileges with the lowest practicable fare.

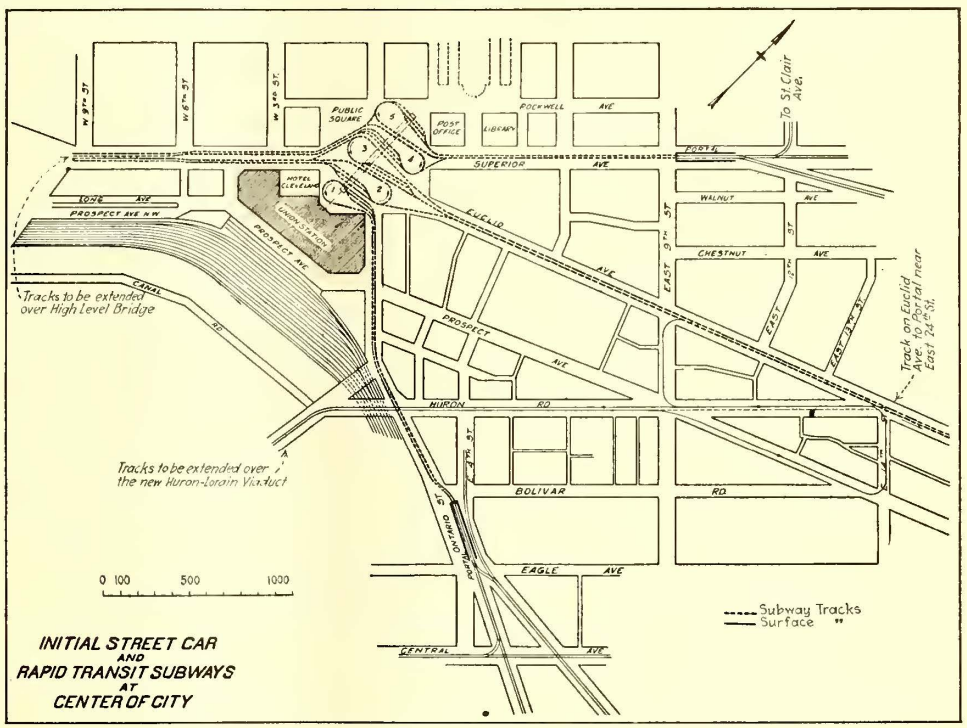


FIG. 1. SUGGESTED ROUTES OF INITIAL SUBWAYS FOR SURFACE CARS IN CLEVELAND

2. The first step toward rapid transit and one which is now warranted should be the construction of subway loops in the center of the city in order to place the surface cars under ground and relieve the congestion in this district.

3. All sections of the subway should be designed of such a size as to accommodate full-sized rapid transit and interurban cars and so located that they may become part of rapid transit routes.

4. A system of subway loops in the public square should be provided and constructed in sections as required to relieve the most crowded streets, such as Ontario, Euclid and West Superior avenues.

5. These subway loops in the public square should be so connected as to permit of turning cars at this point and also of running them through, since both methods of operation on the surface lines will be necessary for the best results, especially up to the time when through rapid transit can be established. A general typical diagram illustrating how this may be done is shown in Fig. 1.

6. The initial rapid transit line should consist of a central through route east and west, passing under the public square and planned to collect passengers from intersecting and branch lines of surface and other cars by transfers, so as to concentrate a traffic of sufficient density to support a train service at frequent intervals. Provision for this rapid transit track is made as shown in Fig. 5. This main trunk line east and west should be arranged to receive branch lines to radiate southeast and southwest as the city development may require.

7. Arrangements should be made for turning back special surface tripper service short of the public square in order to induce passengers to walk outward from the districts in returning home at night, rather than inward toward a central point. This system of subsidiary loops can be developed in connection with the subway when the through trunk line becomes overcrowded. The idea should be to maintain and increase capacity and speed of service to and through the main delivery district and handle the surplus by surface cars from the edges of the district. The most practicable arrangement will be a progressive shifting of the long-haul travel to rapid transit routes and the handling of short haul by surface cars.

8. Efforts should be made to provide further routes from the east to the west sides by bridges, and thus keep out of the central district the passengers who wish to cross the city.

9. Streets especially adapted to vehicle traffic across the city should be developed to facilitate the diversion of this kind of traffic from the congested area. By this means the necessity for part of the extensive subway construction may be postponed.

10. The building of subways should be limited to the congested business districts, and other cheaper forms of rapid transit such as open cuts, elevated lines, or the use of steam and suburban railway rights of way should be resorted to whenever possible, since by such economy the development of rapid transit lines to the greatest number of outlying districts would be possible in the shortest time.

In brief, the general scheme recommended for relieving the situation in Cleveland is first to alleviate the extreme congestion which is now present at the public square, by in effect making the square a two-surface level, and operating some of the car lines in subway loops.

As the traffic grows, one after another of these loops can be put under ground and the cars thereby removed from the congestion on the surface, and then when the total traffic warrants, this underground system through the central district may be connected up with a rapid transit subway extending east and west parallel to the lake.

The cost of carrying out the plan, involving the construction of the subway loops in the public square, and the connecting subways to 22nd Street on Euclid Avenue, 9th Street on East Superior, the Market House on Ontario Street and the high level bridge on West Superior Street is estimated to be between $14,000,000 and $15,000,000, figuring costs at the present prices. The report does not include any estimate of the expenditure which would be required to construct the extensions to the rapid transit systems (beyond the subway portion), and which in effect will be necessary before a transportation which may be classed as rapid transit will be possible. The subway construction indicated above is shown in the heavy lines of Fig. 2 exclusive of the loops, which are shown in Figs. 1 and 5.

SUPPORTING DATA

Population Study

After considering in some detail the conditions surrounding Cleveland favorable to its commercial growth, the engineers arrived at the conclusion that the present population of approximately 1,000,000 people will reach 1,500,000 by 1930, and 2,000,000 not later than 1940.

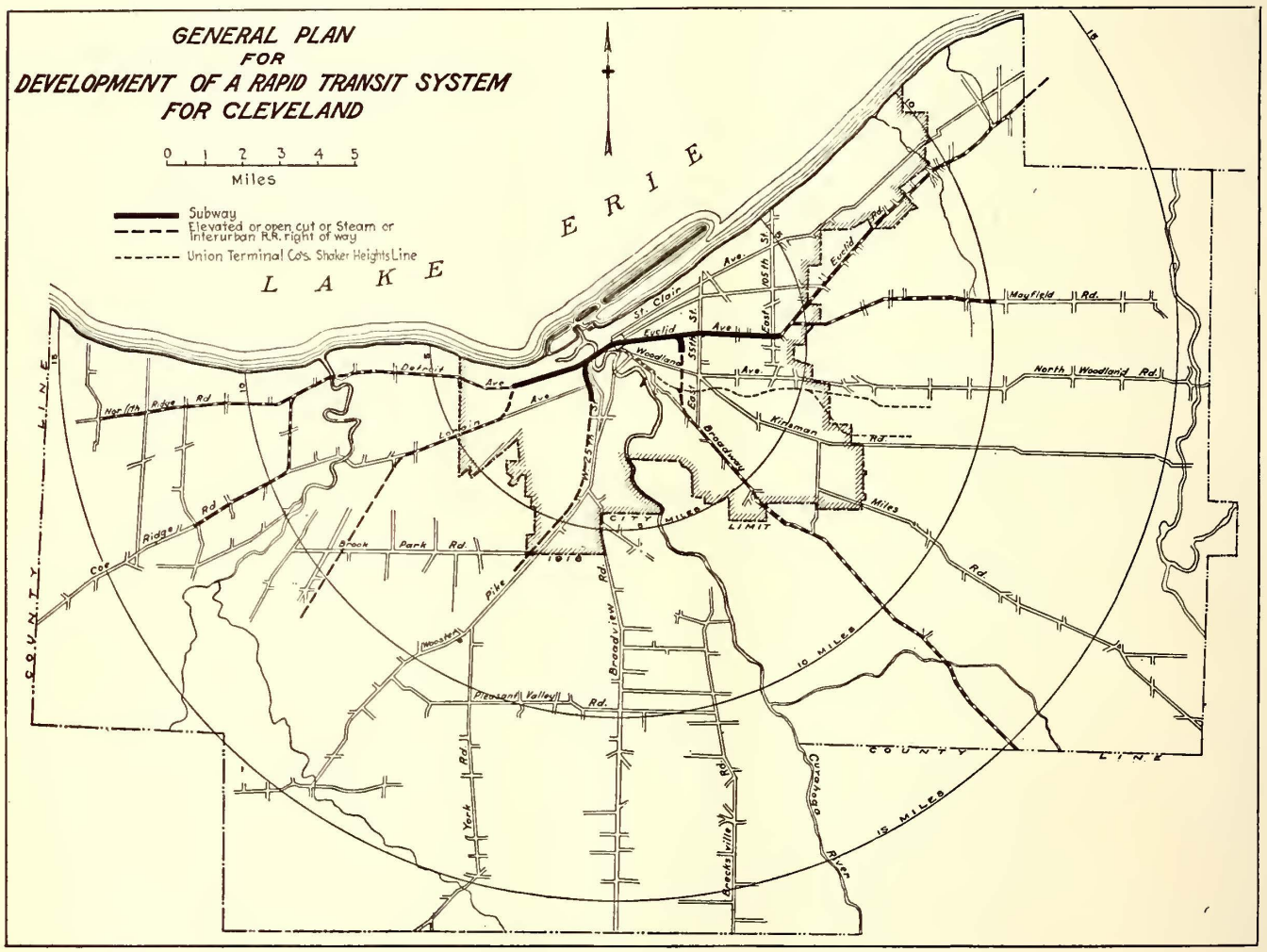


FIG. 2—ULTIMATE SUGGESTED SUBWAY AND ELEVATED RAPID TRANSIT SYSTEM

In arriving at the proper location for a rapid transit line, the engineers made an exhaustive study of the distribution of the present population of the city and endeavored to learn what the probable future distribution would be.

For this study, data were collected showing the density of population for each quarter-square-mile area of the city and suburbs, the grouping of factory employees about and within walking distance of their employment, the number of building permits issued in each of the natural sections of the city in the years 1910 to 1918, etc. The analysis of these data led to

the conclusion that the further development of the city must be looked for by a filling-up process of the vacant spaces between the various outlying residential groups along the lines of transportation, this depending largely on the development of rapid transit facilities. These residential groups and the delivery districts are so located as clearly to indicate that the logical initial rapid transit line should be laid out along Euclid Avenue on the east side and Detroit Avenue on the west side.

TRAFFIC CONDITIONS

Along with the growth in population, the total passengers carried by the street railway company has advanced rapidly, and in fact has practically doubled since 1907. In that year the total passengers carried were 188,192,508, whereas in 1917 there were 398,358,894. The number of fares collected per capita for 1910 was about 285, and this had increased to 326 in 1917. Of the revenue passengers about 36 per cent transfer to other lines. From the general characteristics of the Cleveland traffic, the engineers conclude that the number of rides per capita will have reached from 350 to 360 rides per annum when the estimated 1930 population is reached. This would result in the necessity to handle 525,000,000 to 540,000,000 revenue rides per annum. With a population of 2,000,000 and 370 rides per capita, there would be 740,000,000 revenue rides.

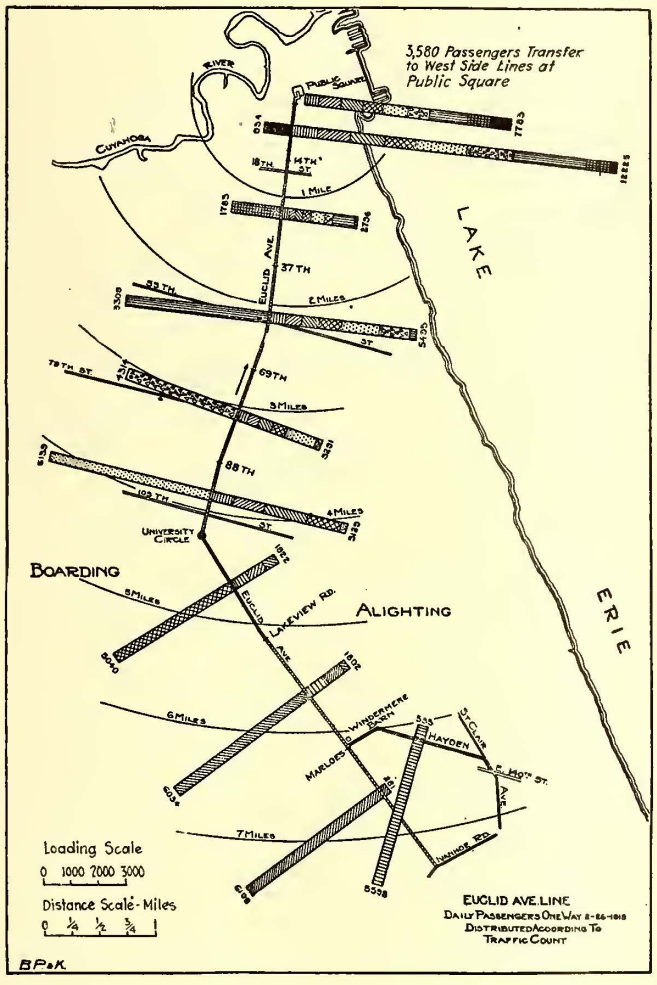


FIG. 3—TYPICAL "ON AND OFF" CHART MADE FOR EACH OF TEN PRINCIPAL LINES

SUMMARY OF LENGTH OF PASSENGER RIDES

	Annual as of 1918	Per Cent of Total
Passengers riding less than 1 mile	5,034,357	18.22
Passengers riding between 1 and 2 miles	5,263,693	19.05
Passengers riding between 2 and 3 miles	5,432,242	19.66
Passengers riding between 3 and 4 miles	4,440,291	16.07
Passengers riding between 4 and 5 miles	2,309,946	8.36
Passengers riding between 5 and 6 miles	1,765,617	6.39
Passengers riding between 6 and 7 miles	1,646,804	5.96
Passengers riding between 7 and 8 miles	1,737,986	6.29
Total	27,630,936	
Average haul	3,017 miles	

It is pointed out that with a population in Cleveland now approximately at the million mark, it compares about equally with the population which existed when the first rapid transit lines were installed in Chicago, Boston and Philadelphia.

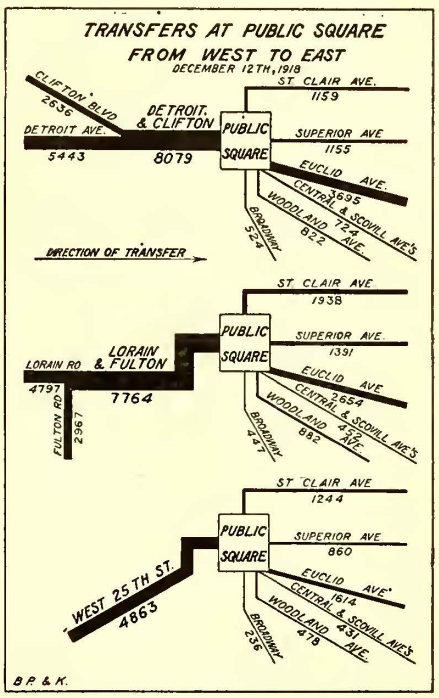


FIG. 4—CHART SHOWING DISTRIBUTION OF TRANSFER PASSENGERS AT PUBLIC SQUARE

The general character of the street railway traffic of Cleveland is into the central business district from the various residential districts and to and from the factories, much of the latter passing through the central business district. The traffic to the central district is essentially radial, coming from east, west and south. The travel to the factories, however, was found to be largely of a crosstown character. Of this riding, a complete traffic check giving the origin and destination of passengers on ten of the principal lines of the city, and a special check on two crosstown lines, together with a classification of the transfers collected on the entire city system for a twenty-four hour period, reveals the fact that the average haul on the principal lines of Cleveland, such as Euclid, St. Clair and Detroit, is noticeably long. The report indicated this to be as high as on the principal surface lines in Chicago. The percentage of the passengers riding three or more miles is also as high and in most cases higher than either Detroit or Chicago. The Detroit Avenue line, for instance, with an average haul of 3184 miles per passenger carries over 46 per cent of its passengers 3 miles or more, and over 22 per cept 5 miles or more. The Euclid Avenue line with an average haul of 3.017 miles per passenger, carries over 45 per cent of the passengers in excess of 3 miles. The St. Clair Avenue line with an average haul of 3.122 miles per passenger carries over 44 per cent of its passengers more than 3 miles.

The average haul on the ten lines checked was 2.53 miles per passenger. Estimating the haul on the remaining lines by observation and from the city's and company's records, the engineers found the average haul on all lines in the city systems to be 2.48 miles per passenger. The average passenger journey, including the average distance ridden on transfers, for which an average fare of 5.30 cents is collected is about 3.113

miles. This compares with 4.16 miles in Chicago on the surface lines for 5 cents.

These Cleveland lines are only eight or nine miles in length, while on lines of similar length in Chicago the average haul is found to be from 2.7 to 2.9 miles per passenger. The Chicago lines, however, have a much higher proportion of transfer passengers, which makes the passenger journey longer.

The density of traffic on the Cleveland street car lines is relatively light compared to other cities such as Detroit and Chicago. Thus the Euclid Avenue lines in 1917 carried 2,628,000 total passengers per mile of single track, as against 4,640,000 passengers for Woodward Avenue in Detroit and 3,230,000 for Halsted Street in Chicago. It is pointed out, however, that the density of traffic on Euclid Avenue is low because it has been intentionally reduced by routing car lines over adjacent streets, in order to facilitate surface car operation and overcome the increasing delays from vehicle and other interference. The engineers conclude, from this condition, that by revising the process and feeding into Euclid Avenue a system of cars from St. Clair and Superior and other lines, the density of traffic on this thoroughfare could be increased sufficiently to produce the traffic density necessary for the support of a rapid transit line.

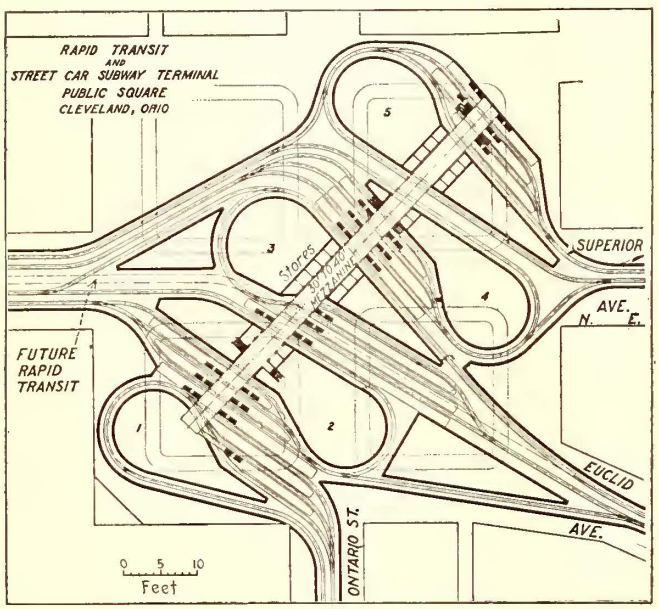


FIG. 5—PUBLIC SQUARE SUBWAY LOOP SYSTEM WITH MEZZANINE PASSAGE FOR PASSENGERS' USE IN TRANSFERRING

Analyzing the result of the 24-hour check on transfers, the engineers found that for the entire system 272,336 passengers used the privilege of the transfer, and of these, 79,458 transferred at the Public Square. This represented 29 per cent of the total for the city. Of the balance, 137,141, or 50 per cent of the total transferred to and from the two cross-town lines, 55th and 105th Streets at various intersections with other lines. The remaining 21 per cent were distributed in relatively small groups at the various street-car transfer points throughout the city. The heaviest transfer outside the public square at a single intersection of surface lines was found to be at St. Clair Avenue and 55th Street, where 6139 passengers transferred on the day checked.

The transfers at the public square are found to be broken up into a great diversity of routes, with the heaviest transfer movement from the Detroit and Clifton lines to the Euclid Avenue line and from the West 25th and Loraine lines to Euclid Avenue, St. Clair and Superior. The transfer at the public square is therefore seen to be principally a matter of convenience in distributing passengers to various destinations from the central point. The diversity of destination of passengers on each line makes through routing from one side of the city to the other very difficult. For even if cars were run through from Euclid to Detroit, or from St. Clair to Lorain, there would still be a large proportion of passengers on these cars who would transfer to other diverging routes at the public square.

Financing the Project

Sizing up the practicability of a rapid transit system for Cleveland, the engineers point out that the difficulty which is most apparent in the whole problem is the question of cost. On account of the radiating character of the city's thoroughfares and the large number of directions in which the residential section can and probably will extend, a system of rapid transit to serve the city best, must give the greatest diversity of routes into the residential sections, but financial considerations demand that the mileage must be reduced to a minimum consistent with adequate service. The concentration upon a few rapid transit lines of a large part of the passengers, with frequent transfer connections to distributing surface lines, seems to offer the most practicable solution in providing Cleveland with any rapid transit at an early date. The expense of attempting to reach all these outlying residential districts from the heart of the city by subway or elevated lines would be so great as to seriously delay the materialization of these facilities. If the existing street-car system, the suburban lines, and parts of the rights of way and other facilities of the Union Terminal Company are utilized in combination with city-built sections of subway in the business district, adequate service and most economical operating cost will be produced with the minimum investment.

These considerations led the engineers to the conclusion that a through line extending from the city limits at Lakewood, on or parallel to Detroit Avenue, passing through the public square and out Euclid Avenue a suitable distance east, appears to be the initial step in the development of rapid transit. The capacity of a two-track rapid transit line of this character with train operation would accommodate for many years east and west long-haul business, and would be capable of handling transfers from the north and south and other divergent lines. Additional rapid transit lines, as indicated in Fig. 2, would then evidently form part of later developments of the transportation system.

Speaking of the initial subway construction consisting of loops under the public square, the engineers point to the difficulty which arises that while the construction of subways in this part of the city for use of surface cars would be very effective in facilitating the movement of traffic of all classes and greatly relieving the congestion on the surface at that point, now, it will nevertheless not produce sufficient revenue to cover the charges on the new investment, although a material saving would be effected in the cost of operation. In another part of the report, however, it is stated that the advantages of such a plan to the public, should be so apparent that it should be willing to provide the necessary funds through bond issue to make this construction possible.

Methods of Observing and Analyzing Passenger Traffic*

The Merits of Several Methods of Obtaining Data Are Pointed Out, Together with Helpful Advice on How to Use Traffic Study Data

BY R. H. HORTON
Traffic Engineer, Philadelphia Rapid Transit Company

TRAFFIC ANALYSIS has perhaps for its prime object the elimination of wasted effort. It should always lead to better service by having the cars on the streets when and where the people need them. A few of the points the traffic analyst looks for are:

1. *Fitting the Service to the Traffic.*—Too often a solid schedule is continued longer than necessary after the morning rush and is started earlier than necessary before the evening rush.

2. *More Efficient Routing.*—Combinations of routes are sometimes possible, to make one car do the work of two. A through routing often makes a remarkable decrease in operating expenses.

3. *Decrease in Running Time.*—Increasing the schedule speed with the consequent decrease in running time is one of the most effective methods of securing economy of operation, and it also results in one of the greatest benefits to the traveling public. A factor in speeding up schedules is the elimination of unnecessary stops.

4. *Turn-Back Points.*—No more cars should be scheduled to the end of a line than the traffic justifies. Herein lies one of the greatest sources of wasted effort. The proper turn-back points can be easily determined by means of a simple traffic count and this information is useful in meeting the inevitable complaint arising from the few passengers located near the end of the line.

5. *Regulation of Vehicular Traffic.*—A knowledge of the characteristics of vehicular traffic leads to cooperation on the part of the city authorities in securing better regulation of this traffic so as to reduce interference with street car traffic. Proper regulation of vehicular traffic usually results in speeding up all classes of traffic.

6. *Development of the Community.*—A constantly checked industrial survey of the community is most essential to efficient street railway management. This not only tells the changing traffic requirements as to sections of the city but leads to great possibilities in building up short distance riding.

Traffic analysis may be broadly divided into field work or observations, office work or compilations, and drawing conclusions or deductions.

Some of the methods employed in field work are as follows:

By using conductors and thus avoiding the expense of observers, some very excellent records often result, but when such work is in progress there should be an inspector or street superintendent on the line to remind the conductors of their duty, as it is sometimes found that if no such reminder is given they will be back to the carhouse in the evening with the blank form just as blank as it was handed to them in the morning, and when reminded by the carhouse clerk that a traffic slip should be turned in they will proceed then and there to fill it out. Naturally the data given are far from accurate.

If inspired with the proper interest conductors can give very good information as to the maximum load on each half-trip. They should be supplied with a form that calls for a notation of the greatest number of passengers on the car at any one time on each one-way trip. This information is most useful in scheduling, as will be explained later.

A similar form might be used asking the conductors to count the load at any given point or any series of given points. In this case even more particular attention must be paid to the work and the conductors reminded of their duty when approaching the point of observation.

In the same manner register readings may be obtained. From the register readings and the load on the car, deductions may be made concerning "local traffic" or "short riders."

STREET CORNER OBSERVATIONS

The work by trained observers usually produces the best results. We have found the trainman excellent for this class of work and he rapidly becomes quite expert in counting passengers.

In the ordinary street corner observation, an observer is stationed at the corner to note the passengers boarding and leaving each car, and the passengers on the car when leaving. The instructions given the observer are to note the destination sign, block or car number, and the time, while the car is approaching and before it comes to a stop. The passengers waiting to board the car will sometimes form a compact knot of people and thus may be counted before the car comes to a full stop. Then a check may be made of the alighting passengers, and during the last few seconds the car is at the corner the observer is able to walk alongside and count the number of passengers on board. We have found that after about a week's work a man will be sufficiently expert so that his data may be used for work requiring considerable accuracy.

ON AND OFF COUNTS

On the riding count, or "on and off" check as it is sometimes termed, an observer boards the car at the starting terminal and rides the entire trip, counting the number of passengers that board or leave the car at each stop. This is one of the most satisfactory methods of making a general check on a line, as it will include the maximum load on the trip, the point at

*Abstract of paper read at meeting of the Pennsylvania Street Railway Association, Harrisburg, Pa., June 27 and 28, 1919.

which the maximum load occurs, whether too many cars are operated to the extreme outer terminal, whether a turn-back point is feasible, and nearly every variation of the traffic. We have found it possible to use the same form on this count as on the street corner observations, by writing in the names of the stops in the block number, direction, and destination sign columns. The work of observers is comparatively simple and requires no detailed explanation.

Identification Ticket Count

There have been a few attempts to count the passengers by means of identification tickets; that is to tag each passenger and thus determine the point at which he entered and at which he left the car. For this purpose two observers are used; one placed at the entrance of the car and the other at the exit. The man at the entrance hands to each passenger entering a ticket which indicates either the exact point at which the passenger boarded the car or, if the line has been previously divided into traffic sections or zones, the traffic section in which he boarded the car. When the passenger alights the slip is taken up by the observer at the exit and the point or traffic section at which he left the car is indicated thereon. There have been very successful counts made by this method, one in particular on an elevated railway in which more than 99 per cent of the passengers retained the slips and turned them over in good order to the observer. This count should give all of the data obtained in the "on and off" count previously described, and in addition should show the exact origin and destination of passengers on the line observed, giving an indication of the amount of short-haul riding and at which part of the line it takes place.

Origin and Destination Count

Efforts have been made in several cities to take a complete origin and destination count. The method, which is a further refinement of the identification ticket count, is to give the passenger a slip indicating his point of origin on the line, this slip to be later collected by another observer who asks the passenger to what point he is destined, not only the point on the line observed but, if he intends to transfer, to what line and to what point he is going on the line to which he transfers. There have been some very good results obtained by this method, and also some which are very much open to question, but it is so complicated and so susceptible to error that it is very doubtful if results would be secured which were accurate enough to form a basis for the consideration of any very important matter.

Check on Running Time

There have been few systematic checks on running time, but on the Philadelphia Rapid Transit system we have just completed a very thorough check along the following lines:

The check was based on the relation between stops per mile, the length of stop and the possible schedule speed of the car. This point will be discussed more fully later. Observers were sent out with stop watches and forms calling for the information indicated in the following paragraph:

In the first column headed "street" the stops were listed. At each stop the number of passengers boarding and leaving the car was noted in the column marked "B" and "L," and the column "O" was used for noting at frequent intervals the number of passengers on the car. Under the heading "stops" the length of stop as determined by the stop watch is entered in the proper column; passenger stops under "P"; stops caused by vehicular traffic under "T"; stops caused by car ahead under "C"; and stops for safety under "S." Under the heading "slows" a checkmark was made whenever the car slowed down. The check was made in the "T" column for slow-downs caused by vehicular traffic, in the column "C" when caused by car ahead, and in the "S" column when slow-downs are made for safety such as passing an intersecting street where ordinarily no stop is made. There is also a column for recording the actual time at each stop and the running time between that and the last stop.

These observations have been made on every eighth car on two different days, or the equivalent of every fourth car in service. When the field work described was completed the car with the heaviest loads was selected and on this car at a later date we placed a crew to make the same observations as before, but the car was operated by an expert motorman under instructions to operate at the highest possible speed between time points and to wait at each time point and leave on the scheduled time. He was cautioned to obey all rules of the company and give due regard to safety, this being done to place a practical check on the theoretical, and knowing that the theoretical speed should never exceed that which this expert actually makes on such a test run.

Analysis of Transfers

Much can be learned through the analysis of the transfers used. The transfer is usually granted in lieu of a direct line, and situations may very easily develop where it is wise to sort out the transfers and determine the number used at each point and the direction of the traffic, so as to be sure the transfer is the most economical manner of handling the various streams of traffic.

Industrial Surveys

As a matter of general information and to keep in touch with the conditions in the community, the traffic man may often find it advisable to take certain large manufacturing plants or business houses and plot on a map the address of each of the employees of such institution. We are now engaged on this work in Philadelphia for several large institutions and for the purpose have divided a map of the city into square-mile sections. Then with the aid of a street guide, we have listed alphabetically all of the streets, showing the house numbers on each street falling in each square-mile section. Thus, in using the card index of the plant, a reference to this directory will show immediately in which section the employee lives. We expect that three men should be able to plot about 2500 names a day.

We have occasionally found it advisable to treat petitions received from associations, etc., in the same manner and have secured some surprising results, as we have sometimes found that a large percentage of the signers would be adversely affected by the change they were requesting.

Where there are groups of industrial plants, a study of the opening and closing hours and the number of

employees on each shift rewards one with much valuable information.

A study of population in connection with the built-up section of the city usually gives very interesting results. It is important that in a system of considerable size one be advised not only of the growth of the city but the direction of that growth. These studies can be conducted through maps, either by spotting the population, which is the most common method, or plotting in different colors the different character of buildings in the city and showing the growth of different sections in recent years.

Office Work.

In the field work as described, we have accumulated certain information as observed by conductors or observers on the street showing the maximum load, the load at any one point or at a series of points. These observations are usually taken for schedule purposes as a measure of the service and traffic. Therefore, the most convenient method in which these statistics may be accumulated is to list them and show for each point of observation, in the order that the cars are operated, the load at that point. To make the data more comprehensible they should then be summarized by half hours, and it is strongly recommended that these half-hour periods be determined at the starting terminal of the line; that is the final sheet should show for the half-hour ending at 7:30 a.m. the number of cars leaving the terminal, the total load and the average per car load on those same cars at the various points observed. The advantage of this may be more readily seen by considering the results in the case of the maximum load observations. The summary will then show that cars leaving the terminal in a certain half-hour will be required to lift a total load of such an amount regardless of the time they arrive at the maximum load point, which is really not an essential matter when considering service. What we first desire to know is how many people we are required to lift and at what time the cars should leave the terminal to lift them. Then we can get into the finer points as to where they are to be lifted and to what point they are to be carried.

Register readings are usually observed for determining the local traffic in a certain district or the passengers riding through a certain district. The compilation in the office should be a fairly simple matter with the application of a few formulas as follows: Having observed the register reading and load on the car at two points A and B, the reading at B being less, the register reading at A should show the number of passengers boarding in the district between A and B. The difference added to the load at A and subtracting therefrom the load at B will show the number of passengers leaving within this area. If the distance between the two points is not too long; that is, if it is a distance in which one would expect that few, if any, people would make their total ride within two points, an estimate of the passengers riding through may be made as follows:

From the load at A subtract the passengers leaving as determined above, or from the load at B subtract the passengers boarding. This should give a fairly correct figure.

There are a great variety of methods which are used in the compilation of the "on and off" counts, depending largely upon the purpose for which the count was taken; that is, what particular question was to be answered. The more general method is to first accumulate the data on each observation sheet; that is, starting at the beginning of the line to determine the net of the passengers boarding or leaving the car at each stop, then take the algebraic sum of this net and it will show the number of passengers on the car at each stop. These data are then compiled into one statement, which as a rule should show the stops down the left hand side of the sheet and the results for each separate trip placed in a column by itself and in chronological order. This, then, may be totalled across the sheet by rush-hour periods or for the total day as may be desired.

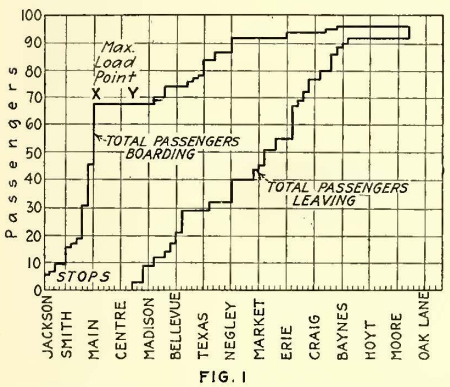


FIG. 1

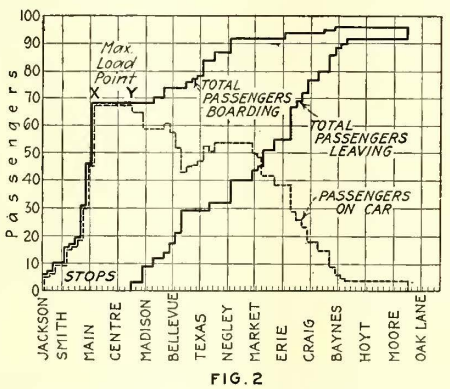


FIG. 2

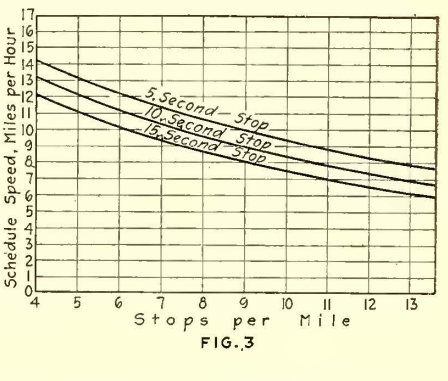


FIG. 3

FIG. 1—PASSENGERS-BOARDING AND PASSENGERS-LEAVING CURVES PLOTTED IN THE SAME QUADRANT. FIG. 2—PASSENGER-ON CURVE COMBINED WITH FIG. 1 DATA. FIG. 3. CURVE DERIVED FOR USE IN ESTIMATING INFLUENCE OF STOPS ON SCHEDULE SPEED

A typical chart is sometimes developed from these data illustrating the conditions of the evening rush period, averaged to represent one car. The stops are laid off along the bottom to scale, and the number of passengers are laid off on the upright scale. The chart when completed shows the number of passengers on the car at every point on the line. The area of the figure inclosed by the line and the horizontal axis shows the total passenger mileage.

The chart as so far described has been criticised in that it does not show the interchange of passengers at different points along the line; that is, that at a transfer point, for instance, all of the passengers on the car might leave and an entirely new group of equal number board, and the chart would show no record of this transaction whatever. This has been obviated by drawing at right angles to the horizontal axis a line showing to scale the number of passengers boarding

the car at each stop, the boarding passengers being drawn above the horizontal axis and the leaving passengers below.

If, in the study being made, it is more important to consider this interchange of passengers, a chart similar to that shown in Fig. 1 may be used. In this case, the accumulated total of the passengers boarding the car at each stop is plotted, and similarly, the passengers leaving. The vertical distance between the two lines thus formed represents the passengers on the car. It will be observed that it more or less obscures the important point of maximum load and is only recommended for use where the interchange of passengers is a very important factor.

On important work the data of the passengers-on-car curve and of the passengers-boarding and pasengers-leaving curve may be combined as shown in Fig. 2. The objection to this latter chart is the large amount of work required for its compilation and the fact that it is apt to be complicated.

With the origin and destination and identification check counts a great mass of detailed office work is necessary. It has been found that the Hollerith card sorting machines give much help. In the case of these counts there is a multitude of slips showing the origin and destination of each passenger; these data are transferred to Hollerith cards and indicated on those cards by means of holes punched in them, for which purpose special machines are provided. The Hollerith mechanism will then sort the cards out in almost any combination which may be desired.

The final point to be covered is the running time check. In the field data we obtained the number of passengers boarding and leaving the car at each stop and the length of all stops in seconds. I wish to point out that in the running-time check as laid out you have with it an "on and off" check, since this is one of the most essential points observed. The first step in working out these data is to divide the line into zones or sections which may be those zones or sections formed by the present time points or others formed by points arbitrarily placed. The traffic conditions, that is, the conditions pertaining to vehicular as well as passenger traffic, should be the same throughout the zone.

Then it is desired to accumulate the observed data for each zone. The form used is laid out to care for one trip and is, in fact, a summation of the observed data for each time point on that trip; that is, it shows the total number of stops, the total slow-downs and the total seconds stopped for each class of stop, with such derived data as stops per mile, slow-downs per mile, speed, etc. These data are then transferred to another form so that the totals shown on the previous form for an entire day's record for a certain time point appear on this sheet. Since the total number of passengers boarding and leaving has a direct effect upon the number of stops and the length of stops, we can then note from the data upon this general form the fluctuations and the time at which they take place.

In a community in which there is any vehicular congestion or large numbers of passengers carried, it is a mistake to continue the same running time throughout the entire day, and these data will show conclusively the periods of the day at which more time is needed than at others. These periods are then located and a summation made of the most important points; that is, the total number of stops, the total length of time stopped, and the number of slow-downs. It was not attempted to measure the length of time consumed in slowing down because it was not deemed practical to make an observation of this, and it was thought to be valueless unless the speed before and after slowing down could also be determined. Therefore, we have assumed three traffic slow-downs or two safety slows (that is, a slow-down at intersecting streets where no stop is made) equal to one stop. For instance, if we have a time zone in which there are five stops, three traffic slow-downs and two safety slows, we would have what we term seven equivalent stops. This is one of the basic factors in the derivation of the proper running time for this particular zone. The other is the average length of stops. The total time stopped divided by the total number of stops (that is, actual stops and not equivalent stops) shows the average length of stop. Fig. 3 has been developed by a tedious process from the motor characteristics chart for the motor equipment in use and should be fairly correct for almost any 20-ton car in city service. From this chart with the stops per mile and average length of stop as previously determined, we arrive at the average scheduled speed for this particular zone, and with that the proper running time.

If we were to take this as the final result we would many times make grievous errors, for those intangible points of the human equation must be given exceedingly careful consideration. Therefore, taking the maximum conditions which might hold forth in this particular zone, that is, assuming that the car would be required to make every stop and each of a length of time equal to that found by observation, and slow down at all points required for safety, a second figure as to the scheduled speed under these conditions is determined from Fig. 3. This figure should be almost as much too low as the first figure might be too high. Then pick out the maximum trip under actual conditions and, in a similar manner determine the theoretical running time under those conditions and compare it with the actual observed. Then average the running time for all trips observed in the period under consideration, and finally, analyze the work of the expert motorman on his test run and compare the theoretical running time under the conditions of the test run with the actual observed.

Thus we have six different figures for consideration: (1) the theoretical time under average conditions, (2) theoretical time under maximum conditions, (3) actual time under maximum conditions, (4) the average actual time, (5) the theoretical time for expert motorman on test run, and (6) the actual time of the expert motorman.

With these six figures, good judgment should easily determine a proper running time which can be made with safety and proper operation of the equipment.

The first motor-bus ever used in Tokyo, Japan, has just been introduced. The bus weighs 1½ tons and has accommodation for sixteen seated passengers. It is capable of developing a speed as high as 12 m.p.h., which is the regulation limit in the city. A fare equivalent to 5 cents is collected for each section of the ride. It is proposed to order 150 more of this type of bus if it proves satisfactory.

Incentive to Efficiency Is Needed

Fixing of Rigid Rate of Return Limits Value of Service-at-Cost Franchises

By W. C. CULKINS
Director of Street Railroads, Cincinnati, Ohio

THE service-at-cost plan of electric railway franchise pre-supposes a desire upon the part of the municipal government to provide adequate street car service to its people at the lowest rate of fare commensurate with such service. The basic principle of such grants is that the city shall determine the character of the service, and that the company may charge such rate of fare as will provide a sufficient revenue to cover operating expenses, taxes and an agreed return upon the investment of the company.

Such an arrangement is so obviously fair that it has appealed strongly to both governmental and utility officials as a solution of the perplexing electric railway problem. But panaceas often carry their own dangers because they are unable to justify the miraculous results expected, and practical values which really exist are disregarded in the disappointments which follow. If the service-at-cost plan is to be adopted as generally as tendencies now indicate, it might be well to consider its inherent weaknesses in connection with its method of application.

The first and most important of these is that the fixing of a definite and rigid return on the investment destroys all incentive for the officers of the company to exercise efficiency and introduce economies in the operation of the property. Stockholders think in terms of dividends, and as long as these are produced at the maximum officials need have no fear of removal. Carlyle has said "Every man is as lazy as he dare be," and electric railway executives are no exception to this rule. There may be a very natural tendency to yield to exorbitant demands of employees, to be listless in making purchases, and in general to pass the buck to the city authorities in the matter of service requirements. Thus the city will be deprived of the keen coöperation of the trained and experienced executives of the company, which is so necessary to the successful operation of this plan.

A second difficulty, perhaps depending largely upon the first, is that while it seems a very simple process to have fares rise indefinitely with the cost of service there is a third party to be considered. This is the short-haul rider, who has the option of walking; and also, if fares become sufficiently high, the long-haul rider, who may elect to pay even more for his transportation by some other means than endure the inconvenience of rush-hour service at what he may regard as an unreasonable rate of fare.

Experience has already shown that there is a point at which the economic law of diminishing returns begins to operate, and increases of fares no longer produce corresponding increases in gross revenue. Inasmuch as the fetish of the nickel has so strongly impressed the American mind, the danger becomes greater as the rate of fare rises above this standard, out of all proportion to the operation of the economic law as it applies to the price of other commodities besides transportation.

If the success of the service-at-cost plan is to be measured by the extent of the departure of fares from the pre-war standards, then it obviously calls for the closest coöperation of governmental and traction officials in the introduction of the highest efficiency in operation that fares may be kept to the lowest point consistent with good service. It is equally obvious that if a rigid rate of return tends to retard such coöperation, the opportunity to earn an additional reward would bring about the desired results.

In the Cincinnati franchise a provision is included by which higher fares will always work to the financial disadvantage of the company. Whenever fares are higher than 6 cents, all of the surplus remaining after the payment of operating expenses, taxes and a fixed return to the company, is paid into a reserve fund toward the reduction of fares. When fares are 6 cents, however, the company is permitted to retain 20 per cent of such surplus in addition to its fixed return. When fares are reduced to 5½ cents, the company retains 30 per cent of the surplus; and when fares are 5 cents or lower, 45 per cent of the surplus. The remainder, in each case, goes to the reserve fund.

It is believed that this provision is so simple and easily understood that were the officials of a company to fail in putting forth the desired joint effort, there would be little difficulty in arousing the interest of the stockholders who were thus being deprived of the opportunity for increased dividends.

The danger that this incentive may be abused and that the company will seek to reduce expenses by impairment of service is obviated by other provisions of the ordinance, through which the city has reserved to itself the complete and final determination as to the character and the quantity of service to be supplied.

The Cincinnati ordinance has been in effect only since last October, and the "surplus" thus far has been a minus quantity. Fares were advanced to 6½ cents on July 1, and it is now hoped that this will be the maximum. The attitude of the company during this period has appeared to justify fully the wisdom of the incentive provision in the ordinance.

To Arrange for Convention Transportation

THE transportation committee of the American Electric Railway Association, under L. E. Gould, Economy Electric Devices Company, master of transportation, and Clarence Sprague, General Electric Company, chairman, is now well organized. Regional chairmen have been appointed as follows: New England, R. M. Sparks, Boston, Mass.; New York State (exclusive of New York City), W. H. Collins, Gloversville, N. Y.; New York City, Bertram Berry, New York; New Jersey, Pennsylvania, Delaware and Maryland, N. D. Bolen, Newark, N. J.; District of Columbia, Kentucky, Virginia and West Virginia, H. S. Newton, Fairmount, W. Va.; Indiana, Ohio and Michigan, E. J. Smith, Detroit, Mich.; North and South Carolina, Georgia and Florida, W. H. Glenn, Atlanta, Ga.; Tennessee, Mississippi and Alabama, F. W. Hoover, Chattanooga, Tenn.; Texas, Oklahoma, Arkansas and Louisiana, L. C. Bradley, Houston, Tex.; Colorado, Arizona and New Mexico, F. W. Hild, Denver, Colo.; Illinois and Wisconsin, H. J. Kenfield, Chicago, Ill.; Minnesota, North and South Dakota, Iowa and Manitoba, J. J. Caufield, Minneapolis, Minn.; Missouri, Kansas and Nebraska, J. R. Harrigan, Kansas City, Mo.; Montana, Idaho, Utah and British Columbia, W. G. Murrin, Vancouver, B. C.; California, Oregon and Washington, W. R. Alberger, Oakland, Cal.; Eastern Canada, Patrick Dubee, Montreal.

Outline of Plan Adopted for Presenting Case of Electric Railways Before the President's Commission

STATEMENT IN BEHALF OF ASSOCIATION

STATEMENT IN BEHALF OF COMMITTEE OF ONE HUNDRED

THE PRESENT STATE OF THE INDUSTRY

A.—PHYSICAL:

Statistics based on census reports showing:

(a) Miles of line
(b) Miles of track
(c) Number of cars
(d) Employees
(e) Power consumed
(f) Riding habit

These statistics will include a comparison between the different census years so as to bring out the retardation in the extension of lines.

In addition—(h) Abandonments

B.—FINANCIAL—

(a) The balance sheet of the industry, in a form as nearly similar to the balance sheet of an ordinary company as it can be made, comparative for census years
(b) The income account of the industry. Comparative for census years
(c) Record of receiverships
(d) Distribution of the securities among general public, savings, trust companies, etc.
(e) Shrinkage of security market values
(f) Yearly capital requirements of electric railways—
  (1) Refunding operations
  (2) New capital
(g) Relation to condition of banking and trust companies and the general financial structure of the country

CAUSES FOR THE PRESENT STATE OF THE INDUSTRY

A.—Not caused by inefficient management:

(a) Evolution of the modern electric railway in the matter of apparatus, methods and practice.
(b) Economic development of the industry

B.—Decline in the purchasing power of the nickel:

(a) General
(b) As affecting these elements of the cost of the service.
  (1) The cost of capital
    (*a*) Destruction of electric railway credit
    (*b*) High interest rates on securities
    (*c*) Failure of market for stock
  (2) The cost of operation:
    (*a*) The cost of labor
    (*b*) The cost of fuel, copper and lumber
    (*c*) Cost of other materials
  (3) The cost of taxes
    (*a*) Increase in normal taxes
    (*b*) Imposition of additional taxes
  (4) Replacements

C. Elements of the cost of service

D. Increased value for fare demanded by and given to patrons and communities—

(a) Extension of lines in unroprofitable territories
(b) Inauguration and extension of transfer system
(c) Improvement in character of track and equipment
(d) Imposts (paving, grading, bridge construction, franchise taxes, etc.) levied by communities
(e) Use of money obtained from railway taxes to provide right of way for competition
(f) Varying cost of operation in different communities

E.—Competition of motor vehicles:

(a) The private automobile
(b) The jitney
(c) The motor truck

F.—Increased physical difficulties of operation in cities:

(a) Traffic congestion and its effect on schedules, accident accounts, etc.

G.—Restrictions put upon operation economies by authorities:

(a) Limitation of speed
(b) Veto upon skip stop
(c) Requirements as to stopping places
(d) Limitations on use of one-man cars
(e) Limitations on short-routing of cars
(f) As to proper traffic regulation

SOCIAL NEED FOR ELECTRIC RAILWAYS

A.—The continuing need for urban and interurban electric railways:

(a) Effect of service on the growth of cities
(b) Effect of service on the growth of rural communities
(c) Effect of service on growth of industry and commercial business
(d) Effect of service on social and living conditions

DEFECTS IN REGULATION

(Applicable to cases where state authorities have jurisdiction)

A.—Failure of commissions of their own initiative to protect the railways

B.—Long time to consider and act on cases

C.—Suspension of filed schedules for lengthy periods

D.—Impossibility of accurately forecasting revenues and expenses

E.—Regulation should be automatic

F.—Defective jurisdiction of some commissions

THEORIES

A.—Fundamentals:

(a) Electric railways in Great Britain
(b) Independent business men's viewpoint
(c) Duty of government to electric railways
(d) State regulation through commissions rather than local regulation; this does not prevent a proper degree of local control over service.

B.—Public co-operation:

(a) Mutuality of interest
(b) Theory of principal and agent
(c) Relationship of car-rider and tax-payer

C.—Flexible fares based upon the cost of the service:

(a) Value upon which return should be allowed
(b) Rate of return
(c) Franchises
(d) Service at cost agreements
(e) Profit sharing agreements
(f) Incentive to efficient and economical management.

D.—Methods of adjusting revenues to meet expenses:

(a) Increase of fares through
  1. Zone system
  2. Flat rate
  3. Charges for transfers
(b) Decrease in expenses through
  1. Elimination of unprofitable lines
  2. Protection from competition
  3. Elimination of special taxes
  4. Elimination of all imposts (paving, etc.)
  5. Participation of property owners, in cost of constructing and operating extension
  6. Employment of operating economies (one-man cars, turn-back, skip stop, et cetera)

Committee of One Hundred Ready for Hearings

At Meeting of Committee on Thursday, Plans Were Announced for Presenting the Railway Case Before the Federal Commission at Hearings to Be Begun in Washington Next Tuesday—Plea Made for Holding Some of the Sessions in Cities in the Central West

AN ENTHUSIASTIC meeting of the Committee of One Hundred, appointed recently by President Pardee of the American Electric Railway Association, to take charge of the presentation of the case of the electric railways before the recently appointed Federal Electric Railways Commission, was held in one of the rooms of the Engineering Societies' Building, New York, on the morning of Thursday, July 10. There was a representative attendance.

Gen. Guy E. Tripp opened the meeting shortly after 10 o'clock and announced that the sub-committees appointed at the previous meeting of the committee had been organized and had prepared reports for submission to the full committee. He then called upon Joseph K. Choate, chairman of the committee on presentation, to give the plans adopted by that committee and approved by the executive committee for presenting the case of the electric railways to the commission. The plan, which Mr. Choate said was tentative, covered the points which the electric railways hoped to prove to the commission. The plan is published on the opposite page.

Reports of Subcommittees

In continuation, Mr. Choate explained that the committee was collecting data and would arrange with different witnesses to present testimony on the points mentioned in the program. He added that Bentley W. Warren of Boston had been selected by the committee as its general counsel and that Thomas Conway, Jr., Ph.D., of the Wharton School of Finance, Philadelphia, would assist in the presentation of the case. Tuesday, July 15, has been designated by the commission as the date of the first hearing, and it was understood that the hearings will be held in the hearing room of the Interstate Commerce Commission in Washington and will be continued each day until the case is closed. The plan of holding continuous hearings has been adopted for the purpose of reaching an early decision in the matter.

Mr. Choate said that the program as given covered only the line of testimony for which the association was responsible. He added that he understood the Commission did not expect to take up cases presented in individual cities but only the broad aspects of the question.

Upon motion, the report of the committee on presentation was accepted.

On being asked to present the report of the committee on recommendations, O. D. Young, vice-president General Electric Company and chairman of the committee on recommendations, said that the committee obviously could not present a detailed report of its recommendations until after the testimony had been presented.

B. C. Cobb, New York, then reported for the committee on information and service. He explained that the committee expected, among other things, to report the sessions adequately and to prepare daily abstracts of the most important data presented for the benefit of the press and others interested, and that copies of these daily abstracts would be mailed to all railway companies.

Samuel Insull suggested that it would be very desirable to have some of the meetings of the Commission held in the Central West, if that were possible, and the chairman was authorized to appoint a committee to confer with the commission to learn whether this could be done.

H. L. Stuart, of Halsey, Stuart & Co., chairman of the committee on finance, then made a verbal report on the expenses of preparing and presenting the case of the electric railways and urged that the committee receive the support of all electric railway companies, the manufacturing interests, and others concerned with the prosperity of the electric railways.

Mr. Insull then suggested that other groups of public utility organizations be invited to co-operate in the presentation of the electric railway case. He thought that the fundamentals in the electric railway case applied to the gas, water, electric light, and power industries. The plan was approved by other speakers, and on motion was adopted.

Good Attendance at Hearings Desired

In conclusion, General Tripp urged all members to assist the committee by suggestions and to attend as many of the hearings before the Commission as possible.

The committee then adjourned to meet in Washington at the first hearing and will meet each day until the Association's case is complete. Association headquarters will advise all electric railway companies of the dates set for the hearings and urge executives to attend as many of the hearings as possible, it being important that the industry manifest through its representation at the hearings its interest in and support of the work of the commission.

Hydro-Electric Development Plans

THIRTY-THREE municipalities covering a territory about 75 miles in length with towns extending from Southampton to Wingham and across to Mildmay, organized as The Associated Municipalities of Northwestern Ontario at a meeting called at Port Elgin by the local Board of Trade on May 8.

The principal object in view is to secure electric power for the district included from the Provincial Hydro-Electric Commission. A resolution was adopted requesting the commission to proceed at once with the development of power on the Sapgeen River and that the southern portion of the territory should be at once supplied from Eugenia Falls. The meeting also strongly favored the electrifying of the railroads and radial construction to serve the district.

The following officers were elected: Chairman, H. H. Stevens, Port Elgin; vice-chairman, Mayor Gurney, Wingham; secretary-treasurer, E. Roy Sales, Port Elgin; executive committee, W. J. Greer, Wingham; J. J. Hunter, Kincardine; Reave Steele, Paisley; Fred Lippert, Walkerton; J. A. Constantine, Ripley; R. Johnson, Lucknow, and A. McLean.

Rehabilitating Track Joints with an Arc Welder

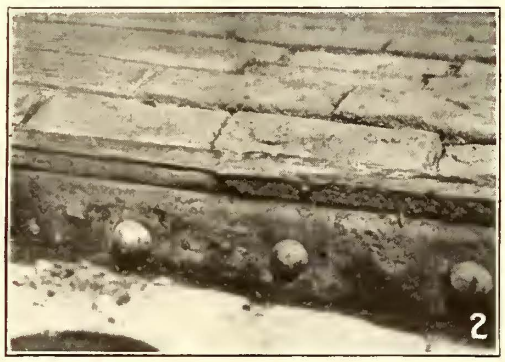
Union Traction Company of Indiana Builds Up Joints in Paved Streets by Reversing Joint Bars and Inserting Plate Under Joint

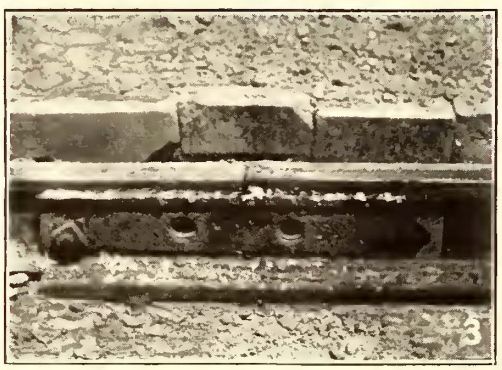
THE accompanying photographs show the method used by the Union Traction Company of Indiana, for repairing in paved streets track joints which have become badly worn and out of surface. The first illustration shows the joint before any work had been performed. It will be noticed that in addition to the bad rail joint the working of the rail ends has loosened the paving. In the second view the bricks have been removed and the joint bars are shown to be worn under the head of the rail so as to leave a space of about ⅛ in. between the rail head and the bar. This makes it impossible to tighten these bars successfully.

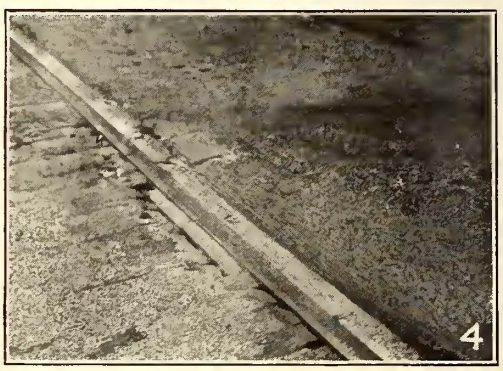
The bars, which are continuous joints, are therefore removed, the base is sheared off and the bars are replaced with the base under the head of the rail as shown in the third illustration. Two bolts are used to draw the bars tightly under the rail. The rail is then loosened from the ties and a steel plate, 1 in. thick, 6 in. wide (for a rail base of 5 in.) and 24 in. long, is placed under the base extending from tie to tie. The ties are adzed for a good bearing surface if they are sound, otherwise new ones are installed. The entire joint is brought to a good surface, thoroughly tamped, and the bolts drawn as tightly as possible.

An electric arc welder is used to weld the joint bars to the head of the rail, using as a shoulder the portion of the base that was not sheared off. The lower part of the splice bar is welded to the base of the rail, which in turn is welded to the 1-in. plate on which it rests. A soft grade of welding steel is used for this purpose. At most of these joints the head of the rail is more or less cupped, in which case this is filled with hard steel by the same welder. After relaying the paving, the joint is ground to a smooth surface to remove any possibility of pounding. The last illustration shows the joint after the brick has been relaid and the grinding done.

This method of rehabilitating joints obviates the necessity of bonding and has been employed on 6-in. and 7-in. rail with very satisfactory results. Joints of this type have been in use on interurban track for a year and a half and are still in excellent condition. The cost of the work has varied from $6 to $9 per joint, depending on the condition of the ties, whether or not the joints were laid opposite, and how badly the rail ends were split or broken.







METHOD OF REPAIRING BADLY WORN TRACK JOINTS

1. A bad joint before rehabilitation.
2. Paving removed showing wear on joint bars.
3. Bars are inverted and welded to head and base of rail, and steel plate is welded on base.
4. Rehabilitated joint after building up and grinding.

Building Up Flat Spots on Wheels and Repairing Worn Axle Collars by Welding

IN THE DISCUSSION which took place following the presentation of the report on "Welding Truck Side Frames, Bolsters and Arch Bars," at the June convention of Section III, American Railroad Association, mention was made of the great saving which results from building up the collars on axles and filling in flat spots on cast steel and rolled steel wheels by welding.

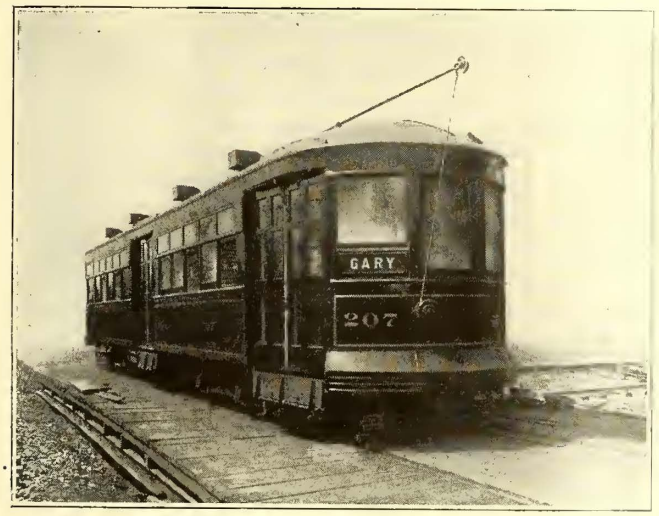
In connection with the building up of axle collars it was stated that where the collars are built up simply to prevent excessive lateral movement, the welding process does not materially affect the strength of the axle. Several prominent railway men stated that they had reclaimed many axles by building up the collars, and that with the prices of axles as they are to-day such a process is a source of great saving.

Railway officials also spoke of the satisfactory results they were obtaining in building up flat spots on wheels by electric welding and stated that if the flat spots are properly cleaned off and cut in around the edges before the weld is made, rather than applying the metal direct to the top, no trouble is experienced with with the electric welding process. Mr. Dickson, master

mechanic Oregon Electric Railroad, said that his company has been welding flat spots successfully by the electric process. He finds the best material to use for filling-in to be cuttings from steel-tired wheels. Some difficulty was experienced when other material was used.

Double-End Pay-as-You-Pass Cars for Gary

TEN double-end Peter Witt cars were recently delivered to the Gary (Ind.) Street Railway. The bodies are mounted on Brill 77-E-1 trucks. As was explained in detail in previous issues of this paper, the design provides for the handling of large crowds during rush hours and for preventing delays in loading as well as for getting the passengers away from the congested points very quickly. As the conductor is stationed in the center of the car body the entire front half of the car serves as a loading platform. Only those passengers who pass the conductor to get to the rear of the car pay their fares upon entering. Those in the front section do not pay until they have reached their destination.



NEW CAR FOR GARY (IND.) STREET RAILWAY READY FOR SERVICE

The new equipment is constructed for double-end operation with entrance doors located at diagonally opposite corners. Exit doors are provided on both sides of the car at the center, one set of these being locked when the other set is in operation. The space directly in front of the doors is provided with hinged seats which can be raised out of the way when the doors are in use. The side construction of the car body is of semi-steel with plate-girder construction. The girder consists of a steel plate riveted at the bottom to the angle-steel sidesill and at the top to a flat-bar steel belt rail. The side posts are of T-section and the letter panel is of pressed steel. In addition to the angle sidesill the underframe is constructed of commercial steel shapes throughout.

Two special features of these cars are the Brill Renitent side posts and the automatically placed window screens. This post is made up of a casing of spring brass attached to the T-section side post by means of clips fastened to the casings and fitted into the stirrups riveted to the post. The casing offers elastic resistance to the pressure of the sash and makes the contact watertight, preventing warping of the sash. The sash may be removed without tools, is interchangeable between windows and when raised will not drop suddenly if released.

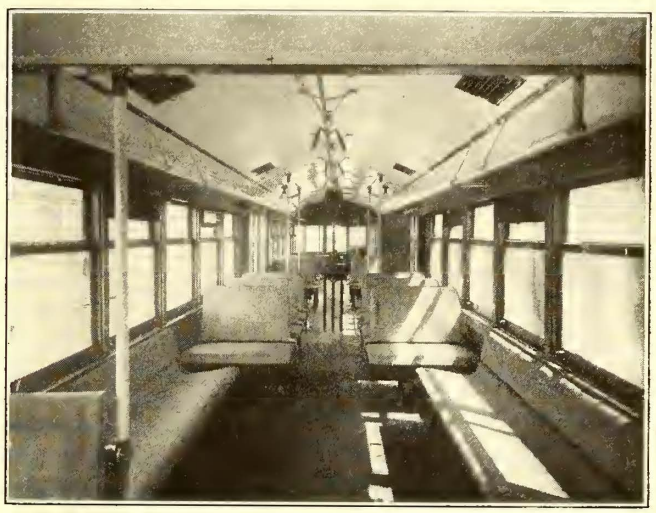
An iron wire screen of 2-in. diamond mesh is fitted to the bottom rail of each sash and when windows are shut the screens are inclosed in pockets formed between the outer steel sheathing and the inner finish below the belt. By this arrangement when the sashes are raised the window screens attached to them are drawn up and automatically close the window.

A signal light gives the indication to the motorman when the center doors are closed and the car may be started without danger of accidents.

Some of the general dimensions of the car are:

Length over all	48 ft. 1 in.
Extreme width	8 ft. 4 in.
Height from rail to top of roof	10 ft. 8¾ in.
Width of center door opening	5 ft. 6 in.
Seating capacity	51 passengers
Truck wheelbase	5 ft. 4 in.
Truck centers	22 ft. 3½ in.
Diameter of wheels	26 in.

The electrical equipment furnished with these cars consists of GE-258 motors and GE-K-12 control. The motorman's door signal and the door and step operating mechanism is furnished by the National Pneumatic Company. The Ohio Brass Company's trolley base and trolley retriever is used, and the heating equipment is of the Consolidated Car Heating Company's type. The cars were built by the G. C. Kuhlman Car Company, Cleveland, Ohio.



INTERIOR VIEW AND SEATING ARRANGEMENT OF NEW GARY CAR

Theory and Practice in Electric Welding

In the London *Electrician* for May 23, 1919, H. S. Marquand describes some power sets for the supply of energy for arc welding and makes a brief comparison between direct and alternating-current processes. He states that the direct-current process should be used where possible but that the alternating-current system is satisfactory where proper skill in the operation is used.

In a previous article in the May 2 issue Mr. Marquand gave information relating particularly to wire welding. The preparation of the work, regulation of the current and the power necessary for making resistance welds was described.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

Progress in Detroit

Agreement to Study Service-at-Cost Plan—Preparing for Fare Arbitration

At a recent meeting of Mayor Couzens, the Street Railway Commission and the City Council of Detroit, Mich., the Council agreed to study the Tayler plan as it is in effect in Cleveland, and then discuss a plan for the city of Detroit with executives of New York rapid transit lines. This conference with the New York experts has been arranged for July 18 at Detroit.

MAYOR STILL FAVORS COMPETITION

Mayor Couzens did not oppose the plans as decided upon, although he is apparently still in favor of a bond issue to build subways under downtown streets and obtain trackage to operate in connection with them. The Mayor's explanation that he meant that the Council had surrendered to the company "in the interest of peace and harmony" and not that he considered that they had received any political or monetary consideration when he made the charge that the Council had sold out "body and soul," was accepted by all parties concerned. The Mayor's contention that no rapid transit system should be planned until its future relation to the surface lines had been determined was backed by extracts read from the report of Barclay Parsons & Klapp.

In the Mayor's opinion the subway system itself could not be self-supporting. A unified system of transportation combining subway, surface and overhead systems was necessary to provide satisfactory service and prove a financial success.

He also set forth that it would not be possible for the city under its present charter to finance both the construction of rapid transit lines and the purchase of the surface systems.

COMMISSION AGAINST COMPETITION

Various members of the Council agreed fully with Abner E. Larned when he stated that the Street Railway Commission, of which he is president, believed it proper to enter into a partnership agreement with the existing company. He said the commission did not favor the piecemeal construction of competing lines.

At a special meeting of the Council on July 3 William H. Maybury, former commissioner of public works, was chosen by the Council to represent the city on the board of three arbitrators to determine the justice of the claim of the railway of the necessity for a 6-cent fare. Councilman Lodge argued that little time remained before July 10, the date set by Judge Marschner's court order, in answer to contention by some of the members of the Council that the Detroit United Railway should appoint its member of the board first. The Mayor has not yet approved the appointment of Mr. Maybury.

The Detroit United Railway has announced the appointment of John J. Stanley, president of the Cleveland Railway, as arbitrator for the company, and at Mr. Stanley's suggestion the names of several men have been proposed from whom the third member may be selected. None of the men named, however, appears to meet wholly with the approval of the members of the Detroit City Council.

Two accountants will be appointed by Corporation Counsel Clarence E. Wilcox, to make daily examination of the railway's books and report to the city's arbitrator. The company's figures will be furnished to the company's arbitrator for the same purpose.

Wage Adjustment Near at Wheeling

The wage disagreement between the Wheeling Traction Company and the West Virginia Traction & Electric Company and their employees has been partially settled, according to an official announcement. The annual wage scale has been signed by both factions for the electricians and firemen without the assistance of the arbitration board.

The wage scale of the platform men and the engineers is still unsigned, but it is anticipated that an agreement will likely be reached between the companies and the union within the next few days. The scale for the inside electricians has not as yet been signed. The scale signed affecting the two crafts gives the men a substantial increase and more satisfactory working conditions. The water tenders receive an advance from $4.15 to $4.65 a day of eight hours; ash wheel and coal passers from $3.36 to $3.80; firemen from $3.56 to $4.10. Thus far an effort to agree upon the third member of the arbitration committee has been unavailing.

The old wage scale of all the crafts affiliated with the railway workers' union involved in the disagreement expired on May 1, last, followed by a one-day strike. The men returned to work after they and the officials of the companies had agreed upon placing the disagreement in the hands of an arbitration board composed of three members. For the past several weeks both sides have suggested a number of men as the third arbitrator, but no selection has been agreed upon.

Pittsburgh Plans Subway

$6,000,000 Appropriated at Election for Constructing Loop for Surface Cars in Downtown Section

The voters of Pittsburgh, Pa., on July 8 authorized a $6,000,000 bond issue for the construction of a downtown subway loop.

The money for the loop subway, which has long been talked about, therefore is now available. Just what the city will do with the fund is not certain. The question submitted to the voters did not specify particulars of construction, except that the tube is be located in the two downtown wards and be built to specifications to be drawn up by the Mayor and Council by ordinance.

DOUBLE-TRACK LOOP LINE

Tentative plans prepared by city engineers and used in the campaign preceding the special election, provide for construction of an underground loop approximately 1½ miles long. This is planned as a downtown terminal for a majority of the surface lines of the Pittsburgh Railways, to which it is proposed to lease the tube.

The subway, according to the tentative plans, is to be double-tracked, traffic to be in the same direction on both tracks, every car using it to make the whole loop. Four portals are planned, at which surface cars will pass in and out, and six loading platforms. It is not planned at first to route cars from the northside section to the city through the subway.

While the whole project is based upon the assumption that the subway will be leased to the Pittsburgh Railways, no agreement has been entered into with that company as yet, and as far as is known its officials have not been approachable in the matter. The lines of the company are being operated by receivers now.

CONSTRUCTION TO START SOON

While it appears the city plans the subway terminal as a start toward a more extensive underground traction system, it has been put forward primarily as a means of relief from congestion in downtown Pittsburgh. Construction is expected to start within sixty days.

With the subway bond item, there were presented to the voters at the special election six other improvement items, the whole issue totaling $22,000,000. All were approved. Most of this sum will be spent in street widening and bridge building, with the same aim as actuated the initiation of the subway proposal—relief of congestion.

Twelve-Cent Wage Advance in Cleveland

Short Strike Ends with Full Compliance with Men's Demands and Arbitration of Company's Main Counter Demand

Motormen and conductors of the Cleveland (Ohio) Railway walked out at 4 a.m., on July 6, because their demand for an increase of 12 cents an hour in wages was not granted when they thought it should be. They had threatened to strike some time before. The final decision was made when the company's officials refused on the previous afternoon to yield unless the City Council granted the company the right to pay stockholders an additional 1 per cent on their holdings, as requested when the question of an advance for the men was presented.

Company Prepared to Operate

The company sent out a number of cars Sunday morning manned by dispatchers and inspectors, but quickly withdrew them on account of lack of police protection.

J. J. Stanley, president of the company, afterward informed the city authorities that 600 men were ready to man cars on the morning of July 7 if the police department would furnish two officers for each car. Mayor Harry L. Davis said the police department did not have a sufficient number of men to do this. He insisted that the company should operate cars and allow its claims to be considered later on.

An advertisement appeared in the newspapers Sunday morning asking for men and women as motormen and conductors. The wage scale offered was 49 cents for the first three months, 52 cents for the next nine months and 54 cents thereafter. This is an increase of 6 cents an hour over the scale that has been in effect. It is said that the number of responses to the advertisement was very satisfactory.

Council Seeks Solution

The Council sat as a commission of the whole on the afternoon of July 5 for the purpose of devising some means of averting the strike. It was decided to make an additional appropriation to the operating expense to cover the increase of 12 cents an hour for the motormen and conductors and other employees, but the request for an additional 3 cents per car-mile for the maintenance fund and for a 1 per cent increase in the return on the investment was refused. Mayor Davis approved the refusal to pay a higher return than 6 per cent on the value of the property as fixed in the Tayler grant, under which the company operates. The company then refused the appropriation for increased wages.

President Fred F. Telschow, secretary W. M. Rea and Business Agent Fred J. Schultz, representing the men, met President Stanley on the afternoon of July 5, but after the conference announced that no conclusion had been reached. Mr. Stanley made the same announcement and added that he had instructed George L. Radcliffe, general manager, to operate all the cars he could the following day.

The resolution adopted by Council, giving an additional appropriation for the employees, contained a condition that 1 cent per car-mile instead of 3 cents should be added to the maintenance allowance. In the discussion of this amendment, members of Council suggested that the request for an additional 1 per cent return on the investment be submitted to a vote of the electroate. Mr. Stanley informed Council that he would not agree to this unless the question of an advance of 12 cents in wages for the motormen and conductors be submitted to a vote at the same time. He expressed the opinion that the advance in wages and the extra 1 per cent dividend could be paid from the receipts under the present rate of fare, which is 5 cents and 1 cent for transfers. He said, however, that if wages went any higher than the 12-cent advance, the present fare would not be sufficient. An offer of an advance of 6 cents an hour was made to the men, with the stipulation that if this was accepted the demand for an additional 1 per cent return to stockholders would be dropped. The men refused this offer. They stated that they would accept nothing less than a 12-cent raise.

On July 6 the rate of fare was reduced from straight 5 cents and a 1-cent charge for transfers to eleven tickets for 50 cents. This followed a demand made by Street Railway Commissioner Fielder Sanders, although Mr. Stanley informed Mr. Sanders that the reduction in fare seemed unwise when everything pointed to an increase in fare to 6 cents becoming necessary within a few months, if all the demands made upon the company were granted. The interest fund is now more than $700,000, and this sum, according to the Tayler franchise, marks the point where the rate shall be reduced. Existing conditions point in the other direction, but the company concluded to follow the agreement.

Settlement Reached

At a conference of representatives of the company, the Chamber of Commerce and the City Council, on the afternoon of July 7, Mayor Davis proposed that the demand for an additional 1 per cent in dividends be submitted to arbitration. Mr. Stanley said that if the city would promise to make an effort to pay the additional dividend, he would grant the demands of the men for an increase at once and then, if the dividends were not increased within a reasonable time, he would reduce the wages 6 cents an hour. The members of the Council refused to entertain the Mayor's proposition.

A settlement of the strike was reached on the night of July 7 in time to put the owl cars into operation shortly after midnight. Operation on full schedule was begun on the morning of July 8.

The agreement was reached at a special meeting of the City Council, at which Mr. Stanley and other officers of the railway, Street Railway Commissioner Fielder Sanders, Mayor Harry L. Davis, President Paul L. Feiss of the Chamber of Commerce and officers of the local branch of the Amalgamated Association were present. The terms of the agreement are:

> That the company shall grant the men an increase of 12 cents an hour in wages, as had been demanded; the contract to continue for one year from June 1.
>
> That the company shall receive an increase in the operating allowance of 3½ cents per car-mile; and increase of 2 cents in the maintenance allowance; that the war-time emergency amendment to the Tayler grant providing that the maximum rate of fare shall be 6 cents with 1 cent for transfers be made a permanent part of the franchise, and that the demand for an increase of 1 per cent in dividends to stockholders be submitted to arbitration.

The agreement was brought about through correspondence between the company and Mayor Davis and between the company and President Feiss of the Chamber of Commerce. Members of Council changed their minds in respect to the suggestion of Mayor Davis that the matter of additional dividends be arbitrated.

Wages under the 12-cent advance will now be 55 cents an hour for the first three months, 58 cents for the next nine months and 60 cents thereafter.

The Chamber of Commerce officials suggested arbitration of the wage question on the ground that their contract provided for arbitration of all differences, but the executive committee of the local branch of the union refused, advancing the old excuse that there was nothing to arbitrate.

Mr. Stanley yielded his contention for the removal of the maximum fare limit from the franchise and accepted the extension from 4 cents and 1 cent for transfers, as provided in the original franchise, to the war-time maximum of 6 cents and 1 cent for transfers.

$960,000 Wage Increase

The increase for the motormen and conductors will entail an additional expenditure of about $960,000, while a proportionate increase for the other employees will require about $500,000 more. The present rate of fare of eleven tickets for 50 cents will prevail until the interest fund drops below $300,000, when it will again go to 5 cents with 1 cent for transfers. It is believed this will occur within a few months, with the increased expenditures, dating from June 1.

Interurban cars were run to the city limits only during the strike. An agreement, apparently, was reached between the city and interurban men that no cars should be operated on the city tracks. Some of the interurban roads arranged to transport their passengers within the city in buses.

Tri-City Strike Averted

Company at Davenport and Employees Reach Agreement Based on Action in Pending Fare Cases

After nearly two months of negotiations the Tri-City Railway, Davenport, Ia., has averted a threatened strike of 425 trainmen and shopmen by granting an increase in wages, a nine-hour day and giving the men the right to open up the wage question on Aug. 1, if an increase in fare is granted on the company's Iowa and Illinois lines by that time. The settlement was reached without arbitration after the company and the men had appointed arbitrators and were ready to submit their arguments to the findings of a board.

A Fifty-Cent Maximum

The new scale is 46, 48 and 50 cents an hour, retroactive to June 1, the date when the old contract expired. The men have been working during the war on a scale of 36, 38 and 40 cents. The war-time scale superseded the contract scale existing at that time, which specified 28, 29 and 33 cents an hour.

If a 7-cent fare is granted, either party can ask for a revision of the wage scale on Aug. 1. Should a 6-cent fare go into force prior to Aug. 1, the scale will be 42, 44 and 46 cents, with either party having the right to ask for a revision as in the 7-cent clause. If this new scale is fixed after Aug. 1 it is to be retroactive to that date.

If no increase in fare is granted the scale is to drop to 36, 38 and 40 cents an hour, with the provision that either party can ask a wage revision at any time. Time and a half will be paid for overtime. This is the agreement for Davenport, Ill., and the Clinton, Davenport and Muscatine interurban lines.

In the city of Muscatine, where one-man cars are in operation, a scale of 43, 45 and 47 cents goes into effect at once, retroactive to June 1. If a 6-cent fare is granted in Muscatine the trainmen get 39, 41 and 43 cents, and if no increased fare is given wages will drop to 35, 36 and 37 cents. Separate contracts were entered into with the Amalgamated Association, meaning that if different fares are granted on the Iowa and Illinois lines the rate of pay to the men will be different.

Sixty-two Cents Asked Originally

In their original demands the men asked for a scale of 58, 60 and 62 cents an hour. Negotiations were opened on May 5. The company and the men reached a practical agreement on all questions except wages within a few weeks. Both sides wished to arbitrate that question, but the men demanded that the company arbitrate according to their stipulations and passed a strike vote when the company officials demurred. The company then agreed to the men's stand to avert a tie-up in Davenport, Ia., Rock Island, Moline, East Moline and Silvis, Ill.

Richard Schaddelee, Grand Rapids, Mich., vice-president, was then appointed the company's representative on the arbitration board and the men chose Mayor Robert McNutt of Muscatine.

When the case was all ready to go before the arbitration board, with the provision that these two men were to select a third in case they could not agree, the company officials, with their fare increase at stake both in Iowa and Illinois, decided to accede to the demands of the employees and signed with the union. The union agreement and its stipulations were publicly announced on June 29.

Another Strike in Windsor

Failure to Approve Fare Increase Results in Suspension of Service in Canadian Cities

The by-laws to authorize the Sandwich, Windsor & Amhurstburg Railway, Windsor, Ont., to charge higher fares was defeated by a large majority in the vote in Windsor and Walkerville on July 5. The defeat of the measure was attributed by company officials to the attitude taken by Sir Adam Beck, chairman of the Ontario Power Commission, who in opposing the measure contended that the grant of a higher fare by the voters would enhance the value of the franchise held by the company. It was evident that the defeat of the measure for increased fares could result in nothing other than a second tie-up of transportation in the territory served by the railway, as the company was unable to meet the demands of its employees without the right to collect higher fares.

The strike which went into effect on July 7 again tied up the lines in the border towns. The original demands of the men have been increased to 50 and 60 cents an hour, depending upon the length of service.

The Council of Windsor will notify the Ontario Municipal Railway Board that the border municipalities are without railway service. Mayor Winter of Windsor is quoted as saying that further dickering with the company and the men is useless, as evidenced by the results of the attempts to settle the former strike when service was suspended for eleven days.

It is believed that the railway board will ask the Council to grant an increase in fare for six months, and that this action could be approved by the Council without approval by the electors, regardless of the large majority vote cast against the fare-increase measure by the electors at the election on July 5.

No statement has been made by the railway officials as to what action will be taken in case the railway board takes over the lines, but the officers of the railway have said emphatically that the cars will remain in the carhouses until the employees return to their duties.

Working for Relief

Attempts Before State Legislature to Ease Electric Railway Burdens in Massachusetts

The committee on street railways of the Massachusetts Legislature has been at work lately on measures for the relief of the financial situation in which the companies, generally, find themselves, and is about to introduce two measures into the Senate for consideration during the present session.

One of these will provide that electric railways not under public control are to be relieved of all present taxes, except those on real estate, and in place of these taxes to substitute a tax of 6 per cent no the net income.

The second measure provides that changes in fare by electric railways shall be effective pending a decision of the Public Service Commission as to their propriety.

The committee endeavored to introduce into the House a measure providing for the purchase by the State of the Cambridge subway from the Boston Elevated Railway at a price not to exceed $8,000,000; but it is a question whether this particular legislation can again be brought up at this session, in view of its having received adverse action in the lower branch. The failure of this bill a few weeks ago was a serious blow to the hopes of the trustees of the Boston company to postpone, if not to avoid, the increase of the fare unit to 10 cents, which became effective on July 10.

The Worcester Consolidated Street Railway and the Springfield Street Railway have appealed to the Public Service Commission to revise the amounts of taxes assessed them for street repairs in various municipalities, claiming that in nearly every case the assessments exceed the municipal expenditures on the streets concerned.

Official Statement of Jersey Settlement

Thomas N. McCarter, president of the Public Service Railway, Newark, N. J., on July 2 issued the following statement in regard to the settlement of the differences of the company with its employees, to which reference was made in the ELECTRIC RAILWAY JOURNAL for July 5.

At a conference of representatives of the employees of Public Service Railway with myself and other officers of the company, held in the company's offices to-day, an agreement was reached which will save the public the inconveniences and business disturbances that would result from a strike. The recent award of the National War Labor Board including the supplementary decision filed by Charlton Ogburn to-day was accepted by both sides and the men were informed that in the interest of stability and with their promise of full co-operation in operation and a feeling of responsibility on their part for its success, the company would agree to enter into a simple contract for a period of two years with its employees, members of the Amalgamated Association, for the maintenance of the wage scale and working conditions provided for by the award of the National War Labor Board. The men promised the heartiest co-operation on their part and agreed to submit a form of contract to be signed.

Reserve Engineers' Traveling Expenses

National Service Committee of Engineering Council Ready to Help Secure Legislation if Needed

An account was published on page 1105 of the issue of this paper for June 7 of the efforts being made by the National Service Committee of the Engineering Council in Washington in connection with the discharge of engineers enrolled in the Reserve Corps at points other than those in which they were enrolled. The case was cited of some twenty-five or thirty engineers who entered the service while residing in the Philippines and of several who enlisted from Alaska, who were discharged in the United States, most of them in the eastern part. Further investigation disclosed the fact that there were some 800 engineer officers who were deprived of mileage payment to their first stations under the present act. The correspondence between the National Service Committee of Engineering Council and the War Department mentioned in the previous article showed that the latter recognizes the situation but is powerless, under the existing law, to apply any general remedy.

In a recent statement, the National Service Committee says it is willing to see what can be done in the way of legislation, but adds that it is obvious that Congress cannot be expected to take the time to correct the situation if those in whose benefit it is proposed are too indifferent to relate the facts as they know them. It therefore urges that any engineering officers who have had similar experience communicate promptly with the committee, whose headquarters are in the McLachlan Building, Washington, D. C.

$500,000 for Betterments

The City Council of Seattle, Wash., recently passed ordinances appropriating $500,000 for betterments and extensions of the Seattle Municipal Railway, the appropriation being a loan from the general and electric railway funds to enable the railway department to start work immediately on a number of important improvements. One of the most important of these works to be undertaken at once is the double-track line on Avalon Way, West Seattle, to cost $60,000. This will provide a direct route to that suburb on a much easier grade, and will eliminate the trestle approach on the West Alaska Street hill.

Another item is $57,000 for tie-in tracks at East Union and Madrona. East Union will be double-tracked from Twenty-ninth Avenue to Thirty-fourth Avenue, allowing the residences of the Madrona district direct route to the city without transfer, and eliminating 2 miles of travel over the present route.

An item of $49,800 is allowed for rerouting on Leary Avenue, to avoid several dangerous turns. Tie-tracks will be provided to the Fifteenth Avenue, West Bridge, to cost $30,000. The existing tracks on the bridge will be connected with the former traction lines on Forty-seventh Avenue. Other items include $26,000 for double tracks on West Sixty-fifth, Twenty-eighth Northwest, and Twenty-fourth Northwest; construction of tracks on Third Avenue, from Stewart to Pine Streets, to cost $18,650; and numerous other minor improvements, designed to facilitate operation.

Toledo Company Ordered Off Streets

The City Council of Toledo, Ohio, has passed an ordinance ordering the Toledo Railways & Light Company, a subsidiary of the Cities Service Company, to vacate the streets over which the railway lines of the company operate by Aug. 1, this action affecting only the railway department of the company, and not in any way interfering with the operations of the electric light and power or gas departments.

The passing of this ordinance followed the action of the Toledo Railways & Light Company in increasing fares from 5 cents and 1 cent for transfers to 6 cents and 2 cents for transfers. This increase was rendered necessary by the award of the Federal War Labor Board increasing wages of employees of the railway department of the Toledo Railways & Light Company.

Through the Toledo Traction, Light & Power Company, the Toledo Railways & Light Company is an operating subsidiary of the Cities Service Company, but it is stated at the offices of Henry L. Doherty & Company that this action by the Toledo City Council will not be detrimental in any way to the income of the Toledo Traction, Light & Power Company, or of the Cities Service Company. For some time the railway department at Toledo has furnished transportation facilities to the city of Toledo and suburbs at a loss.

Power Plant Rehabilitation Ordered

Immediate steps to rehabilitate the Anderson power plant of the Union Traction Company of Indiana so that adequate and regular service can be given to the cities along the line were ordered on June 13 by the Public Service Commission of Indiana.

The order is the result of a complaint filed with the commission by a number of prominent business firms of Marion. It was pointed out in the complaint that the franchise with the company called for hourly service through the city and that the company was giving only two or three-hour service and at times there were breaks of four or five hours in service. The Marion business men said the poor service was caused by the power plant at Anderson.

The commission ordered an investigation of the plant by the engineering department of the commission, which filed a report saying that the basic difficulty lies in the Anderson plant and was caused by deferred maintenance.

Dispute Over Hours Results in Strike

Railway Service Suspended on Illinois Traction Lines in Urbana and Champaign

Railway service of the Urbana & Champaign Railway, Gas & Electric Company has been partially tied up since July 3. It seems that part of the employees were affiliated with the Amalgamated Association and part with a brotherhood. It is said that the union men were dissatisfied with the hours, claiming that the nine-hour day was agreed upon by the company last September, when the lines were tied up by a strike for about three days. The men say that they returned to work in September as a patriotic duty in time of war, with the understanding that the day would be shortened to nine hours. This, they say, has not been done. There is no difficulty regarding wages. The men who belonged to the brotherhood interpret the matter differently and did not strike.

Suggests Settlement by Vote

George M. Mattis, vice-president and treasurer of the Illinois Traction System, of which the Urbana & Champaign Railway, Gas & Electric Company is a part, says that as the union men demand a nine-hour day and the brotherhood favors another set of hours the only fair way to settle the matter is to determine just how many hours should constitute a day's work. The company proposed, in writing, on March 20, 1919, that a vote be taken of all employees. It renewed this proposal on June 28. To both of these offers the union men turned a deaf ear, maintaining that the nine-hour day was promised as soon as the war period was over, and that they conceded a point in returning to work in the emergency.

The union employees have also demanded the return to the service of the company of four men who had been discharged. Mr. Mattis, in his published statement, says that only two men have been discharged and that the company has stated all the time to the union that the officers of the company are willing to arbitrate the dismissal of these men on request in writing to the company that the cases be arbitrated. With reference to wages Mr. Mattis says that the rates paid in Champaign-Urbana are the same as those paid in Danville, Decatur and Galesburg and higher than those paid in Bloomington, Springfield and Quincy.

Loyal Men Refuse to Join Strikers

The brotherhood was organized early in 1919, chiefly by older employees of the company. Members of the brotherhood prefer the long runs and the split runs rather than work nine hours straight. They are abiding by their contract and are at work, but are too few in numbers to keep all the cars running on anything like schedule. The strike had not been settled at 7 o'clock p.m., July 7.

Cincinnati Employees Reject Agreement

The terms of the new agreement between the Cincinnati Traction Company and its employees were rejected by the street railway employees' union at a recent meeting.

Platform men are asking a 2-cent-an-hour increase, with an eight-hour day and time and a half for overtime. The old agreement provided for 44, 46 and 48 cents an hour for motormen and conductors, with time and one-third for overtime.

Carhouse men who have joined the union are also asking for an increase. They formerly were paid a sliding scale, but were allowed 42½ cents an hour by the War Labor Board.

W. Kesley Schoepf, president of the company, accepted most of the proposals of the union, but stated that the company does not agree to the increase of 2 cents an hour in the wage of trainmen from the maximum of 48 cents fixed by the War Labor Board last November, as the company does not believe conditions have changed so as to warrant an increase. The company proposes to continue the War Labor Board award to miscellaneous employees, except to car washers, curve cleaners and watchmen, whose rates it holds were fixed too high.

The possibility of a strike is remote, since the old agreement provides that if the company and the union fail to arrive at a satisfactory agreement by June 30, thirty days grace shall be granted for a settlement by arbitration.

Strike Ended in Vancouver

The men on the British Columbia Electric Railway's Vancouver city lines resumed work on June 30 after a strike of twenty-five days. They quit work in sympathy with the general strike in Vancouver and Winnipeg.

The men went back, although the general strike in Vancouver had not yet been called off but was collapsing. Following telegrams from the international ordering the men back to work in accordance with their agreement, a meeting was held on June 25 which was addressed by union leaders and by W. G. Murrin, assistant general manager of the railway. It was then decided to take a ballot. The vote showed a majority of forty-five in favor of resuming work out of a total of 750.

The New Westminster city lines and the Central Park and Burnaby Lake interurban lines, all of which came under the New Westminster local, were not in operation from June 18 to June 23. The New Westminster trades and labor council declared a general strike on the arrest of the strike leaders in Winnipeg, and although the street and interurban railway men voted 70 per cent to stay at work, they were forced out. On June 23, however, of their own volition, they decided to go back to work. Station agents and despatchers on the Fraser Valley and Lulu Island lines were involved in this phase of the strike and the company reduced its passenger service by one train a day on the Fraser Valley line and discontinued most of its freight service. The trainmen on these lines are members of the railroad brotherhoods and did not strike.

New Franchise Planned for Covington

An ordinance outlining a twenty-year franchise has been drawn up by legal representatives of the South Covington & Cincinnati Street Railway, Covington, Ky., and was read at a recent meeting of the City Commissioners. The new measure, patterned largely after a similar ordinance enacted in Cincinnati, proposes a service-at-cost system with a sliding scale of fares.

Increases or decreases in fares are to be made on a half-cent basis, dependent on the operation cost and the condition of the reserve fund, which shall be $50,000 at the minimum. Three appraisers are to ascertain the physical valuation of the company's property in Kenton County.

The twenty-year franchise is to replace the perpetual franchise which the company purposes to surrender. The changes in fares must be approved by Ludlow and Cincinnati before the ordinance becomes effective.

News Notes

Strike in Ottawa.—The employees of the Ottawa (Ont.) Electric Railway went on strike on July 2. A board of conciliation is sitting on the dispute and on June 30 a request was made to the men by the chairman, Darcy Scott, to withhold drastic action until the award was made, but it was refused.

Petition for Higher Salaries—Twenty employees of the Rapid Transit Commission of Cincinnati, Ohio, signed a petition lately asking for an increase in salary. Chief Engineer Frank Krug, Assistant Chief Engineer Frank Raschig and Chief Clerk E. E. Humphries were the only members who did not sign.

Strike of Linemen Settled.—The strike of linemen in the employ of the Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., has been settled on a basis of an increase in wages of 10 per cent, effective from July 1 for all linemen, groundmen and truck drivers, with an additional increase of 5 per cent for linemen only, effective from Aug. 1.

Union Recognition Made an Issue.—Conductors and motormen in the employ of the Oklahoma Union Railway, which owns and operates an interurban line from Tulsa to Keifer and the local railways in Tulsa and Sapulpa, formed a union recently and struck to enforce their demands for recognition of the union. They won their point after being out a few days. Service on the interurban and on the local lines was badly crippled until the settlement, when all men went back to work and all cars were started running on schedule. No question of wages or shorter hours was involved.

Elevated Damaged by Fire.—A fire said to have been caused by an electrical short-circuit consumed five passenger coaches of the Third Avenue elevated line of the Interborough Rapid Transit Company, New York, N. Y., at the South Ferry terminal on the afternoon of July 2, damaged the front of the Staten Island ferry house, endangered hundreds of persons, and resulted in the injury of a half dozen firemen called to fight the flames. The fire forced a suspension of ferry service to Staten Island. The elevated structure was charred for a distance of about 300 ft. north of the ferry house. At one time the structure, the front of the ferry house and the four coaches were a mass of flames.

Program of Meeting

Illinois Electric Railways Association

The mid-summer meeting and outing of the Illinois Electric Railways Association will be held at the Rockford Country Club, Rockford, Ill., on July 16. Through the courtesy of R. A. Moore, general manager of the Aurora, Plainfield & Joliet Railway, an invitation has been extended to join the members from Joliet on Mr. Moore's private car "Louisiana" on Tuesday evening, traveling over the properties of several of the member companies, and arriving in Rockford on Tuesday night. Lunch will be served aboard the car. Those who do not go on Tuesday night can take a special car on the Illinois Central train Wednesday morning, and will be met at Rockford by a special car for the Country Club.

The convention will assemble at 10.30 a.m. Three papers will be presented and discussed. They are as follows:

"Safety Cars and the Results of Their Operation," by E. M. Walker, general manager of the Terre Haute & Western Railway.

"Track Maintenance," by John B. Tinnon, engineer of maintenance of way of the Chicago & Joliet Electric Railway.

"Public Utility Life Insurance," by Bernard J. Mullaney, director of the Illinois Committee on Public Utility Information.

Dinner will be served at the Country Club, following which those who desire may enter a golf tournament, the winner to receive a cup offered by the president of the association. This will be a handicap tournament. For those who do not play golf, a specially conducted automobile trip to and through Camp Grant has been arranged.

Financial and Corporate

I. T. S. Costs Heavy

Higher Rates Give Increased Revenues, but Expenses Rise at Greater Rate

While general increases were authorized in electric railway, lighting and heating rates of the Illinois Traction System, Peoria, Ill., during the calendar year 1918, these were insufficient to offset the advanced operating costs. As a result the net income for 1918 was only $413,744 as compared to $1,172,153 in the preceding year.

INCOME STATEMENT OF ILLINOIS TRACTION SYSTEM FOR CALENDAR YEARS 1917 AND 1918

	1918 Amount	1918 Per Cent	1917 Amount	1917 Per Cent
Interurban lines	$4,740,079	31.1	$4,609,898	32.8
City lines	3,351,256	21.9	3,198,056	22.8
Gas	1,282,104	8.4	1,035,169	7.4
Electric	4,887,743	32.0	4,295,501	30.6
Heat	412,779	2.7	383,092	2.7
Water	15,636	0.1	15,151	0.1
Miscellaneous	571,406	3.8	504,004	3.6
Total gross revenues	$15,261,003	100.0	$14,040,870	100.0
Operating expenses and taxes	10,966,998	71.9	9,149,176	65.1
Gross income	$4,294,005	28.1	$4,891,694	34.9
Interest on bonds, etc.	3,880,261	25.4	3,719,541	26.5
Net income	$413,744	2.7	$1,172,153	8.4

In spite of the so-called "lightless nights" and the influenza epidemics, the gross revenues of the various subsidiaries in the system increased $1,220,133, or 8.7 per cent. Each department contributed to the result, the increase for the interurban railway lines being $130,183 or 2.8 per cent and that for the city lines $153,200 or 4.8 per cent. These gains compare with 15.4 per cent and 2.8 per cent respectively for 1917 over 1916.

The total increase in operating expenses and taxes, which materially exceeded the gain in revenues, was $1,817,822 or 19.9 per cent. Of this advance in expenses a total of $1,505,675 was made up as follows: Wages, $700,086; steam coal, $545,636; materials and supplies, $142,425, and $117,527 for gas coal and oil. Had it not been for the company's direct control of considerable coal tonnage on its interurban lines, the expense for steam and gas coal would have been further materially increased.

The effect of the revenue and expense changes upon the gross income for 1918 was a loss of $597.689 or 12.2 per cent below the 1917 figure. The fixed charges increased, and the result was the big decline in net income above noted. Detailed figures for the last two years are given in the accompanying statement.

The utmost effort was made by the management early in the year to secure an adjustment in rates necessary to provide revenue which would harmonize with the greatly increased operating expenses. On the interurban lines an increase of 25 per cent in joint freight rates became effective June 25, followed by an increase of 25 per cent in local freight rates on intrastate and interstate traffic, effective Aug. 3 and Nov. 1 respectively. On Nov. 15 an increase of 50 per cent in intrastate passenger fares became effective, and on Dec. 19 the Interstate Commerce Commission issued an order authorizing a corresponding increase in interstate fares, effective early in 1919.

Segregation Decision Put Off

Court Says Commission Decision in New York Transfer Case Changes Complexion of Affairs

Judge Mayer in the United States District Court in New York City on July 8, after listening for more than an hour to numerous lawyers representing various interests at a hearing on the motion made some days ago to separate the Eighth and the Ninth Avenue Railroad lines from the New York Railways because of default in rental, announced that he thought further consideration was called for under existing circumstances and he accordingly adjourned both cases.

In the case of the Ninth Avenue line, Receiver Job E. Hedges had suggested that inasmuch as the amount due it was less than $100,000, that amount be paid over at once in order to avoid separation, and as the problem was comparatively simple as regards that company, Judge Mayer adjourned the further hearing until Aug. 28. The amount due to the Eighth Avenue company is considerably larger and the situation is somewhat complicated by the fact that it owns some $3,000,000 worth of real estate. Judge Mayer said that he thought it would be desirable to have some further conferences respecting that company and he adjourned the hearing to July 11.

In making this announcement, Judge Mayer said that the whole situation had been changed since the motion for separation has been made owing to the decision announced by Public Service Commissioner Nixon, permitting the charging of 2 cents for transfers at ninety-nine points in the system. This decision is referred to at length elsewhere in this issue. The court said:

> Commissioner Nixon, in making this decision, has not only co-operated with the court in a very serious problem, but he has in my opinion rendered a very distinct service by the promptness of his decision. Without in any manner commenting upon the course pursued by his predecessors, the fact remains that, although voluminous testimony was taken in similar proceedings no decision was rendered and that at the end no one knew more than they had at the beginning. Under existing circumstances, it is only fair that the court should co-operate with the commission in an endeavor to work out the problem under the changed conditions and to study the exact situation as it shall develop before coming to a final opinion.

Seattle's May Profit $5,301

Superintendent of Municipal Railway There Points Out Wherein Service Has Been Bettered

According to a report filed by Superintendent Thomas F. Murphine, the Seattle (Wash.) Municipal Railway during the month of May showed greatly increased service and a large gain in revenues compared with the corresponding month of May of last year.

The city operated during May, 1919, a total of 148,758 car-hours, or 33,225 more car-hours than in May a year ago, or 4153 eight-hour days of service more than was provided in May, 1918. The figures include the combined lines of the Puget Sound Traction, Light & Power Company, and the Municipal divisions "A" and "C." The report also shows that 260,347 more car-miles were operated last month than in May of last year by both railway systems. The revenues from all sources for May of this year totaled $439,932, a gain of $18,680 over April of this year, and an increase of $66,637 over May of last year.

Operating Expenses Higher

Operating expenses are shown to be considerably higher, due to increased wages in the car shops, payment of time and a half overtime, and to an increase, in some instances, in service. The report claims a net profit of $5,301 for the month. The letter of Mr. Murphine containing a summary of the report follows in part:

> The recapitulation of the financial statement of railway operating expenses and revenues for May, 1919, shows the revenues from all sources for said month to be $439,932, a gain of $18,680 over the month of April, 1919, and an increase of $68.637 over May, 1918 Known operating expenses are shown to be $354,458, as compared with $331,242.32 in April.
>
> This increase in expense is due to an increase of wages in the car shops, the payment of time and one-half for overtime (which was not in effect in April), and to an increase, in some instances, in service. However, there is shown a gain or profit for the month of May of $85,473. From this amount we have deducted an item of $66 260, being the interest on outstanding bonds, and an item of $6,911, being the maximum amount payable when called for as industrial insurance; also an item of $7,000 to pay this month's share of damage claims. Depreciation is more than offset this month by extraordinary expenditures in the way of maintenance.
>
> These various items deducted from the gain would leave a net profit of $5,301.
>
> It will be noted that the statement shows that we operated during this month a total of 148,758 car-hours, or 33,225 more car-hours than were operated in May, 1918, by the combined lines of the Puget Sound Traction, Light & Power Company and the Municipal Street Railway, Divisions "A" and "C."
>
> It is also shown that we operated 260,347 more car-miles than in the corresponding month of last year by both railway systems.
>
> These figures show the increased service that the people of the city are now getting over the operation of last year.
>
> Wages paid to employees this month totaled $103,779 more than was paid in May, 1918.

$33,040,795 Buffalo Valuation

Arbitration Board Fixes Upon This Amount as Fair Basis for Rate Purposes

The board of arbitration appointed by the International Railway, Buffalo, N. Y., and the municipal authorities to determine the valuation of the company's property within the city, filed its report with E. G. Connette, president of the company, on July 3. The property is held to be worth $33,040,795. The report of the appraisers is not binding on either party, however, as the arbitration proceeding which was expected to lead to an agreement between the city and the company for municipal control of service was abandoned by the city after Governor Smith had vetoed the enabling act.

Final Report a Compromise

If the New York State Court of Appeals decides on July 15 that the Public Service Commission has power to fix fares in Buffalo regardless of the company's franchise, the International Railway will probably use the report of the board of appraisers as a basis for raising fares from 5 cents to 7 or 8 cents.

The final report of the arbiters is a compromise between the $44,000,000 valuation sought by the company and a valuation of $22,000,000 sought by the city. James E. Allison, the company's member of the board, would add $1,825,000 for going value, making a total of $34,965,795. Orson E. Yeager, the umpire, agreed with Professor Albert S. Richey, the city's member of the board, in opposition to the going value figured by Mr. Allison.

The arbiters allowed the claim of the company for superseded property. Such property was defined by them as property that has become obsolete and discarded through progress in inventions and the arts or has become inadequate or otherwise rendered useless before the termination of its useful life. The board found that $2,764,125 should be allowed for this item and he included in the valuation entitled to a return until such time as it may be amortized out of future earnings.

Many Deferred Renewals

No allowance was made by the board for depreciation of the company's property. The members think, however, that the company should be required to place all parts of its property in a condition of proper operating efficiency, such necessary renewals to be paid out of earnings, but without diminution of a proper return on the valuation found.

Much evidence was submitted to the arbitration board to the effect that there is at present a considerable amount of deferred renewals, principally in the form of track and pavement. The report says in part:

> This is a condition in which many electric railways are found at the present time, in general due to the inability of the companies to secure proper materials and labor during the past year or two, and also to the fact that many companies on account of rapidly increasing prices and fixed fares, with a falling off of traffic due to war conditions and automobile competition, have not been able to make such renewals after paying for operating expenses, ordinary maintenance and taxes.

Explaining the allowance for promotion and consolidation, the arbitrators say:

> In the history of every property of the character of the one under consideration there have been numerous special costs which have been incurred for promotion and consolidation. These costs are often met by the giving of securities or by consideration in the price at which securities are taken by promoters and organizers. This portion of the expense, which is an actual expense to the corporation, is not usually traceable in the books on account of the nature of its payment, and even if it were it would be impossible to take as a figure in determining a rate base the sometimes fanciful amount of securities obtained as a reward for promotion. It is, therefore, necessary in this case, as in nearly all of them, to assign arbitrarily an amount which in the opinion of the board should cover these outlays. In this case we believe $1,250,000 to be a proper allowance for these costs.

A summary of the items entering into the value of the property, as fixed by the arbiters, is as follows:

Physical value stipulated by city and company	$22,356,736
Capital additions, real estate	300,000
Capital additions, new line	17,000
Omissions and contingencies	768,994
Engineering and superintendence during construction	613,354
Injuries and damage during construction	167,976
Legal expenditures during construction	93,419
Administrative and miscellaneous expenses during construction	176,768
Taxes during construction	104,293
Interest during construction	737,947
Superseded property	2,764,125
Cash working capital (in addition to store and supplies)	284,026
Physical value, including overheads	$28,384,638
Promotion and consolidation costs	$1,250,000
Cost of assembling capital	567,693
Capitalization of initial risk, including going value	2,838,464
Total finding of majority of board	$33,040,795
Addition in Mr. Allison's opinion to cover initial deficit or "going value"	$1,925,000
Total with Mr. Allison's addition	$34,965,795

As soon as the New York State Court of Appeals hands down its decision with respect to the right of the Public Service Commission to intervene in local traction matters and fix an adequate rate of fare despite the provisions and restrictions of local franchises, the company will apply for an investigation into local conditions so that a higher rate of fare can be fixed.

Case Before St. Louis Special Master Closed

The hearing in the case of John W. Seaman, New York, a holder of preferred stock of the United Railways, St. Louis, Mo., against directors of the company for their discharge and for recovery from them of funds alleged to have been wasted through power contracts, mill tax litigation and other means, before Special Master Lamm at St. Louis came to an end at the close of the week of June 23 after several of the directors had testified in their own defense.

The directors who took the witness stand were Frank O. Watts, Murray Carleton, Alanson C. Brown, A. L. Shapleigh and Henry S. Priest, who was formerly general counsel for the railway. Mr. Priest, who has been acting as counsel for himself and the other directors during the hearings, asked each of the directors the following question in regard to the passage by the board on July 9, 1918, of a resolution declining to accept the resignation of Bruce Cameron, superintendent of transportation, following his indictment in connection with the referendum petitions theft:

> What knowledge or information had you at the time that Mr. McCulloch or Mr. Cameron had any part in the theft?

Each director replied that he had none. Mr. Shapleigh went on to say that Mr. McCulloch had told him he knew nothing of the theft.

Collateral Securing St. Louis Loan Being Sold

Attorneys representing the various interests involved in the suit for a receiver and an accounting against the United Railways, St. Louis, Mo., appeared before Special Master Lamm on June 30 to discuss the application of the receiver and the directors of the railway for permission to issue receiver's certificates in sufficient amount to take up the loan of $2,500,000 made to the United Railways by the War Finance Corporation. As a result of the failure of the attorneys present to agree on any essential point, the Special Master postponed the hearing until July 10 to give the attorneys time to study the situation.

The application for permission to issue the certificates was made by Charles W. Bates, attorney for the receiver. The directors of the railway joined in this request, but differed with the attorney for the receiver on details. Mr. Bates' plan was for the issue of general receiver's certificates. Henry S. Priest, representing the directors and attorneys for other interests, said these would not be subscribed, as investors would not have the confidence that they represented an actual lien against the property. Mr. Priest suggested one-year notes secured by the Union Depot bonds. He said these could be marketed easily. This plan was objected to by counsel for the Leed Mining Company, one of the intervenors in the receivership suit.

The War Finance Corporation loan became due on June 1. It has not been paid. It is secured by $3,485,000 of the Union Depot Railway bonds deposited with the War Finance Corporation. Of this collateral $800,000 in bonds already has been sold by the War Finance Corporation. The principal purpose of the hearing was to lay plans for preventing further sale of these securities. Insisting that the matter be settled quickly, Attorney Priest said that the War Finance Corporation was becoming very impatient. Special Master Lamm then urged the lawyers to act with dispatch.

Ten-Year Traffic Increase 51.9 Per Cent

Previous Census Figures Supplemented by Capitalization and Traffic Details

Director Samuel L. Rogers, of the Bureau of the Census, Department of Commerce, has issued the following statement, supplementing that of April 21, in regard to electric railways in the United States:

The total capitalization of the electric railways, street and interurban, for the year 1917 was $5,525,025,923, representing an increase of 46.4 per cent over 1907; and deducting investments in securities and non-operating property, the net capitalization was $4,882,764,201, as compared with $4,243,317,727 in 1912 and $3,400,107,899 in 1907, representing an increase of 15.1 per cent for the period 1912-1917 and of 24.8 per cent for the period 1907-1912, the rate of increase for the decade being 43.6 per cent.

The net capitalization per mile of track was $111,233 in 1917, as compared with $104,930 in 1912 and $100,495 in 1907. The roads of the Middle Atlantic States, New York, New Jersey, and Pennsylvania, taken as a group, showed the heaviest net capitalization per mile of track, namely, $167,942 in 1917 and $140,724 in 1907; and those of the New England States the lowest, $64,474 in 1917 and $54,724 in 1907. The South Atlantic States averaged $130,144 in 1917; the Pacific States, $125,596; the East South Central, $97,518; the West South Central, $95,695; the West North Central, $94,848; the East North Central, $88,163; and the Mountain States, $71,987.

For the United States the total number of revenue passengers was 11,304,660,462 in 1917, 9,545,554,667 in 1912, and 7,441,114,508 in 1907, representing an increase of 51.9 per cent for the decade. The roads of the Middle Atlantic States carried 4,225,287,044 revenue passengers, an increase of 48.8 per cent over 1907: those of the East North Central States, 2,712,624,699; increase, 68.7 per cent; of the New England States, 1,242,076,786; increase, 41.9 per cent: of the West North Central States, 902,368,927: increase, 46.6 per cent; of the South Atlantic States, 747,561,816; increase, 53.2 per cent: of the Pacific States, 707,310,819; increase, 45 per cent: of the West South Central States, 313,203,554, increase, 62 per cent: of the East South Central States, 292,004,689; increase, 32.2 per cent: and of the Mountain States, 162,222,128; increase over 1907, 43.2 per cent.

The average number of revenue passengers per mile of track (based on total track mileage, including sidings) was 252,323 in 1917 and 216,522 in 1907; the average number per passenger-car-mile, 5.4 in 1917 and 4.7 in 1907; and the average number per passenger-car-hour, 53.7 in 1917 and 43.1 in 1907. Details appear in the tables herewith.

ELECTRIC RAILWAYS: UNITED STATES

Capitalization	1917	1912	1907	Per Cent of Increase * 1907-1917	1912-1917	1907-1912
Capital stock	$2,473,846,651	$2,379,346,313	$2,097,708,856	17.9	4.0	13.4
Funded debt †	3,051,179,272	2,329,221,828	1,677,063,240	81.9	31.0	38.9
Total	$5,525,025,923	$4,708,568,141	$3,774,772,096	46.4	17.3	24.7
Investments in securities and non-operating property	642,261,722	465,250,414	374,664,197	71.4	38.0	24.2
Net capitalization	$4,882,764,201	$4,243,317,727	$3,400,107,899	43.6	15.1	24.8
New England	352,553,026	320,491,727	263,842,127	33.6	10.0	21.5
Middle Atlantic	1,696,403,938	1,312,329,549	1,194,940,494	42.0	29.3	9.8
East North Central	1,109,374,472	1,024,768,763	900,387,383	23.2	8.3	13.8
West North Central	341,884,368	300,821,223	251,673,038	35.8	13.7	19.5
South Atlantic	415,149,716	361,599,371	250,135,621	66.0	14.8	44.6
East South Central	141,410,566	118,166,868	99,599,823	42.0	19.7	18.6
West South Central	160,936,399	128,049,146	84,192,034	91.2	25.7	52.1
Mountain	88,125,354	75,630,871	45,920,878	91.9	16.5	64.7
Pacific	576,866,362	601,460,209	309,416,502	86.4	—4.1	94.4
Net capitalization per mile of track	111,233	104,930	100,495	....	....	....
New England	64,474	61,577	54,724	....	....	....
Middle Atlantic	167,942	134,702	140,724	....	....	....
East North Central	88,163	87,102	87,292	....	....	....
West North Central	94,848	97,807	102,948	....	....	....
South Atlantic	130,144	125,409	112,013	....	....	....
East South Central	97,518	92,051	93,925	....	....	....
West South Central	95,695	93,272	100,083	....	....	....
Mountain	71,987	77,514	76,358	....	....	....
Pacific	125,596	145,428	102,272	....	....	....

* A minus sign (—) denotes decrease.
† Not including real-estate mortgages: 1917, $7,197,895; 1912, $6,097,245; and 1907, $4,059,805.

ELECTRIC RAILWAYS: UNITED STATES

Traffic	1917	1912	1907	Per Cent of Increase 1907-1917	1912-1917	1907-1912
Passengers carried	14,506,914,573	12,135,341,716	9,533,080,766	52.2	19.5	27.3
Revenue	11,304,660,462	9,545,554,667	7,441,114,508	51.9	18.4	28.3
Transfer	3,021,137,935	2,423,918,024	1,995,658,101	51.4	24.6	21.5
Free	181,116,176	165,869,025	96,308,157	88.1	9.2	72.2
Revenue passengers by divisions:						
New England	1,242,076,786	1,051,161,737	875,115,527	41.9	18.2	20.1
Middle Atlantic	4,225,287,044	3,513,720,591	2,839,019,161	48.8	20.2	23.8
East North Central	2,712,624,699	2,159,620,746	1,607,894,497	68.7	25.6	34.3
West North Central	902,368,927	787,301,146	615,630,852	46.6	14.6	27.9
South Atlantic	747,561,816	616,724,741	487,981,528	53.2	21.2	26.4
East South Central	292,004,689	268,785,533	220,887,485	32.2	8.6	21.7
West South Central	313,203,554	270,745,675	193,338,141	62.0	15.7	40.0
Mountain	162,222,128	154,224,248	113,304,063	43.2	5.2	36.1
Pacific	707,310,819	723,270,250	487,943,254	45.0	—2.2	48.2
Average number of revenue passengers:						
Per mile of track (all tracks)	252,323	232,556	216,552	....	....	....
Per mile of running track	260,868	(2)	(2)	....	....	....
Per passengar car-mile	5.41	5.06	4.70	....	....	....
Per passenger car-hour	53.69	48.38	43.06	....	....	....
Per mile of track (all tracks) by divisions:						
New England	223,468	198,536	179,546	....	....	....
Middle Atlantic	400,322	349,867	321,520	....	....	....
East North Central	214,346	183,142	155,789	....	....	....
West North Central	246,184	254,081	245,432	....	....	....
South Atlantic	228,064	208,193	212,699	....	....	....
East South Central	201,355	208,947	207,466	....	....	....
West South Central	186,162	196,730	229,831	....	....	....
Manhattan	127,877	153,104	188,404	....	....	....
Pacific	150,824	172,790	160,951	....	....	....

(1) A minus sign (—) denotes decrease. (2) Figures not available.

Merger at Indianapolis Approved

Commission Modifies Its Original Order and Companies Involved Arrange to Carry Out Plan

Following the order handed down by the Indiana Public Service Commission on June 28 conditionally approving the merger of the Indianapolis Traction & Terminal Company and Indianapolis Street Railway, as reported in the ELECTRIC RAILWAY JOURNAL of July 5, page 42, an appeal was made to the commission to modify its order so that the consolidation could take place at once without calling a further meeting of the stockholders.

FIRST COMMISSION APPROVAL CONDITIONAL

Under the terms of the order of the commission issued June 28 the merger petition was approved subject to fourteen conditions to be accepted by the parties involved on or before Sept. 1, 1919. Several of the conditions, however, would have required the amendment of the original consolidation agreement as submitted to the stockholders. This could not have been accomplished by July 1. In issuing the original order the commission contemplated that the merger could be made effective at once and the conditions met by the consolidated company. The attorneys for the two companies, however, showed that it would be impossible to reduce the stock of the Indianapolis Traction & Terminal Company below the amount of $2,500,000 provided in the merger agreement without the consent of the trustee, and the suspension of sinking fund payments would also have to be referred to the trustee for the bondholders.

The commission thereupon issued an order superseding its order of June 28. The modified order issued by the Public Service Commission on June 30, takes the place of the order issued Saturday.

In the first order were fourteen points or conditions, precedent to approval of the merger. In the modified order there are ten conditions precedent, which were complied with at once by the constituent companies, and several additional conditions which are to be complied with by specified times in the future by the consolidated company.

Of the conditions to be complied with by the consolidated company in the future, one requires that on or before Aug. 1, 1919, there shall be surrendered to the consolidated company $1,500,000 of the $2,500,000 stock to be issued in exchange for the $5,000,000 stock of the Indianapolis Traction & Terminal Company. This would bring the amount down to $1,000,000, which the commission decreed in its first order. It was contended by the merger advocates that the trustee for the bonds of the Terre Haute, Indianapolis & Eastern Traction Company, with which is deposited the Indianapolis Traction & Terminal Company stock, would have to consent to the reduction to $1,000,000. The trustee had consented to a reduction to $2,500,000, as provided in the merger agreement, and the articles of consolidation provide for the $2,500,000.

In the condition requiring a reduction of $1,500,000, it is provided that if the Public Service Commission should find the value of the property as of July 1, 1919, to be in excess of all the stocks and bonds of the consolidated company, then "additional stock to the amount of such excess value may be reissued."

MUST MEET ALL CONDITIONS BY SEPT. 1

All other conditions not precedent to the merger are to be met by Sept. 1, 1919, the chief one being that the consent of the trustees of the bondholders would have to be obtained in connection with the suspension of sinking fund payments until Jan. 1, 1923, and eliminating the payment of interest on bonds already in the sinking fund.

After the order was issued the company filed acceptance with the commission, and articles of incorporation of the new consolidated Indianapolis Street Railway were filed with the Secretary of State.

The members of the new board of directors named in the merger agreement to serve until the next annual meeting of the company are: Dr. Henry Jameson, chairman; Charles H. Becker, Walter J. Ball, W. T. Durbin, R. K. Willman, C. Thomson, J. A. McGowan, John J. Appel and Robert I. Todd. The directors met on July 2 and elected Robert I. Todd president of the new consolidated company, and J. A. McGowan, auditor of the Indianapolis Traction & Terminal Company, secretary and treasurer of the new company.

As soon as the final order of the commission had been issued and accepted by the company, payment was made of bond interest on the Indianapolis Street Railway bonds. This payment had been been deferred at the first of the year.

Financial News Notes

Deferred Dividend Paid.—The dividend of 3 per cent on the preferred stock of the Virginia Railway & Power Company, Richmond, Va., declared on Dec. 20, 1918, payment on which was deferred, will be paid on July 20.

Another Road Sold for Junk.—The Stoughton & Randolph Street Railway, Randolph, Mass., has been sold to a Chelsea junk dealer for $12,000, and work on removing the rails and ties will soon be started.

Mr. Budd a Middle West Director.—Britton I. Budd, president of the Chicago (Ill.) Elevated Railways, has been elected a director of the Middle West Utilities Corporation, succeeding Francis S. Peabody, resigned.

Company Accepts Offer from City.—The mortgagees of the defunct London & Lake Erie Traction Company have accepted an offer of $25,000 from the city of St. Thomas, Ont., for all of the property of the company in the city, including carhouses, freight house, etc.

Compensation Fixed for Hudson & Manhattan Road.—Director-General of Railroads Hines on July 1 signed railroad contracts with the Hudson & Manhattan Railroad, operating under the Hudson River between New York and New Jersey, fixing the annual compensation by the government for that system at $3,003,362.

Application for Receiver Heard.—Argument on the application for a receiver for the Rock Island (Ill.) Southern Traction Company has been heard by the Master in Chancery of Knox County, Ill. The Continental Trust & Savings Bank, Chicago, representing the holders of bonds, is the complainant.

Two-Year Notes Ready for Payment.—H. M. Byllesby & Company, Chicago, Ill., operating managers, announce that the $450,000 of 6 per cent gold notes of the Arkansas Valley Railway, Light & Power Company, Pueblo, Col., which matured on July 1, 1919, are payable at the office of the Continental & Commercial Trust & Savings Bank, Chicago.

Amount of Outstanding Bonds Reduced.—The amount of first and refunding mortgage 5 per cent bonds of the Kentucky Traction & Terminal Company, Lexington, Ky., due on Feb. 1, 1951, has been reduced from $2,892,000 to $2,342,000. $550,000 of the bonds having been retired and cancelled by operation of the sinking fund as of June 5, 1919.

Would Abandon New York City Lines.—The New York City Interborough Railway, whose lines are now operated as a part of the Third Avenue Railway System, has applied to the Public Service Commission for the First District of New York for permission to abandon parts of unused or little used lines in the borough of the Bronx. Commissioner Nixon has fixed July 24 as the time for a hearing upon the applications involved. The proposals to abandon have already had the approval of the directors of the company.

Court Confirms Receiver's Authorization.—The United States Circuit Court of Appeals has affirmed Judge Julius M. Mayer's order authorizing Lindley M. Garrison, receiver of the Brooklyn (N. Y.) Rapid Transit Company to issue receiver's certificates for $20,000,000. The Appellate Court, however, modified the order which made the certificates a lien superior to that of the first refunding gold mortgage of the Brooklyn Rapid Transit Company by maintaining the lien of that mortgage unimpaired.

St. Louis Payments Authorized.—Federal Judge Dyer, on the recommendation of Special Master Henry Lamm in the so-called Seaman suit against the United Railways, St. Louis, Mo., has authorized Rolla Wells, receiver of the company, to pay out of the revenue of the company certain income, license and mill taxes due the city of St. Louis under franchise ordinances. Judge Dyer also authorized payment of the unpaid coupons of the St. Louis Transit Company's bonds and the continuance of various depositaries for this purpose. The payment of these coupons had been strongly objected to by attorney for the plaintiff in the John W. Seaman receivership suit.

Commission Administers Quietus.—The Illinois Public Utilities Commission on its own motion has directed the Chicago, Fox Lake & Northern Electric Railway to cease selling its one-year 7 per cent notes and to desist from transacting any further business in Illinois. The company was granted a certificate of convenience and necessity on July 28, 1916, to operate a suspended monotype railway between Palatine and the Wisconsin State line. On April 17, 1918, the commission denied an application for a certificate of convenience and necessity to construct the mono-railway over a specified route between Palatine and the Wisconsin State line, and denied authority to issue capital stock in the amount of $2,500 and bonds in the amount of $5,680,300. The commission held that while some preliminary work had been done in connection with the laying out of the line and the securing of the right-of-way, outside of about one hour's work done in July, 1918, no work for the actual construction of the railroad, as proposed, was done until October, 1918, and that the company has not exercised its right conferred by the certificate of convenience and necessity granted under date of July 28, 1916, within the two-year period and that the certificate authorizing the road is null and void.

Traffic and Transportation

Tri-City Company's Appeal

Iowa and Illinois Railway in Receiver's Hand Except for Aid from Holding Company

By making the concession to its employees noted on page 86 in this issue, the Tri-City Railway, Davenport, Ia., hopes to secure the active support of all its employees and the public in the petition for higher fares, although the fare case is backed by strong arguments in the failure of the company's Iowa lines to pay operating expenses and in the great decrease in revenue compared with cost of operation in Illinois.

The petition of the company for increased fares was presented to the Public Service Commission of Illinois nine months ago. No decision has yet been rendered. The company has been placed in the embarrassing situation of not being able to ask an increase on the Iowa side until it was informed of the finding of the Illinois commission.

The officials felt that they could not ask a 7-cent fare in Iowa if the Illinois board turned down its petition. It also believed that the company could not hope to get a 7-cent fare in Davenport if the Illinois commission awarded only 6 cents on the lines in Illinois. It had to wait until the Illinois board returned a verdict so that, if an increased rate were granted, the same rate could be asked in Iowa.

It was at first believed that the rate in Iowa would be determined by a special election in Davenport. The company's attorneys, however, found in the Davenport franchise a provision which enables the City Council to change the passenger fare. Officials of the Tri-City Railway then presented their case in preliminary form before the Council of Davenport, notifying that body that it would ask in Davenport the same rate that the Public Utility Commission of Illinois granted.

Company Makes Statement

The Illinois commission, however, has as yet made no decision, so the railway company has its hands tied, waiting for word from Springfield.

On June 20 the company, in a statement from J. G. Huntoon, vice-president and general manager, called the Illinois board's attention to its embarrassing situation, reviewed its labor trouble, emphasized for the commission's benefit the fact that the fare situation was holding up a settlement of its labor trouble, and stated that its financial condition demanded an immediate increase in revenue if the company was to be kept out of the hands of a receiver. In conclusion the company made an earnest plea for a speedy decision of the case. In this statement Mr. Huntoon said:

> Had these companies (Tri-City Railway of Iowa, Tri-City Railway of Illinois, and Moline, Rock Island & Eastern Traction Company) not been allied with a strong holding company organization (United Light & Railways Company), which has been able and so far willing to finance their need for new capital, to give them the advantage of holding company contracts at more favorable prices for materials than would have been possible under unit management, and to provide the best of management for their operation, they severally would have long since been compelled to resort to the bankruptcy courts for relief.

The company closed its appeal with the request of a prompt decision to enable it to put into effect at once "such street car fares as will enable us, in your judgment . . . to realize an income sufficient to enable us to pay our legitimate operating expenses . . . plus a proper reserve for depreciation and a reasonable return upon the fair value of our properties."

The statement was accompanied by an exhibit showing the financial condition of the companies.

Seven-Cent Fare Predicted for Youngstown

The predictions of William L. Sause, Street Railway Commissioner, are to the effect that the fare of the lines of the Mahoning & Shenango Railway and Transit Company at Youngstown, Ohio, will go to 7 cents on Aug. 1, under the recently enacted service-at-cost grant. On June 1 the stabilizing fund, which is the barometer for the rate of fare, dropped below the required $50,000 and the rate of fare was automatically increased to 6 cents and nine tickets for 50 cents. The increase in operating expense from 22 cents to 27 cents a car-mile, recently granted, was retroactive to May 1 and the allowance for May was $14,853 more than it would otherwise have been.

The operating report for May shows receipts of $117,238. Deductions for operating and maintenance were $104,978, leaving a balance of $12,259. This amount was transferred to the stabilizing fund. From this fund was deducted $32,796, used in paying return on capital and taxes, leaving $47,070.

Under the 27 cents per car-mile the company operated during May at a deficit of $424 and under the 5-cent maintenance allowance there was a deficit of $703, making a total deficit of $1,127. These figures show the reason for Mr. Sause's prediction that another increase in the rate of fare will have to be made. Reports show that operation is costing more than the allowances, even as advanced, and the income, which is guaranteed, must be enough to prevent deficits.

Fare Contest Expected

Strong Opposition Before Commission to Ten-Cent Cash Fare in Pittsburgh Seems Certain

Physical valuation of the properties of the Pittsburgh (Pa.) Railways, looked forward to for more than a year as a possible basis for final adjustment of the tangle in which that unfortunate corporation finds itself, probably will be a leading factor in the contest over the fare increase announced recently by the receivers, when the protest of the representatives of the city is heard by the members of the Public Service Commission within the next two weeks.

Engineers Now Making Valuation

Five engineers have been engaged in making physical valuation of the Pittsburgh traction lines ever since the compromise agreement reached between the city and the company early in 1918 when the fare was advanced to 5½ cents. On July 7 Chairman W. D. B. Ainey, of the Public Service Commission, announced that the commission expected to complete its task in time to report before the new fare increase hearing.

This announcement was received with great interest by holders of the securities of the Pittsburgh Railways, who regard it as presaging the next step in the development of a way out of the company's difficulties. All interests involved have been marking time, practically, since the properties were turned over to the receivers, it being desirable, of course, before attempting to proceed with the reorganization of the company to have a valuation as a guide.

The appointment of the valuation commission, comprising two representatives of the company, two of the city and the surrounding boroughs, and one of the Public Service Commission, was one of the items of the 1918 compromise agreement, it being understood that the value set upon the properties should constitute the basis of future tariff changes. Its existence probably has contributed fortuitously to an earlier final adjustment of the company's difficulties, as it was well along with its work when the federal court named receivers.

Ten-Cent Cash Fare Proposed

The fare increase, which is to be contested before the Public Service Commission, is from the present 5 and 7-cent rate to a straight 7½ cent fare by ticket and a 10-cent cash fare, effective on Aug. 1. A detailed account of the announcement made by the company with respect to the establishment of the new fare tariff was published in the issue of the ELECTRIC RAILWAY JOURNAL of June 28, page 1293.

A slight extension of the transfer privilege will accompany the proposed new fare. Rebate slips will be attached to tickets sold under the new rates and given to payers of cash fares.

Two Cents for Transfers in New York

Commissioner Nixon Hopes Companies Will Relinquish Long-Term Franchise and City Consent to Flexible Fare

Public Service Commissioner Lewis Nixon announced, on July 7, that he would issue an order granting Job E. Hedges, as receiver of the New York Railways, authority to charge 2 cents for transfers at ninety-nine of the 113 points of the railway system throughout the city of New York where transfers heretofore have been given free. Receiver Hedges had asked for authority to charge 3 cents for such transfers. Commissioner Nixon announced his decision, as follows:

The receiver who makes this application is an arm of the Federal Court. He has appeared before this commission, stating in substance that if some immediate relief is not granted he will be compelled to disintegrate the lines under his control. Such a course, if possible, should be avoided. Having in mind the interests of the city and its taxpayers, the commission has resolved to grant the receiver temporarily a measure of the relief which he seeks. It has determined to empower him to charge 2 cents for transfers at points where he is legally entitled to charge for them.

This relief, as stated, is temporary. The order will continue in force for one year. That will enable the city in the meantime to make the necessary appraisals. If at the end of six months the city is not satisfied with the appraisal of the receiver, it is authorized to apply to have this proceeding reopened. This hearing, therefore, is adjourned to July 7, 1920. This order is made upon condition that the lines of this company are not disintegrated. If they are disintegrated by order of Judge Mayer, this commission will make such further order as the situation demands. Counsel for the respective parties will agree upon the form of the order.

Later Commissioner Nixon issued a statement in which he reviewed the finances of the New York Railways at length, and the necessity for the appointment of a receiver. He said:

This case concerns the application of the receiver of the New York Railways Company to charge 3 cents for transfers at all intersections of lines where there are no specific requirements by local franchise to furnish free transfers. It is really a continuation of the application of the New York Railways in April, 1917, Case No. 2212, where the company asked for a charge of 2 cents for transfers. During the pendency of the application the Court of Appeals decided in the Quimby case that the Legislature had not given the commission power to increase street railway charges above those fixed by local franchises.

In line with this decision, the commission held in the Third Avenue Railway case, No. 2211, also an application for a charge of 2 cents for transfers, that its power to grant the desired relief was limited by local franchise provisions, which fixed the maximum single fare at 5 cents, and pointed out that relief must be sought from the city as represented by the Board of Estimate and Apportionment. Following this declaration, the New York Railways did not pursue its application in Case No. 2212, but turned to the city for a modification of the franchise restrictions. When the city did not act upon the application, the company again turned to the commission, which body as then constituted went out of office before action was rendered.

The case of the company was presented to the commission as a matter of great emergency, and it was so considered by the commission. The property has been operated by a receiver since March 20, 1919, and there is a motion before Judge Julius M. Mayer in the United States District Court for the Southern District of New York to separate some of the leased lines on account of default in the payment of rent. The case was presented by counsel of the receiver from the standpoint that if no financial relief was granted the court would authorize the separation of the property, but that with relief the present system may be maintained.

Commissioner Nixon pointed out that the greater portion of the case before Judge Mayer had been presented on the basis of operating results for the six months ended March 31, 1919, and he said that for these six months the operating income above operating expenses and taxes, exclusive of any allowance for reserves, amounted to $200,000 in round figures, and that, accordingly, the earning power of the company at present fares had been set at about $400,000 a year. He continued:

Testimony was presented showing that a 3-cent charge for transfers would bring a maximum additional revenue of $900,000 a year, so that if the application be granted the company would have available a total income above operating expenses and taxes of about $1,300,000 a year. This would be far from being an adequate return on the investment. It would not even be sufficient to pay rents on the leased properties, but would enable the receiver to pay the rentals on the most important lines and thus keep the heart of the present New York Railways system together.

Counsel for the receiver believes that if only the least profitable lines were now cut off from the system the owners would finally be compelled to accept a substantial reduction in their present rentals and the properties could ultimately be brought back into the system with greatly reduced rent charges. The present operating condition of the company was so presented that conclusions might be misleading. While the income above operating expenses and taxes for the six months ended March 31, 1919, amounted to only $200,000, this does not properly show a present earning power of only $400,000 a year. Stating the operating results separately by months, it appears that the low return of only $200,000 for six months was due to the very exceptional months of October, November and December, when traffic was demoralized on account of the influenza.

The commissioner stated that in January operating conditions began to improve and in March, the last of the six months period, the net earnings above operating expenses and taxes amounted to $109,238, or over 50 per cent of the total for the entire six months. For April, he said, the net earnings were $188,865, for May the gross receipts were about $34,000 greater than for April, while in June they were about $5,000 less. Figures for operating expenses and taxes for these two months, he said, were not available, but if they were in the same proportion as for April the net earnings above operating expenses would be about the same as for April. Mr. Nixon then said:

April is considered a typical or average month of the year. Its gross receipts are not the greatest of the year, but about normal, as are the expenses. If, then, the April results for this year be taken as representing what may reasonably be expected during the next year, we have resultant net earnings in excess of $400,000 per year. On the other hand, the commission realizes that maintenance of the property has probably not been adequate because of lack of resources, that there has been no allowance for reserves, which should properly be made, and that huge present obligations exist that must be paid. The commission is thoroughly convinced that in spite of the great improvements in operating conditions since the beginning of the year the company is not now earning and is not likely to earn a fair return upon its investment, if indeed it will hereafter be able to earn even rentals on leased lines. The commission, after careful consideration of all the facts, has decided to grant conditionally a charge of 2 cents for transfers.

Average Return Not 6 Per Cent

Commissioner Nixon said that on the basis of the return to the State Tax Commission it is shown that the average return since the reorganization of the company in 1912 has been under 6 per cent, and during the last year has been far below fixed charges. The commissioner said in closing:

The case, however, is not a simple one in spite of the company's financial difficulties. I believe that, except where there are specific requirements for free transfers at intersections of two lines, the commission possesses ample authority to deal with transfers as may seem reasonable under the circumstances, and I am now acting according to this view.

My decision is this: I shall allow a charge of 2 cents for transfers at all points except where free transfers are now legally required. But this permission shall extend only to July 7, 1920, and is further conditioned upon the entire New York Railways system being kept together as at present constituted. Under ordinary circumstances I should consider a charge for transfers as wholly unreasonable, resulting in gross discrimination between different classes of passengers and different parts of the city and in establishing a disjointed system of rates.

But in the present case the choice is between an unreasonable system of rates and dissolution of the service. Which of these evils will cause the greater inconvenience to the public? The answer, to my mind, is clear, and I therefore seek to maintain the unity of the present system at the cost of a very unsatisfactory method of charging for service.

Move to Gain Time

The charge for transfers becomes reasonable only because it would be more unreasonable to permit the collapse of the service. My thought in limiting the increase to one year is in part to await further traffic development, but chiefly to make possible a satisfactory permanent settlement between the companies and the city.

The present franchise under which the company operates is unreasonable in two respects: first, restrictions on fare, and, second, the permanent or long-time rights granted in the streets. Neither restriction nor privilege is justifiable. Both should go, the one with the other. My desire in granting temporary relief is to obtain sufficient time to get these adjustments.

I hope that the city may be prevailed upon to consent to a flexible fare, while the company or the various financial interests will, in turn, give up their long-time or permanent rights to the streets. If these two things be accomplished it would then not be difficult to determine the value of the property and to fix reasonable rates. The city would then have the way clear for any transportation policy that may seem reasonable in the future, while the company would have safeguarded its investment. But unless the two things be accomplished there can be no final satisfactory settlement. In the end the charge for transfers would prove unsatisfactory and probably unworkable. It is justified only as a financial makeshift to gain time for settlement along proper lines.

Mayor Hylan immediately announced that he was opposed to abolishing the transfers in any part of the city, as that would mean an increase in fare and would place additional burdens on the people. In consequence it is expected that the city through Counsel Burr will seek to obtain a restraining order from the courts in a test case to determine whether Mr. Nixon has the right to allow a charge for transfers. It is said that Mr. Burr will contend that the city has not been given ample opportunity to prove that a charge for transfers is unnecessary.

It was announced on July 9 that the order of Mr. Nixon, authorizing a charge for transfers, would not be formally entered for a day or two. Mr. Nixon left the city on July 8 on a two weeks' vacation and is said to have taken with him the papers in the Brooklyn Rapid Transit rate case. He is quoted as saying that he intended to study the situation carefully and might be prepared to make a decision with respect to Brooklyn within a week.

Denver Sorely Tried

Enforced Fare Reduction, Court Decision on Commission Jurisdiction, Reduction in Wages, Strike and Other Complications

A decision by the Supreme Court of Colorado rendered on July 7 on rehearing reaffirms the court's former decision in the case of the city of Denver against the Mountain States Telephone & Telegraph Company giving jurisdiction over the utilities in the home rule cities in that State to the municipal authorities. As in January last, when the original decision was rendered, the court on July 7 held that the sole power to regulate rates is vested in the people and that in home rule cities the Public Utilities Commission has no jurisdiction.

Five-Cent Fares Restored

The 6-cent fare ordinance in Denver was repealed effective on July 5, reducing the fare on the lines of the Denver Tramway to 5 cents. On July 7 the tramway announced a reduction in service, abandoning entirely or partially eight lines, installing stub line service on six others and cutting the schedules materially on twelve additional lines. Only eight or nine lines are unaffected by the service reduction.

The railway also notified the employees that the 1917 wage scale would be effective from July 8, trainmen's rate being 30 cents the first year, 32 cents the second year and 34 cents thereafter.

On Monday night, July 7, the City Council passed on first reading an ordinance allowing jitneys to operate at a 5-cent fare on prescribed routes and schedules for a period of ninety days. This measure cannot become a law until the week ended July 19.

At midnight on July 7 the employees voted 976 to 2 to strike at 4 a.m. on Tuesday, July 8. In consequence, on July 10 nothing but mail cars and milk cars were operating in the city. The interurban cars are being operated by union men to the city limits as no fare or wage reduction was made on the interurbans.

Jitneys Operating Without License

On July 8 the Mayor authorized the jitneys to operate without schedules on certain routes for a 5-cent fare. About 370 dollar jitney licenses had been taken out up to July 19. The Mayor the same morning stated that the electric railway was no longer necessary to the city, and that motor buses would give adequate service permanently for a 5-cent fare. Business men report 50 per cent losses in local business.

The tramway adjustment committee of fifty-five citizens, which was appointed in January by the Mayor and which recently recommended service-at-cost operation, met on July 8 to work out a solution of the problem on the basis of their previously-advocated settlement plan, referred to in the ELECTRIC RAILWAY JOURNAL for June 14, page 1183. The Mayor on July 10 intimated that he would not oppose an initiated petition for a 6 or 7-cent fare to be referred to the people if the company would pay the expenses of the special election.

The company has made repeated attempts to operate cars with company officials and supervisors, but it was blocked by the strikers although there was no violence. F. W. Hild, general manager of the railway, has announced that no professional strike breakers will be imported at present to operate the cars. He is advertising for men, but is offering only the 1917 wage scale. More than 1200 out of 1400 employees are on strike from every department of the railway except the power house and the general offices.

Men Make New Demands

The jitney service is inadequate and the unlicensed jitneys are charging 10 cents to $1.50 to haul passengers.

On July 9 local union No. 746 presented a contract to the company providing for a closed shop and a 60, 65, 70-cent wage scale for trainmen with proportionate increases for all other employees. No action was taken on this by the management.

The Mayor charges collusion on the strike between the strikers and the company. This the management denies flatly, stating the strike to be the inevitable and prophesied consequence of the Mayor carrying out his election platform promising a 5-cent fare.

Five Cents for a Month

The Grand Rapids (Mich.) Railway returned to a 5-cent fare on July 1 for an experimental period of one month. That the company would do this was noted previously in the ELECTRIC RAILWAY JOURNAL. The conditions under which operation will be carried out for July are reviewed in a letter of Benjamin H. Hanchett, president of the company, to the City Commission. In this letter Mr. Hanchett said:

> In accordance with the understanding at a meeting of your honorable body held on June 12, when this company agreed to put into effect, for the month of July, the 5-cent fare, and discontinue the 6-cent fare, as authorized by the ordinance passed Nov. 4, 1918, orders have been issued to the conductors to begin collection of a 5-cent fare on July 1, and to continue during the month of July, to test out the question whether the earnings of the company on this rate of fare will be sufficient to care for the operating and other necessary expenses.
>
> Notices have also been placed in all the cars, as requested by your resolution, passed on June 19, and the public has been advised through the newspapers that the 5-cent fare rate would be in effect for the month of July as above.
>
> This company will furnish from its cashier's office a sworn statement of the car earnings daily, compared with the same week of the previous year, that is, the days of the week will be used in comparisons, and also a schedule of all cars operated on the various lines from 6 o'clock in the morning until the last car at night. Both of these statements will be sent to the City Manager for the information of the special committee having the matter in hand, and also for the information of any of the commissioners who may be interested in knowing how the 5-cent fare is working, as compared with last year. These statements of the car earnings will show the percentages of increase for each day in the month of July.
>
> The company will be willing to have a daily inspection of the earnings as well as the car service reports and will co-operate to this end in any way it may suit the pleasure of your honorable body.

Louisville Suburban Rates Revised

Reduced rates on all lines of the Louisville & Interurban Railway, Louisville, Ky., will go into effect on Aug. 1. This action is the result of an agreement between the railway and the Suburban Protective Association reached before the State Railroad Commission at a joint meeting on June 24.

Under the new agreement, single-trip fares on the five Beargrass lines will be computed on the basis of 2½ cents a mile; on the Lagrange and Shelbyville lines fares will be charged at the rate of 2¾ cents a mile. Round-trip tickets from all points where such tariffs have been arranged will be sold by conductors on all cars without extra charge to passengers.

In the future, twenty-trip commuters' books will be sold at the rate of 2 cents a mile, except where book fares average more than the round-trip fare. In such a case the lowest fare will prevail. Commuters' books for the full month on the Lagrange and Shelbyville lines will contain sixty-two tickets instead of fifty-four, allowing for Sunday travel on these books in the future.

A minimum fare of 6 cents will be charged on all lines. The minimum fare heretofore has been 5 cents.

Books for school children on all lines will contain forty-trip tickets and will be sold at the same rate as prevailed prior to the tariff changes July 1, 1918. Recently, these books for school children contained forty-six tickets, which had to be used during the month in which the book was purchased. The forty-trip ticket books may be used during any month of the school year, and unused tickets are redeemable.

The new fare scheme, as announced by Chairman Finn, of the commission, shows large reductions over the scale of cash fares now in existence. The reduction on the Beargrass lines will amount to 16⅔ per cent; on the Lagrange and Shelbyville roads 8½ per cent. On all lines the commuters' book rates will be lowered approximately 25 per cent.

In order that a check may be kept on operations under the new schedule of fares, the railway will make a monthly report to the State Commission. The figures thus forwarded will be compared with corresponding months of 1917 and 1918. The revised rates could not be put into effect on July 1 because of the many new ticket forms which will of necessity have to be printed.

Jitney Regulation Proposed for Kansas City

The City Council of Kansas City, Mo., is considering ordinances for the regulation of jitney traffic. There are this summer fully 800 jitneys on Kansas City streets, of which about forty are large buses. The jitney drivers have an organization which from time to time has promised co-operation in such regulation as will provide the public with more regular and reliable service, and with protection against the many hazards involved in the operation of jitneys. So far, however, the chief activity of the organization has been to fight ordinances for regulation.

A regulatory ordinance was passed by the lower house of the City Council on June 30, which required bonds, limited the parking privileges, and otherwise curtailed the liberties the jitney operators have enjoyed. Another ordinance has been introduced in the Council, which will be heard soon, requiring jitneys to maintain scheduled runs all day, and extend their service further into the suburbs.

Jitney organization men say that they have not been able to secure bonds, the requirements of private companies for bonding being prohibitive. As an alternative, there is talk of some form of mutual insurance among the local owners themselves.

Stockholders Asked to Aid in Fare Campaign

Out in Columbus, Ohio, the voters are to be asked on Aug. 12 to approve the ordinance passed by the City Council granting an increase in fare from eight tickets for 25 cents to six tickets for 25 cents. As part of its campaign in behalf of the increase the company will put to a practical trial the suggestion made in an editorial in the ELECTRIC RAILWAY JOURNAL of June 28 by appealing to its stockholders in Columbus for help. The letter to the owners of the securities of the company, signed by P. V. Burington, secretary, follows:

An increase in rate of fare is of vital importance to all stockholders of the company.

The City Council has passed an ordinance granting an increase from eight tickets for 25 cents to six tickets for 25 cents.

Before becoming effective a referendum vote of the people is to be had at the primary election to be held on Aug. 12, 1919.

Whether the ordinance shall be sustained or defeated, is largely up to you and your efforts with other fair-minded citizens in voting to sustain the ordinance.

The need of an increase to maintain the service properly and protect the company is beyond question, and though small, the proposed increase will help.

Be sure to place the importance of voting right in this matter plainly before all voters with whom you may be associated or come in contact.

You can do much between now and Aug. 12 to secure this measure of relief by personal touch with voters.

If convenient, I would be glad to hear from you in this matter.

Court Sustains Fare Emergency

The Supreme Court of Wisconsin has reversed the judgment of the lower court in the La Crosse case in which Judge Stevens held that an emergency did not exist in establishing a 6-cent fare on the lines of the Wisconsin Railway, Light & Power Company in that city. The court said:

In the instant case the petition was broad enough to cover a proceeding for emergency relief in due course under section 1797-12, statutes. It is clear from the record that the commission had jurisdiction to proceed, and that all parties interested were before the court and a full and exhaustive hearing had, and the hearing covered all issues in the matter and the procedure was the same as in other cases where a general rate hearing is had before the commission. There was ample credible evidence in the record to show that the income was not sufficient to pay a reasonable return on the investment after allowing 3 per cent depreciation. It is unnecessary to go into a discussion of the facts and figures in the record, which are very voluminous and which appear to have been carefully considered by the commission.

Treating the order as an order in due course under section 1797-12, it cannot be said that it was either unlawful or unreasonable.

The issues involved in this case were reviewed at length in the ELECTRIC RAILWAY JOURNAL for April 12, page 759. As explained at that time the Wisconsin Railroad Commission had on Sept. 12, 1918, granted a 6-cent fare 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 on March 21 held, however, that the grant of a higher fare was unlawful because no emergency existed within the meaning of the law. His general argument was that a utility has no right to an emergency rate that would maintain its normal rate of income, and that the fact that a utility has set aside a substantial surplus was one of much weight in determining whether an emergency exists. It is this decision that is now reversed.

Seven Cents in Quincy

The Quincy (Ill.) Railway, included in the Illinois Traction system, has been authorized by the Public Service Commission of Illinois to increase rates in Quincy. The company has made a contract to secure power from the Mississippi River Power Company at Quincy. The commission held in this matter that it would not be necessary for the existing power station or equipment to retain the service until such time as an opportunity may arise to dispose of it to advantage, and in case of disposition it must be presumed that some sacrifice will have to be made on the part of the Railway, particularly as to the costs of the foundations, connections and other appurtenances which would be unsaleable in the case of the removal of the equipment. The issues on this point were whether the cost of the power station equipment should be included or excluded in the value of the property.

It appeared to the commission that the change constituted an economic good for many reasons; that it enabled the utilization of water power that would otherwise go to waste, thus resulting in the conservation of fuel. If the value of the power station building and equipment were entirely excluded from the initiation of this improvement and the operating expenses determined solely upon the cost of the purchased energy then it is obvious that no incentive would exist for the development of a project of this character.

In this case the commission will consider the cost of the power plant and equipment depreciated to date as contributing to the value of the property and in giving consideration to the equity of the rates for railway service will consider that a sufficient amount must be allowed to amortize property over a reasonable period of time, while at the same time giving the public a portion of the benefits that will accrue from this improvement; and it would appear that ten years would be ample time to effect the amortization. The rates authorized until Dec. 31, 1919, are as follows:

For single continuous passage between any two points:

Cash fare	7 cents
Four tickets	25 cents
School children's tickets—good between school hours—forty-ticket book	$1

Each Division on Its Own Basis

The trustees of the Eastern Massachusetts Street Railway, Boston, Mass., on July 1 made effective a new system—known as the "home rule" system—by which they plan to determine the fare rate on each of the twelve divisions of the road.

Under the new plan the manager of each division is held responsible for the service provided on his division. He is to be in charge of accounts, assisted by a clerical force entirely independent of the main office; of complaints and maintenance of service. At frequent intervals the district managers are to issue statements showing receipts and expenditures, in order that patrons in the respective districts may know the operating costs. On these figures will be based the fare rates for the different lines.

The trustees took possession of the property on June 1. An estimate of the earnings and expenses for the previous month under the old system of management indicated a deficit of $300,000. Nothing was earned toward the interest charges or the principal of the State-guaranteed bonds.

The twelve divisions of the road are in Chelsea, Lynn, Salem, Gloucester, Lowell, Lawrence, Haverhill, Hyde Park, Quincy, Brockton, Taunton and Fall River.

Transportation News Notes

Presenting Valuation Testimony.—The League of Municipalities of New Jersey is now engaged in presenting its case with respect to the valuation of the property of the Public Service Railway, New Jersey, for rate-making purposes in connection with the plan suggested by the company for the proposed zone-fare system.

Six-Cent Fare Sustained.—The Railroad Commission of Wisconsin has handed down a decision denying the petition of the city of Sheboygan to reduce to 5 cents the 6-cent fare recently ordered, and also denying the application of the Eastern Wisconsin Electric Company to make the rate permanent that was ordered as an emergency measure. The commission held that the conditions at present do not warrant the re-establishment of the 5-cent fare at this time.

Wage Increase for Municipal Employees.—Wage increases for platform men, track and office employees of the San Francisco (Cal) Municipal Railway have been approved by the Board of Public Works and sent to the Board of Supervisors with recommendation that the ordinances fixing the depreciation and accident funds be amended. It is asked that the depreciation fund be decreased from 14 to 12 per cent and the accident fund from 4 to 3 per cent to take care of the proposed wage increase.

Zones for Worcester.—The Worcester (Mass.) *Telegram* of June 30 said: "Plans are being considered by officials of the Worcester Consolidated Street Railway for establishing a 5-cent fare in a general zone which would include parts of Worcester in what might be termed the central section of the city and a 10-cent fare for the remainder or outlying districts. In connection with the above plan the company officials are also giving consideration to the establishment of shorter zones in the suburban lines with a reduction in fare."

Free Rider a Poser.—The finance committee of the City Council of Seattle, Wash., has asked Corporation Counsel Meier for an opinion on the question of whether the city's policemen and firemen can be compelled to pay fare on the cars of the Seattle & Rainier Valley Railway. The company has called the attention of the Council to the new tariff granted by the Public Service Commission which makes no provision for carrying policemen and firemen free, but the finance committee is under the impression that the company's franchise provides that these employees shall be carried without charge.

Fare on Suburban Line Increased.—The fare on the Westerville line of the Columbus Railway, Power & Light Company, Columbus, Ohio, has been increased from 5½ cents to 6 cents per zone. This makes the total fare between Columbus and Westerville and return 42 cents, as a city ticket must be used for fare within the city. There are three zones on the line. The franchise under which the company now operates provides for service at cost. Before it was adopted, the round-trip fare from Westerville to the center of Columbus was 25 cents.

Another Ten-Cent Road.—The Middlesex & Boston Street Railway, Newtonville, Mass., has again filed with the Public Service Commission a schedule of fares, effective on Aug. 1, which puts the system practically on a 10-cent fare basis. All present 8-cent lines go to 10 cents, as do all but routes "B," "D," and "E" of the 7-cent lines. The three sections remaining unchanged are certain lines through Newton, Waltham, Waverly and Watertown. Free transfer privilege will be eliminated under the schedule as filed, which proposes a charge of 3 cents for each transfer issued.

Two Sevens Replace Two Fives.—The present fare on the Corry & Columbus Traction Company's line between Corry and Columbus, Pa., is 10 cents, namely, two 5-cent fares. It is proposed, after July 20, to charge 14 cents, namely two 7-cent fares, with eight tickets for 50 cents. If there is no opposition on the part of the public to the increase and the results under the increased fare justify, the road will be continued in operation, at the rates named. Otherwise another increase will be requested. If the road can not in some way be made to pay, the owners are prepared to shut it down.

Wants Six-Cent Fare Continued.—Extension indefinitely of authorization for a 6-cent fare is asked by the East St. Louis (Ill.) Railway in a petition filed with the Public Utilities Commission of Illinois on June 25. On the application of the company for a 7-cent fare a year ago the commission authorized a 6-cent fare until July 31, 1919. The petition now filed points out that the 6-cent fare was allowed last year after the trainmen had been awarded an increase in wages and that these employees are now demanding an additional increase in wages of about 100 per cent. A decision on the wage demand by the War Labor Board is now awaited.

Patrons to Decide Skip-Stop Matter.—The skip-stop system in Dallas, Tex., has been abolished on July 1 for a period of three months, during which time the old system will be tested and patrons will have an opportunity to compare the two systems. At the end of the three months it is planned to have a referendum in which the railway patrons will express their choice. The railway promises to abide by the result. The Dallas Railway will keep close check of the cars on the various lines during the three months test period. The office of the Supervisor of Public Utilities of Dallas has also made arrangements to check all the lines of the city to see that the service is kept up to the proper standard.

Safety Cars for Galesburg.—The Public Utilities Commission of Illinois has passed an order authorizing the Galesburg Railway, Lighting & Power Company, included in the Illinois Traction System, to operate one-man cars in the city of Galesburg, provided that such cars shall not be operated across railroad crossings unless flagged over the crossings after the car has come to a full stop and a conductor or flagman has proceeded ahead to view the crossing, the motorman remaining in control of the car. The order of the commission is to apply only to cars especially modeled and equipped with safety appliances for one-man operation. Specifications and descriptions of the proposed type of cars are to be filed with the commission for its approval.

Service to Be Resumed in Hastings.—Thomas J. Goodwin, president of the village of Hastings-on-Hudson, announced on July 2 that electric railway service from Yonkers to the center of Hastings will probably be resumed soon. The formal consent of the Board of Trustees of the village, giving the Yonkers Railroad a new franchise, has been filed in White Plains with the County Clerk. The new franchise will permit the cars from Yonkers to continue to the corner of Main Street and Warburton Avenue, instead of stopping at the village line, as they have done since the old franchise expired. The Uniontown branch, however, in the northern end of the village, which has torn up its track, will be discontinued. The discontinuance of service in Hastings was referred to in the ELECTRIC RAILWAY JOURNAL for May 10, page 938.

Illinois Traction Increasing Facilities.—New schedules were placed in effect by the Illinois Traction System, Peoria, Ill., on July 6. On the lines between Peoria and Bloomington and Bloomington and Decatur the service has been almost doubled, giving an hourly service between these cities most of the day as compared to practically a two-hour schedule previously. Few changes will be made on the Peoria-Springfield-St. Louis line, as service on this division was maintained at a high level during most of the war period. Two parlor cars will leave Peoria every day for Springfield and St. Louis. Traffic on the various divisions of the Illinois Traction System is reported to be increasing. The company, itself, resumed the handling of express June 29. The new department will be known as the Illinois Traction Express Company. It will be in charge of C. F. Handshy, assistant general manager. No express has been handled over this system since the Adams Express Company was absorbed by the American Railway Express Company. The company reports a heavy tonnage of coal this summer.

Personal Mention

New Engineer for Pacific Electric

Eugene C. Johnson Made New Chief Engineer for the Pacific Electric Railway, Los Angeles, Cal.

Eugene C. Johnson, who has served in the capacity of assistant chief engineer in charge of maintenance of way and structures of the Pacific Railway System in Southern California since the year 1911, was recently appointed chief engineer, vice George E. Pillsbury, who retired on account of ill health. The position of assistant chief engineer has been abolished.

Mr. Johnson becomes the active engineering head of the system in this new position, having jurisdiction over all track, paving, bonding, signal, bridge and structure manitenance, as well as all new construction, together with full charge of the valuation report of the company's entire properties as directed by the California State Railroad Commission during the year 1912. The jurisdiction of his new duties covers a trackage of 1092 miles.

Mr. Johnson was born on July 16, 1881, at Des Moines, Ia., and was educated in the public schools at Minneapolis, Minn. Later he took a preparatory course in civil engineering at Armour Institute of Technology of Chicago, Ill., and upon graduation from the Armour Institute he entered Cornell University. In 1905 he was graduated from Cornell University with the degree of civil engineer. In 1905 he was engaged as assistant engineer of the Buffalo Terminal Division of the Delaware, Lackawanna & Western Railroad. In 1906 he accepted the position of terminal engineer of the Western Pacific Railroad at San Francisco. During his work for the last-mentioned company Mr. Johnson had more or less to do with the Southern Pacific construction work of the Bay Shore Cut-off.

In 1908 Mr. Johnson was recommended to the Los Angeles Pacific Company to handle the construction of two large and difficult tunnels for the Los Angeles Pacific Company's lines in the city of Los Angeles, these being known as an extension of the Hill Street line to afford a more accessable route for penetrating the Hollywood district. Upon the completion of this tunnel construction in 1909, Mr. Johnson took charge of the Arizona Eastern Railroad's construction of its Gila Canyon Cut-off line, one of the most difficult pieces of construction the Southern Pacific had ever undertaken in Arizona.

After the completion of this work Mr. Johnson was appointed chief engineer of the Los Angeles Pacific Company. This was in 1910. He then continued with that company until the consolidation of the local and interurban lines at Los Angeles in 1911 as the Pacific Electric System. Since then he has had charge of maintenance of way and structures of the Pacific Electric Railway with the title of assistant chief engineer.

Mr. Cameron Resigns

Retires As Superintendent of Transportation at St. Louis, After Nineteen Years of Service

Bruce Cameron, superintendent of transportation of the United Railways, St. Louis, Mo., has handed his resignation to receiver Rolla Wells. In transmitting his resignation Mr. Cameron said in part:

In July, 1918, immediately after the action of the Grand Jury which indicted me, I directed a letter to the board of directors of the United Railways telling them I had no connection whatever with the theft of the referendum petitions and did not see how I could be indicted upon the testimony of a man named Jackson, who confessed that he did the deed himself, and that I did not wish to embarrass the board in any way whatever and if they thought it was best for the railway for me to discontinue my services with the company to consider that as my resignation, effective at their pleasure.

BRUCE CAMERON

The board did not accept the resignation and I have been continued as superintendent of transportation ever since.

Recent developments have caused a great deal of unpleasant newspaper comment, and I am quite sure you are in an unenviable position, hence I do not wish to embarrass you in the least and you may consider this as my resignation as superintendent of transportation of the United Railways to take effect at your pleasure.

I want to repeat, I had no connection with the referendum petitions in any way and future developments will prove this statement.

May I ask that you, the public which you represent, as well as the stockholders of the company, reserve your personal opinions until this unfortunate muddle has been cleared up or my innocence established in the courts?

I have dealt honestly with every one of the many problems coming to my department, and, in doing so, have, no doubt, made some enemies. My work has necessarily kept me on the job all of the time and Mrs. Cameron has passed through a year of unjust and unfair criticism leveled at me, but her faith supports her, as she knows it will come out all right in the end. If at any time you wish to consult with me I am at your service.

Bruce Cameron was born on a farm in Missouri in 1877. After attending public and high schools of Nevada, Mo., he took a course at Fort Worth College, Fort Worth, Texas. His first business adventure was in the asphalt business at Dougherty, I. T. In 1900 he went to St. Louis and was employed by the St. Louis Transit Company in the enginering department. Later he was assigned to the operating department, where he has been continuously since that time.

As head of the transportation department of the United Railways it fell to Mr. Cameron to employ, instruct, train, discipline and commend the men who actually run the cars, also the superintendents, supervisors, clerks, dispatchers, switchmen, car sweepers and curve cleaners. In the department of which he had charge there are at present approximately 3400 efficient, loyal, capable and honest men and women, many of whom have shared in establishing a record of accident reductions for the last eighteen months, the present ratio being twenty-five accidents to 1,000,000 passengers carried. Mr. Cameron personally gave the property the very best that was in him. In fact he worked for the company from fifteen to twenty-four hours a day for nineteen years with only one vacation. Mr. Cameron has had several opportunities to better his condition within the last two years. At present he is taking a much needed vacation. He has not made any definite plans for the future.

George Kidd, general manager of the British Columbia Electric Railway, Vancouver, B. C., who left for England on April 12 in connection with affairs of the company, expects to return to Vancouver by Aug. 1.

H. O. Buder, assistant superintendent of transportation of the United Railways, St. Louis, Mo., has temporarily been given the duties of superintendent of transportation of the company following the recent resignation of Bruce Cameron.

R. V. Rose has been appointed superintendent of the Niagara Junction Electric Railway, Niagara Falls, N. Y. He succeeds Joseph McSweeney, who has been appointed head of the welfare department of the newly-consolidated Niagara Falls Power Company.

Col. George Alan Green, who as chief engineer and superintendent of the Fifth Avenue Coach Company, New York, N. Y., operating the buses on Fifth Avenue in that city, is largely responsible for the steady improvement and progress of the company, has been elevated by the board of directors to be general manager of the company. Colonel Green recently returned to the company after active service in France in the British Tank Corps.

James Watt, Pittsfield, Mass., has been appointed superintendent of equipment of the Hudson Valley Railway, Glens Falls, N. Y., succeeding George C. Murray, who resigned to return to Mexico City where he was employed previously. Mr. Watt has been with the Third Avenue Railway, New York, and the Public Service Railway of New Jersey.

Lieut. Walter A. Neeley, formerly superintendent of the New Jersey & Pennsylvania Traction Company, Trenton, N. J., has received his discharge from the army after spending nearly two years overseas. He received severe wounds about the arms and body in the battle of the Argonne Forest and still has one of his wounded arms bandaged. Lieutenant Neely was a member of the old New Jersey National Guard for many years. He resigned from the railroad to enter the army. He will probably resume his old position with the New Jersey & Pennslyvania Traction Company when he recovers entirely from his wounds.

Horace E. Allen has been appointed general superintendent of the Saginaw-Bay City Railway, Saginaw, Mich., which includes the local railway systems in both Saginaw and Bay City, and in addition operates an interurban line from Saginaw to Bay City. The Northeastern division of the Michigan Railway, of which Mr. Allen is also in charge, operates through cars from Bay City and Saginaw to Flint and Detroit. Mr. Allen was formerly assistant general manager of the Springfield (Ill.) Consolidated Railway. Before that he was with the Michigan Railway. After completing the course in electrical engineering at the Massachusetts Institute of Technology Mr. Allen accepted a position with the Westinghouse Company at East Pittsburgh and in 1910 became connected with the Toledo Railways & Light Company, serving with that company for six years.

George B. Willcutt, secretary of the United Railroads, San Francisco, Cal., and its oldest employee in point of continuous service, has been made vice-president and secretary of the company. Mr. Willcutt is a native of San Francisco, in which city he received his early training and prepared for the University of California. While in college he majored in chemistry and after graduation in 1879 taught the subject at the University of California for three years. Leaving his professorship to take up mining, he was an early associate of John Hays Hammond and Henry Butters. His father, J. L. Willcutt, was at that time general manager of the Market Street Cable Railroad, San Francisco, and in 1886 Mr. Willcutt joined this company as assistant to the general manager. In 1893 there was a consolidation of fourteen or fifteen of the small horse car and cable railways of San Francisco into the Market Street Railway Company and J. L. Willcutt was made secretary and comptroller, with his son as his assistant. In 1900 George B. Willcutt succeeded his father, who wished to retire from active life, and since that time has held the position of secretary and comptroller, being re-elected to the same office in 1902, when the United Railroads of San Francisco was formed. He has been a director of the company since 1907 and is considered perhaps the highest authority on the history of street railways in San Francisco. He has an intimate acquaintance with the many changes that have occurred during the past two decades and his service to the company is of inestimable value on this account alone.

Mr. Buffe Made Manager

Former Assistant to President at Kansas City Succeeds Mr. Gibson—Other Departmental Changes

F. G. Buffe, connected with the Kansas City (Mo.) Railways since August, 1917, has been appointed general manager of the company, effective from July 1. Mr. Buffe had been acting in this capacity since the resignation of James E. Gibson, who had been general manager since the reorganization of the company.

Following the appointment of Mr. Buffe, readjustments were made in the personnel, with the end in view of closer co-ordination and a reduction in the channels through which reports reach the officers of the company. Mr. Buffe had been assistant to the President P. J. Kealy for more than eighteen months.

F. G. BUFFE

A. E. Harvey, who has been superintendent of ways and structures, has been appointed chief engineer, in charge of ways and structures, and the electrical distribution system is added to his responsibilities. He will report to the general manager.

S. H. Grauten, electrical engineer, will report to Mr. Harvey.

H. W. Smith, now assistant superintendent of ways and structures, becomes engineer with this subject in charge.

In the shop department George J. Smith, superintendent, will have the assistance of Henry S. Day, equipment engineer. Mr. Day will have particular charge of details of inspection, maintenance and division repairs.

W. C. Harrington, formerly superintendent of equipment, will be supervisor of division repairs. Mr. Harrington will report direct to the equipment engineer.

Mr. Buffe, the new general manager of the Kansas City Railways, was born on Sept. 5, 1881. He was graduated from Illinois Wesleyan University, Bloomington, Ill., and did newspaper work in Denver, Col., and Peoria, Ill. He was formerly managing editor of the Peoria *Herald-Transcript*. In 1909 he became connected with the Illinois Traction System, as manager of the department of publicity which he installed. Later he served as special representative for H. E. Chubbuck, vice-president executive of that company, in connection with franchise and public service commission work. Mr. Buffe entered the service of the Kansas City Railways in August, 1917, for work in connection with labor matters, and also served in the educational work of the utilities of the State of Missouri on the relations of these companies to the public. He was made assistant to President P. J. Kealy on Jan. 1, 1918. Upon the resignation recently of James E. Gibson as general manager, Mr. Buffe was made acting general manager.

Mr. Day is a new man in the Kansas City Railways organization. After service with the Boston (Mass.) Elevated Railway, Mr. Day spent several years with the Westinghouse Electric & Manufacturing Company, specializing on railway equipment. He had charge of all electrical equipment in connection with the electrification of the New York, New Haven & Hartford Railroad, and was in complete charge of the shops, inspection and maintenance work for this company. He has recently returned from France, where he served as captain of engineers. He also served with Sanderson & Porter, New York, N. Y., on valuation work.

C. C. Bullock has been appointed superintendent of transportation of Shreveport (La.) Railways to succeed J. W. Robertson, who resigned to accept a similar position with the Sheffield (Ala.) Company, operating the railway in Sheffield. Mr. Bullock entered electric railway work as a conductor with the company in 1910. Some years later he became night dispatcher, serving in this position during the winter months, and as assistant secretary for the local baseball club during baseball season in summer months.

Obituary

John F. Merriam, seventy-one years of age, died on July 1 at his home in St. Joseph, Mo. About 1870 Mr. Merriam acquired an interest in the Citizen's Street Railway which operated on South Eleventh Street, St. Joseph. He served as superintendent of the line. The franchise of the company was purchased in 1888 by the People's Electric Railway and Mr. Merriam retired from railway work to devote himself to banking and traveling.

Manufactures and the Markets

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

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Rail Inquiries Continue Favorable Showing

Under Curtailed Production, Rush of Orders from Railroads Would Lengthen Shipments

Conditions in the rail mills are becoming better. Better orders for rails are coming in from domestic consumers, but the principal increase in orders is from abroad. Inquiries, too, are in larger volume, not only in number of orders, but also in size of order.

The recent government order for 200,000 tons of rails has had little effect on rolling mills. The order was so split up among producers that it resulted in merely a mouthful per mill compared with normal orders. There seems to be no foundation to the rumored further order on the government's account for 300,000 tons of rails at this time. Manufacturers state that the withholding of the rail orders causes more injury to railroads than it does to the rail mills. This, of course, is true of the electric railways as well.

Immediate Shipments Now

Mills are operating at between 40 and 50 per cent of capacity, producers state. No stocks of rails can be made up in advance of the ordering, which manufacturers feel sure will soon come in, because of the number of different sections required by the various types of railways. It is expected that when ordering does start in it will be in large volume and for a great part all at once. At that time shipments will be extended to long periods. For the present, shipments can be made immediately. All orders are about completed.

Export orders are looking up. The British mills have capacity well below demand and are not in a way to produce rails to compete in price or delivery with American rails. Manufacturers of steel products in Great Britain are studying American methods of production with a view to the adoption of measures that will reduce the present high costs of British manufacture. Glasgow has recently purchased 5000 tons of street railway rails from America. The lowest British offer was given at £19 1s. 3d. per ton. The reported American quotation of £17 9s. is believed to be too low, but it was under £19. Great Britain has done little electric railway work in five years, and her rail condition is seriously in need of care.

Japan is reported in the market for 5000 tons of rails, although she only recently purchased 30,000 tons. France is in need of 5000 tons of rails and a like tonnage of other steel, while Spain is inquiring for axles, wheels and other equipment. Brazil also is extending railroads. These are merely indications or rail activity, and expected further export orders will have their effect on the already curtailed rail mill production and shipments.

Prices are holding firm for domestic consumption at the rate suggested the latter part of April, but there is a tendency upward with other steel products.

Fare Box Inquiries on the Increase

Buying of New Boxes and for Changes Expected When Commissions Grant Relief

Many inquiries are in the field and several orders for small numbers of fare boxes are in manufacturers' hands. Traction companies in many cases feel that the period of higher fares is drawing closer, and they are getting information on new fare boxes and the work necessary to equip present boxes to handle different coins in advance of this change. Many of the inquiries concern applications of metal tokens.

Actual buying of this equipment is being put off, it is stated, owing to uncertainty about the possibility of getting the desired increase in fare or doubt as to the permanency of any higher fare that might be obtained just now. Too long holding off of ordering, manufacturers say, will result in congestion of manufacturing conditions and shipments and will hold up deliveries for some time. There are lots of orders ready to come through, they say, and when relief is assured the railways will release them in considerable numbers.

No recent change in prices has been reported. The tendency, sales representatives state, is upward, along with other railway material.

It is expected that charge for transfers, such as it seems is about to go through for the New York Railways Company, will not require fare box changes, as it can be made merely a matter of the issue of a transfer by the conductor and the receipt by him of the pennies.

Crossarms Higher

Price increases have just gone into effect, although at this writing the amount of increase is not available. It will probably be in the nature of a 10 to 15 per cent rise. Stocks are in quantity to make good deliveries.

No Price Drop in Glass Expected

Curtailed Production and Increasing Domestic and Foreign Demand Will Probably Keep Stocks Low

The market for window glass has increased considerably in the last few weeks. In the agreement whereby one-half of the factories should work from December to the latter part of May and the other half from August to December, there is a belief among the trade that present consumption and that expected in the fall and winter, will so reduce stocks that longer periods of production could have been permitted.

Probably two-thirds of the year's production is already in storage. Manufacturers have a large part of this in stock, although dealers and jobbers are fast taking on large stocks for their own use. Jobbers' stocks, however, it is stated, are not yet in sufficient quantity to meet all demands.

Manufacturers can make immediate deliveries on most common grades of window glass, although there is one instance where no deliveries under thirty days can be made. Carload lots have been set down at sixty days. For some of the thicker sizes, around 22 to 29 ounces, deliveries are running from three to six months. This is because of the heavy automobile top demand which the glass factories cannot supply in a short time with their present capacity.

Prices on window glass have been holding firm for some time and no intimation has been given by manufacturers that there will be any reduction this year. For single strength, first three brackets, A and B quality, New York discount still holds at 80 per cent, while double strength, all sizes, AA quality, has an 81 per cent. New York discount.

Although fall production will start up in August, present building demands, both domestic and foreign, dealers state, will take a large proportion of the window glass stock and production. The export demand in particular is in creasing to a great extent. The glass factories of France and Belgium are not yet in a position to supply the needs of those countries and, according to present indications, will not be for a long time, so that stocks in this country naturally will be drawn upon to a large degree to fill their requirements. The result to domestic consumers, it is stated by the trade, will be longer deliveries and, if stocks get much smaller, possible higher prices.

Copper and Brass Products Holding Firm for the Present

Copper continues its advance, and at this writing is quoted at 20 cents a pound spot delivery. Copper and brass products which went up a cent a week ago have not undergone any further advance, although such advances are not expected.

No increase has been noted in the price of commutator bars nor field and armature coils during the recent ascent of copper, but it is likely that price changes in this class of maintenance equipment will follow. Among orders for armature coils there is found one for about $80,000 in the New York district.

Rolling Stock

Delta Light & Traction Company, Greenville, Miss., has purchased two cars for early delivery.

Arkansas Valley Interurban Railway, Wichita, Kan., expects to equip its limited cars with heavier type motors to cut down the running time between Wichita and Hutchinson. Additional standard freight cars will also be needed by this company.

Georgia Railway & Power Company, Atlanta, Ga., has ordered from the American Car Company for October delivery fifteen new cars, seating 51 people each, with center-entrance doors opening very little above street level. These will be the first cars of this type to be seen in Atlanta, though they already have been tried in a number of other cities and have proved very successful. The new cars will be turtleback, like the latest pay-as-you-enter cars built in Atlanta. They will have steel sides and steel reinforced timber underframing. They will be double ended, with no bulkhead at either end and no difference of level between platform space and car floor. The motorman will have his own enclosure shut off from the rest of the car. The cost of these new cars is given as $9,000 each delivered.

San Francisco - Oakland Terminal Railways, Oakland, Cal., recently placed upon its lines a new street car which was built in its own shops from material bought in Oakland. It is known as double end drop platform with monitor roof and is divided into two compartments, one compartment for smoking, occupying about one-third of the car. The seats are transverse reversible and of spring rattan. Its length is forty-eight feet, width nine feet, and has large commodious platforms. The framing of the car is steel throughout, with the exception of the roof, which is wood and steel combined. The latest system of lighting is installed, with opal shades. The interior of the car is finished in Spanish cedar, natural finish. The car seats fifty-two people and operates on the College Avenue line. The directors have authorized the building of seventeen additional cars similar in all respects to this one.

Recent Incorporations

Sistersville & New Martinsville Traction Company, Sistersville, W. Va.—The Sistersville & New Martinsville Traction Company and the West Virginia Power Company have been incorporated with a capital stock of $500,000 as successor companies to the Union Traction Company and the Sistersville Electric Light & Power Company. The extension of the road above New Martinsville to Clarington or Moundsville is contemplated. Important improvements are also being worked out for Paden Park, which will make it one of the most popular and convenient pleasure resorts in that part of the Ohio Valley. Incorporators: R. Broadwater, W. J. McCoy, Nell Burns, W. R. Reitz and E. C. King, all of Sistersville.

Franchises

Little Rock, Ark.—L. Garrott has asked the City Council of Little Rock for an extension of his franchise to construct a line from Little Rock to Hot Springs.

Miami, Fla.—The Dade County Commissioners have granted a thirty-year franchise to the Miami Beach Electric Company to operate a street car line over the causeway. It is stipulated that within four months after the completion of the causeway tracks the company shall have constructed and ready for operation a line extending from the eastern terminus of the causeway to Miami Avenue, and that within a year it shall have completed and ready for operation a belt line at the beach.

Track and Roadway

Wichita Railroad & Light Company, Wichita, Kan.—The Wichita Railroad & Light Company has ordered 12,000 new ties to be used this year on streets to be paved.

Frankford & Shelbyville Traction Company, Shelbyville, Ky.—L. C. Lashmet, secretary and engineer of Wadell and Sons, engineers of New York and Kansas City, who will construct the Frankfort-Shelbyville electric line, has arrived in Louisville to begin work. The last connecting link has been surveyed and it is planned to begin construction work so as to have it completed January 1, 1920. It was thought that a new bridge over the Kentucky River at Frankfort would be necessary but the present plan is to use the bridge now in service over that stream. (Mar. 8, '19.)

Springfield, Ill.—It is proposed to construct an electric line between Springfield and Rushville, via Petersburg and Chandlersville. John Rosenwienkyle, 2145 North Racine Avenue, Chicago, is reported interested.

Boston (Mass.) Elevated Railway.—Work will be begun soon by the city of Boston and the Boston Elevated Railway on the paving of Tremont Street from Berkeley and Dover Streets to Northampton Street. The city will spend $152,000 on the work and the Boston Elevated will spend $104,000 for its part of the work. New tracks will also be laid by the Boston Elevated Railway on this section.

Norwood, Canton & Sharon Street Railway, Sharon, Mass.—A stock company is being organized by F. A. Prince, of Dennet & Prince, Boston, to operate the Norwood, Canton & Sharon Street Railway. It is planned to have the road in operation by Aug. 1.

Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo.—Right-of-way has been obtained and construction will be begun soon by the Kansas City, Clay County & St. Joseph Railway on its proposed extension from Excelsior Springs to Richmond, about 18 miles.

Pittsburgh (Pa.) Railways.—Work will soon be begun by the Pittsburgh Railways on the double-tracking of its line on Chartiers Avenue, Sheraden, at a cost of $103,614.

Power Houses, Shops and Buildings

East St. Louis & Suburban Railway, East St. Louis, Ill.—The East St. Louis & Suburban Railway is in the market for a 60-cycle turbine, switchboard and other electrical equipment to replace material destroyed and damaged by an explosion.

St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo.—Improvements and additions to the plant of the St. Joseph Railway, Light, Heat & Power Company planned for the year 1919 will amount to $1,250,000. The plans include the installation of three additional 10,000 kw. generators with their boilers and accessories, the installation of one 10,000-kw. turbogenerator with condensers, pumps, switchboard, boiler, stacks and other necessary equipment. Heavy expenditures are planned for next year as well.

Interborough Rapid Transit Company, N. Y.—Bids for the construction of eleven stations on the Pelham Bay Park branch of the Seventh Avenue-Lexington Avenue rapid transit line have been asked for by Transit Construction Commissioner John H. Delaney. The bids are to be opened on July 24, and work is to be completed within six months after the contracts are awarded. The steel work for the Pelham Bay Park branch of the city-owned rapid transit system is already being erected, and will be ready for station finish within two months. All of the stations are located above ground, and it is estimated the work will cost $650,000.

Trade Notes

E. T. Causer has recently resigned as works manager of the R. D. Nuttall Company, Pittsburgh, Pa.

Holden & White Inc., Chicago, announce that the National Railway Appliance Company of New York, will handle the sale of jewel forced ventilation heating systems and Holden & White electric heaters in the New England, Eastern and Southern states.

Mr. Dennis' Title—A note in this column on June 28 referred to the title of Charles H. Dennis, while with the Railway Audit & Inspection Company, as "general superintendent of employment." This paper is in receipt of a card indicating that his complete title was "superintendent of inspection and employment."

Federal Electric Products Corporation, 52 Broadway, New York City, announces that the corporate name of the Federal Electric Company has been changed to Federal Electric Products Corporation, and the business will hereafter be conducted under that name. Benjamin Blum, heretofore managing director of the Federal Electric Company, has been elected secretary of the Federal Electric Products Corporation, and will be in charge of the company's business with the same duties as heretofore exercised.

Harrison Safety Boiler Works, Philadelphia, Pa., announces that the Monash line of pressure reducing valves and pump governors, formerly manufactured and sold by the Monash-Younker Company, of New York and Chicago, has been acquired by the Harrison Safety Boiler Works of Philadelphia. The purchase includes a stock of manufactured parts and valves, drawings, patterns, trade mark and good-will. The Harrison Safety Boiler Works will manufacture and market the valves under the trade name "Cochrane-Monash," and will supply repair parts for valves now in use.

Allied Machinery Company of America has increased its capital stock to $5,000,000. This was made necessary by the decision of the American International Corporation to group all of its machinery export selling subsidiaries under one head. All shares of the Allied Machinery Company will, as before, be owned by the American International Corporation. J. W. Hook will continue as president and F. A. Monroe, S. T. Henry and T. G. Nee have been elected vice-presidents. Mr. Monroe is in charge of the administrative affairs of the company. Mr. Henry is in charge of sales and advertising and Mr. Nee is at present in Japan devoting his attention to the affairs of the company there. R. P. Redier is general sales manager of the company, with headquarters at Paris.

Henderson - Mockenhaupt Company, Chicago, has been organized to act as sales representatives for manufacturers of electric material. A. F. Henderson, president of the company, was formerly secretary and general sales manager of the Electrical Material Company; B. J. Mockenhaupt, secretary and treasurer of the new company, was formerly vice-president of the W. P. Crockett Company. Among the lines being handled by the Henderson-Mockenhaupt Company are those of the Independent Lamp & Wire Company, Electric Railway Equipment Company, National Enameling & Manufacturing Company, and Rattan Manufacturing Company. A. C. Perrin, formerly railway and mine specialist for the Electrical Material Company, is also associated with the Henderson-Mockenhaupt Company.

National Railway Appliance Company, New York City, has just completed arrangements with Holden & White, Inc., Chicago, Ill., whereby they are prepared to offer in the Eastern and Southern States a new line of car heaters of various types. These include the Jewel hot-blast forced-ventilation stove and a complete line of electric heaters. The stoves are made by the Detroit Stove Works and the motor and blower are located below the fire box. A new type of construction has been introduced into the electric heaters. These are made by the Cutler-Hammer Manufacturing Company and include a nicrome resistance ribbon wound on a mica center strap. This is incased in mica insulation and mounted on a metal bar bound with sheet metal in such a way as completely to sheath the unit.

Col. Douglas I. McKay has been elected president of the Pulverized Fuel Equipment Corporation of 30 Church Street, New York, to succeed John E. Muhlfeld, who retires to return to consulting engineering practice. Since July, 1917, Colonel McKay has been engaged in war work and supply, where he had supervision over the purchasing operations of the several supply corps of the War Department, including the Ordnance Department, Quartermaster's Corps, Medical Corps, Corps of Engineers and Signal Corps. Colonel McKay is a graduate of West Point and a former police commissioner of New York City. Upon resignation of the commissionership he became assistant to the president of J. G. White & Company, Inc., and two years later was elected vice-president and director, which position he held at the time he entered the service.

Park-Union Foreign Banking Corporation formally opened its doors for business on June 1, at 56 Wall Street, New York City, for the development of foreign markets. The new international bank has been in the process of organization since March, when it was incorporated under the laws of New York State, with a capital of $2,000,000 and surplus of $250,000. These figures, however will be increased as occasion demands. For the present the activities of the Park-Union will be devoted particularly to the promotion of American interests in the far Eastern field, says Dr. C. A. Holder, its president. Branches have been established in Yokohama and Shanghai, and negotiations are under way for offices in other important world centers. Offices in the United States have been located on the Pacific coast at San Francisco and Seattle.

Ohio Electric & Controller Company, 5900 Maurice Avenue, Cleveland, Ohio, announces it has appointed as its representatives, the following firms: The Iron & Steel Equipment Company, 1502 First National Bank Building, Pittsburgh, Pa.; Williams, Beasley Company, 343 South Dearborn Street, Chicago, Ill.; Linn O. Morrow, 707 Franklin Trust Building, Philadelphia, Pa.; J. W. Dopp & Company, 18 Columbia Street, Detroit, Mich.; Kelly, Powell, Ltd., 403 McArthur Building, Winnipeg, Canada; Wonham, Bates & Goode, Inc., Dominion Express Building, Montreal, Canada; Shook & Fletcher Supply Company, Birmingham, Ala. For export business the following representatives have been appointed: Wonham, Bates & Goode, Inc., 17 Battery Place, New York, London, Paris, Havana and Rio de Janeiro; Mitsui & Company, 65 Broadway, New York, Japan, China, Philippine Islands and Honolulu; Gustav Neilson A/S, Christiania, Norway, Sweden and Denmark.

New Advertising Literature

Napier Saw Works, Inc., Springfield, Mass.: Form 60 on Napier band saw machines and hack saw machines.

Trumbull Waste Manufacturing Company, Manayunk, Philadelphia, Pa.: Booklet on "Tampico" and how to use it in journal box packing.

Universal Packing & Service Company, Railway Exchange, Chicago, Ill.: Double sheet on "Spring Journal Box Packing."

Electric Arc Cutting & Welding Company, Newark, N. J.: Booklet on "Portable Alternating Current Apparatus for Cutting and Welding Metals."

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.: Folder on the "FFI Electric Locomotive"—the 4800-hp., single 4-0 three-phase freight locomotive.

Electric Service Supplies Company, Philadelphia, Pa.: Bulletin No. 157 illustrates and describes the "Golden Glow" demountable mirror unit for replacing 18 in. x 9 in. metal reflectors.

Thompson-Starrett Company, New York: Two finely printed brochures. One contains views and short descriptions of some of the important buildings erected by the company. The other is a copy of an article which appeared in *Scribner's Magazine* for November, 1918, written by Col. W. A. Starrett, and describes the construction of the city of Nitro, W. Va., at a cost of $50,000,000. This construction included the erection of 3000 individual buildings.