

Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

Volume 53

New York, Saturday, June 7, 1919

Number 23

Constructive Maintenance Raises the Standard of Equipment

ONE of the perplexing problems which progressive superintendents of equipment and master mechanics have to solve is to decide when the additional cost paid for "extra good" material is justified by the results obtained. All realize that the better the material the less will be the trouble experienced in maintaining the equipment, and all are anxious to avoid all the trouble possible. Unfortunately, the cost of a material is not a safe standard by which to judge performance in service. Purchasing agents often cannot understand why the material that is the lowest in price is not the cheapest to buy. Hence the men responsible for the safe operation of the equipment should have at hand plenty of data to prove that it is excessively costly to use poor material.

Aside from the consideration of the cost and trouble resulting from the use of poor-quality supplies, there is another which may be termed "constructive maintenance." By this is meant the renewing of worn-out parts with others which are better than those replaced. By employing such a plan the standard of the equipment is continually raised so that instead of being restored to their original condition, such essentials as motors, controllers and compressors are constantly being put into better condition than ever before. Under high-class maintenance the usefulness, efficiency and life of equipment are always on the increase. With electric railway equipment, where safety in operation is of the highest importance and the first consideration, the best is none too good.

City Track Not an Energy Saver

THAT the originator of the cheap automobile, himself, should have recognized the value of rails for passenger transportation is quite an event. Indeed, the fact should go far to straighten out the confused minds of the still-numerous city officials who are suffering from the effects of the motor-bus virus.

One does not have to go far to find a reason for preferring rails to rubber tires in view of the latter's extremely high cost when used on heavy vehicles. However, it is the cost of tires rather than the economy of steel rails that enforces the use of track. For example, the very general belief that the track effects large energy savings is really erroneous. Indeed, the energy consumption of a reasonably large car in city service will not be greatly different whether the vehicle be on rails or on asphalt streets; rubber tires, of course, being necessary in the latter case. This rather surprising condition is at once explained when one considers that, in city service, all except a small percentage of the energy consumed by the car is expended in acceleration

after stops, rolling resistance being only an incidental item. For example, an energy consumption of 150 watt-hours per ton-mile is quite common in city service where frequent stops are demanded. But if the stops are cut out in part, as in interurban service, the energy consumption falls to the vicinity of 75 watt-hours per ton-mile in spite of the greatly increased wind resistance due to the higher speed. If the stops should be cut out altogether, the demand for energy becomes merely that required to overcome wind and rolling resistance at, say, 20 m.p.h. and the friction losses, which amount all told to something like 40 watt-hours per ton-mile for light cars, or in other words make up a total resistance of 20 lb. per ton.

On rails the pure rolling resistance is almost negligible, being probably less than 1 lb. per ton, and this is practically the only component of energy consumption that would be affected if a railway car should be equipped with rubber tires and run upon the street pavement instead of smooth steel. In this case the total energy consumption would rise by the amount of the increased rolling resistance of rubber tires on pavement, and as the total resistance of rubber-tired vehicles on asphalt pavement has been found to about 35 lb. per ton at 20 m.p.h. (equivalent to about 70 watt-hours per ton-mile) it could be said that the difference between this figure and the energy consumption of 40 watt-hours for a free-running railway car would measure the loss due to the use of tires or the saving to be effected by the use of rails. This difference amounts to 30 watt-hours per ton mile. The result is influenced by the fact that the total resistance of automobiles includes a relatively large component of wind resistance because of the relatively light weight and wind-catching form, and there is also a component of opposite value due to the practice of rigidly mounting railway wheels upon their axles, thus involving slippage at curves. However, since the two components are of opposite value they may be considered as offsetting each other, at least sufficiently for present purposes, and therefore they may be canceled out.

Consequently, removal of a railway car from its rails and running it on the street may be considered as resulting in an increase of 30 watt-hours per ton-mile in energy consumption. If the car should have been in a city service demanding 150 watt-hours per ton-mile the energy input under the new conditions would become 180 watt-hours. Then if the car should be put back on rails the saving in energy due to the use of rails would be 16 per cent. Expressed in terms of cost, the saving of 30 watt-hours per ton-mile would be worth about 0.05 cent per ton-mile; or, for a 7-ton car, would be worth 0.35 cent per car-mile. Such a saving, although well worth consideration in these ultra-economical days, becomes insignificant when compared to the interest charges on modern track, and in con-

sequence one must look to the prohibitive cost of the alternative device—the rubber tire—rather than to the inherent economy of a permanent way of steel to warrant the latter's continued existence.

Win Walkers, Save Sole Leather and Make Money

THE statement recently attributed to the president of the Dallas Railway, that if it comes to a point where fares must be raised to avoid bankruptcy he is through with that company, must make strange reading for those who profess to believe that railway men are looking only to abnormal profits when they seek to have the rates of fare advanced. However, if one is to judge by the results on numerous properties which have experimented with higher fares, one is likely to conclude that this is not the best way out of the difficulties which surround the railway industry. A striking illustration of this fact is given in the report of the Boston Elevated for last February when the receipts per revenue passenger were 8.15 cents and the cost per passenger 9.30 cents—this, of course, including a reasonable return on the investment which nowadays is regarded as part of the cost of service.

In this connection it is worth while to consider one of the points made by Harlow C. Clark in an address before the New England Street Railway Club in which he stated that unless the electric railways make people want to ride they will not secure or retain that class of riders who do not have to ride. It is becoming increasingly evident that the ideal fare problem solution has not yet been worked out. It certainly does not appear to consist in advancing fares again and again until a great proportion of the profitable short-haul riders are driven away. The number is growing who think it is more likely to be found in some form of zone fare collections.

While the best form of zone system is being determined, there is every reason why the railways should give serious attention to building up their business by encouraging increase of the riding habit under existing rates of fare. Some roads already have found a happier turn of affairs since the return of war workers and a resumption of certain lines of industry.

The only roads which cannot profit by such increased business are those unfortunate institutions which are said to find additional expense in every extra passenger hauled. Disregarding this class of companies, there should be hope in the present tendency toward heavier travel, and the wise manager is he who knows how to get the best results out of the situation.

As President T. E. Mitten of the Philadelphia Rapid Transit Company said in a letter to the employees of that company on May 28, 1919: "Improve our salesmanship so as to sell more of that which we have for sale—street car rides. We must sell the empty seats in the off-peak hours to those who now walk or use other transportation. Every person in the territory we serve is a possible car rider. As the common carrier for the entire community, we fall short of doing our full duty to the public if we do not make a car rider of every walker, every automobile user and every steam railroad passenger who can be more conveniently and cheaply carried by street car."

Here, as in every instance where public favor is sought, the best means of reaching that end must be studied. The railway operator must learn to distinguish

between car service and service in the broadest sense. It is not a question of how many cars are on the street but of operating them when and where they are most needed. The conductors and motormen who run them must be taught how to make friends for the company. Now that summer is at hand there is a greater opportunity for attracting additional business outside the rush hours. Many companies are said to be economizing on advertising of attractions along their lines. They might well consider the possibilities of attracting riders who are likely to be in a mood for relaxation now that the strenuous days of war making are over. Once having secured these patrons every effort should be bent to make of them friends who will come to the front in times of adversity. This is the field for the modern transportation salesman.

"Poland Isn't Lost Yet"

WITH this slogan the Poles comforted themselves through many years of oppression until the day of glory did arrive. To-day it is the electric railway industry which is passing through so dark a period that those who claim to see even a glimmer of hope ahead must produce sound evidence for their slogan: "The electric railway isn't lost yet." The man who is asked to furnish new money cannot be convinced by arguments on the usefulness of electric railways as a class but only by facts and deductions on individual situations. Such individual analyses will prove that it will pay to put new money into a large proportion of our electric railways.

The largest group, namely, small and medium-size properties, can probably invest most profitably by introducing the one-man safety car. When bankers can be shown what a high return this car pays in both money and good-will, they will not be so chary about furnishing the money. Through this type of operation many railways could get their investment in cars back in two or three years: Let us quote the condition on a property recently visited.

This railway is in a small city of the Central States. It used to have the field to itself. After a jitney fever, competition assumed the more menacing form of small motor buses which now carry three times as many passengers as the railway! Because of turnout spacings, the railway cannot give better than a fifteen-minute headway whereas buses are run every two or three minutes. There is no hard feeling against the street railway company. The public simply take the first vehicle that offers, except those people who go to the end of the line, for the buses stop where the paving stops. Because of these very riders, the street railway had to raise its fare from 5 cents to 7 cents while the short-haul buses still continue at 5 cents. This raise in fare caused the loss of more patronage, the 40 per cent increase producing only 12 to 15 per cent more revenue. To summarize: Insufficient track facilities and absence of one-man frequent-service cars are causing the railway to lose at least \$300 a day in receipts. Obviously it would not take very long to return the outlay on an opportunity of this kind and bankers ought to be willing to finance it after a personal investigation of the exceptional conditions.

Brooklyn's decision to use 200 safety cars indicates that this car also is suitable to the lighter lines of large

city systems, but such properties should find still further opportunities in creating an entirely new class of traffic through short-ride fares. When 25 per cent of the traffic in a city like Aberdeen comes from people who ride less than 0.6 mile it must be clear that there is merit in frequent service and a graded fare which does not penalize the short-haul rider for the long-distance passenger. And why not follow also the example of British municipal roads in eliminating needless track? Surely there are cities where one route with a five-minute service will serve the public better than two routes with ten-minute headways. Also, the more agitation for the removal of duplicate track, the more will the public appreciate the fact that street railways are not uniformly profitable.

Even the interurban, which has suffered so much from the automobile and the motor truck, can face the future with confidence. On the technical side it has much to hope from the automatic substation and from lighter cars; on the operating side, it has barely touched the possibilities of freight development as brought out so thoroughly in A. B. Cole's recent analyses.

There yet remain two groups for which, frankly speaking, there is no hope as commercial propositions. These are the tiny-town and suburban railways, usually the result of land promotion schemes, which should never have been built because of the paucity of customers. The former class ought to face the music and go out of business; the latter must ultimately meet the same fate unless their usefulness to the communities served justifies their being taken over as a community service. There is no more logic in a private operator running an electric railway at a continuous loss than in running a grocery under like circumstances. Although both are essential industries that fact does not bar them from failing through lack of customers.

Crossing Flagmen Cost Less Than Needless Conductors

ONE OF the few valid objections offered to the use of the modern, one-man car is that involved in the flagging of steam railroad crossings. For some rarely-used spur or unimportant crossing, it is sufficient for the operator (of one-man cars) to give a lookout, if there is nothing to obscure his view. At busy crossings where there is no flagman, it is customary with a two-man car for the conductor to look up and down the track before ordering his car across. In one city where there are many grade crossings the management was very timid about adopting one-man cars for this reason. The usual rule about the conductor signaling across the crossing had always been very rigidly enforced and the management thought no other plan was possible. But when the number of flagmen required to protect every live crossing was checked against the number of really needless conductors, it was found that the latter exceeded by six times the number of conductors who had formerly been required. Nor will this advantage be confined to this saving in man-power, which can be applied to a more profitable purpose in giving additional service. It is obvious that when the crossings are flagged, the one-man cars can run over them without the loss of a second instead of causing the annoyance and delay, in fair weather or foul, which is inevitable when a car must be flagged across by a dismounted conductor.

The Electric Railway Power Situation as Disclosed by Census Data

THE 1907-1912 statistics furnished by the United States Bureau of the Census and published in the issues of this paper for April 26 and May 3 furnish a basis for study of the power end of the electric railway business. Briefly stated, they show that in 1917 the electric railways of the country used the enormous total of more than 12,000,000,000 kw.-hr. of energy, 35 and 154 per cent more than the consumptions in 1912 and 1907 respectively. During the semi-decade ending with 1917 the kilowatt capacity of railway power houses increased 17 per cent and the output 21 per cent. In one section the corresponding figures were about 47 per cent and more than 100 per cent, while of course some sections were much below the average.

The data show then that there is a fair growth in the power business of the electric railways in spite of the manifest tendency on their part in some sections to purchase power. The facts in this connection, as disclosed by the report, are these: In 1912 almost exactly two-thirds of the power used by the railways was generated by them and one-third was purchased. The corresponding fractions for 1917 were six-tenths and four-tenths. This is not surprising because in a number of places it is found to be cheaper to buy electrical energy than make it, and in almost all cases it has been difficult to procure capital with which to make extensions, such capital as was available being more urgently needed elsewhere than in the power plant.

The statistics cited above lend interest to some editorial comment in a recent issue of an engineering contemporary. The writer says, in substance, that transportation and not power production is the real job of the electric railway man. And further, apropos of some contemplated extensions on a large electric railway system, he says that it is not good business to make large expenditures for that which is in the nature of a side line when the main enterprise requires all of the capital that can be commanded. While in general the logic of this is sound, several points must not be overlooked. First, there is a railway plant capacity of about 3,000,000 kw. extant. At \$100 per kilowatt the corresponding investment is \$300,000,000 which must be retired gradually if at all. Then there are many interurban and city lines that are not near efficient and reliable central stations and cannot get a satisfactory energy supply from an outside source even if they desire it. Again there are many highly economical railway plants which are large enough to be operated independently and which are being kept up to date in equipment and operating procedure.

As has been pointed out in these columns before, power generation economy in a modern power plant depends largely on the load factor. Many railway companies have good plants and if they can fill in the depressions of the load line by means of industrial load they are in a good position to compete in economy and in the sale of power with the central stations. Many interurban companies, particularly, have been able to develop a lucrative power business at places along their lines, and there is no reason why this business should not increase. It is important, however, that the railway men who are responsible for the power supply make every effort to keep informed as to developments in this field, for rapid progress is being made in steam and electrical machinery design and manufacture.

Relieving Congestion in Baltimore's Delivery District

Comprehensive Plan Now Being Carried Out Is Noticeably Improving Traffic Conditions, Particularly in the Half-Mile-Square Dense Business Region

By L. H. PALMER

Assistant to the President United Railways and Electric Company

FOR a number of years the congestion of traffic in the business center of Baltimore had been increasing. This condition developed much more rapidly in recent years with the more widespread use of automobiles. Finally the point was reached where practically all the cars possible were being operated on Baltimore and Fayette Streets, the main two east and west business thoroughfares of the city.

Several causes aggravated the difficulty: (1) the considerable grades which are a feature of the topography of the city; (2) the irregularity of the harbor front; (3) the complicated layout of the streets; (4) the narrowness of the thoroughfares; (5) the lack of efficient and modern regulation and control of the traffic situation; (6) the restricted area of the business district, which is about ½ mile square, and (7) the location of a great proportion of the wholesale business in addition to retail, professional, banking and other general business and commercial work, all in this small congested section. Much of the manufacturing is also done either within or on the outskirts of this restricted district. Baltimore has many large establishments for manufacturing clothing, straw hats and similar business which can be carried on in loft buildings, and these industries employ large numbers of persons in proportion to the amount of ground area occupied, compared with other manufacturing, such as rolling mills or similar industries. Much of Baltimore's freight is water-borne and factories have located near the wharves which bound one side of the congested district.

The officers of the United Railways & Electric Company which operates all of the city electric railway service in Baltimore, determined to obtain competent advice upon this serious problem of congestion, in the

effort to arrive at a solution which would permit the operation of additional service into and through the congested downtown district and permit also of more efficient handling of their service for the public use. The congestion and the resulting delays had seriously affected not only the rapid movement of passengers, but also the regularity with which they could obtain service, both of these results affecting the main problem of furnishing more service.

In the early part of 1917, A. L. Drum & Company, construction and consulting engineers, who had successfully solved similar problems in other cities, were engaged for this investigation. Exhaustive studies were begun in the spring of 1917 under the personal direction of Mr. Drum, with E. M. Maddox, resident engineer, in charge. The facilities and resources of the company, including the advice and assistance of its operating staff, were placed at Mr. Drum's disposal, and the work was completed in the fall of 1917, when a report was submitted recommending the rerouting of twelve lines. The recommendations were adopted by the railway company.

With one exception, this rerouting was all confined to the congested business district. One new through route from northeast to southwest Baltimore was inaugurated, and as a result one new operating base was established for this new Federal Street-Columbia Avenue line. Later, due to local conditions which developed opposition, the routes of two of the lines were left unchanged, but the general scope and effect of the plan was not destroyed by this revision, although better results would have followed had the original recommendation been carried out.

In summary, the rerouting was predicated upon three

TABLE I—RUSH-HOUR SERVICE IN CARS PER HOUR AT POINTS OF MAXIMUM CONGESTION ON EACH STREET, AND INCREASE OR DECREASE IN CARS PER HOUR UNDER THE REROUTING PLAN

East and West Streets	Former		Present		Increase or Decrease* in C. P. H.		Per Cent Increase or Decrease* Operated		Increase or Decrease* in C. P. H.		Per Cent Increase or Decrease* Operated	
	East	West	East	West	East	West	East	West	North	South	North	South
	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound
Fayette (Charles to Howard)...	152	132	123	96	29	36	19	27	..	..	86	80
Baltimore (Gay to South)....	155	138	100	85	55	53	35	38	..	..	86	80
Redwood (South to Charles)....	83	106	82	76	1	30	0	28	19	19	16	16
Lombard (Howard to South) .	30	0	70	73	40	73	133	..	3	3	15	15
Paca (Baltimore to Lombard) .	..	..	..	..	..	..	..	..	108	121	30	45
Eutaw (Baltimore to Redwood)....	..	..	..	..	..	..	..	..	61	58	70	70
S. Howard (Baltimore to Redwood)...	..	..	..	..	..	..	..	..	48	41	12	12
Franklin (to Redwood)...	..	..	..	..	..	..	..	..	56	60	56	60
Charles (Fayette to Baltimore) .	..	..	..	..	..	..	..	..	77	48	28	28
Calvert (Center to Pleasant) .	..	..	..	..	..	..	..	..	49	20	64	42
South (Redwood) to Lombard)....	..	..	..	..	..	..	..	..	..	..	..	..

*Italics indicate decrease.

†Formerly German.

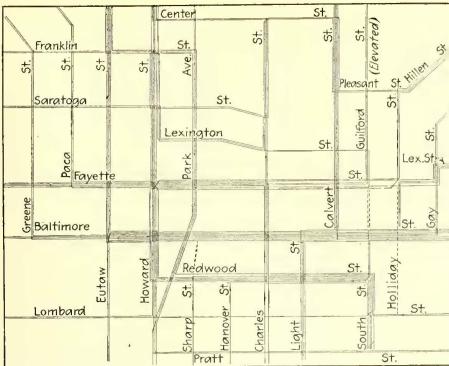


FIG. 1—LINES OF THE UNITED RAILWAYS & ELECTRIC COMPANY, BALTIMORE, MD., BEFORE REROUTING

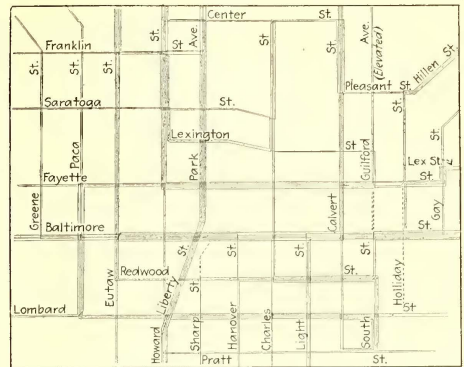


FIG. 2—BALTIMORE LINES AS REARRANGED UNDER THE REROUTING PLAN

principles, namely, (1) balancing and equalizing the amount of traffic on adjacent streets; (2) locating terminals outside of or on the outskirts of the congested district; (3) providing for turning movements at corners outside or on the outskirts of the congested districts.

Consequent upon these changes, additional loop operation was utilized in the business district, to assist in prompt handling of service. This was particularly desirable because the narrow streets do not lend themselves to the use of crossovers for terminals.

AT SOME POINTS THREE-QUARTERS OF CAR-HOURS WERE TRANSFERRED

Fig 1, showing the routing before the changes, and Tables I and II contain data illustrating the congestion on Baltimore and Fayette Streets compared to the traffic on the two adjoining parallel streets to the south, viz., Redwood (formerly German) and Lombard Streets. It will also be noticed that Howard and Fayette Streets, and Baltimore and Howard Streets were complicated by turning movements which made these two inter-

sections the limiting points on these two thoroughfares. Fig. 2, showing the routing after the changes were effected, together with Tables I and II, indicate how the use of the four parallel and adjacent streets has been balanced.

At the time the rerouting study was made, 638 cars, or 66 per cent of the 960 cars leaving the business district during the maximum evening rush hours, were operated on Fayette and Baltimore Streets. Fifteen lines out of a total of twenty-four leaving this same district were operating practically at their maximum capacity, because of the congestion on these two streets. It was thus evident that service could not be increased without first relieving the existing congestion. As a direct result of the large number of cars on these two streets, the congestion at a number of intersections was such that the service operated through the central area on some of the north and south streets had been limited, and two of the most important intersections, viz., Fayette and Howard Streets, and Baltimore and Howard Streets, had reached their capacity.

TABLE II—STATEMENT SHOWING TOTAL CARS PER HOUR OPERATED ON STREETS IN THE BUSINESS DISTRICT DURING MAXIMUM EVENING RUSH HOUR.

	Former		Present		Increase or Decrease*		Per Cent Increase or Decrease*	
	East	West	East	West	East	West	East	West
East and West Streets	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound
Lexington.....	89	89	89	89	...	...	...	...
Saratoga.....	40	40	40	40	...	...	...	...
Fayette.....	196	175	147	120	49	55	25	29
Baltimore.....	190	173	149	145	41	28	22	16
Redwood (formerly German).	83	106	82	76	1	80	...	28
Lombard.....	93	59	70	73	23	14	25	24

TABLE III—CARS PER HOUR DURING MAXIMUM EVENING RUSH HOUR AT IMPORTANT INTERSECTIONS IN CONGESTED DISTRICT

Intersection	Cars Per Hour Operated		Decrease in C. P. H. Operated	Per Cent Decrease Operated
	Former	Present		
Fayette Street and Howard Street.....	398	294	104	26.1
Fayette Street and Park Avenue.....	403	359	44	10.9
Fayette Street and Charles Street.....	308	243	65	21.1
Baltimore Street and Howard Street.....	438	267	171	39.0
Baltimore Street and Charles Street.....	298	216	82	27.5
Baltimore Street and Light Street.....	267	185	82	30.8
Baltimore Street and Gay Street.....	293	185	108	36.9
Redwood Street (formerly German) and Howard Street.....	229	145	84	36.7
Redwood Street (formerly German) and South Street.....	189	120	69	36.5

TABLE IV—CAPACITY IN CARS PER HOUR OF FORMER MAXIMUM RUSH HOUR WITH ESTIMATED MAXIMUM CAPACITY UNDER REROUTING PLAN

Sections of the City Served	Former Routing, Former Service		Present Routing, Maximum Service		Per Cent Increase
	Former	Present	Former	Present	
Northeast.....	244	356	462	45.9	
Northwest.....	341	462	258	35.5	
Southwest.....	153	258	327	68.6	
Southeast.....	222	327	47.3	47.3	
Total.....	960	1403	46.1	46.1	

North and South Streets	Former		Present		Increase or Decrease*		Per Cent Increase or Decrease*	
	North	South	North	South	North	South	North	South
Paca.....	19	20	82	84	63	64	332	320
Eutaw.....	59	59	59	59	...	...	...	...
Howard.....	276	239	207	175	69	64	25	27
Park Avenue.....	61	58	70	70	9	12	15	21
Sharp.....	35	29	35	29	...	...	...	...
Hanover.....	88	100	88	100	...	...	...	...
Charles.....	40	50	40	50	...	...	...	...
Calvert.....	56	60	86	60	30	...	34	...
Gulford or South.....	172	107	123	87	49	20	28	19

*Italics indicate decrease.

To quote from the report: "The proposed system of routing contemplates only such changes as are necessary to relieve the present congestion in order to provide for increasing the service on all existing car lines, and at the same time providing all patrons of the street cars with direct service and reasonably good delivery with the least possible inconvenience due to the necessity for changing existing conditions.

"In order not radically to change existing conditions and to obtain reasonably good delivery, it is necessary that the east and west delivery be maintained on a majority of the lines entering the delivery district. The relief in congestion on the main downtown streets of Baltimore is accomplished principally by a more equal distribution of the cars on the east and west streets utilizing the now unused capacity on Redwood (formerly German) and Lombard Streets and eliminating as far as possible the curving movement of cars so as to reduce the congestion at street intersections in the delivery district.

"Under the proposed system of routing the total track capacity of the delivery district is increased about 46 per cent, as shown in Table IV, on page 1083, and the traffic is so distributed that every line has sufficient available capacity to provide for several years' increase before reaching such congestion as to produce the slow and irregular movement now found on Fayette and Baltimore Streets."

It will be noted that for each of the four sections of the city, as a result of the plan proposed, it was estimated that there was a considerable capacity available for future traffic requirements. This increased capacity was estimated at 443 cars per hour or 46 per cent.

The estimated maximum service is based upon fewer maximum rush-hour cars at controlling points than now operated, so as not to produce the slow-moving and congested conditions now found on Fayette and Baltimore Streets. The number of cars allowed in the estimated figures on Baltimore and Fayette Streets is 140, against 155 cars and 152 cars formerly operated at the most congested sections of these streets. The maximum number of cars allowed on the north and south streets crossing these main east and west streets is 100.

It will be obvious that the increased capacity made available is more or less flexible, so that the future increases can be allotted to the lines requiring them.

As an illustration of the results accruing from the rerouting it should be noted that the relief estimated at the point of maximum congestion, eastbound on Fayette Street, was twenty-nine cars during the maximum

rush hours, equivalent to 19 per cent of the car movement, and westbound, thirty-six cars per hour, equivalent to about 27 per cent of the present movement. On Baltimore Street, eastbound, it was estimated at fifty-five cars per hour, during the maximum rush hour, or about 35 per cent of the present movement; and westbound fifty-three cars or about 38 per cent. Similarly at the Fayette and Howard Street intersection it was 104 cars during the maximum rush hour or about 26 per cent, and at the Baltimore and Howard Street intersection, 171 cars or about 39 per cent.

It is well known that cars curving around a corner of an intersection materially decrease its capacity, compared with right-angle movements; hence one of the effective means of improving conditions has been the elimination of curving movements at the congested points. As indicating the results to be obtained, the elimination was provided of 103 curved car movements

on Fayette St. with an increase of 143 right-angle crossing movements. Similarly the elimination of curved car movements on Baltimore St. was laid down at 142 and the right-angle crossing movements were to be increased by fifty-eight.

One of the most serious problems in a revision of routing, such as that undertaken in Baltimore, is the inconvenience caused to patrons

through moving car lines from one street to another, and unless this inconvenience can be shown to be measurably less than the gain to the other parts of the city and of the system, no good can result from making changes.

At the beginning of the study it was recognized that Fayette and Baltimore Streets were more desirable deliveries than Redwood (formerly German) and Lom-



INSTALLING SPECIAL WORK AT BALTIMORE AND CALVERT STREETS

TABLE V.—EFFECT OF REROUTING ON PASSENGER CONVENIENCE AS TO POINTS OF BOARDING AND LEAVING CARS

	Total Number of Passengers On and Off Cars Within Delivery District	Number of Passengers On and Off Cars Required to Change Their Place of Boarding and Leaving Cars Under the New System of Routing	Per Cent of Total Passengers Required to Change Place of Boarding and Leaving Cars
Morning rush hours—			
6 a.m.-9 a.m.	91,613	15,456	16.9
Evening rush hours—			
4 p.m.-7 p.m.	101,777	17,536	17.3
Remainder of day.....	192,214	27,554	14.3
Total.....	385,604	60,546	15.8
Estimated number of passengers using cars not counted on day of traffic count.....	39,384	4,563	11.6
Total.....	424,988	65,109	15.3

bard Streets, and the plan was prepared so as to affect the fewest possible passengers in order to give the relief essential properly to serve all the street car passengers in the city. Quoting again from the report: "In other words, it is the intent and purpose of this plan to serve the public and to afford the greatest convenience to the greatest number, with the least possible inconvenience to the small percentage of passengers affected by the necessary changes."

That this difficult problem was met is shown by the

It will be obvious to all persons familiar with street railway operation and construction that the installation of the special work and the construction of the new track required by the rerouting was a serious task under war conditions. Under the terms of the ordinance, it was necessary for the company to install special work costing upward of \$200,000, and new track costing upward of \$60,000, within six months. To accomplish this under the war conditions which existed during the summer and fall of 1918 was a most difficult

task, the work comprising about 5900 ft. of single track constructed in accordance with rigid specifications and best modern practice.

Special work had to be installed, revised or renewed at twenty-seven locations. The plan also involved the abandonment, for regular operation, of about 5500 ft. of single track, mostly in outlying sections of the city, due to the new through line.

The actual changing of the routes was di-



fact that the maximum number of passengers whose points of boarding and leaving cars were moved one block was less than 9 per cent of the total passengers entering and leaving the business district on an average week day, and fewer than 7 per cent of the total passengers had their present points of boarding and leaving cars moved two blocks. These percentages are maximum figures and include many passengers not inconvenienced by the change, as all transfer passengers are included, though the large majority of them were not affected. There are also a number of passengers on these lines who are delivered nearer their destination by the new routing than under the old plan, but no attempt was made to determine what proportion of the 7 per cent and 9 per cent of passengers were thus benefited.

It should be stated that under the rerouting no portion of any line was moved more than two blocks from its old route.

Table V on page 1084 shows in an interesting way how the percentages were developed.



TRACK CONSTRUCTION IN CONNECTION WITH BALTIMORE REROUTING

vided into three steps, which permitted the rerouting to be accomplished with the minimum of confusion to the public, and enabled the company to install in sequence the various pieces of new track and special work necessary.

The changes were put into effect during the period from Oct. 1 to Dec. 1 and, generally speaking, there have been few complaints from the public, due to the changes in the old time routes, but on the contrary a noticeable improvement in the operation of cars

through the congested district, has resulted. The actual results anticipated have not yet been completely realized, due largely to increased traffic congestion.

PUBLIC MUST CO-OPERATE BY CONTROLLING VEHICULAR TRAFFIC CONGESTION

This question of traffic congestion and regulation is among the causes aggravating the problem which confronted the United Railways & Electric Company, as mentioned in the second paragraph on page 1082. No efficient control has been established by the municipal authorities over the use of the streets for parking by vehicles; and Drum & Company in their report, by means of observations which they tabulated, indicate very clearly the difficulties imposed upon the operation of the cars though the failure of the city authorities to adopt modern, progressive methods of traffic regulation and control. The company has been urging this subject upon the attention of the authorities for a considerable period.

During the hearing of the company's 6-cent fare case before the Public Service Commission last winter this subject was brought forcibly and emphatically to the attention of the authorities and the public press, by testimony and graphic exhibits, and since that time an ordinance has been passed by the City Council, which will bring considerable relief when put in force. A gratifying feature of the situation was the fact that the automobile interests gave it their hearty support, recognizing that something had to be done for the benefit of the traveling public. One of the principal things accomplished is the limiting of the parking nuisance, and on certain streets its complete elimination during the afternoon rush hours.

Cars Ready, but No Electricity

A rapid transit electric line running between Osaka and Kobe, Japan, has been extending its lines which will be finished soon. The necessary power for operating this extension was to be supplied by the Osaka Electric Company. The present increased demands for power from this company, however, make it impossible to supply the required amount to operate the transit system. It thus appears that the railroad company must look for power elsewhere, and should it fail in locating a proper supply, the construction of the road must be suspended for the time being.

Supplement to Report 3808

San Diego Electric Railway Adds to Figures Presented to Railroad Commission

AN EXTENDED abstract was published in the ELECTRIC RAILWAY JOURNAL for Feb. 8, 1919, of Application 3808, made by the San Diego Electric Railway to the California Railroad Commission asking for authority to increase its fares. The report went very extensively into the history of the property and showed

TABLE I—SOURCE AND DISPOSITION OF THE NICKEL ON THE SAN DIEGO ELECTRIC RAILWAY FROM 1914 TO 1918, INCLUSIVE

Item	1914	1915	1916	1917	1918
Source of Nickel—Income:					
Revenue from transportation.....	4.710	4.678	4.715	4.735	4.714
Revenue from other railway operations.....	0.287	0.257	0.211	0.220	0.250
Non-operating income.....	0.003	0.065	0.074	0.045	0.036
Total income.....	5.000	5.000	5.000	5.000	5.000
Disposition of Nickel—Outgo:					
Normal maintenance.....	0.90	.374	.342	.377	.412
Depreciation.....	1.390	1.330	1.476	1.558	1.404
Power.....	.435	.442	.402	.639	.650
Conducting transportation.....	1.415	1.386	1.328	1.421	1.487
Traffic.....	.130	.283	.098	.120	.067
General and miscellaneous.....	.442	.542	.534	.656	.690
Total operating expense.....	3.902	4.357	4.180	4.771	4.710
Taxes assignable to railway operation.....	.345	.338	.366	.393	.338
Total outgo.....	4.247	4.695	4.546	5.164	5.048
Net available for fixed charges.....	.753	.305	.454	d.164	d.048

that in spite of most conservative capitalization and efficient management and including a return on the investment, it was costing the company \$1.406 for each \$1 of business handled. The report was prepared largely by E. J. Burns, of the company's staff.

A supplementary report has recently been presented to the commission showing, among other things, the estimated operating expenses and revenues for the year 1919 under the present fare, the trend of income and outgo since the organization of the company, etc. These figures are given in great detail. As a summary, the accompanying tables, based on a nickel, were calculated.

A concise definition of each of the items is given in the report. The "investment" is the actual money invested in the property rather than the reproduction cost, this base being taken because the California Commission had indicated its preference for it in its decision in the case of the Town of Antioch vs. Pacific Gas & Electric Company.

TABLE II—SOURCE AND DISPOSITION OF THE NICKEL ON THE SAN DIEGO ELECTRIC RAILWAY—FROM 1892 TO 1918

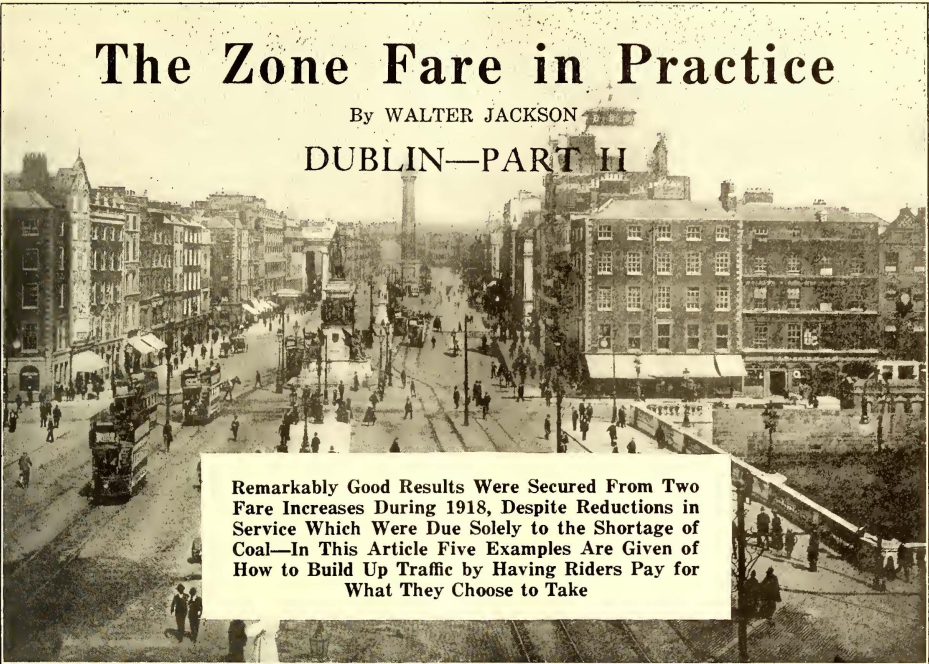
Item	Two-Year Period 1892 to 1893 Inclusive	Five-Year Period 1894 to 1898, Inclusive	Five-Year Period 1899 to 1903, Inclusive	Five-Year Period 1904 to 1908, Inclusive	Five-Year Period 1909 to 1913, Inclusive	Five-Year Period 1914 to 1918, Inclusive	Twenty-seven-Year Period 1892 to 1918, Inclusive
Source of Nickel—Income:							
Revenue from transportation.....	4.90	4.47	4.35	4.63	4.70	4.71	4.68
Revenue from other railway operations.....	.09	.43	.60	.31	.25	.25	.28
Non-operating income.....	.01	.10	.05	.06	.05	.04	.04
Total income.....	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Disposition of Nickel—Outgo:							
Normal maintenance.....	.40	.94	.87	.44	.59	.40	.51
Depreciation.....	2.12	2.83	1.47	.74	.81	1.37	1.17
Power.....	.90	1.11	.70	.48	.43	.49	.52
Conducting transportation.....	2.31	1.95	1.53	1.29	1.35	1.41	1.40
Traffic.....	.02	.03	.08	.10	.12	.14	.12
General and miscellaneous.....	.88	.41	.45	.35	.37	.58	.47
Total operating.....	6.63	7.27	5.20	3.40	3.70	4.33	4.19
Taxes assignable to railway operation.....	.09	.11	.10	.10	.19	.35	.25
Total outgo.....	6.72	7.38	5.30	3.50	3.89	4.74	4.44
Net available for fixed charges.....	d.172	d.238	d.30	1.50	1.11	.26	.56
8 per cent return on average investment.....	2.01	2.08	1.64	1.20	1.28	1.79	1.56
Surplus or deficiency of the nickel.....	d3.73	d4.46	d1.94	.30	d.17	d1.53	d1.00

d Signifies deficit.

The Zone Fare in Practice

By WALTER JACKSON

DUBLIN—PART II



Remarkably Good Results Were Secured From Two Fare Increases During 1918, Despite Reductions in Service Which Were Due Solely to the Shortage of Coal—In This Article Five Examples Are Given of How to Build Up Traffic by Having Riders Pay for What They Choose to Take

NELSON'S PILLAR AND SACKVILLE STREET, DUBLIN'S GREAT THOROUGHFARE

UP TO MARCH, 1918, the Dublin United Tramways managed to continue the pre-war services, fares and stages despite the burdens imposed by the war. By that time, however, the need to conserve coal became so urgent that service had to be reduced, as outlined in Part I in the *ELECTRIC RAILWAY JOURNAL* of May 31, 1919. Similarly the cost of operation had reached the point where more revenue per car-mile was necessary.

As the company was bound by various franchise agreements, it could not change the fares so freely as otherwise. For example, one condition in the Dublin franchise is that the fare within an inner boundary (shown in the map on page 1039 of the issue for May 31) must not exceed 1d. Furthermore, in an agreement made with the municipality in 1897, it was specifically stated that the fare between many of the city termini and the city boundary should not exceed 1d., provided the distance did not exceed $1\frac{1}{2}$ miles, and no fare within the city on any one of the lines should exceed 2d. From Nelson's Pillar as the common terminus, in the sense of this agreement, the company is giving $1\frac{1}{2}$ miles per penny and even a little more where the old boundary happens to be in waste territory.

The first revision of fares, which became effective on April 27, 1918, resulted in raising all but the penny statutory fares to $1\frac{1}{2}$ d. The fares on the Dalkey and Howth suburban lines were raised from 5d. to 6d. and the stages were shortened. A few penny fares not required by statute still remained. Following a further advance in wages, the fares were increased a second

time on Nov. 4, 1918. Almost all of the overlapping stages were eliminated and other stages were shortened. The fares on the Dalkey 9-mile line and the Howth 9.5-mile line were raised to their present maximum of 7d. and season tickets on these lines were also discontinued during the year. An idea of the increased cost to the suburbanite may be gained from considering that the original one-way fares and round-trip fares on these lines were 5d. and 8d. respectively, which are still the steam rates.

The characteristic features of the first fare revision were the elimination of a few overlaps and the substitution of a $1\frac{1}{2}$ d. fare on certain overlaps or on sections which exceeded the statutory length of a penny stage from the center of the city. The adoption of the $1\frac{1}{2}$ d. fare did not, of course, affect the majority of the riders, as they could still ride $1\frac{1}{2}$ miles or so to or from the center of the city. Likewise the through 2d. rider remained unaffected. The increased revenue came entirely from former 1d. passengers who had been getting a maximum ride. Many of these actually pay 2d. because they do not think it worth while to walk several hundred yards at the end of the $1\frac{1}{2}$ d. stage merely to save a half-penny. This effect was the result of good psychology on the part of the management. If it had not given the passenger the option of saving the half-penny, he would have walked to and from the end of the statutory penny stage wherever possible.

In the second revision of fares a large number of overlaps were eliminated, partly to simplify fare collection. The shorter lines were divided into two zones, the first

being approximately the statutory penny stage and the second a 1½d. stage for a slightly longer journey in the outer section and in less settled territory. The terminus-to-terminus fare, however, remained 2d. Thus the 2d. habit acquired voluntarily by the passenger under the first revision made it easier to secure the same rate after most of the old options had been wiped out. Even to-day the passenger feels that he is exercising some choice because if he chooses to pay 2d. at once he will not, when outboard, have to pay another 1½d. if he does not care to walk in the second stage. Then, too, an inbound passenger from the outer zone does not begrudge the payment of a penny more if he gets frequent service.

In discussing the principles that should govern a fare increase, D. Brophy, traffic manager of the company, put much stress on the policy of disturbing as few patrons as possible, of placing a burden where it would fall most justly on the long riders and of making the revisions in a way that left some choice to the riders. There was a limit to raising fares

at any given time. Personally, he believed that if the fare to the outer zone were made 3d. instead of 2d., the revenue as well as the riders would be less for this zone.

For the information of the board of directors, G. Marshall Harriss, general manager, prepared a most able analysis of the effects of the two fare increases, with a series of diagrams to show the shortening of the stages on the several routes. The accompanying figures in Table I to Table V, as well as the diagrams reproduced in Fig. 1 to Fig. 5, are taken from Mr. Harriss' analysis.

Table I gives the general results of the changes in fares and service during 1918 up to Nov. 30. It was only during the heavy influenza period of Nov. 4 to Nov. 30 that there was a decrease of passengers compared with the same period of 1917, but even at that there was a substantial increase in revenue. Furthermore, thirty cars less were run every day between Jan. 1 and Nov. 30, 1918, as compared with the same period of 1917.

TABLE I—SUMMARY OF RESULTS OF TWO FARE INCREASES OF DUBLIN UNITED TRAMWAYS TO NOV. 30, 1918

	Jan. 1- March 20	March 21- April 26	April 27- Nov. 3	Nov. 4- Nov. 30	Totals
Receipts:					
1918.....	£81,946	£38,315	£251,516	£31,361	£403,139
1917.....	66,806	32,033	197,915	26,015	322,771
Increase.....	15,139	6,282	53,600	5,345	80,368
Passengers:					
1918.....	15,777,725	7,230,865	37,320,885	4,667,208	64,996,683
1917.....	12,957,682	6,137,591	36,508,494	5,036,469	60,640,236
Increase.....	2,820,043	1,093,274	812,391	*369,261	4,356,447
Car-miles:					
1918.....	1,671,614	678,593	3,414,263	431,955	5,196,425
1917.....	1,630,196	756,374	4,080,068	560,185	7,026,823
Increase.....	41,418	*77,781	*665,805	*128,230	*830,398
Car-days:					
1918.....	16,523	6,653	33,134	4,202	60,512
1917.....	16,354	7,613	41,130	5,638	70,735
Increase.....	169	*960	*7,996	*1,436	*10,223
Receipts per car-mile (pence):					
1918.....	11.76	13.55	17.68	17.42	15.61
1917.....	9.83	10.16	11.64	11.14	11.02
Passengers per car-mile:					
1918.....	10.65	10.93	10.93	10.80	10.49
1917.....	7.94	8.11	8.94	8.99	8.63
Cars per diem:					
1918.....	209.15	179.81	173.47	155.70	181.18
1917.....	207.02	205.75	215.34	208.81	211.78

*Decrease.

TABLE II—RESULTS OF FARE AND SERVICE CHANGES ON TERENURE LINE

	Jan. 1- March 20	March 21- April 26	April 27- Nov. 3	Nov. 4- Nov. 30
Receipts:				
1918.....	£7,716	£3,665	£21,257	£3,113
1917.....	6,453	2,989	16,842	2,510
Increase.....	1,263	675	4,415	603
Passengers:				
1918.....	1,531,691	730,662	3,539,286	491,669
1917.....	1,281,860	593,777	3,328,092	498,665
Increase.....	249,831	136,885	211,194	*67,96
Car-miles:				
1918.....	145,514	59,017	273,968	38,427
1917.....	139,432	64,681	341,296	48,716
Increase.....	6,082	*5,664	*67,328	*10,289
Car-days:				
1918.....	1,513	642	2,846	416
1917.....	1,521	705	3,729	524
Increase.....	*8	*63	*883	*108
Receipts per car-mile (pence):				
1918.....	12.72	14.90	18.82	19.44
1917.....	11.10	11.09	11.84	12.36
Passengers per car-mile:				
1918.....	15.26	12.38	12.91	13.28
1917.....	9.19	9.17	9.75	10.23

*Decrease.

TABLE III—RESULTS OF FARE AND SERVICE CHANGES ON INCHICORE LINE

	Jan. 1- March 20	March 21- April 26	April 27- Nov. 3	Nov. 4- Nov. 30
Receipts:				
1918.....	£5,381	£2,354	£14,156	£2,046
1917.....	4,322	1,954	11,323	1,607
Increase.....	1,059	400	2,833	439
Passengers:				
1918.....	1,079,111	471,096	2,411,323	341,249
1917.....	872,477	396,795	2,304,346	330,099
Increase.....	206,634	74,301	106,977	11,150
Car-miles:				
1918.....	90,824	38,537	185,832	24,935
1917.....	85,913	40,194	207,889	29,339
Increase.....	4,911	*1,657	*22,057	*4,404
Car-days:				
1918.....	910	374	1,959	256
1917.....	879	413	2,139	303
Increase.....	31	*39	180	47
Receipts per car-mile (pence):				
1918.....	14.24	14.66	18.28	19.70
1917.....	12.07	11.67	13.07	13.15
Passengers per car-mile:				
1918.....	11.88	12.22	12.97	13.68
1917.....	10.15	9.87	11.08	11.25

*Decrease.

TABLE IV—RESULTS OF FARE AND SERVICE CHANGES ON DUNNYBROOK AND CLONSKEAGH LINES

	Jan. 1- March 20	March 21- April 26	April 27- Nov. 3	Nov. 4- Nov. 30
Receipts:				
1918.....	£11,886	£4,932	£29,356	£4,087
1917.....	9,831	4,554	25,773	3,848
Increase.....	2,054	377	3,582	239
Passengers:				
1918.....	2,441,122	990,127	4,900,244	662,171
1917.....	2,032,324	942,330	5,300,428	792,901
Increase.....	1,913	28,725	140,128	22,946
Car-miles:				
1918.....	236,451	79,051	417,638	57,475
1917.....	234,358	107,776	557,766	80,421
Increase.....	1,913	*28,725	*140,128	*22,946
Car-days:				
1918.....	2,459	807	4,134	584
1917.....	2,472	1,142	5,880	847
Increase.....	*13	*235	*1,746	*363
Receipts per car-mile (pence):				
1918.....	12.06	15.25	16.86	17.06
1917.....	12.06	10.14	11.09	11.48
Passengers per car-mile:				
1918.....	10.32	12.52	11.73	11.52
1917.....	8.66	8.74	9.50	9.85

*Decrease.

TABLE V—RESULTS OF FARE AND SERVICE CHANGES ON DALKEY LINE

	Jan. 1- March 20	March 21- April 26	April 27- Nov. 3	Nov. 4- Nov. 30
Receipts:				
1918.....	£15,692	£8,008	£62,046	£7,287
1917.....	12,571	6,417	42,005	5,081
Increase.....	3,120	1,590	19,241	2,206
Passengers:				
1918.....	2,188,865	1,085,139	5,813,569	659,403
1917.....	1,772,612	890,281	5,563,009	707,283
Increase.....	416,253	194,858	250,560	*47,880
Car-miles:				
1918.....	283,633	132,477	646,407	82,272
1917.....	274,482	129,305	717,528	97,209
Increase.....	9,151	3,172	*71,121	*15,077
Car-days:				
1918.....	2,425	1,155	5,608	705
1917.....	2,412	1,166	6,354	831
Increase.....	13	*11	*646	134
Receipts per car-mile (pence):				
1918.....	13.27	14.51	23.03	21.25
1917.....	10.99	11.91	14.31	12.54
Passengers per car-mile:				
1918.....	7.71	8.16	9.00	8.01
1917.....	6.45	6.88	7.75	7.27

*Decrease.

Through the courtesy of W. McHugh, secretary, the figures in Table I are supplemented by the following, which give the car-mile receipts for the entire calendar year 1918 as compared with 1917:

RECEIPTS PER CAR-MILE (IN PENCE)		1918	1917
Period in 1918 prior to first revision of fares or from Jan. 1 to April 26,		12.28	9.94
Period in 1918 from date of first revision, April 27 to Nov. 3, 1918,		17.68	11.64
Period after second revision, Nov. 4 to Dec. 31,		18.25	11.44
Receipts per car-mile per annum,		15.86	11.63

Note—The receipts per car-mile in 1914 were 9.63 d.

It will be seen from Mr. McHugh's figures that the earnings per car-mile are now nearly twice those of 1914 and compare favorably with American figures.

HOW CHANGES WORKED OUT ON TYPICAL LINES

Table II to Table V and Fig. 1 to Fig. 5, as prepared by Mr. Harriss, show the outcome of the fare and

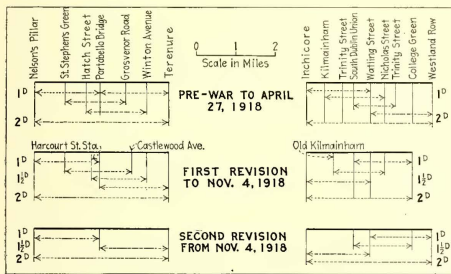


FIG. 1

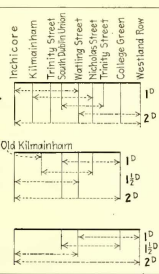


FIG. 2

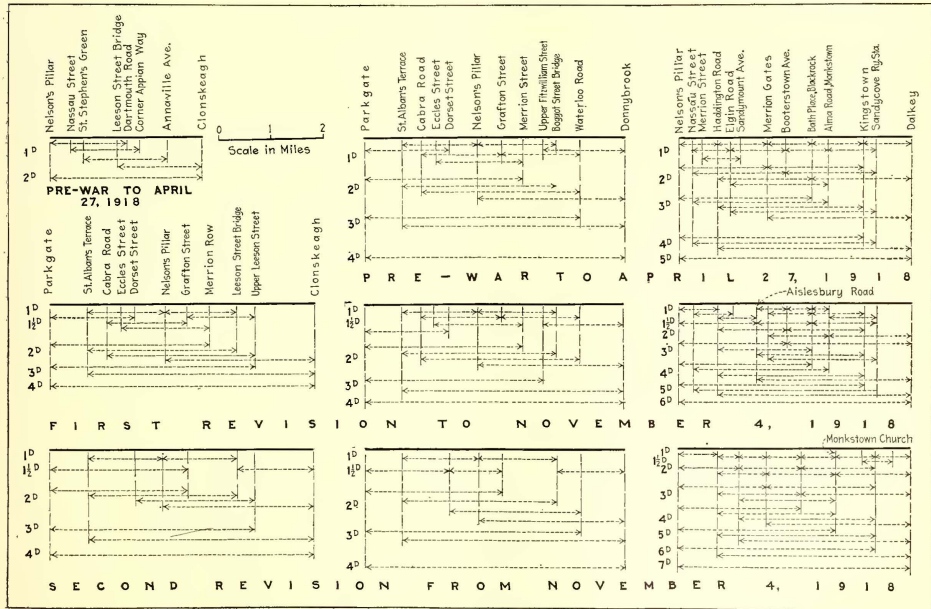


FIG. 3

FIG. 4

FIG. 5

HOW ZONE FARES WERE SHORTENED FOR TWO FARE INCREASES IN DUBLIN

Fig. 1—Terenure Line. Fig. 2—Inchicore Line. Fig. 3—Clonskeagh Line (now Donnybrook-Clonskeagh). Fig. 4—Donnybrook Line. Fig. 5—Dalkey Line

service changes on typical individual lines. These exhibits should be considered in the light of the general route map, in the issue of May 31, and the following information:

The Terenure line originally had two end-on and two overlapping 1d. stages and one 2d. stage all the way, as shown in the top diagram in Fig. 1. On April 27, 1918, only the statutory 1d. stage remained, the other three 1d. stages having been raised to 1½d., with the 2d. stage as before, as shown in the middle diagram. On Nov. 4, the two overlapping 1½d. stages were abolished, the other stages remaining as before, as shown on the bottom diagram. The results of these changes are indicated in Table II.

The Inchicore line had the pre-war fares up to April 27, 1918, as shown on the top diagram in Fig. 2, there being two stages end-on with three overlapping stages, which had 1d. fares with a 2d. fare all the way. On March 21 came the first reduction in service. On April 27 there was a further reduction in service, and both fares and stages were altered as follows: The running to Westland Row (Nelson's Pillar) was abolished, and all cars were turned at College Green. The 1d. fare from College Green to South Dublin Union remained. The 1d. fare from Inchicore to Watling Street was raised to 1½d. All other 1d. fares were abolished, and the 1d. stage from Nicholas Street to Kilmainham was shortened to Old Kilmainham for 1½d.

Dublin United Tramways Co. (1896), Ltd.

Owing to the recent further increase in wages and the reduced earnings which must result from the greater curtailment of the services in consequence of the road shortage, it has become necessary again to revise the Fares of the Dublin United Tramways Company. On and after the 4th November the revised Fares below will come into operation—

Stages	INCHICORE LINE	FARE
1	Westland Row to or from Watling Street	1d
2	College Green to or from Sth. D. Union (over Arch)	1d
1	Inchicore to Watling Street	1½d
1	Inchicore to or from College Green or Westland Row (4 stages fare)	2d

Stages	BALLYBOUGH LINE	FARE
1	Parkgate Street to or from Capel Street (over Park Street)	1d
2	Sackville Street to Ballybough	1d
1	Parnell Street (over Capel Street) to Ballybough	1½d
1	Parkgate Street to Ballybough	2d

27th Oct., 1918
G. MARSHALL HARRISS, General Manager.

HOW INDIVIDUAL ROUTE PATTERNS IN DUBLIN ARE TOLD OF FARE INCREASES

The fare from Inchicore to College Green remained 2d, as shown on the middle diagram.

On Nov. 4 came a second alteration in the stages. The running to Westland Row had been previously restored partially to meet morning and evening trains, and the stages were now altered to suit, as shown on the bottom diagram. The 1d. fare from College Green to South Dublin Union remained as an overlapping stage to the original 1d. stage, Westland Row to Watling Street, which was restored, and the 1½d. stage from Watling Street to Inchicore remained as an end-on stage. The original 2d. fare for the whole distance was also restored, as shown in the bottom diagram. The results are given in Table III.

The combination of the originally independent Clonskeagh service with an arm of the Donnybrook-Phoenix Park through line was carried out in the following manner: Originally the Clonskeagh line ran from Nelson's Pillar via Leeson Street and Appian Way to Clonskeagh, with four 1d. stages and 2d. stage all the way, as shown in the top diagram in Fig. 3. On April 27, 1918, the Phoenix Park-Donnybrook line via Stephen's Green was diverted to Clonskeagh, and the original Clonskeagh line was taken off. Penny and 1½d. stages were then introduced as shown on the middle diagram. On Nov. 4 the 1½d. stages were cut down to three, and one of the 2d. stages was

no desire to cut service, and with the improvement in the coal situation it will restore pre-war conditions as rapidly as possible. That the increased revenue was needed may be gleaned from a few figures in the report for the fiscal year ended Dec. 31, 1918, and some comparisons prepared by Mr. McHugh:

In 1918 coal cost 36s. 4½d. per ton as compared with 27s. 6½d. for 1917 and 2s. 7½d. in 1906.
 In 1918 3,788 lb. coal was required per kilowatt-hour, and in 1917, 2,444 lb.
 In 1918 traffic wages were 195,723, and in 1917, with more mileage, 179,942.
 In 1918 gross receipts were 1463,998, and operating expenses, £321,934; and in 1917 gross receipts were £371,572, and operating expenses, £251,951.
 In 1918 power cost 1.686d. maintenance 3.131d., and traffic 3.976d. per car-mile, and in 1917 power cost 1.142d., maintenance 1.782d., and traffic 2.887d. per car-mile.
 In 1918 general charges, sundries, franchise charges and fixed charges were 3.972d., and in 1917 3.229d.

Traffic receipts for 1918 were 44.9 per cent greater than in 1914, and passengers carried were 21.8 per cent greater, while the car mileage showed a decrease of 12 per cent. The percentage ratios of expenditures to traffic receipts were:

	1918	1914
Power station operations.....	10.6	7.1
Maintenance of cars, track, etc.....	19.7	13.5
Traffic (wages only).....	21.6	21.4
Total traffic expenses.....	25.0	24.8
General charges.....	14.7	14.8
Ratio of expenses to receipts from parcels traffic.....	82.0	55.0
Ratio of expenses to receipts from goods carried.....	63.0	56.0
Ratio of total operating and general expenses to total receipts.....	69.7	59.0

The image displays ten different types of Dublin zone-numbered tickets:

- F 81036**: School ticket, 1d. fare.
- Dj 3619**: Messenger ticket, 1d. fare.
- 09319**: Messenger ticket, 1d. fare.
- Uu 8917**: Messenger ticket, 2d. fare.
- Dj 6119**: Messenger ticket, 1d. fare.
- Pc 07757**: Bicycle ticket, 3d. fare.
- Me 6519**: Messenger ticket, 4d. fare.
- Ah 1919**: Messenger ticket, 5d. fare.
- Ld 9419**: Messenger ticket, 6d. fare.
- Fa 6619**: Messenger ticket, 7d. fare.

CLASSIFICATION OF RIDERS AND CHARACTER OF TICKETS

Because of the two revisions in rates of fare during 1918, important differences will be observed in Table VI showing the classification of passengers carried during 1917 and 1918. During this period the average fare per passenger advanced from 1.274d. to 1.498d. It is clear that the average passenger fare in Dublin is not so far below what it has been in the United States when allowance is made for the transfer.

DUBLIN'S ZONE-NUMBERED TICKETS, SCHOOL AND MESSENGER TICKETS AND BICYCLE TICKETS

shortened to end at Grafton Street instead of Merrion Street. Other stages remained as shown in the bottom diagram.

On the Donnybrook line (Fig. 4) there were originally seven 1d. stages, as shown in the top diagram. On April 27 only the two statutory 1d. fares in the city remained, for the other 1d. stages were raised to 1½d. as shown in the middle diagram. On Nov. 4 two of the 1½d. stages were abolished. Of the three remaining, two were shortened as shown in the bottom diagram. The results of the Clonskeagh and Donnybrook changes are presented in Table IV.

On the Dalkey suburban line (Fig. 5) there were originally ten 1d. stages with 3d., 4d. and 5d. stages respectively to Blackrock, Kingstown and Dalkey, as shown in the top diagram. On April 27 the stages were revised all along the line. Four 1d. stages remained with six 1½d. stages, while the stages to Blackrock, Kingstown and Dalkey were raised respectively to 4d., 5d. and 6d., as shown in the middle diagram. On Nov. 4 there was a second general revision. Only the statutory 1d. stages remained with eight 1½d. stages, and the Blackrock, Kingstown and Dalkey stages were again raised to 5d., 6d. and 7d., as shown in the bottom diagram. The results are given in Table V.

The figures given in the foregoing tables surely are sufficient to prove that the traffic of the Dublin United Tramways has not suffered unduly despite increases in fare and decreases in service. The company had

The figures in Table VI require little explanation. It is plain that the losses in penny passengers were more than made up by the creation of 1½d. passengers and the augmentation of 2d. passengers, and that the suburban traffic did not suffer. That this is a remarkable showing for the industrial conditions obtaining at Dublin goes without saying.

Of the various rates of fare referred to in the table,

TABLE VI—CLASSIFICATION OF DUBLIN RIDERS ACCORDING TO FARES

Id.	1918		1917	
	Number	Per Cent	Number	Per Cent
1d.	41,792,380	58.85	53,372,025	80.11
1½d.	9,834,981	13.85	None	.....
2d.	14,516,317	19.94	9,812,603	14.73
3d.	1,850,145	2.60	1,359,122	2.01
4d.	1,139,025	1.60	417,046	0.63
5d.	1,150,172	1.59	98,321	0.15
6d.	702,399	0.99	None	.....
7d.	50,978	0.07	None	.....
6d. round trips.	10,388	0.01	71,100	0.10
7d. round trips.	80,217	0.11	347,627	0.52
8d. round trips.	48,812	0.07	316,942	0.48
Miscellaneous.....	212,441	0.30	849,540	1.27
All passengers.....	71,008,655	100.00	66,624,326	100.00
Passengers per car-mile.....	10.58	.....	8.49	.....
Journeys per inhabitant.....	182.00	.....	170.83	.....
Miles run per inhabitant.....	17.19	.....	19.65	.....

ceipt; or he might give him a receipt for what is actually the first inbound zone, hoping to pick up the discarded receipt and issue it to an inbound passenger from the end of the line. When detected, the conductor would say that he had already made up his way-bill for the outbound trip or else that he had put the ticket in the punch from the wrong side. Such fraud is so risky, however, that it is simply mentioned here as being a

written in for him by the depot inspector. The notations of punch number, journey number, etc., are written in by the head office. The conductor himself writes down the serial numbers of his tickets on every half trip and figures out the cash. He does not hold the cash until the end of the day but turns in as much as he cares to every two or three trips to the depot official, in the case of short lines, or to a boy sent to the car from a col-



GRAFTON STREET, IN THE HEART OF DUBLIN



CITY HOUSES FRONTING ON STEPHEN'S GREEN

VISUAL PROOF THAT THE BUSINESS SKYSCRAPER IS UNKNOWN IN THE IRISH CAPITAL

possibility and not a regular practice, because under the fare-receipt system the passenger has an interest in the conductor's actions which he cannot be induced to take otherwise. The success of this plan is indicated by the fact that the Dublin company does not count ticket punchings more than once or twice a day—a significant compliment to the honesty and the ability of Dublin conductors!

Of the twenty inspectors along the line, four supervise traffic and sixteen carry on ticket checking. The full force of ticket inspectors is on duty during the rush hours. During hours of normal traffic, a ticket inspector will board a car every three to five minutes. From the typical "Inspector's Report and Checking Sheet" reproduced, it will be seen that seventy-three cars were inspected between 9.45 a.m. and 10.55 p.m., except for dinner relief from 1.30 p.m. to 2.50 p.m. and tea relief from 6.58 p.m. to 8.14 p.m. The conductors do not initial the report for the boarding of the inspector. Whether or not conductors should do this seems to be a moot point among British tramway managers. Some hold that it is not wise to have a conductor act, seemingly, as a checker on his superior officer; others maintain that initialing of reports is an excellent way of avoiding disputes afterward.

On beginning the day's work, the conductor receives from his local carhouse clerk (called locally a "depot inspector") a box which contains his tickets, punch and waybills as transmitted from the head office. The all-day waybill gives the conductor his in-and-out times, starting numbers of tickets and other data shown on the form reproduced. This waybill formerly carried calculating tables, but this practice was found unnecessary in view of the tests which a new conductor must pass.

In addition to the all-day waybill, the conductor is supplied with waybills for his individual half or one-way trips on which he will find his times for the day

lector at Nelson's Pillar, in the case of the through lines. In each instance, of course, a receipt is tendered for the money collected. The individual waybills also go with the cash, but they do not have to correspond. It is only in the case of the last return with the all-day waybill that money and tickets must check. This master waybill is the one used for checking by the head office, whereas the individual trip waybills are the checking means of the local cash collectors and forwarders. The totals of one set must tally with the totals of the other set.

Cash is forwarded to the cashiers of the head office several times a day, but the boxes containing the punch, master waybill and unsold tickets of the individual conductors are returned but once daily. While one box is in use, the head office is preparing a second box for the conductor. Each conductor works two orders of serial numbers of tickets as a consequence of this system. Thus, if he begins a "3600" pad on Monday, he may get a "3700" pad on Tuesday, but on Wednesday he will have to work off the remainder of the "3600" tickets.

The general office comprises the following staff:

Duty	Number of Employees
Receiving Department, under Chief Accountant:	
Issuance of tickets and punches, and checking of same when returned each day.....	8
Issuance of waybills and summaries to conductors.....	3
Audit or reconciliation of tickets issued and cash received.....	3
Cashiers (two during the day and one at night).....	3
Total.....	22
Remainder of General Office:	
All accounting and general counting house work.....	28
General manager's, secretary's and traffic manager's offices, shares transfer, etc.....	8
Stenographers.....	2
Grand total.....	60

Of the depot inspectors, who also carry on miscellaneous transportation duties, there are fourteen. There is also the cash collector at Nelson's Pillar, who is assisted by a boy.

Examining the Electric Railway Situation

The Public Utilities Committee of the National Chamber of Commerce Is Told of Efforts Being Made in Leading Cities to Preserve the Carriers

AT THE second hearing before the public utilities committee of the Chamber of Commerce of the United States, held in Washington on May 23 and 29, various experts gave their views of the electric railway situation and of efforts which have been made and should be made to secure relief. A preliminary note in regard to this hearing was published in the *ELECTRIC RAILWAY JOURNAL* of May 31, 1919.

The subjects discussed before the committee were of two general types. The first dealt with the electric railway situation in Buffalo, Cincinnati, Chicago, Cleveland and Connecticut, and the second with general matters like franchises, skip-stop economies and the present price situation. Detailed abstracts of the discussion on these latter topics will be included in this article. Since most of the information in regard to the railway situation in the communities named, however, was presented to give the committee members knowledge which readers of this journal already possess, only the "news" points contained in the various recitals will be mentioned here.

EXPERIENCE OF TYPICAL CITY LINES

The situation in Buffalo, N. Y., was described by John W. Van Allen, attorney and vice-chairman of the committee on public relations of the "All-for-Buffalo" Committee (257 citizens). Mr. Van Allen said that in the Milburn 5-cent fare agreement of 1892 there is a reservation that the contract does not interfere with the right of the Legislature to establish rates of fare. In view of the Quinby decision, however, that whatever power the Legislature has over franchise rates has not been delegated to the Public Service Commission, it is not certain that the commission can grant a higher fare to the International Railway. This point, however, is now before the Court of Appeals for decision. If the commission does not receive power to act, a receivership is likely to result but efforts will be continued to get a service-at-cost plan through the Legislature, perhaps with a compromise on joint control through the commission and the city. Buffalo, however, objects to the Massachusetts plan of a State guarantee of company finances, for it believes that a community should pay for what it gets without asking even for temporary aid from the State.

Both W. C. Culkins, director of street railways of Cincinnati, Ohio, and Walter A. Draper, vice-president Cincinnati Traction Company, discussed the local situation. Mr. Culkins laid especial emphasis upon the elasticity of the service-at-cost plan in this city and upon the reward for efficiency and economy on the part of the company. He also mentioned the fact that under a service-at-cost plan the adjustment of wages is a community affair, although the public has not yet fully realized the fact that such a franchise is not solely a company proposition. In M. Culkins' opinion, the Cincinnati ordinance gives all the advantages of municipal ownership without imposing upon the city and the public its disadvantages.

Mr. Draper directed attention to the non-desirability of providing in a service-at-cost franchise for such specific automatic fare revision as to make it impossible to adopt a zone system if riding decreased with higher unit fares. Moreover, he declared that the incentive reward to the company should not be abolished when the fare passed a certain point, as 6 cents in Cincinnati, for the inspiration to the company to do its best, and the right of the public to receive the best should not be limited because of economic forces beyond the company's control.

Britton I. Budd, president Chicago (Ill.) Elevated Railways, told of the efforts to secure higher fares in Chicago in order to offset the increased cost of labor and materials. In his opinion electric railways are in a deplorable condition, and unless the public can be led to pay the cost of service, insolvency and the consequent ill-effects upon the communities are certain. Mr. Budd urged that greater use be made of employees as publicity agents.

The great problem of electric railways is to prove their case, believes L. S. Storrs, president The Connecticut Company, so that the public will recognize the needs of the carriers and use the service. Mr. Storrs related how in one case, where the fare reached 7 cents, the people bought bicycles, one manufacturer even buying 1000 to sell to its employees on a weekly payment basis. Mr. Storrs felt that a small group of the public can be convinced personally and some through railway employees, but that it is more difficult to educate the politicians. Until the public understands its interest in good transportation, the politicians will not favor the railways.

RESULTS OF CLEVELAND'S EXPERIENCE

Cleveland's nine years of experience with its service-at-cost plan was described by Fielder Sanders, street railway commissioner of that city. In Mr. Sanders' opinion the strong points of this franchise are these: (1) Close supervision of expenditures by the city; (2) absolute control of service (except employment). He criticised the franchise, however, for the lack of an incentive to efficiency and economy. In 1909 the city opposed the idea of a reward on the ground that the company would skimp in the interest of stockholders and in the long run injure them, and the company objected that the city would show a tendency to reduce the annual operating allowance by the amount of the company's savings in the prior year. Mr. Sanders stated that the management had operated the property in a good way but that some subordinates had displayed a tendency toward inefficiency. When the franchise recently came up for revision, he suggested an amendment modeled after the Montreal reward plan, but the people did not see the necessity of improving the franchise. Mr. Sanders also criticised the Cleveland plan on the ground that some method is needed for the regulation of labor trouble when the public interest becomes involved.

In regard to taxes, Mr. Sanders said that the Cleveland Railway pays the federal and state corporation taxes, the excise tax and the ordinary property tax, and it maintains the pavement between the tracks and one foot outside. There are, however, no paving renewals, no new paving construction, no franchise tax and no sprinkling and snow removal expenses. Just now the city officials are co-operating with the company to secure a reduction in the assessment for state taxes. Mr. Sanders believes that a company should maintain the paving along its tracks but that the imposition of other street expenses on the car rider is an improper form of taxation.

A query as to whether or not a service-at-cost franchise should contain a maximum fare limit elicited from Mr. Sanders the reply that the controlling element is public confidence. Electric railway men can devise a perfect franchise, but if the public does not believe in it it will not be granted. One way to get public support is to show that there is a limit to the fare, although theoretically there should be none. The franchise can then be amended if necessary, as the Cleveland one was last year.

GENERAL MATTERS DISCUSSED

The two witnesses on the general topic of franchises were L. R. Nash, of Stone & Webster, Boston, Mass., and Halford Erickson, of Hagenah & Erickson, Chicago, Ill. The paper of the latter, who was not able to attend the hearing in person, will be abstracted in a later issue.

Mr. Nash presented to the public utilities committee reprints of his article on "Recent Developments in Service-at-Cost Franchises for Utilities" in the *ELECTRIC RAILWAY JOURNAL* of Jan. 4, 1919. He also described in detail the salient points of the various plans and expressed the conviction that the Philadelphia one has more elements of broadness and fairness than any other one. In his opinion, flexibility should be the chief aim, and he is not sure that it is wise to fix a definite fare schedule instead of leaving this to the supervisors appointed under the franchise.

The subject of prices was treated by T. S. Holden, economics investigator, Bureau of Public Works and Construction Developments, United States Department of Labor, and by Irving Fisher, professor of political economy, Yale University, New Haven, Conn. Their remarks are abstracted elsewhere in this issue.

John A. Beeler, consulting engineer, New York, N. Y., testified in regard to the advantages of skip stops, as the detailed abstract printed on page 1097 shows. He also stated his belief that in Washington, where the plan has been used in combination with rerouting, rescheduling and other improvements, the estimated annual saving of \$250,000 for one company and of slightly less for the other company has been more than realized.

Mr. Beeler was of the opinion that the frequent-service safety car could be used to advantage on a very large part of the present mileage. The principal opposition will come from employees, but the cars should not be installed with the idea of reducing platform expenses, for business is increased. A company should start the use of such cars on some line where service can be doubled, thus keeping all employees, and then extend the use. Where the one-man car has been properly installed and fairly tried, its operation has proved to be a great success.

Higher Prices Are Sure to Continue

Failure of Fares to Correspond to Other Prices Is One of Most Conspicuous Examples of the Injustice of the Depreciated Dollar

BY IRVING FISHER

Professor of Political Economy, Yale University, New Haven, Conn.

I AM very glad of the opportunity to speak on the subject of prices of money, material and equipment in reference to electric railways. This is not because I am competent to speak from any special knowledge as to the particular materials and equipment of these companies. I shall speak entirely from the point of view of the general level of prices—in other words, from the point of view of the purchasing power of money.

In 1915 I testified on this subject in certain arbitration proceedings in Boston held to settle a wage dispute between the Bay State Street Railway and the union of conductors and motormen. I then took the ground that this railway should raise the wages of its employees in order that these should be adjusted to the lower purchasing power of the dollar—in other words, in order that their wages should overtake the high cost of living. I argued that any inability to pay such high wages could and should be remedied by raising the railway's fare.

These views were not accepted by a majority of the arbitration tribunal. The idea of raising fares, which was the key to the situation, was then too new to seem practicable. Since that time fares have broken away from the traditional 5 cents in many cases. The principle that fair wages ought to be paid just as truly as a fair price for copper or any other requisite of the railways, irrespective of the adequacy of the 5-cent fare, has been adopted by the United States War Labor Board as it had, previously to my testimony, been adopted by Justice Higgins of Australia.

The whole question is one of adjustment to a lowering purchasing power of the dollar. No adjustment should be repressed, and the sooner all the adjustments are made the better. All except one of these adjustments will be against the interests of the electric railways but that one, the adjustment of fares, can and should compensate, so far as compensation is necessary and just.

NICKEL HAS DEPRECIATED FIFTY PER CENT

The truth is that the purchasing power of the dollar is to-day about one-half of what it was before the war and one-third of what it was in 1896. If, therefore, a 5-cent fare was just in 1896 and if the other factors in the case, wages, material, equipment, etc., have on the average risen proportionally with the general rise in prices, that is, are nearly three times what they were in 1896, then the "fair fare" for the companies should be to-day from 12 to 15 cents!

To put it the other way around, if to-day a 5-cent fare is just and expenses in 1896 were lower than now in proportion to prices in general, the just fare in 1896 should have been about 2 cents!

I do not venture to say which of these two statements represents the truth, or whether some intermediate statement represents it, for I am ignorant as to whether the expenses of the companies have risen proportionately to other prices and as to whether the profits of the companies in 1896 were fair or unfair. Both of these points, however, are capable of determination.

The failure of trolley fares to correspond with other prices is one of the most conspicuous examples of the

havoc which has been played by depreciation of the dollar. The vitally important question is, will prices drop, or is the present depreciation of the dollar permanent?

While prediction in the economic field is always dangerous I am strongly inclined to believe, on the basis of considerable study of the subject, that this generation will never again see the pre-war price level, or anything like it, and that the dollar has suffered a permanent impairment of purchasing power.

To take a world-wide view, the money in circulation in the world outside of Russia has increased during the war from \$15,000,000,000 to \$45,000,000,000, and the bank deposits in fifteen principal countries from \$27,000,000,000 to \$75,000,000,000. That is, both money and deposits have been trebled; and prices, on the average, have perhaps trebled also. The conclusion is that in this war as in general, in the past, the great outstanding disturber of the price level has been money. What can be done about it? So far as the past is concerned, comparatively little. Bygones must largely be bygones. As far as wages and salaries are concerned, the remedy must be to raise them rather than to lower the high cost of living. While some kinds of work have had excessive wages during the war, this has not been true in general, public opinion to the contrary notwithstanding. I quite agree with Mr. Gompers that the wage level should not be lowered if it could. On the contrary, it should be raised to catch up with prices, just as was done after the Civil War. In the same way, the fares of electric railways should be adjusted to the new level of prices. But in regard to contracts little relief for past injuries can be expected.

FIX THE DOLLAR'S PURCHASING POWER

The real culprit being the dollar, the real remedy is to fix the purchasing power of the dollar. In order to secure a dollar constant in its purchasing power over goods in general, it should, in effect, be a composite of these very goods in general. It would be just as simple then to keep the price of the composite package of say 100 commodities invariable (however widely its constituents might vary among themselves) as it is now to keep the price of gold invariable. The price of that composite would always be a dollar, just as to-day the price of gold is always \$20.67 an ounce. [The plan of Professor Fisher for a "goods dollar" was summarized in the ELECTRIC RAILWAY JOURNAL of April 19, page 780—Eds.]

By all means, let us keep the metal gold for the good attributes it has—portability, durability, divisibility, salability—but let us correct its instability, so that one dollar of it will at all times buy approximately that composite basketful of goods. Money to-day has two great functions. It is a medium of exchange, and it is a standard of value. Gold was chosen because it was a good medium, not because it was a good standard. And so, because our ancestors found a good medium of exchange, we now find ourselves saddled with a bad standard of value! The problem before us is to retain gold as a good medium and yet to make it into a good standard.

The method of rectifying the gold standard consists in suitably varying the weight of the gold dollar. If we add new grains of gold to the dollar just fast enough to compensate for the loss in the purchasing power of each grain, or vice versa take away the gold to compen-

sate for a gain, we shall have a fully "compensated dollar," a stationary instead of a fluctuating dollar, when judged by its purchasing power.

And if we circulate paper representatives of gold exclusively, instead of including any gold coins, monthly changes in the weight of the gold dollar can be made even more easily than the occasional changes were made which history records. In actual fact, gold now circulates almost entirely through "yellow-backs" or gold certificates. The gold itself, often not in the form of coins at all but of "bar gold," lies in the government vaults. It would therefore be little more than expressing in law an existing custom if gold coins were abolished altogether.

If gold thus circulated only in the form of paper representatives, it would evidently be possible to vary at will the weight of the gold dollar without any such annoyance or complication as would arise from the existence of coins. That is, each month the proper government bureau would calculate from current market prices how much would have to be paid for the composite basket of goods. This figure it would publish, and this figure would then afford the needed official sanction to the Secretary of the Treasury to change the rating of the gold dollar—that is, to change the amount of gold which the mint would give or take for a gold certificate, and thus increase or diminish the purchasing power of that certificate.

The result is that the price level would oscillate only slightly. Instead of there being any great price convulsions, such as we find throughout history, the index number would run, say 101, 100½, 101, 100, 102, 101½, 100, 98, 99, 99, 99½, 100, etc., seldom getting off the line more than 1 or 2 per cent.

Present Conditions Fix "Normal" Prices

Utility Owners Have the Right to Expect Public Authorities in Determining Fares to Consider Operating Conditions and Production Costs That Prevail in 1919

BY THOMAS S. HOLDEN

United States Department of Labor

MUCH has been said and written as to whether prices are fair or whether they represent excess profits; as to whether present high levels can be maintained or will decline to a level near that prevailing before the war. Some statements have been wisely made; much that has been said has been beside the point.

It is not surprising that the price situation has bewildered many of the most intelligent business men. It has been stated by a competent authority that the purchasing power of the money of the world has shrunk more during the four years of war than it did during the four hundred years from 1300 to 1700. Prof. Irving Fisher has called what has taken place "a price revolution"; this name designates most accurately what has occurred.

The bewilderment of intelligent men concerning the price situation has been largely due to the fact that most have had to learn to think correctly about prices. We have thought one way with one side of our brain in our capacity as buyers, and we have thought another way with the other side of our brain in our capacity as producers and sellers.

In our capacity as buyers of commodities we have

proceeded on the assumption that it was desirable for prices to fall. Falling prices, however, rarely stimulate business. They usually stimulate waiting for further declines. A period of falling prices is usually a period of business depression. The past six months has been remarkable for the small number of business failures. It is entirely possible that a sharp decline in prices might have been accompanied by a greater number of business failures than there has been, attended with a much greater menace of unemployment. A financial panic might have been within the bounds of possibility.

WHAT IS NORMAL PRICE?

Many of those who have been deferring building projects and the resumption of production of commodities have stated that they were waiting until prices and wages should have returned to "normal." The word "normal" has been used extensively in this connection and most of those who have used it have not appreciated the true meaning of the word. Not only in connection with prices and wages has this term been used incorrectly, but courts and public utility commissions have used the term loosely when speaking of valuations of properties.

Just what does this word "normal" mean? In a paper entitled "Appraisals and Rate Making," read on March 20 at the annual meeting of the Illinois Gas Association, Cecil F. Elmes presented with the utmost clarity and force certain aspects of the price situation as affecting valuations of public utility properties and the principles of rate making. In the course of his discussion Mr. Elmes dwelt at some length on the misconception of the term "normal." He presented curves showing the fluctuations of prices in England on five basic articles, wheat, iron, lead, cattle and sheep, covering a period of six centuries. He also presented curves showing fluctuations of artisans' wages, both in terms of money and in terms of the quantity of wheat the wages would buy, covering the same extended period. He pointed out that in the case of each one of these curves the fluctuations are so erratic that it is impossible to draw a horizontal straight line, an oblique straight line, or a mathematical curve which can in any sense serve as an axis about which the prices or wages fluctuate. Consequently it is not possible to define mathematically in terms of past experience the "normal" price of a given commodity, or "normal" wages. Nor is it possible to thus define a "normal" rate of increase in prices or wages.

PRESENT COSTS DETERMINE NORMALITY OF PRICES

Not everyone has the opportunity to consult the records of the British museum, as Mr. Elmes has had, for the purpose of studying this subject. There is, however, another authority which is readily accessible to all, *Webster's Dictionary*, which defines the term in connection with economics as follows:

Pertaining or conforming to a more or less permanent standard, from which, if the individual phenomena deviate on either side, such deviations are to be regarded as self-corrective. This, in economics, the normal price is a price which corresponds to the cost of production.

The standard to which a price must conform is, therefore, not necessarily a price to which we are now accustomed or were accustomed five years ago. Mr. Elmes has shown that past experience has established no mathematical standard to which a price may be expected to conform. Webster says that the standard is the cost of production. In 1919 the standard is the

cost of production in 1919, and not the 1914 cost of production. There is no justification for the assumption that \$12 is an unfair price for a pair of shoes today simply because the same pair of shoes might have been bought in 1914 for \$6. The only criterion for the present price of shoes is the present cost of production of the shoes plus a reasonable margin of profit to those concerned in the making and the selling of the shoes.

Similarly "normal" wages in 1919 must not necessarily conform to the wage scale of 1914. "Normal" wages in 1919 must cover the cost of living in 1919 with a reasonable margin.

Similarly, the fact that the customary street-car fare in the past has been 5 cents is not necessarily an indication that a 5-cent fare is the "normal" fare in 1919. As in the case of prices and wages, the standard of the rate to be paid for the services rendered by any public utility corporation is not fundamentally the rate the public has been accustomed to pay, but the cost of production of the commodity that is being sold, whether it be gas, electric power or transportation.

In connection with valuations of public utilities and the fixing of rates, although the basic principle which applies to the price of commodities and wages of labor and valuation of real estate constitutes the standard of normality, it is fully realized that, in practice, restrictions, legal and otherwise, operate to modify the application of this principle. It is evident to all, however, that as long as these properties are owned and operated by private interests the return must ultimately be in proportion to the cost of production of that which is sold to the public. When operated by the public through government officials, if the rates paid for the service are not sufficient to cover the costs, the deficit has to be paid out of public funds.

MONEY SUPPLY INFLUENCES PRICES

If a curve representing the average of prices of a great number of basic commodities be drawn, the fluctuations are much less marked than those of any particular commodity. Prices and production costs, which constitute the norm of prices, are measured in terms of money. Wages and the cost of living, which is the norm of wages, are measured with this same yardstick, money.

During the last forty-six years, in the United States, the curve of the price index for basic commodities has kept very close to parallelism with the curve representing the stock of legal tender in the country.

According to figures of the Bureau of Labor Statistics the maximum level of wholesale prices of basic commodities was reached in September, 1918, the index figure being 207. This figure is based on the average for the year 1913 as 100. The index figure for February was 197, for March 200 and for April 203. Weekly quotations continue to show more commodities advancing than declining. Thus it is seen that the price level is again within hailing distance of the maximum. The question today is not whether prices will fall or how much they will fall; it is rather how much higher will they go? The cost of living is still increasing and the dollar is still on the decline. The problem is to arrest this decline in the purchasing power of the dollar.

During the last few months there has been evident a growing tendency on the part of the public to accept present prices and to wait further only for some assurance that prices would not fall. The growing volume

of building operations throughout the country indicates that the public has largely given over its policy of waiting. The Department of Labor is daily in receipt of statements from leaders in business and finance attesting the correctness of the statements it has published concerning prices.

WORLD-WIDE CONDITIONS PROHIBIT PRICE-LEVEL RECESSION

It took thirteen years after the Civil War for wholesale prices to get back to the prewar level. The circumstances of that period were much more favorable for price reductions than they appear to be at the present time. As compared with the war just ended the Civil War was a purely local affair.

The reason why the present situation has been so difficult to understand is the fact that it is a world-wide phenomenon. The scope of the economic changes has been as wide as the war itself. In January of this year the Bureau of Labor Statistics' index figure for wholesale prices of all commodities showed an increase of 102 per cent over 1913. At the same time the price level in England was 117 per cent higher than in 1913; in France it was 249 per cent higher. It is a significant fact that France, which showed such a marked rise in the price level, resorted to inflation to a much greater extent than did either England or the United States. In England and in America it has been considered wise to pay a large proportion of the expenses of the war through the levying of heavy taxes, thus minimizing the necessity for extension of the public debt and the inflation of currency. In those countries where it was considered expedient to avoid high taxation and to resort to inflation the people are now paying the piper through the high prices they are obliged to give for the necessities of life.

Whether you believe with the majority of economists that the price level is the result of the amount of money, or whether you agree with the minority that the quantity of money accommodates itself to the price level, the present condition of world-wide high prices accompanied by a world-wide increase of money and credits must be considered. Either prices in the future will be less because of a contraction in the amount of legal tender, or lower prices in the future must be accompanied by a decrease in the amount of legal tender. Hence the problem of future prices depends upon the solution of the financial problem and a solution of that can not be wholly controlled by any one country.

Lord D'Abernon, an eminent British financier, has been quoted as follows:

If there were to be any attempt to-day to bring about a rapid return to the gold currency basis of 1914, it would almost double the weight of the world's indebtedness and would certainly lead to the bankruptcy of many nations.

The governments which have borrowed cheap money would, in the case of contraction, have to re-pay with dear money. Individuals who have borrowed cheap money would have to pay back with dear money. It is extremely unlikely that the governments of the world can be reasonably expected to decrease appreciably the world inflation within a brief period of years.

PRODUCE MORE GOODS

The best way for Americans to set about arresting the shrinkage of the dollar is to produce more goods, thus remedying the existing disparity between commodities and money. But great as is the actual and

potential demand in this country for consumers' goods, perhaps even more insistent is the demand for houses. Scarcely second to this need is the necessity of making many repairs and improvements in the various systems of transportation and other public utilities.

The public has a right to expect that its servants will safeguard its proper interests in whatever adjustment of rates is made. The owners of public utilities have equally a right to expect the public officials to take into consideration operating conditions and costs that prevail in 1919.

Economies of the Skip-Stop

Skip Stop on Basis of Elimination of One Stop Per Mile, at 1.3 Cents per Stop, Will Save \$30,000,000 Annually

BY JOHN A. BEELER

Consulting Engineer, New York, N. Y.

THE importance of the skip stop as a method of improving operation for electric railways by speeding up schedules and reducing the energy consumption through the medium of eliminating unnecessary stops has recently attained national prominence.

In horse-car days, which began in New York in 1829, the horses stopped when they heard the bell. With the advent of cable cars, which first appeared in San Francisco on Sutter street in 1873, a notice was carried to the effect that "Cars will stop at street corners only and cannot stop on curves." This was the beginning of the skip-stop system.

As the horse-car lines were electrified and new electric lines built, some companies followed the horse-car method of making stops at any point, while others spaced them out more in accordance with the cable practice. The first commercial electric railway in the United States was the East Cleveland (Ohio) Horse Railway, which was started in 1884. The electric cars, which were operated by the underground system, were run between the horse cars on the same track and on the same schedule. Cleveland also was the scene of the first comprehensive effort to eliminate stops, when in 1912 under the direction of Peter Witt, then street railway commissioner, the plan proved a marked success. The example was followed by a number of other cities, where the skip-stop system was used to a limited extent.

WASHINGTON FOUND THE SKIP STOP A BENEFIT

With the coming of the great war, the adoption of the skip stop was speeded up. In Washington, D. C., for example, the great influx of war workers congested all transportation facilities to such a point that the service was breaking down. One of the methods advanced by the writer to clear up the congestion on the principal streets of the business district was the elimination of all unnecessary stops. The first step in this direction was taken in the vicinity of the Treasury Building, where on Feb. 17, 1918, one-half the original stopping places were eliminated. The effect was so marked that on April 7, 1918, the plan was extended over a large share of the business district and on April 21, 1918, was made to cover the entire District of Columbia. Altogether the railways eliminated about a third of the former stopping places, leaving an average of slightly less than eight to the mile.

The effect of the skip stop in this case was immediately advantageous. The running time was reduced an

average of 13 per cent. Especially in the rush hour cars which had formerly run late were able to keep on schedule and get to the end of their trips on time. This resulted in great benefit to the public, as eighty-seven cars under the new conditions were able to do the former work of 100. This gave the company the advantage of additional equipment—though it was unable to purchase more cars under war conditions—and the public had the advantage of improved transportation.

The indorsement of the plan was nearly universal, only thirty-three complaints being received from a population of half a million. Not a single one was made against the principle of the skip stop.

SKIP STOPS SAVE TIME

The skip stop properly applied is nothing more than a means of correcting an inheritance of the horse-car days. It is self-evident that the more often a car stops the slower its progress is. An ordinary street car has a free running speed of about 20 m.p.h. Without any stops it will make a mile in three minutes. Require it to make eight stops to the mile and it will have a reduced speed of 10 m. p. h. and take six minutes for a mile. If it must make fourteen stops to the mile, the speed will be reduced to 7 m. p. h.

Eight stops to the mile—every 660 ft.—means that the motorman must throw off the power, apply the brake and bring the car to rest, the doors must be opened and closed and then the motorman must release the brakes and feed up the power—every forty-five seconds. One-half the time of all persons on the car is spent in making these stops.

The importance of controlling the number of stops is apparent. For example, consider a passenger making a 2-mile trip. If fourteen stops per mile are required, the passenger will consume seventeen and one-tenth minutes in riding the full distance. With but eight stops to the mile, the ride will take twelve minutes, five and one-tenth minutes being saved. There will be a slight addition to the average walk, amounting to about 70 ft. at either end, which will take four-tenth minute additional. Thus the net gain through the stops being reduced from fourteen to eight per mile is to save the passenger four and seven-tenth minutes. If the trip is longer, the gain will be correspondingly more.

The amount of service that can be given with a certain equipment is entirely dependent on the number of stops that must be made. I have seen many lines where the points designated as stopping places average as high as eighteen to twenty per mile. True, cars do not stop at every point each trip. But on certain trips, especially during the rush hours, the cars are making an excessive number of stops. It is then that the fatal effect of the too-frequent stops becomes apparent. Either the cars are hopelessly delayed or else schedules are slowed down and the public delayed during the period when the demand for service is most urgent. Extra cars must be furnished for the sole purpose of making the additional stops, without adding one bit to the service. In some congested cities the situation has been so bad that with more cars added the speed was reduced so much that actually fewer cars per hour were moved along the street.

As a means of relief, a reduction in the number of possible stopping places makes a marked improvement. Not only does it save the time consumed in making the stops, but it aids the schedule maker by giving him a

much more definite idea of what is likely to happen on each trip. With a definite basis to work on, he can place the equipment where it will afford additional service to patrons instead of being used to make extra stops.

METHODS OF ELIMINATING STOPS

In reducing the too numerous stops of the past, electric railways have used a number of methods with justice to all the car riders. The recognized arrangements of skip stops are: Simple, staggered, odd-and-even, selective, arbitrary or measured, and express and local.

In the simple skip stop every alternate corner is eliminated as a stopping place, stops in both directions being made at the same street. The staggered skip stop calls for a stop at alternate corners by inbound, and at the remaining corners by outbound, cars. The odd-and-even system is a modification of the last, applicable principally to the cities with numbered streets. Cars marked "odd" stop at odd-numbered streets, and those marked "even" stop at even-numbered streets. With the selective system the locations for stopping places are determined with reference to the traffic, without rigid adherence to the uniformity of the spacing. The arbitrary or measured method, sometimes known as the European plan, locates the stops at even distances apart without reference to the street intersections or the character of the territory served. The express and local method is self-explanatory, being an application of the steam railroad method of designating certain points as express stops.

SKIP STOPS SHOULD BE MAINTAINED

In addition to being a time-saver for the public, the skip stop saves coal for the railroads. With proper operation, a reduction in power comparable with the gain in speed can be made. After the successful installation in Washington, the United States Fuel Administration determined to advocate the general introduction of the skip stop in all cities of more than 25,000 population in order to save fuel for war purposes. An order was issued and the skip stop was installed beginning August, 1918, a spacing of eight stops per mile in city districts being recommended. Unfortunately it was hastily put in on some lines, without shortening schedules or affording patrons any benefit whatever. In such cases the public, seeing no feature but the inconvenience resulting from this arrangement, has since demanded the abolition of the practice.

A very great reduction in accidents of different classes has followed the adoption of the skip stop, according to the actual records kept in Detroit and Philadelphia. The reduction has been especially marked in boarding and alighting accidents and collisions.

In round figures the electric railways of the United States are now operating 2,500,000,000 car-miles and handling 15,000,000,000 passengers annually. They are earning on the average about 32 cents per car-mile, the operating expense being about 23 cents on a ratio of 72 per cent.

The total investment is approximately \$5,000,000,000. The gross receipts are about \$800,000,000, making a \$6 investment per \$1 of business. After the payment of operating expenses of 72 cents, there remains 28 cents on each \$1 received. This is equal to 4½ per cent on the investment, from which must be provided interest, depreciation and replacements. It must be remembered

that this includes all lines, good, bad, and indifferent. Many of the latter should never have been built.

Electric railways are to-day carrying more people and taking in greater receipts than ever before in their history. It is indeed a significant fact that in the face of the tremendous increase of automobiles in daily use, the demand for good street-car service was never so great as to-day.

If the skip stop does nothing more than save one stop per mile, it will at 1.3 cents per stop, as estimated by J. F. Layng, engineer of the United States Fuel Administration, save more than \$30,000,000 annually. This important saving warrants that the skip-stop-plan be installed with great care in order to insure its permanency. Making eight stops per mile a car will make a schedule speed of 10 m. p. h. but with ten stops the speed is reduced to 9 m. p. h. With average car earnings at 32 cents, the slower schedule will earn but \$2.88 while the faster one will bring in \$3.20 per car-hour. As the great bulk of all the expenses are controlled by the time element feature, the importance of this fact is apparent. Savings through the skip stop and through other legitimate means, such as rescheduling, rerouting, reduction of lost time and lost motion, and the use of safety cars wherever practicable, will enable many a company to show a good balance on the right side of the ledger.

Side Lights on the Zone Fare—Good Service Absolutely Essential

No Matter How Low the Fare, Short Riders Cannot Be Developed Unless They Can Be Offered Comfortable Travel

BY WALTER JACKSON

WHOEVER has had the opportunity to analyze classification of passengers according to individual maximum length of ride cannot fail to observe that the British tramway has a much greater proportion of patrons to whom a car ride is not a necessity but merely a convenience. Roughly speaking, the minimum fare passengers of Great Britain's street railways are about half of the total. Although the unit-fare American systems do not offer the same valuable differentiation in length-of-ride data, we know from the few surveys made to get such statistics and from the traffic shrinkage immediately following an increase in fare that the same class of short-ride traffic is nearer 15 per cent than 50 per cent.

The difference between these percentages goes a long way toward explaining the operating philosophy of unit-fare vs. distance-fare properties. The unit-fare operator inevitably comes to think in terms of expense reductions because he feels that most of his passengers must use the cars in any case; hence the temptation to handle the same number of riders in bigger cars at longer intervals with fewer men. Just as inevitably the distance-fare operator comes to think in terms of income increases because he knows that a reduction in service will cut down the largest and most promising part of his business.

Since no exceptional talent is required to reduce mileage, it is easier to get on in the first class of properties, but only too often a penny saved is a nickel spurned. It requires courage—a willingness to try new ways—to seek to increase the net by adding service that creates travel.

If American operators feel that the war did dreadful things to them, let them contemplate what happened to the British managers who saw nearly 80 per cent of their tried and true men go forth to the carnage of war, who had in many cases to pay double wages for their help plus war allotments to the families of the men in the field, who experienced greater difficulty probably than Americans in getting repair and maintenance material during the war and who had to endure a coal shortage that was not confined to Mondays but froze on all through the week.

And did the British manager trained in selling transportation make any reductions in service voluntarily? Not one that we know or heard of! Service reductions there were; but they were reductions compelled by man shortage, car shortage and fuel shortage. These hunters of the short rider knew that they could not afford to let the street railway's only dangerous competitor—the human foot—get into its stride. Accordingly, each and every one of them was only too anxious to restore pre-war conditions as rapidly as possible.

From their policy it is clear that frequent service and good service are of prime importance in building up short riding. No fare, no matter how low, will induce a walker to board a car unless that car comes before he is well on his way and unless that car has seats available or in early prospect. He is not asking for speed or costly fixtures—he is asking only for reasonable comfort.

So here we have arrived at the natural answer to those who ask: "Won't we be plagued during the peak load with a lot of short-ride undesirables?" No, fear not. The short rider will let you severely alone during those hours when most of your passengers are long riders anyway. But if you are giving reasonably frequent service during the off-peak hours, the shopper, the solicitor, the carpenter, the plumber, the delivery clerk, the teacher, the pupil and the pleasure rider will fill seats that now are empty.

Important Hearing on Mail Pay in New England

New England electric railway circles are keenly interested in the hearing to be given at Boston, Mass., on June 13, by the Interstate Commerce Commission upon rates of compensation for carrying mail. This is one of the series of hearings throughout the country beginning in Washington on June 9.

The New England Street Railway Club has appointed the following committee to represent its members at the Boston hearing: Chairman R. E. Stearns, first vice-president Bay State Street Railway, Boston; Clarence K. Reed, general auditor Boston Elevated Railway; and D. P. Abercrombie, vice-president and general manager Northern Massachusetts Street Railway, Greenfield, Mass.

The New England committee has sent a questionnaire to about sixty companies, asking for comparative financial data and other information which will enable the case to be thoroughly presented. It is earnestly requested that all possible co-operation be rendered in the forwarding of the desired material. A large attendance is expected at the Boston hearing, which will be held at 10 a. m. at the Federal Building, First District Court room.

American Engineering Standards Committee Adopts Revised Constitution

New Plan Involving Enlargement of Scope and Change of Name to A. E. S. Association Has Been Submitted to Government Boards and National Societies

THE raison d'être, organization and proposed procedure of the American Engineering Standards Committee were comprehensively set forth in the presidential address of Comfort A. Adams before the American Institute of Electrical Engineers in February. (See *ELECTRIC RAILWAY JOURNAL*, March 1, 1919, page 407.) A plan for the enlargement of the organization was explained by Dr. E. B. Rosa, chief physicist United States Bureau of Standards, in the issue of this paper for May 3, 1919, page 859. This plan has now progressed to the point where a tentative draft of a revised constitution has been approved and adopted by the committee and is now before the interested governmental bureaus and national societies for their consideration.

The committee has prepared a statement of the situation, from which the following digest has been made:

In the first place the new constitution replaces the committee name by "The American Engineering Standards Association," more adequately to suggest the scope of its activities.

The objects of the association are stated as follows: (1) To unify and simplify the methods of arriving at engineering standards, to secure co-operation between various organizations and to prevent duplication of standardization work. (2) To promulgate rules for the development and adoption of standards. (3) To receive and pass upon recommendations for standards submitted as provided in the Rules of Procedure, but not to initiate, define or develop the details of any particular standard. (4) To act as a means of inter-communication between organizations and individuals interested in the problems of standardization. (5) To give an international status to approved American engineering standards. (6) To co-operate with similar organizations in other countries and to promote international standardization.

Means are provided for increasing the number of representatives in the association by invitation or on request. Several important organizations interested in standardization will be invited to appoint representatives as soon as the necessary power is obtained.

The routine work of the association will be conducted by its secretary under the direction of a board of directors. This board will have power to deal with all of the affairs of the association except the final approval of the standards submitted to it.

Any organization may request the association to approve standards which it has formulated, or to approve committees that it has appointed, and by so doing becomes a "sponsor society." Such a request is entirely at the option of the organization that has formulated or expects to formulate the standard. At the request of the sponsor, approval of the standards is given when they are the substantially unanimous conclusions of a committee made up as follows:

(a) Sectional committees dealing with standards of a commercial character (specifications, shop practices,

etc.), shall be made up of representatives of producers, consumers and general interests, no one of these interests to form a majority. A producer is a person, or the representative of a firm or corporation, directly concerned in the production of the commodity involved. A consumer is a person, or the representative of a firm or corporation, that uses the commodity involved, but is not directly concerned with its production. General interests include independent engineers, educators, and persons who are neither consumers nor producers, as defined above.

(b) Sectional committees dealing with scientific or non-commercial standards shall consist of persons specially qualified, without regard to their affiliations.

It is anticipated that in nearly all cases the approval of standards and committees by the association will be requested. In case it is considered advisable, the association is authorized to call a meeting of those who would be interested in the formulation of a new standard or the revision of an old one, to select one or more sponsor societies. The sponsor society or societies will appoint a sectional committee to formulate or revise the standard. This sectional committee will report to the sponsor when its work is completed. The sponsor may then request the association to approve. The association deals only with the sponsor and acts only at its request. Provision is made in all publications that a standard must be referred to as that of the sponsor, using whatever title the sponsor has given it, followed by the statement "approved by the American Engineering Standards Association." The approval may be given as "recommended practice," "tentative standard" or "standard," the expectation being that nothing will be approved as standard until it has shown that it is generally acceptable.

The association thus acts only to bring together those interested in a common object, and when they have completed their work, will at their request, certify that it has been done in such a manner as to justify its adoption. In addition to assisting in the selection of committees and certifying that their work has been done under proper conditions, the association will act as a bureau of information regarding standardization. It will collect information regarding existing standards and as to the bodies that have formulated and adopted them. This will enable it promptly to give necessary information to those who select a committee to formulate a new standard or revise an old one. It will also enable it to furnish information desired by the working committees regarding what has been or is being done on similar or related lines. It will establish relations with similar bodies in other countries.

Canvass of Local Chambers of Commerce

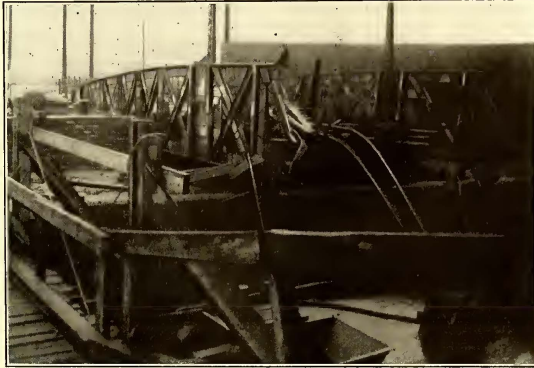
The public utilities committee of the United States Chamber of Commerce, which is holding a series of hearings in regard to the general electric railway situation, is planning to send out to all local chambers of commerce a questionnaire on the subject. The purpose is to have these bodies give their views in regard to electric railway franchises, operating economies, taxes, the public interest in good transportation and the price situation. General information along these lines, as brought out by witnesses at the first two hearings before the committee, has been published in *ELECTRIC RAILWAY JOURNAL* of May 3, 10 and 31 and in this issue.

Rehabilitation of French Tramways

Condition of Those In and Near the War Zone Described by an Eye-Witness—Many Destroyed and All French Tramways in Poor Physical Condition—Extension of Credit by American Manufacturers Necessary If Sales for Renewing Properties Are to Be Made

By DANIEL T. PIERCE

Recently with the American Red Cross, Paris



WHY FRENCH ELECTRIC RAILWAYS CANNOT RESUME OPERATIONS
—A TROLLEY BRIDGE IN THE DEVASTATED REGIONS BLOWN
UP AS THE GERMANS RETREATED IN OCTOBER

THROUGHOUT the strip of territory, extending from Ostend to Nancy, which constitutes the devastated region of Belgium and France, there is to be observed almost total destruction of electric railways, including track, structures and rolling stock. In Ypres everything is destroyed. It is one

of those cities which now consist of only a few walls and is not to be rebuilt, if we can believe the reports as to the determination of the Belgian government. Lille and Valenciennes are next encountered. Lille was a big industrial city and had several lines of electric railway, all of which were abandoned during the long period of German occupation, largely on account of the scarcity of coal. The scarcity was even more severe immediately after the armistice. People who are freezing can get along without even electric lights and railways. In January the track was in deplorable condition, and no steps had been taken to restore the service. In fact part of the motor equipment had been carried away, along with great quantities of textile machinery—some of it originally bought from German makers! Almost identical conditions existed in Valenciennes.

Arras is a scene of complete destruction and desolation, as is also Cambrai. If the latter city ever had any electric lines no sign or vestige of them remain—not, that is, in such shape as to be noticed by a casual visitor who was not searching especially for the remains of railways.

Amiens, the next large city, is in much better condition. It is officially stated that only 25 per cent out of every 100 houses are classified as not being worth rebuilding or repair. Even before the armistice the electric power plant was in operation and shortly afterward a few electric cars were run in a desultory way over routes that were not obstructed by demolished buildings. If the electric railways of the city were found to be 25 per cent (much less 75 per cent) intact, I should be surprised, but this is not an estimate made on the basis of exact information; it is merely the im-

pression that one gets from visiting the city three or four times, at different intervals before and after the armistice was signed. Péronne and St. Quentin are in the same classification as Cambrai—almost totally destroyed—railways in common with every other utility, including the water supply, being non-existent.

Montdidier, Beauvais and Compiègne present quite different conditions. They were shelled but little, only badly bombed. Such railways as they had are in about the same state as the towns themselves—shattered here and there, and where intact badly worn and down at the heel. Château Thierry had only one electric line running along the river, the larger part of the town lying on the side of a steep hill which rises northward. The track had not been restored in February when I last visited the town and only temporary bridges crossed the river.

Soissons had not attempted to restore electric traction as late as March. What I saw of its track, overhead and depots suggested that there might be a salvage of perhaps 25 per cent of the plant formerly operated. In Rheims, another large city of a population of more than 100,000, there is practically nothing left of the electric lines. The four years of shelling which destroyed all but fifteen out of 15,000 dwellings, not to mention other structures, tore up the track and demolished the overhead, and repeated direct hits by shells of enormous caliber reduced the carhouses to masses of twisted iron, half-burned cars and debris. On some of the very narrow streets the feed wire was carried on arms projecting from the walls of houses. Even these were gone for stretches of several blocks. I happened to be following a car track in Rheims last year in the hope that it would lead to the railroad station. It ended in a huge shell hole, which combined with the debris from houses on either side completely blocked the street. This perhaps will give some idea of the condition of electric railways in Rheims and elsewhere in the war zone.

The few kilometers of track in Châlons and Épernay, which were on the southern edge of the devastated re-

gion, were operated after a fashion with the exception of a few months. The cars and equipment appeared to be fit only for the junk pile. I cannot recall seeing any electric railway in Ste. Menchould and Bar-le-Duc, although the latter city probably possesses the usual single-track line through the town, but certainly not on the main street. Verdun on the other hand had rather an extensive system, all of which is wiped out and must be replaced *in toto*. In Toul and Nancy on the other hand the railways operated throughout the war and, relatively speaking, are intact—if that is a proper term to apply to railways which have had no maintenance for more than four years.

CARS THAT RUN ON THEIR NERVE

In Paris and Lille the tram lines appear to be in fair condition; the equipment is in better shape than the track because the latter has gone to pieces along with the total abandonment of street repairs of all kinds. In Bordeaux, Tours and other cities and towns in middle and southern France the condition of electric lines, is, of course, deplorable by reason of the long-continued lack of maintenance and replacement. The equipment, like the Paris taxicabs, impresses one as something likely to fall to pieces at any moment. "How on earth do they keep running?" an American in Bordeaux asked, as a double-decked rattle trap swayed down the quay. "On their nerve, I guess," was the most satisfactory answer that could be given.

And that is how most of the machinery, electric railways, motor trucks, and other moving equipment in France has been kept going during the war. Every man in France was mobilized and every ounce of man-power was needed for the war. If a thing did not directly contribute to the winning of the war it was of no account. The steam railways were fairly well cared for, but France had few if any heavy electric or interurban lines. Electric railways therefore were not important for transport of men or munitions, and France has let them go to pieces. The Frenchman, however, has a gift for making things go. His motor transport during the war was disreputable in appearance but it kept on going. A motor car that an American would push into the ditch and abandon would be coaxed along indefinitely by a Frenchman. French cities therefore will probably keep their lines going somehow where there is anything left of them.

PRESSING NEED FOR ELECTRIC RAILWAY MATERIAL

But evidently there is a pressing need for vast quantities of everything that goes into the making of an electric railway. France could not in many years make this equipment; she must buy it here or in Britain or elsewhere—everything from rail to power-house equipment. France bought largely of electrical equipment from Germany; that supply is now eliminated unless the rest of the world forces France to buy from the only seller who will give her reasonable prices and long credit.

That practically all the electric railways in France are municipally owned will, of course, deter purchases from her enemies. The feeling against Germany is, however, only a deterrent; it is not an absolute bar against trade with Austria and Germany. As between a friendly seller who asks much the higher price and demands cash and a hated seller who quotes a low price and will give three years for payment, the Frenchman will eventually turn to the latter. Anyone who counts

upon a refusal by France to trade with Germany if Germany offers much the best terms, is doomed to disillusionment. The Frenchman when the present intense bitterness is over will trade where he can get the best bargain. This is not only true of Frenchmen but of Italians and others, and of course it applies also to other commodities than electric railway equipment.

At the present time Frenchmen find it difficult to trade with anyone. There are high tariff barriers, the law against "export of capital" which prevents the payment of foreign debts except by express permission of the minister of finance; there is the back-breaking depreciation of the franc which means that French buyers have to pay Frs. 6.50 for every dollar's worth and there is the fear of further increase in the balance of trade against the republic.

SALES MUST BE FINANCED

Frenchmen hear that United States banks will "finance" French purchases here; they will doubtless derive much satisfaction from the speech of Mr. Vandellip, and the proposal in Congress to form a semi-governmental corporation to "carry" French and other foreign buyers. But up to date about the only terms quoted—actually quoted as distinguished from being talked about in the newspapers—are cash against ship documents, *i.e.*, cash long before delivery on the other side. Within the past week I was interviewing a manufacturer in regard to certain machinery for export to France. Before he went very far into the discussion of what he could supply he wanted to know whether or not a cash credit had been opened here to pay for the goods. If this is to be our idea of "helping France" she will inevitably look elsewhere for help or get along without it.

The conditions call for some tangible plan of which the average buyer can take advantage by which French purchases in this country can be carried here by banks, for it cannot be expected that the manufacturer will extend two or three years credit. Until this is brought about, France must wait for the rehabilitation of her railways—at least so far as we are concerned. That she wants to buy here is certain; we must make it possible for her to do so—or lose the business. There are radical differences in French and American railway standards—notably in the weight of all equipment—but the extent of the business to be done is so great that it would seem to be worth while for American manufacturers to give the French roads what they want.

As a footnote to this subject attention may be called to a report made from Milan by a representative of the Chamber of Commerce of the United States. He says: "There are thousands of bicycles of German manufacture at Chiasso ready to flood the market. There are also carloads of chemicals and dyestuffs which have already been offered Italian merchants at extremely low prices. The high rate of American exchange makes Italian trading with Americans most difficult while the German mark is at its lowest ebb. This makes the price when translated into liri most attractive. The dollar exchange costs the Italians three times as much as the mark exchange. Naturally the prices of German goods in liri are very low."

Transpose lire to franc in this quotation and you have a correct statement of the situation as it applies to France. Nor does this situation affect only bicycles, dyestuffs and chemicals. Germany—defeated Germany—disrupted by Bolshevism and disorganized by war—

this year sold an electric locomotive in Switzerland to the government at a far lower price than was offered by any other country. It would be profitless to characterize this condition of affairs; it speaks for itself in loud tones to the American manufacturer.

Buffalo-Niagara Falls High-Speed Line Completes Successful Year

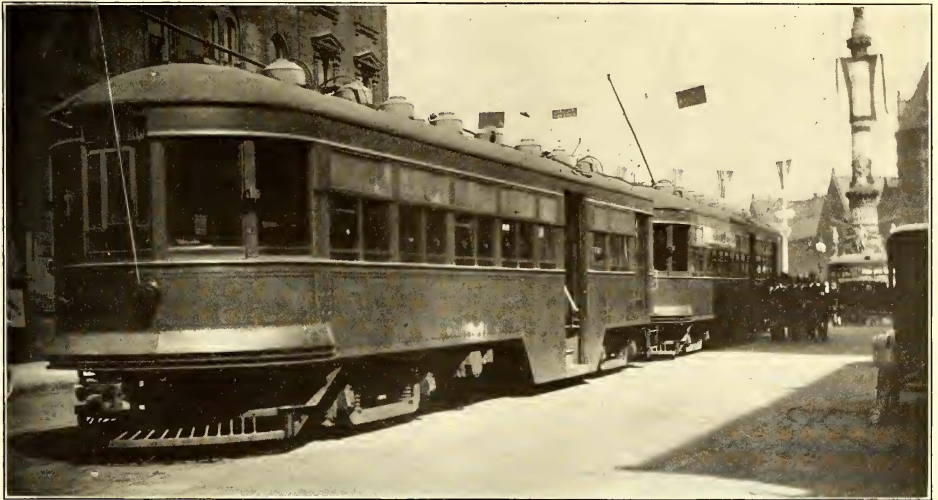
Frequent Service, High Speed, Attractive scenery and Comfortable Cars have Contributed to Attract a Large Patronage

THE high-speed line of the International Railway between Buffalo and Niagara Falls is just rounding out its first year of operation, as it was opened to traffic on June 9, 1918. The line connects Main Street, Buffalo, and Portage Road, Niagara Falls, passing through Tonawanda, North Tonawanda and La Salle. It was described in detail in the issues of the ELECTRIC

new line because the number of steam passenger trains between Buffalo and Niagara Falls was limited. All in all, however, it appears that the new line has developed new business for the company.

The principal factors, of course, in the success of the new line were the high running speed, permitting a running time of one hour between Main and Court Streets, Buffalo, and the Terminal Station at American Falls, Niagara Falls; the frequency of the service; and the wonderful scenic features of the route. The number of stops between terminals was reduced to a minimum, there being a half dozen or less required stops and five signal stops.

Thirty-minute service last summer consisted of two-car trains, which seldom left either terminal city with unfilled seats. As winter came on the operation of two-car trains was confined to the busy periods of the day. W. J. Whiteside, traffic agent of the railway, states that it is planned to operate three-car trains during the coming summer and schedules are being revised accordingly. The general plan is to utilize three-car



HIGH-SPEED LINE TRAIN LOADING AT BUFFALO

RAILWAY JOURNAL for July 13 and Aug. 10, 1918. During the year cars have been regularly operated over the line on a thirty-minute headway.

The business which the new line has gathered may be considered all its own, because the old Niagara Falls line of the company, which leaves Buffalo by way of Niagara Street and Military Road, has held up its traffic fairly well. Comparisons are, however, difficult to make because the winter of 1917-1918 was a severe one for the older line, and higher fares were also inaugurated during that season. Comparisons are complicated farther by the fact that the war situation and the steps taken by the government to curtail passenger traffic on the steam roads operated partly to reduce the 1918 summer traffic between Buffalo and Niagara Falls on the new line because the tourist traffic was curtailed. On the other hand, a certain advantage accrued to the

trains on Sundays, holidays and other days of heavy traffic and two-car trains ordinarily. With three-car trains a twenty-minute schedule is proposed with adequate layover. An alternative under consideration is the operation of two-car trains at intervals of fifteen minutes with a layover of fifteen minutes for the crews at each end.

By reference to the preceding articles it will be noted that the new line is 23 miles long, about 4 miles being through Main Street, Buffalo. Between city limits the distance is 17 miles, and the roadbed is on a private right-of-way. To avoid crossings at grades $3\frac{1}{2}$ miles of track was built on an embankment which in places is 26 ft. high. The road curves around the Tonawandas, taking in the outskirts. The rolling stock consists of twenty interurban cars of special type, built by the G. C. Kuhlman Car Company.

been restored because of the fuel shortage, but there is reason to believe that they will be.

On entering the station, the patron will note a large map like the upper one reproduced; also a smaller map which shows the immediate vicinity of the station. These maps could not be kept up to date during the stress of the war period, but when the abnormal conditions with regard to traffic, high price of paper and printing, etc., let down, these effective means of conveying information will be used as before. The map reproduced is among the first of a new issue. Another shows the route numbers of nearly 150 bus lines in addition to the names of all the underground stations.

Whether or not the patron consults a map he is not likely to buy a ticket to the wrong place. It is enough for him to mention the station to which he wants to go, whereupon he is advised that the cost is so and so, depending upon the distance. On examining his ticket, he will usually find specific directions as to where to transfer in case he is going to another line. Thus a Hampstead passenger desiring to go to some station on the District line is informed that Charing Cross is his transfer station. In some instances several transfers may be necessary.

The purchaser now proceeds to a lift or elevator where the attendant examines and notches his ticket. When the level of the boarding platform is reached, a multiplicity of signs tell him that this is the "Way out" and that that is the way "To trains." Where there are three or more passages, fingerboard posts are used.

As he reaches the train platform, he cannot fail to see the list of stations posted on the wall opposite. If his station is not on the list, he can walk to the other platform where he will find a list of stations covering travel in the other direction. This is not all. An illuminated destination indicator overhead tells him what train is coming next, so that if it is not his train he can step aside to avoid the rush. If perchance he has failed to see this indicator, he is not likely to miss the illuminated destination sign carried at the head of the train itself.

Should he feel nervous about passing his station or getting off the car too soon, he need only look at the diagram maps of station order, two or more of which are tacked up in the roof of the car, four on bulkhead panels and two painted on opposite sides of an illuminated overhead box sign in the center of the car. These signs show the order of stations, red being used to designate those stations where interchange is made with other underground lines or connections afforded to the steam railroads, trams, etc. The two roof signs also have arrows indicating the direction of travel. As the train enters the station, even the bewildering variety of advertising posters will be unable to hide the great red disks, up to 4 ft. or more in diameter, which serve as a background for the blue field and white lettered enameled name of the station.

If, after all these directions, the passenger gets off at the wrong station he will be set aright verbally by the liftman or liftgirl who takes up his ticket.

The foregoing by no means exhausts the efforts of the railway to make riding easy. In peace days, the company issued leaflets by the hundreds of thousands. For instance, there was a monthly pocket circular called "London's Guiding Star," made up of the general map on one side and eight pages on the other. In addition to the list of permanent attractions and steam line con-

nections with the nearest station thereto, similar information was furnished concerning exhibitions and events of the month. One of the eight miniature pages carried a theater district plan of London, showing with the aid of numbers just where these places of amusement were located and the nearest station to each. Publications like this are greatly appreciated.

In spite of such elaborate and painstaking practices to aid the passenger, the management does not feel that perfection has been attained. It is always studying possible improvements and at this very time is figuring on a plan of identifying lines by letters so that ticket and station directions may be simplified—the letter Y, for example, being use to guide passengers destined for the District line, X for the Metropolitan line and so on.

Engineers' Unfortunate Experience

National Service Committee of the Engineering Council Reports Volunteer Officers Cannot Collect Traveling Expenses

ENGINEERS who were enrolled in the Reserve Corps at the beginning of the war will be interested in the circumstances related below as given out by the National Service Committee of the Engineering Council. If other engineers had a similar experience they are urged to send a detailed statement to the office of the committee, McLachlan Building, Washington, D. C. If the experience was common, the combined testimony may be sufficiently strong to induce Congress to provide for reimbursement. It is not probable that corrective action can be secured on the basis of a few instances. Therefore the engineers who have knowledge of similar cases and who fail to respond to this invitation may be depriving other engineers who are not so indifferent as to the consequences.

The following letter was addressed to the American Society of Civil Engineers by one of its associate members resident in the Philippines, and by progressive reference finally came to the Washington office of the Engineering Council.

THE AMERICAN SOCIETY OF CIVIL ENGINEERS,
New York, U. S. A.

DEAR SIRS:

As you are doubtless aware, the American Society during the recent war played a very considerable part in obtaining the services of engineers for the Army. Literature descriptive of the Engineer Officers' Reserve Corps was circulated throughout our membership and the society's appeal for men was probably responsible for a very large number of volunteers. In view of this fact, I am taking the liberty of advising you of certain instances in which the War Department through the Chief of Engineers seems to have violated the agreement under which the engineer officers were induced to offer their services. I am doing this with the hope that the society may be instrumental in securing legislation that will result in a partial reimbursement to the men for some of the financial loss that they suffered through certain rulings of the War Department.

Among other things, we were informed that Reserve Corps officers when ordered to active duty would receive the pay and allowance that officers ordinarily do when changing stations. Any number of Western engineers, several of them located in Alaska, applied for commissions in the First Engineer Reserve Corps. After their applications had gone forward the reserve corps was abolished by the War Department. Without receiving any information to this effect these men were telegraphed offers of commissions in the Engineers, U. S. A. They were accepted and ordered to Camp A. A. Humphreys, Va., for duty as students. Upon their arrival at camp they were informed that they would receive no travel allowances at all. The 7 cents a mile that they expected was not due

them because they had accepted commissions in the regular army, not in the reserve corps. This was the first intimation that they had as to their new status. Most of the men, particularly those from Alaska, had been to a very considerable expense in traveling, as much as \$350 in some cases, and naturally consider themselves unfairly treated.

Another instance, one which covers my own case, occurred as follows: Some twenty-five or thirty of us entered the service in the Philippine Islands. We were discharged in the States, most of us in the eastern part. Our discharges came just too late to catch the December transport for the Philippines so we were forced to wait for the January boat which arrives in Manila about Feb. 15. We were thus more than two months without pay, our army pay having stopped on the date of our discharge and our pay as civilians not beginning until our arrival in the Philippines. Anticipating these conditions, some of the men requested that they be ordered to the Philippines and discharged there or that they be returned to the inactive list in the Reserve Corps so that they could return to their homes with pay. Both of these requests were refused and the men were discharged along with the rest.

Several of us called on various army officials in Washington and were told in every case that new legislation was necessary before we could be reimbursed. It is to acquaint you with these facts and to solicit your assistance in securing the necessary legislation that I am troubling you with this letter.

We all received a letter of appreciation from Major General Black in which we were heartily thanked for the way in which we had responded to our country's call, etc. A little consideration in the orders getting us into and out of the service would have been more to the point.

On May 1 a letter was addressed by the National Service Committee to the Secretary of War in which the above communication was quoted with a request as follows:

Will you be good enough to inform the Engineering Council through the undersigned whether the facts as related in the letter above quoted are interpreted by the War Department in the same way as by Mr. — and whether there is an official intention to present the facts to Congress for the purpose of securing authority to reimburse discharged engineer officers of the Army whose experiences were similar to that above related.

Up to May 24 no response had been received from the War Department but the National Service Committee still has "hopes." While the author of the above letter recites an unfortunate train of circumstances, which seemingly reflects discredit on some one, the committee thinks that judgment should for the time being be tempered with consideration. This war has been so big a thing that the mental capacity of man has been quite inadequate to direct everything rightly. An injustice has been done, but the correction in this case lies not in placing the blame but in securing reparation. Our government is essentially just and the Congress will not advisedly do injury to any man. "Let us have all the facts," says the National Service Committee.

Keep Inflammable Material Out of the Fill

AN ILLUSTRATION of the importance of care in selecting and inspecting material for fills is furnished by the experience of Newark, N. J., with the embankment installed in connection with the development of Port Newark. A smoldering fire has been burning in the fill for months and members of the fire department of the Submarine Boat Corporation nearby and employees of the city's engineering division on several occasions have attempted without success to extinguish the blaze by playing a hose upon the burning area. The trouble is due to the fact that street sweepings and other organic material form a considerable part of the filling material.

Fill Up the Empty Seats

The Philadelphia Rapid Transit Company Urges Its Employees to Develop Salesmanship for Rides

A UNIQUE method was recently used by the Philadelphia Rapid Transit Company for bringing forcibly to the attention of each of its 10,000 employees certain information about the electric railway business of particular interest and importance at this time.

The management feels that too often the "front office" is working so close to the gigantic problems confronting the industry in connection with rates of fare, revenues and expenses, that it is assumed all of the employees throughout the organization are just as well informed and are giving the same serious consideration to these factors, which make for the success or failure of the business.

As a matter of fact, many of the employees have no comprehension of these larger basic matters for the simple reason that no one has taken the trouble to explain the facts to them.

Appreciating the increasing necessity for recognition on the part of electric railway managements of the "merchandising" or "salesmanship" end of the business, President Mitten addressed a letter to all of the employees as follows:

TO ALL EMPLOYEES:

I desire to thank each of you for the fine spirit of co-operation and loyalty you have shown during the trying conditions brought about by the war.

Continuance of the present high standard of wages during the reconstruction period can be best assured by our all now striving together with renewed effort to accomplish two things:

1. Build up our "Factory Organization" so as to produce street-car service of the best quality at the lowest cost. In this, all of us—transportation, rolling stock and buildings, electrical, way, and general offices—have important work to do. It means going heart and soul after such things as accident prevention, keeping the cars properly spaced on the streets, careful inspection and cleaning of cars, regularity and economy of power, track betterment, office efficiency, and the elimination of ALL wasted effort.
2. Improve our "salesmanship" so as to sell more of that which we have for sale—street-car rides. We must sell the empty seats in the off-peak hours to those who now walk or use other transportation. Every person in the territory we serve is a possible car rider. As the common carrier for the entire community, we fall short of doing our full duty to the public if we do not make a car rider of every walker, every automobile user and every steam railroad passenger who can be more conveniently and cheaply carried by street car. You, the conductors and motormen particularly, by your alertness and courtesy, have it within your power to stimulate and encourage the short-ride habit, especially among those who now walk.

The best selling asset in this business is cheerfulness. A smile will usually win. A frown always loses. I invite your thoughtful attention to the enclosed pamphlet by the Hon. William D. B. Ainey, chairman of the Public Service Commission of Pennsylvania.

May 28, 1919.

T. E. MITTEN, President.

This letter was printed on the face of an open-end envelope 4½ in. wide by 6½ in. high, and within the envelope was inclosed a pamphlet containing an address by William D. B. Ainey, chairman Public Service Commission of the Commonwealth of Pennsylvania, which was delivered before the public utility group of the United States Chamber of Commerce in St. Louis, and reprinted in the ELECTRIC RAILWAY JOURNAL of May 3, 1919. Chairman Ainey's address emphasized the necessity for better "merchandising" by selling the empty seats, and discussed the effect of rates of fare on the riding.

Federal Commission Appointed

President Wilson Chooses Body to Investigate Electric Railway Situation and Recommend General Solution

FEDERAL action looking toward a solution of electric railway problems throughout the country was taken through the creation of the "Federal Electric Railways Commission" by President Wilson. This action was taken pursuant to a recommendation sent to the President on May 15, 1919, by William C. Redfield, Secretary of Commerce, and W. B. Wilson, Secretary of Labor, as noted in this paper for May 24, page 1015.

The President approved this recommendation and appointed the following members, to serve without compensation: Edwin F. Sweet, Assistant Secretary of Commerce; Royal Meeker, Commissioner of Labor Statistics, Department of Labor; Louis B. Wehle, general counsel of the War Finance Corporation, who will act during the absence in Europe of Eugene Meyer, Jr., managing director of the corporation; Charles E. Elmquist, president National Association of Railway and Utilities Commissioners; Charles W. Beall, of the American Investment Bankers' Association; Philip H. Gadsden, American Electric Railway Association, and William D. Mahon, Amalgamated Association of Street and Electric Railway Employees of America. The President has also designated a representative of the American Cities' League of Mayors, but an acceptance has not yet been formally received and an announcement of the mayor who will serve will be made later. The new commission met on June 4 and organized by electing Mr. Elmquist as chairman and Mr. Sweet as vice-chairman.

The commission has no authority to hear and determine specific controversies in any community or in respect of any company. It will attempt to determine the general principles which should govern the regulation, operation and service of electric railways. It will not interfere in any way with the regulatory functions of state regulatory bodies or municipal authorities, its functions being confined to investigation and recommendations. The election of Mr. Elmquist as chairman is the best evidence that it is not the intention of the new commission to interfere in any way with the powers of states or municipalities.

The methods by which the commission hopes to reach its conclusions have not been developed, but will be announced from time to time. "Mr. Elmquist at the conclusion of the meeting said that the commission will not start off with any preconceived notions. It wishes to make its investigation broad and comprehensive with the view to making recommendations which will be a positive contribution to the solution of the problems which now confront the country. Those problems grow out of the expansion and improvement of service which the public properly demands; out of the great increases in the payrolls; out of the high prices for materials; out of controversies which center around financial organization and methods, and out of franchise relations."

In order to explain to all the regulatory bodies the character of the general investigation contemplated, Mr. Elmquist has sent out to all commissioners a copy of the letter to President Wilson from Secretaries Wilson and Redfield [ELECTRIC RAILWAY JOURNAL of May 24, page 1015] with the following comment:

The President has decided to create a commission to make a study of the general franchise and operating con-

ditions of the electric railways in their relation to rates, including service-at-cost plans, state and municipal taxation, local paving requirements, and internal economies that may be effected.

During the war, some of the utilities were in favor of having the President take over certain street and electric lines as a war measure and fix their rates, since the government was fixing the price of fuel and labor, and controlling to a large extent the output of the steel mills and other factories. You will recall that the war committee of our association opposed this plan but suggested to the President, in lieu thereof, that he appoint a federal board to make a study of the utility situation and submit its recommendations to the local commissions and municipalities simply for their help and guidance in the determination of utility questions.

It was felt for some time that such a board would be created, but final consideration seemed to end with the signing of the armistice. It is reported that the readjustment period has not thus far brought any relief to the utilities and that the condition of many of them is critical. A letter from Secretary Redfield and Secretary Wilson was wired to the President May 15 and resulted in his determination to create a commission. I think it is in the interest of the public that the state commissioners be represented on this board, because the problem is, after all, local in its nature, and all obtainable information should be brought to the board's attention.

Three Zone System in Detroit

The accompanying diagram shows the method of zone collection used on the Royal Oak suburban division of the Detroit United Railway. Fare boxes are used. The plan followed is an adaptation of the pay-enter pay-leave system, but is somewhat more flexible because of the introduction of what is known as an "identification check." This check, on northbound cars, is given to passengers in zone 1 or the city zone who pay cash fares and request it when they pay their fare. It is not given to passengers who ride on transfers.

On northbound cars, zone 1 is operated in the usual way as pay-enter. Passengers who wish to ride into

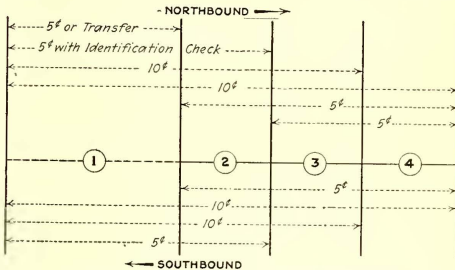


DIAGRAM SHOWING ZONE FARE SYSTEM

zone 2 without extra charge and pay their fare in cash ask for an identification check at the time of paying fare as mentioned above. Zones 2, 3 and 4 are operated pay-leave with a 5-cent fare, but a passenger may use the identification check in zone 2 on alighting from the car in place of a cash fare.

On southbound cars, all fares are pay-enter. In zones 4 and 3 a passenger may pay 10 cents and get an identification check or 5 cents and receive no such check. In zone 2 he receives his identification check with his 5-cent fare if he says he is expecting to travel into zone 1. At the entrance to zone 1 an identification check or an additional 5-cent fare is collected from all passengers, and in zone 1 pre-payment collection is made in the usual way. Zones 2, 3 and 4 are about 1 mile in length.

Cutting Most of the Compromise Out of the Compromise Joint

Experience of Brooklyn Rapid Transit Company with Experimental Joint Shows It to Be Economical of Material and, to Date, Durable

THE problem of successfully connecting rails of different heights and shapes has had any number of possible solutions, some of which are quite effective. Nevertheless, the compromise joint, as such, continues to give considerable trouble and to cause far greater expense than ordinary joints. Hence any means of reducing costs and bettering the joint conditions should be of interest, particularly when it is remembered that regular compromise joints as furnished with special work will cost from \$12 to \$15 each.

It is quite safe to assume that many compromise joints are still made up in the field by the blacksmith, using ordinary joint plates found on the job. By far the greater number are used for making connections of parts of special work with tangent tracks and an examination of special-work layouts on almost any

A. S. C. E. rail is to be used in connecting it with 7-in. groove girder rail. This is accomplished by malleable iron base castings, shown in Fig. 2, which are installed upon the upper part of the base of the deeper rail, being held in place by arc welding. The castings are I-shaped, 13 in. long, with webs and flanges about 3/4 in. thick and reinforcing ribs about 4 in. apart. They weigh about 10 lb. each. The tops of the castings have the same bevel as the upper part of the rail base, thus reproducing the fishing angle at the same level with the lower or shallow rail. Here it may be

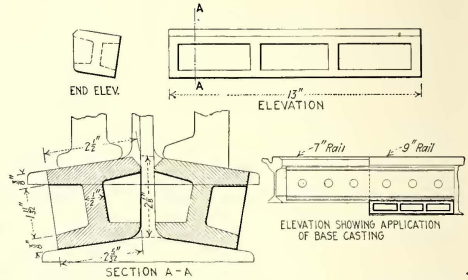


FIG. 2—BASE CASTINGS FOR "R. P. W." COMPROMISE JOINT ASSEMBLED FOR CONNECTING 7-IN. GROOVE GIRDER AND 9-IN. TRAIN GIRDER RAILS

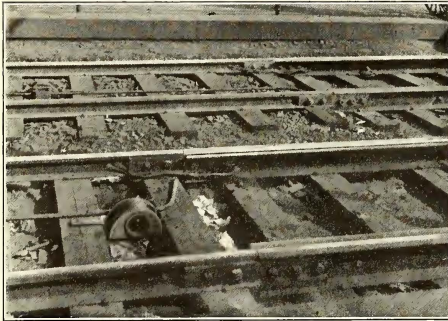


FIG. 1—EXPERIMENTAL "R. P. W." COMPROMISE JOINTS AFTER A YEAR'S SERVICE

These are located at the Brooklyn end of the Williamsburg Bridge, connecting 80-lb. A. S. C. E. and 7-in. 122-lb. association standard groove girder rails. Car traffic more than 3000 per day.

system will disclose at least one and generally several of these joints which are defective. The purpose of this article is to explain one plan for reducing joint cost which is being tried out in Brooklyn.

The scheme here illustrated and described was devised by R. P. Williams, formerly inspector of special work for the Brooklyn Rapid Transit System. It is but a short time since the castings were obtained, due to delays from war conditions and for this reason the device is only getting into service, although the experimental joints shown in Fig. 1 have been in use more than a year at the Williamsburg Bridge, where the schedule calls for a traffic of 3000 cars or more per day. It is estimated that the device will result in a saving of from \$3 to \$5 per joint and that when its use is extended, a total saving of from \$1,800 to \$3,000 per year should be effected in one particular type of compromise connection alone.

The principal feature of the idea is the means provided for the use of standard splice plates for association standard 7-in., 122-lb. groove girder rail in making connections between 7-in. and 9-in. rails. Similarly the standard angle bar for 5-in., 80-lb.

said that advantage is taken of the fact that this angle is a constant for most rails which are found in Brooklyn.

There is occasional trouble in connection with the fishing angle at the top of the joint plate, sometimes due to sectional differences and sometimes due to head wear. This is taken care of by welding a flat shim or liner on top of the joint plate, as indicated in Fig. 3.

Of course, the tops of the rail heads are ground to a true surface as soon as the joint is made up. It is also necessary, as of old, to offset the plates at times to line the gage lines of different sections. The base castings are made of a width sufficient to permit the arc welding of the joint plates to them if desired. The cost reduction previously referred to is mainly due to difference in the cost of deep 3/4-in. x 8-in. bar steel formerly used for compromise joints when made in the shop, together with the

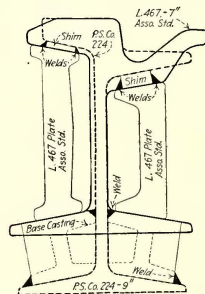


FIG. 3—SHIMS WELDED TO PLATES TO TAKE UP SECTIONAL DIFFERENCE IN FISHING SPACE

elimination of the waste of steel lost by cutting out the 2-in. vertical step as compared with the cost of ordinary joint plates plus the castings. The experimental joints shown in Fig. 1 are made of bar steel planned to fit 80-lb. A. S. C. E. rail, while the bases on the 7-in. rail, in this instance, are made from steel bars cut from joints made up for deeper work which otherwise would have been scrapped. In the experimental joints shown the joint bars are held by ordinary bolts and are also welded to the deep rails and special bases.

Suggestions for Mechanical Ticket Issue As Applied to a Differential Fares Scheme

BY THEODORE E. THOMAS
London County Council Tramways

THE issue of tickets by mechanical means has always been a more difficult problem for tramways in Great Britain than is the case in America. The chief attraction of the flat fare is the resultant simplification of ticket issue. Most of the tramways undertakings in the London area have, however, now adopted a uniform fares system in place of the more arbitrary system previously in force. Each route is divided into penny stages, each of which is in turn subdivided into sections varying in length (but not in number) according to the incidence of traffic points. The introduction of such a scheme at once suggests the possibility of the issue of tickets by a machine on the platform as passengers board the car. I propose to set out briefly the functions which such a machine should be able to fulfill, with the difficulties to be met, and, if possible, overcome.

The fare for the journey to be taken would be paid to the conductor when the passenger enters the car. Each kind of ticket would be issued from a separate receptacle in which a roll had been placed.

Tickets would be printed to indicate all fare stage points and would be cancelled in the section to which a passenger was entitled to travel.

At each fare stage point the machine would be set so that cancellation at the correct place on the ticket would be automatic.

In the case of return (round-trip) tickets they would only be recorded on issue, and when used for the return journey need only be punched by a cancelling machine.

The machine would record the number of tickets of each variety, thus providing a check upon the record obtained from the starting and finishing numbers on the rolls. Packets of tickets could, if desired, be sold separately and punched by the conductor, with the cancelling machine. In the event of the machine becoming defective a seal would be broken and the tickets removed and punched with the cancelling machine.

Passengers on alighting from the car would be required to hand their tickets to the conductor so that any who had overridden could be excessed.

I can well believe that such a system as has been briefly described sounds complicated and so it is as compared with the simplicity of the flat fare. But the flat fare stands condemned with the great reduction in the value of money caused by the war.

Some of the difficulties that will arise are: (1) Dealing with passengers who lose their tickets. This is not a new problem, as it arises on all railways. (2) At very busy points loading may be unduly delayed. (3) Heavy capital expense. (4) The need for special provision being made for cars not working on their proper routes. (5) Passengers must board and alight from the car at the conductor's platform which is inconvenient at terminals with a heavy traffic in both directions.

The worst side of the story has now been told and it only remains to show what compensating advantages would be obtained.

These are briefly: (1) Every passenger must take a ticket, which is very far from being the case at present. (2) The conductor is always on the platform—a matter of some importance in avoiding delay at stopping points and reducing the risk of accident. (3) Correct

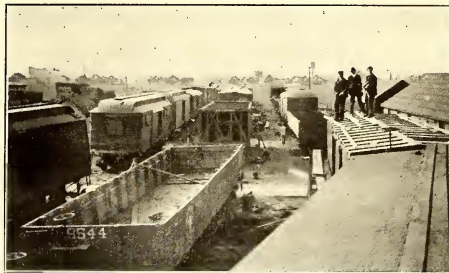
cancellation of tickets is insured. (4) All tickets are collected and available for repulping.

It may be that the writer has not faced all the difficulties, but they must indeed be great if they accumulate to the size of only one objection to the present British practice. I refer to the conductor's struggle to get round to all the passengers on a crowded car. This should be stopped at almost any cost, it tempts honest men and provides a rich harvest for the dishonest.

Freight Car Repairing Facilities of An Interurban Line

IN THE PROCESS of rearrangement and rehabilitation through which the Decatur yards of the Illinois Traction System are now passing, the facilities for repairing freight cars have been considerably increased. Six tracks with a total capacity of sixty cars have been laid, three on each side of a line of new buildings devoted entirely to the work of maintaining the more than 900 freight cars operated by the company.

At one end of the layout is an office building, 25 ft. x 30 ft. in size, for the inspectors. The next



THREE OF THE SIX FREIGHT CAR REPAIR TRACKS AT THE DECATUR YARDS OF THE I. T. S.

building, of the same width and about 100 ft. long, is a storehouse containing only stock used for the car repairing. In one end of this building is a room in which the men may rest and eat their lunch in cold weather. Each stock bin in the stockroom has a card tacked on the outside, and every piece of material taken out is entered on the card by the storekeeper, who is on duty during all working hours. This procedure is followed not solely to maintain a running inventory but to enable the storekeeper closely to estimate the quantity of each article needed per day and thus keep a plentiful supply on hand.

The third building is about 50 ft. long by 25 ft. wide and has a cinder floor. This is to be the freight car repair blacksmith shop and will contain pipe cutter, bolt cutter, drill press, forge, anvil, etc. There is a large rolling door in the center of each side so that the heavy parts of the cars, such as drawbars, bumpers, etc., can be easily handled in the blacksmith shop.

A plank flooring extends along both sides of the entire stretch of buildings and also between them. Beyond the buildings will be stored all lumber and other materials used in the repairing of the cars and not kept in the storeroom. Clear passageways across the tracks are maintained between the main shops and the inspector's office and the storeroom and between the wood-working shop and the lumber pile and blacksmith shop.

Speedy Erection of Trolley Poles with Gin Poles on Wheels

A RECORD in the rate of setting up trolley poles along the track of the Chicago, Milwaukee & St. Paul Railway has been made by the use of a gin pole built up on a push car and operated along the track. Using this device, poles up to 50 ft. long have been set with a crew of four linemen and about three helpers, including a teamster, the team being used for hoisting the trolley pole and moving the push car from setting to setting. Additional men, of course, were used to line poles and backfill, following the setting crew.

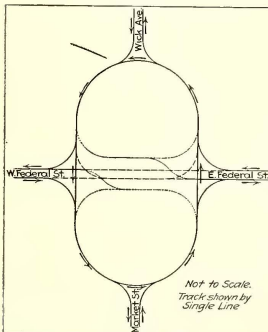
With this rig the rate of progress has been as high as 108 settings per day and has averaged about seventy poles per eight-hour day. Before the portable gin pole was built the average made by the hand method was about fifty poles per day, and this meant hard work on the part of the crew. The gin pole has a total length of about 18 ft. and is slung, about 6 ft. from its lower end, on a horizontal pin supported on a heavy frame built up from an ordinary push car. The gin pole itself is strengthened with longitudinal steel cables passing over central struts so as to form trusses.

The trolley poles are laid with the pickup point immediately over the hole, thus making it possible to place them with a direct lift. The use of this rig avoids the danger of knocking dirt into the hole in course of erection and thereby decreasing the effective depth.

The hoisting equipment consists of a block and tackle slung from the upper end of the gin pole from which the hauling line runs through a snatch block attached to the rail below. The team does the pulling. The gin pole can be easily reversed in its supports for use in setting the poles on the opposite side of the track.

Data for the foregoing were supplied by F. B. Walker, superintendent of electrical construction, Chicago, Milwaukee & St. Paul Railway, Seattle, Wash.

The "Diamond" Loop at Youngstown



PROPOSED TRACK LAYOUT

that shown by the dash lines. As Mr. Yereance points out in a letter to the editors it would make an unnecessarily complicated layout if the last-named track were not removed. This diagram is reproduced again this week for convenience in reference.

LETTERS TO THE EDITORS

Cars Should Carry Passengers, Not Seats

CLEVELAND, OHIO, May 31, 1919.

To the Editors:

Before one despairs too greatly on the electric railway situation I think it would be sensible to give serious consideration to the remedy for high costs and fares with which I have been bombarding railway operators for a long time, namely, abandoning their sacrosanct notion that the first use of a street car is to carry seats instead of passengers. The gain of space that would result from doing away with only a few of the present quota of seats and properly equipping such space for standing passengers would rapidly increase car capacities, as anyone can readily compute.

Under present conditions, the public must largely ride standing in any event, and, at the same time, pay high fares for the privilege. There is little objection or complaint nowadays by the majority of car riders, because they do not get seats; there is great complaint, however, of the cost. My studies indicate that it is entirely practicable to change the space now occupied by seats in a car into standing places in a manner that would abundantly satisfy all conditions. Such plans, in the present emergency, are worthy of close examination on the part of those, at all events, who are inclined to sink back into a hopeless and helpless wonderment as to whether or not the "trolley is in danger of becoming extinct."

GEORGE C. WING.

Mr. Ford and Light Vehicles

MILAN, ITALY, May 16, 1919.

To the Editors:

The editorial in your issue of April 26, entitled "Mr. Ford's New Car May Be a Wonder, but—" and Mr. Kingsley's very interesting discussion of the matter in the same number prompts me to ask leave to state my humble and European opinion on the matter.

Although there is no possibility of discussion about the relative cost of gasoline and electricity as prime movers of street railway vehicles, I would say that, being an automotive man myself, I have too much respect for Mr. Ford's technical skill to believe that he may involve himself in such a series of blunders as many people seem to think.

Perhaps he may be wrong in believing that he may beat electricity with gasoline, although the last word hasn't been said as yet about economical internal combustion engines, but we mustn't look at him as a gas motor engineer. More than anything else Mr. Ford must be considered as the pioneer in standardized construction of light-weight vehicles, and as such he may solve at least one part of the problem which has already been tackled by Mr. Birney.

Street railways have still to learn a great deal from the automotive field; structural iron, or steel as you Americans are wont to call it, must give way to high strength, steel alloys, while the use of aluminum and its light-weight alloys should be seriously considered for the replacement of a multitude of accessory parts which are now made of copper, brass, etc. The use of hardwood should be restricted to a very few parts by its substitution with stampings of light-weight

metals, while cast iron and common iron should absolutely be proscribed from the mechanical and structural part of the ideal car.

Of course, this may be a very difficult goal to attain, but, as a matter of fact, doesn't every real achievement require a deal of time and perseverance?

Mr. Birney has blazed the path with his light-weight one-man car, but being practically a traction man, he had to follow the trend of traction practice, cutting off only such apparent waste as he safely could without breaking the age-long rules of electric railway custom. Mr. Ford, being independent both of the time-worn customs of the railway field and the actual rules of the automobile world, may perhaps achieve something really worth while.

Anyway, in my opinion, it is much better to have the automobile engineers working with the old street cars than against them, and Mr. Ford's move is certainly an indication of a better understanding between the two most important branches of street transportation.

FERDINANDO C. CUSANI.

Effect of Vibrations on Rail Failures

LOS ANGELES, CAL., May 24, 1919.

To the Editors:

Referring to the editorial comment in your issue of May 10 in which it is stated that rail conditions are responsible for rail breakage near welds and in special work, please be advised that for several years I have observed in both paved and open track that at welds and splice bars deterioration of the rail, if any, is always more pronounced on receiving rail ends in one-way track. From this fact I have reached the conclusion that the problem is for the physicist rather than for the metallurgist.

I have noticed that the less the mass of metal in contact with the rail ends, the less deterioration is evidenced and this would indicate that the theory of vibrations enters into the problem through the presence of vibrations in wheels and rails. An analogous situation prevails in special work which is a problem in itself, but the solution for joints, it would seem, lies in the application of a minimum mass of metal at the rail ends, consistent with track resistance.

W. M. PEGRAM.

Seatless Cars Tried in Tokyo

THE overcrowding of the electric cars in Tokyo has become so acute as to necessitate taking some measures to increase the capacity of the system. One of the expedients adopted is the seatless car, the greater portion of the seats in these cars having been removed, leaving but a small seating space in the middle. Additional straps have been added to provide support for the passengers. A few of these cars have been put on the main route and the result is being watched eagerly by the promoters of this scheme. It is thought that standing room may perhaps be preferable to no room at all.

Another measure which has been proposed in order to lessen the congestion is to decrease the number of stops and at the same time increase the schedule speed of the car. This latter has not been put into effect as yet as it conflicts with the present police regulations and these must be changed first in order to permit of the trial.

AMERICAN ASSOCIATION NEWS

Exhibit Committee Now Assigning Space

CHARLES R. ELLICOTT, Westinghouse Traction Brake Company, chairman American Electric Railway Association exhibit committee, has sent out blank forms for use in filing applications for exhibit space on the "Million Dollar" pier at Atlantic City.

Acting with Mr. Ellicott on this committee are Edwin Besuden, Chicago Varnish Company; Fred C. J. Dell, National Railway Appliance Company; J. J. Dempsey, Brooklyn Rapid Transit Company; Frank H. Gale, General Electric Company; George Keegan, Interborough Rapid Transit Company; J. C. McQuiston, Westinghouse Electric and Manufacturing Company; A. M. Robinson, The J. G. Brill Company; R. T. Senter, Philadelphia Rapid Transit Company; E. B. Smith, American Brake Shoe & Foundry Company.

The committee states that all applications for space received before June 20 will be considered as of that date and will have equal preference as to location.

The general convention committee comprises L. S. Storrs, The Connecticut Company, chairman; Charles R. Ellicott, Westinghouse Traction Brake Company; L. E. Gould, Economy Electric Devices Company; C. L. Henry, Indianapolis & Cincinnati Traction Company; J. J. Stanley, Cleveland Railway; E. P. Waller, General Electric Company; T. W. Wilson, Wilmington & Philadelphia Traction Company.

Connecticut Section Ends Prosperous Year

WITH the exception of an outing to be held in June the meeting of the Connecticut Company section held at Hartford on May 27 was the last of the season. About 250 men dined together at the Hotel Garde. The membership committee reported an increase in membership from 311 to 339 for May.

The speakers at the meeting were Robt. P. Butler, assistant corporation counsel of Hartford; Harlow C. Clark, New York City; Rev. Joseph Sullivan, Chicopee, Mass., and Charles C. Peirce, Boston, Mass.

Mr. Butler spoke on "Public Servants," and said that while the public of Connecticut has a right to expect much in the way of service from the railway company, the company can rightfully expect much of the people. Dr. Sullivan made and illustrated three points, namely, that the railway man's job is one well worth while, that the prime requisite in doing the job is loyalty, and finally that whole-hearted service is necessary to success.

Mr. Clark impressed upon his hearers the fact that the electric railway is in a bad way, showing by statistics how the financial status has fallen during a few years. He said that the situation will improve but the railroads must utilize the car riders as a force in securing a square deal. Mr. Peirce traced the history of electric traction and showed why the railways find themselves in their present straits. They will get out of these through the application of merchandizing principles to their business. He quoted statistics to show that the country is now prosperous, but that there will be a labor shortage soon with no immediate falling in prices. The electric railway will in time share in the general prosperity.

Recent Happenings in Great Britain

Labor Program Is Adopted—Increased Fare Movement, Hitherto Mostly Talk, Now Well Under Way

(From Our Regular Correspondent)

For the present at least the labor crisis in Great Britain seems to be over. The coal miners and the railwaymen have accepted the terms offered by the government as to shorter hours and improved conditions of employment, and the federation of transport workers has come to an agreement with the employers. Even more important is the fact that a national industrial conference of employers and employed, representing nearly all the great industries of the country, has adopted a series of far-reaching recommendations brought forward by a committee appointed at a previous conference. Among the chief recommendations so adopted are:

A legalized maximum normal working week of forty-eight hours in all industries. Legalized minimum time rate of wages to be of universal application.

Discouragement of systematic overtime. Trade conferences to consider how war advances and bonuses should be dealt with.

A full and frank acceptance in trade negotiations of employers' organizations and trade unions.

Organized short time and regulation of government orders and pushing forward of government housing schemes to prevent unemployment.

An adequate provision for the maintenance of the unemployed.

Child labor age to be raised, and more generous provision for sickness and infirmity benefit and old-age pensions.

The establishment of a permanent National Industrial Council of employers and workers to advise the government on national industrial questions.

It is perhaps significant of the differences between the British national temperament and that of European continental countries that on May Day, when Socialist demonstrations were producing riots in Paris and when half of Europe was—as it still is—plunged in anarchy, a further peaceful meeting of the provisional joint committee of the British National Industrial Conference was held in London at which a guarantee was received from the government to pass the legislation necessary to carry the above recommendations into effect. The undertaking was contained in a letter from Lloyd George, the Prime Minister, to the joint committee, and it was read by Sir Robert Horne, the Minister of Labor.

THE NEW INDUSTRIAL DAY

In this letter the Prime Minister said that foreign countries were looking to Great Britain to give them a lead in the foundation of a new and better industrial order, and the report of the committee marked the beginning of such a foundation. He fully accepted the principle of maximum hours and minimum wages. For the purpose of the former a bill was being drafted, and it would provide elasticity to meet the circumstances of particular industries. As regards wages, the question of the best method was complex and full of difficulties, and the government would in the first place set up a commission to report on the whole matter. He hoped that the National Industrial

Council would speedily address itself to the important question of unemployment. The council after hearing the letter adjourned to permit all the subjects to be further considered by representatives of employers and trade unions.

Never before has anything of the nature of a national agreement on such subjects been brought about, and hopes for the industrial future are correspondingly bright. It was stated in Commons, shortly before the Easter adjournment, that Whitley joint industrial councils for all the leading industries except four have now been constituted.

In the domain of tramways, it will be remembered that such a joint industrial council has recently been constituted, and that a forty-eight-hour working week has been agreed to. The shorter week is now coming into operation on the tramway undertakings throughout the country, though the new organization can hardly be completed until all or nearly all the employees who were serving in the forces have been got back. Estimates have been issued by many of the tramway authorities of the increased working expenses which will be involved.

INCREASE IN FARES NECESSARY

The only way to meet the increase is with further increases of fares. Such increases are now being made where the existing fares are not already up to the statutory maxima. Where the point has already been reached, application is being made to the Board of Trade for authority to make further increases. That arrangement, however, is likely to be only a temporary one, and there may be further legislation of a more permanent kind, as it is clear enough that working expenses will not materially fall for a long time. In any event, the tramway authorities at present have easier and cheaper machinery for getting increases of fares than that which seems to be open to the electric railway companies of America. We do not hear of receivers being appointed to any great extent on the company undertakings, while the municipal railways always have the rates to fall back upon in case of a deficit.

LONDON FARES GO UP

In order to meet additional expenditures, a further increase in fares on the London County Council Tramways came into force in the end of April. The average distance for which the passenger is carried for a penny is reduced from 1.8 mile to 1.5, with a single overlap in place of the present double overlap. Each route is divided into sections, of an average length of 0.75 mile, two consecutive sections to be traversed for 1d., four for 2d., six for 3d. and eight or more for 4d. The new workmen's fares are 2d. for a re-

turn journey over a stage of 2 miles (total journey 4 miles), 3d. for a return journey over a stage of 3 miles (total 6 miles), 4d. for a return journey over 4 miles (total 8 miles), and a 5d. ticket for a total journey above 8 miles, with transfer facilities.

It is estimated that, under the new scale, the loss on workmen's cars will be reduced from £160,000 to £105,000 a year, and that £40,000 a year will be forthcoming as the result of improved collection consequent on greater efficiency resulting from the reduction in hours. The total increased revenue is estimated at £416,000.

GLASGOW ABOUT TO SUCCEMB

Even in Glasgow, where the entire capital cost of the municipal tramway undertaking has been repaid out of receipts, so that there are no interest or sinking fund charges, the necessity of increasing fares is becoming urgent. Glasgow is probably the only place in the country where the halfpenny fare has not yet been abolished. At a meeting of the finance sub-committee of the tramways committee on April 30, it was decided by the casting vote of the chairman to recommend the abolition of the halfpenny fare, the minimum to be 1d., rising by stages of 3d. according to distance to a maximum of 3d.

This decision as regards Glasgow was reached after full consideration of a report by James Dalrymple, the general manager. In this Mr. Dalrymple stated that it was absolutely necessary to increase the revenue in order to meet the increase in wages and the high cost of materials. Regarding a suggestion that an increase in revenue should be obtained by a further reduction in fares, he pointed out that the department could not possibly, with the present plant, carry any more passengers.

WAGES CLIMBING IN GLASGOW

During the past few months the average number of passengers per car-mile in Glasgow had reached twenty. Were it not for the overcrowding, the financial position of the department would be hopeless. With an average revenue per passenger of about 3d., it was impossible to make ends meet. For the year ending May 31, the estimated revenue was £1,521,215 and the expenditure £1,474,800, giving a surplus of only £46,415. The amount set aside for depreciation, £124,000, which was the same as for the previous year, was now quite inadequate owing to the great increase in wages and cost of materials. The wages bill for the year 1913-14 was £441,048, last year it was £649,749, for the current year it was estimated at £830,000, and for next year at £950,000. Mr. Dalrymple estimated the revenue for next year at £1,571,000, and the expenditure at £1,736,560 (including £245,000 for depreciation and renewals), showing a deficit of £165,560. He recommended the increase of fares which the sub-committee adopted. It involves an increase of 3d. on each hitherto existing fare.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

San Francisco M. O. Review

Having Embarked on Municipal Ownership San Francisco Must Needs Carry Out Its Work

The annual report of M. M. O'Shaughnessy, city engineer of San Francisco, Cal., for the year 1917-1918, submitted to the Board of Public Works at San Francisco under date of Jan. 2, 1919, contains a general review of the San Francisco Municipal Railway and the problems confronting the building and operation of that system.

WANTS CITY'S RIGHTS STRENGTHENED

Mr. O'Shaughnessy says that, while the municipal charter has been instrumental in fostering the promotion and growth of the municipal railway system, it has been seriously defective in that it has prevented rapid transit service being given to new and outlying districts which were naturally tributary only to privately-owned systems and which could not be properly reached by extensions from the municipal system.

According to Mr. O'Shaughnessy there are several causes tending to limit the extension of the municipal system. The city has a limit of bonded indebtedness of 15 per cent of its assessed valuation. At the present time the city, with projects to which it is committed, has almost exhausted this limit and there are yet other urgent purposes for which bonds must be issued in the near future. He says that the difficulty could be eliminated by an amendment to the charter which would reduce the limit of bonded indebtedness to 8 per cent for non-earning projects but which would remove all limit of bonds which might be issued for self-sustaining public utilities. This would put the city in the same position as a private concern desiring to raise money for the construction of such properties.

Since the completion of the work contemplated in the original bond issue the only extensions that have been built have been from earnings. With the natural tendency to a rising wage scale, it is safe to assume that future earnings on a 5-cent fare will be adequate only for wages, maintenance and renewals, bond interest and bond retirement.

PLEA FOR UNIFIED MANAGEMENT

Mr. O'Shaughnessy says that under unified management it would be possible to eliminate a great deal of unnecessary service, particularly where the privately-owned and the municipal systems operate along parallel routes. According to him, the necessity for the city acquiring the United Railroads is

extremely urgent. This, he says, is appreciated even by those who are opposed on general principles to municipal ownership. As the time approaches for the expiration of the franchises of the United Railroads the necessity of the city taking over the lines will become more urgent and more apparent.

According to Mr. O'Shaughnessy, as long as the present conditions limiting bonded indebtedness exist it will probably be impossible for the city to issue bonds to cover the entire purchase price of the United Railroads. He feels, however, that if the bonds were issued to buy the property at a fair price the interest on the bonds could be paid out of the earnings of the system and a sinking fund created which would free the entire property of encumbrance within twenty-five or thirty years and at the same time provide for reasonable extensions to the system.

THE CITY'S ACCOMPLISHMENT

Mr. O'Shaughnessy points out that what the municipal railways have done is best realized when it is observed that, while the city has constructed and acquired some 48.94 miles of track in the 1910 and 1913 bond issues, it has constructed 10.16 miles out of the surplus earnings of the road, and in addition to this has paid the interest on the bonds, set aside \$923,456 in its depreciation reserve, \$35,339 in its injury insurance fund, and has retired \$303,000 of its bonds.

Improvements Planned for Seattle

An ordinance recently passed by the City Council of Seattle, Wash., and sent to Acting Mayor Lane for approval, provides for the issuance and sale of \$790,000 of utility bonds for extensions and betterments to the Municipal Railway. A bill has also been introduced in the City Council, at the request of the city utilities department, providing for a loan from the city railway fund to the Municipal Railway betterment fund of 1919, to cover the cost of several immediate improvements which Thomas F. Murphine, superintendent of public utilities, recommends.

The first work proposed by Mr. Murphine is the construction of a double-track line on Third Avenue, from Stewart Street to the south margin of Pine Street; connections of the tracks at the south end of the Ballard bridge and the connection of tracks of Division A and the Fremont-Ballard lines at Twenty-fourth Avenue, N. W., and West Sixty-seventh Street; extension of Division A at Fremont Avenue to the Fremont Avenue bridge. The improvements are estimated to cost \$49,650.

Buffalo Arbitration Stops

Governor's Veto of Service-at-Cost Responsible—Railway Officials Are Still Hopeful

The City Council of Buffalo, N. Y., has voted to discontinue the arbitration proceedings started some time ago to fix the valuation of the properties of the International Railway within the city to be used as the basis of a service-at-cost agreement with the company and also determine upon a rate to be allowed the company as a return upon the investment fixed by the arbiters. This step was taken as the result of Governor Smith's veto of the service-at-cost bill which was passed by the Legislature and which had the approval of the Mayor.

STATEMENT OF COMPANY

The current issue of the *Service Spot Light*, the official organ of the railway, says:

The International Railway is disappointed at Governor Smith's veto of the act enabling the city and the company to get together on some service-at-cost plan, just and equitable to all concerned. We had hoped for better treatment. Governor Smith may be right from his standpoint, but it is difficult to convince the people that they haven't the right to enter into an agreement on a matter that concerns them and them alone. But we aren't crushed.

We still hold firmly to the belief that some way will be worked out to your satisfaction and to ours. We are maintaining a war scale of wages—a wage higher than it ever seemed possible for us to pay. We have paid a greatly increased rate for supplies and materials. We counted greatly on the institution of the service-at-cost plan to restore us to a satisfactory equilibrium. Out of the present confusion may come the real solution.

In the same issue of the *Service Spot Light*, the railway calls attention to the case in the State Court of Appeals in which the company asks that court to uphold the contention of the Appellate Division in the right of the Public Service Commission to fix fares in municipalities even though the fares are limited by local franchises. One section of the company's franchise says:

Nothing in this contract shall be construed to prevent the Legislature, from regulating the fares of said companies, or either of them.

Officers of the railway contend that this clause allows the Public Service Commission to determine the reasonableness of fares charged by the International Railway and fix an adequate rate.

The sale of the company's properties in Buffalo to satisfy a lien for unpaid taxes was prevented on May 26 by the payment of \$71,000 in back taxes by the company to the city. The balance of the \$350,000 in taxes will be paid in installments.

Wages and Fares Considered

General Discussion of Detroit's Problems Diverted by Demands of Men for Wage Increases

The meeting of Detroit's Mayor and Council and Detroit United Railway officials on May 23 was scheduled to discuss final arrangements for extensions, and plans for rerouting lines in the congested sections. These matters, however, received second consideration due to the fact that the railway employees had issued an ultimatum to the company asking practically a 50 per cent increase in wages and backed up their demands by threatening a strike. The men who are now paid 43, 46 and 48 cents an hour, varying with the length of service, are asking 65, 70 and 75 cents an hour. The company has requested the union to withdraw its objection to the employment of women. This request was vetoed by the union.

COMPANY STATES ITS ATTITUDE

The stand taken by the company was not that the demands of the men were unjust, but that the money to provide for the increase in wages would have to be provided by an increase in fares. Prior to the meeting Mayor Couzens stated that he considered the railways would have to have a higher rate of fare if the men were to have their wages properly increased, but he did not state what he considered a fair increase. He also said the company must state its financial needs and allow the city time to verify the figures, all of which was promised by President Brooks at the meeting of the company on May 9.

The Mayor scored the officials of the company for waiting until two or three days prior to the threatened strike before submitting figures and requesting higher fares. The first figures presented by E. J. Burdick, the company's assistant general manager, were unsatisfactory to the Mayor, in that they were based on assumptions which the Mayor would not admit. It was shown by these figures that the company faces an alleged deficit of \$1,074,383 for the present year, under present conditions without making provision for the increase in wages demanded by the employees. It was stated by Mr. Burdick that the estimated deficit for 1919 was based upon figures for the first three months of the year.

COUNCIL DIVIDED ON FARES

The Council was divided on the question of fare boost. Some members admitted that they would consider a change of rates if it could be shown by the company that higher wages could not be granted the men without the increase. Councilman John A. Kronk, author of the Kronk 5-cent fare ordinance, stated that service and sensible routing of the cars were in his opinion more essential than an argument about the rate of fare.

The Twelfth Street extension and St. Jean Avenue extension were discussed

and it was agreed that they should be built at once and that the rate of fare should be the same as now exists on other of the city's non-franchise lines. All propositions of the company relative to rerouting downtown cars were tabled for future consideration. The meeting was adjourned and the conferees met again on May 26.

The threatened strike was postponed by the men at a later meeting for two weeks, to give the Council time to act, after the Mayor had assured representatives of the union that he and the Council were endeavoring to reach an honest agreement with the company.

The Council has ordered an exhaustive audit of the accounts of the railway in order to determine if the increase in wages could be granted the men. City Comptroller George Engel was asked to report immediately on the length of time needed to complete the survey. If his estimate of one week proves correct the Council will have that length of time to consider the question and decide a just rate of fare which will enable the company to operate without deficit and pay the increased rate of wages to its employees.

AUDIT STARTED

The audit of the Detroit United Railway's accounts to determine the possibility of its paying wage increases on the present rate of fares, begun by the city on May 27, was practically completed by June 2, and it was expected that the matter would be acted upon by the Council on June 3.

A meeting of the railway employees is set for June 7. The men have announced a strike will be voted then unless they receive some definite assurance of being granted higher wages.

Accountants from the offices of Barclay Parsons & Clapp, Marwick-Mitchell-Peat Company, the Detroit Bureau of Government Research, as well as from his own office, are working under the direction of George Engel, city comptroller.

The results of the audit tend to verify the statement of the railway officials to the effect that a deficit of \$675,000 for the year 1919 would result if the company continued to operate at present fares and wages.

The Board of Street Railway Commissioners, realizing that the settlement of the wage question now at hand will not dispose of the problem which has confronted public officials of Detroit for years, and that conditions now are intolerable and daily growing worse, express belief that the efforts of the city officials should be redoubled to the end that some plan may be evolved which will grant relief to the community.

It is set forth by the commission that the defeat of the two former municipal proposals by the voters of

Detroit is in no sense a rejection of the municipal ownership principle, but rather a disapproval of the form of acquisition. It is also stated that since the election of April 7, numerous and conflicting suggestions have been offered by citizens, each of whom expressed a belief that his proposal was the proper one for the adjustment of present difficulties. They are principally: Municipal ownership by a revised purchase agreement plan; municipal ownership by the condemnation plan; municipal ownership by piecemeal construction; private ownership with municipal control under a settlement similar to the Cleveland so-called service-at-cost plan; municipal ownership of a rapid transit system of subways and elevated railways.

The commissioners state that the board is not in a position to know positively which proposal best suits conditions, but they believe that a pole of public sentiment could be taken at a nominal cost which would enable the city authorities to proceed with some plan that they would know would have a reasonable chance of securing adoption when submitted at an election.

The Council approved the appropriation of \$10,000 for conducting a post-card canvass of opinions of voters to decide what action the city should take. The questions to be asked are:

1. Do you wish the administration to proceed with plans leading to the acquisition by the city of the street railway system? If so, which of these plans do you prefer? (a) Acquisition of the surface lines by purchase. (b) Acquisition of the surface lines by condemnation. (c) Acquisition of a partial surface system by piecemeal construction.
2. Do you favor an agreement with the Detroit United Railway for a five or ten-year period, similar to the Cleveland plan, calling for municipal control of privately-owned surface lines?
3. Do you favor the preparation of plans for the acquisition of a rapid transit system to consist of subways and elevated railways, independent of whatever action may be taken with regard to the surface lines?

In the opinion of the board it is obvious that such a questionnaire plan will enable the voters, both men and women, to discuss the issue in their homes before indicating a preference, and an expression will be obtained without the inconvenience of going to a polling booth.

Strike in Muskegee

All conductors and motormen employed by the Muskegee (Okla.) Traction Company went on strike at midnight of May 29 and the city has been without railway service since that date. R. D. Long, general manager, made no attempt to operate the lines when the men quit. The strike is the result of the refusal of the company to grant demands for a sliding wage scale of 44 cents to 50 cents an hour. The present scale is 24 cents to 30 cents an hour. The company offered a compromise of 30 cents to 41 cents an hour. There has been no trouble of any kind. One-man cars are operated in Muskegee. About 100 men are involved in the strike.

Scranton Wage Award Announced

P. F. Calpin and John B. O'Malley, who represented the men on the arbitration board that heard the arguments on wages for employees of the Scranton (Pa.) Railway, have received the award made by Chairman Charlton Ogburn, representative of the War Labor Board, and refused to sign it. The award did not grant any increase in wages to the conductors and motormen, except for overtime, allowing them time and a half for overtime, instead of time and a quarter. Attorney H. C. Reynolds and W. L. Connell, representing the railway on the arbitration board, affixed their signatures to the award.

The carhusemen and shopmen of the company are to have an eight-hour day with the same daily wage that they are now receiving for ten hours of work. The trackmen are to have a nine-hour day with the same daily wage as they are now receiving for ten hours of labor. Mechanics in various lines employed by the company are to receive slight increases.

The following table shows the rate of wages per hour asked by all of the men and the amount that has been granted them by Charlton Ogburn, representative of the War Labor Board and chairman of the arbitration board:

	Rate Awarded	Rate Demanded
Conductors and Motormen:		
First three months.....	\$0.41	\$0.58
Next nine months.....	.43	.59
Second year.....	.45	.60
Third year and after the men asked same as second year, men and got 45 cents an hour, same as second year.		
Trackmen.....	\$0.42	\$0.57
Trolley tenders.....	.42	.57
Track foremen.....	.49	.64
Teamsters.....	.45	.57
Drill pressmen.....	.518	.71
Blacksmiths.....	.467	.68
Pitmen.....	.442	.68
Car cleaners.....	.423	.57
Firemen.....	.46.4	.62
Oilers.....	.423	.57
Pitmen helpers.....	.423	.68
Painters.....	.46.4	.68

Unions at Odds

The strike of the platform employees of the Rochester & Syracuse Railroad, Rochester, N. Y., referred to in the ELECTRIC RAILWAY JOURNAL for May 31, page 1066, was settled on May 23. The men went out more than a week. Both the Amalgamated Association and the Brotherhood of Locomotive Engineers were involved. As a result of the settlement Brotherhood members have returned to their jobs as members of the Amalgamated Association.

The issue involved was clean cut. The Amalgamated refused to agree to the operation of cars over the local Rochester lines by Brotherhood men. The interurban men went on strike rather than abandon their Brotherhood affiliation. The Amalgamated thereupon agreed to furnish men to operate the interurban. The strike settlement has been explained as follows:

The men return to their former jobs with their seniority and without prejudice, and each one has made application to the Amalgamated Association for membership. The final determination of the question will be

submitted to the American Federation of Labor for solution.

The Brotherhood never has been affiliated with the American Federation of Labor, while the Amalgamated has. At the last convocation of the Brotherhood a request for affiliation was formulated. It is expected that favorable action will be taken in June.

The Amalgamated has claimed that the Brotherhood has no rights on electric railroads. The Brotherhood defends its rights on the ground that railroads are rapidly becoming electrified throughout the country. The counter proposition that Amalgamated men had no right to operate cars over steam roads was brought up during the strike just settled.

This is the question, then, that is to be solved by the American Federation of Labor, presumably at its June convention.

Railway Plans Bus Service

In connection with the proposed motor bus service asked for by the Connecticut Valley Street Railway, Greenfield, Mass., it is the intention of the company, if its petitions are acted on favorably by the Public Service Commission, to start motor bus service between the railroad station in Greenfield and terminals in Turners Falls, at the head of the thoroughfare known as Avenue A.

This proposed new service will be in addition to and will supplement the company's present car service. The rate of fare on the buses will correspond with the rate at present in effect on the cars of the railway, a minimum fare of 6 cents with a rate of 3 cents per mile. The company looks forward to this service as a means of preserving to the railway its legitimate business between these two points.

Spokane Men Want to Organize

To have the Washington Water Power Company, Spokane, Wash., grant its trainmen permission to join a union, a delegation from the central labor council conferred recently with D. L. Huntington, president, and W. E. Coman, vice-president and general manager of the power company. Mr. Huntington said he did not care to have his men organize.

In a statement made for publication, Mr. Huntington said in part:

A committee composed of representatives of several unions called upon me to ascertain the attitude of the company regarding unionizing the trainmen. I told them that our relations with our employees are excellent and that we could see no reason to change our well-known policy in these matters. Our methods of handling directly with our own employees all questions regarding our relations with them have been entirely successful and satisfactory, both to the employees and to the company. Contrary to the statement in an evening paper, the question of unionizing is not being brought up by our own employees.

The committee that called on the officers of the company was composed of Everett J. Parker, president of the trainmen's union; D. P. Reid, representing the electrical workers; Fred W. Green, president of the musicians' union; James McGowan of the steam engineers, and Robert Cullen of the culinary workers. This committee is regarded in labor circles as fully representative of the original trade of Spokane.

Wage Payment Made

The employees of the Rhode Island Company, Providence, R. I., whose wages were increased last October by award of the War Labor Board, the decree being retroactive to July 1, have been paid the back wages due them, a total of \$155,000 being disbursed among 3600 employees.

The Rhode Island Company was unable to pay the amount in a lump sum as ordered by the War Labor Board and a subsequent decree directed the company to make the payments in three installments. The first payment was made on time, but the second payment was allowed to lapse and before the date due for the third payment the company went into the hands of a receiver.

Permanent receivers were later appointed and they applied to the Superior Court for authority to make the payment. This authority was at first refused, but the carmen's union took the matter up and when the employees voted to strike the court authorized the receivers to make the payment. Under the law thirty days was allowed in which appeals from the ruling of the court could be taken and the receivers were obliged to await the expiration of that period before distributing the money. The time expired on May 24, and on that date the employees received the money due them.

Preparing for Pittsburgh Wage Hearings

Hearings of the electric railway wage controversy at Pittsburgh, Pa., will open before Charlton Ogburn, public utilities representative of the War Labor Board, in Pittsburgh on June 16. Mr. Ogburn will hear testimony from the receivers and the men to establish the points of fact in the differences that led to a four-day strike, beginning on May 14.

After Mr. Ogburn has briefed the testimony offered before him in Pittsburgh and sent it to the War Labor Board, that body will announce a date for hearing arguments of counsel before William Howard Taft and Basil Manly, joint chairmen of the board, in Washington.

The question at issue before the board is purely one of wages. The men demand a 12-cent increase over the present schedule of 43, 46 and 48 cents an hour. Questions of operating conditions, which the receivers sought to raise early in the controversy, were dropped upon the insistence of union officials at the conference at which the agreement to submit the matter to the Labor Board was entered into. It was this agreement that ended the strike. The receivers had hoped to get better "tripper and trailer" conditions in return for some wage concession, but the men would have none of this.

As it stands the proceedings before the Labor Board do not amount to arbitration, strictly speaking. Neither side is definitely bound to accept the

award. The United States Court firmly refused to enter into binding arbitration, holding that such would be illegal delegation of part of its authority. So the men have retained the right to strike again if the court rejects an award in their favor or fails to act upon the award within twenty days after it is made.

St. Louis Loop Development Urged

John D. Knapp, a member of the free bridge committee of the Tenth Ward Improvement Association of St. Louis, Mo., has reported to the president of that association and the members of the free bridge committee in regard to the plan initiated by the association for a city-wide campaign for finishing the St. Louis Free Bridge and for new interurban and steam terminal business via the bridge.

Mr. Knapp says that the city government is now busily engaged in stringing wires for street car and interurban service and that work has commenced on the construction of the loop at the western end of the bridge approach. He recommends to the association a number of steps to be taken by the city properly to finish the loop on both sides of the river.

He suggests the condemnation in St. Louis of an entire block as a site for the loop. He also recommends the construction of a loop in East St. Louis sufficiently large for the municipal railway which will operate over the bridge and for a spur connection to permit the East St. Louis lines to operate over the loop.

Preparing for Wheeling Arbitration

Following several conferences at Charleston, W. Va., between the various traction officials and the representatives of the railway workers relative to the new wage scale, it is reported that the demands of the linemen, engineers and firemen will be taken up first by the arbitration committee.

It was also announced that C. R. Parrs, Huntington, an official of the Ohio Valley Traction Company, would represent the companies involved as a member of the arbitration committee. W. Roy, an official of the eastern Ohio district miners' union, will be the umpire.

Arbitration was decided upon following a strike at Wheeling on May 1, when all lines in the entire Wheeling district and in this section of eastern Ohio were tied up and all power plant employees affiliated with the unions ceased work.

It is reported that it is practically agreed upon by the traction officials and representatives of the carmen's union that the firemen's, engineers' and linemen's compromised advanced wage scale will be arranged without any difficulty, but that it will not prove so easy to

dispose of the platform men's scale. The number of platform men involved is about 600.

Boston Wages Negotiations Under Way

Conferences were begun during the week ended May 31 between the management of the Boston (Mass.) Elevated Railway and representatives of the employees' union relative to the formulation of a new wage scale to take the place of the agreement which expired on May 1, after a term of three years. No official statement has been made as yet regarding the subject matter of the conferences, but it is understood that a demand for a maximum wage of 73 cents an hour was set forth by the union early in the meetings, and that in a nutshell the employees are now seeking an eight-hour day on the basis of nine hours' pay.

The present maximum wage is 48 cents an hour. Under the existing 8-cent fare the company's operations showed a deficit of \$316,392 for April, compared with deficits of \$224,920 in March, \$285,124 in February, and \$219,269 in January. Total receipts in April were \$2,386,822, and the cost of service per passenger was 9.328 cents. Receipts under the 8-cent fare in April, 1919, showed an increase of \$727,170 or 45.96 per cent compared with April, 1918, under the old 5-cent fare.

It seems probable that the company will be obliged to institute a 10-cent fare later in the season unless plans for the trial of a zone system are put into effect, although no official statement to this effect has as yet been forthcoming. The size of the April, 1919, deficit was in large measure due to excess of track and car repair work above a fair monthly average.

Would Continue National Employment Service

Secretary of Labor Wilson has recommended to Congress the enactment of legislation creating a permanent public employment service for the United States and has transmitted an outline of a bill which calls for the continuance of the United States Employment Service, developed during the war, as a permanent bureau in the Department of Labor and in charge of a director general appointed by the President, and a system of public employment offices, operated by the states and co-operating with the Federal Employment Service. The federal government would contribute funds to the states for the maintenance of their offices, which would work under standard rules and regulations prescribed by the United States Employment Service, the national service handling labor clearances between states, inspecting and gathering of information as to labor and employment conditions. At the conference which agreed upon this outline were representatives of thirty states, including nearly all the industrial states, and representatives of employers and labor.

News Notes

Increase in Wages Granted.—The Toledo, Bowling Green & Southern Traction Company, Findlay, Ohio, has decided to increase the wages of its men 5 cents an hour, dating from May 1. The men had asked back pay from Aug. 16, 1918. A conference will be held within a few days to discuss this matter.

Wage Increase in Fargo, N. D.—Five cents an hour for all trainmen and other employees of the Fargo and Moorehead division of the Northern States Power Company is an advance already effective. The increase affects about fifty men and will mean an addition of \$7,000 to the payroll for the year.

Examination for Special Work Inspector.—The Civil Service Commission of New York State will shortly conduct an examination for an inspector of special track work installation for the Public Service Commission for the First District. The salary is from \$1,501 to \$1,800. Five years' experience is required. The position is open to non-residents.

Wage Increase in East Liverpool.—A new wage scale, ranging from 43 to 47 cents an hour has been awarded the platform employees of the Steubenville, East Liverpool & Beaver Valley Traction Company, East Liverpool, Ohio, by a board of arbitration which has been considering the demands of the men for several weeks. This is an increase of 11 per cent over the 1918 scale.

Trial Put Over to November.—The trial of Bruce Cameron, superintendent of the United Railways, St. Louis, Mo., on charges made in connection with the disappearance of petitions for a referendum on the so-called "Compromise United Railway Ordinance" has been deferred until the November term of court by Judge Dearing of the Reynolds County Circuit Court at Centerville, Mo.

Believes Municipal Ownership Plan Unconstitutional.—Senator J. Turner Eutler believes the bill which has passed the House requiring the County Commissioners of Duval County, Florida, to build an electric interurban railway to Pablo and Atlantic Beach from the profits of the municipally owned electric light and water plants of Jacksonville, is unconstitutional, and he will not pass the measure through the Senate.

Auto Bill Fails.—By withholding his signature from the bill permitting electric railways to engage in the jitney automobile business, Governor Holcomb has prevented the measure from becoming a law. The Governor acted

in response to the appeals of several of the electric railways, which announced that they considered the bill useless in the form in which it was finally passed on the last day of the General Assembly session.

Commission After Violator of Its Order.—The first case in court of the Public Service Commission of Pennsylvania against a public service defendant is now under way in the Common Pleas Court of Allegheny County. The action is a test case brought by the commission as a warning against violations of public service laws. A. W. Behling, a motor bus operator of Pittsburgh, is accused of ignoring an order of the commission to desist from serving as a public carrier without a certificate.

City Has Motor Bus Rights.—Walter F. Meier, corporation counsel of Seattle, Wash., has advised Thomas F. Murphine, superintendent of public utilities, that the city has the authority to operate motor buses as feeders to the Seattle Municipal Railway. The Council has been asked by several communities to start bus service from outlying sections to connect with the city railway lines. Residents and property owners of Magnolia Bluff have agreed to give the city two large motor buses provided they are operated in connection with the railway lines into that district.

I. T. S. Using Keokuk Power.—The Quincy (Ill.) Railway, included in the Illinois Traction System, has made arrangements whereby power from the Keokuk dam can be transformed in the company's power house. On one or two occasions previously, in emergencies, the cars have been run with Keokuk power, but it has always been obtained through the plant of the Quincy Gas, Electric & Heating Company. The use of Keokuk power transformed directly marked an interesting step in the rehabilitation of the Quincy Railway. After their completion of the installation of the three rotaries, the steam plant will be closed down and held for emergencies when the Keokuk power may be off temporarily.

Bay State Labor Difficulties Easier.—Labor difficulties on the Bay State Street Railway, Boston, Mass., which threatened to involve many divisions in a strike, have become less disturbing through conferences between company and union officials and the pending arbitration of disputed points. During the week ended May 31, a two-day strike took place on the Lawrence (Mass.) division over the refusal of the company to reinstate a motorman. The strike was called off by advice of J. H. Reardon, Worcester, international vice-president, who stated that the walkout was in violation of the agreement between the men and the company. It was announced at Lawrence that the company will provide employees with passes subject to photographic identification.

Union Buttons a Problem Again.—After a tie-up of six hours, service on

the railway lines of the Toledo Railways & Light Company, Toledo, Ohio, was resumed on May 30 pending receipt of official word from the War Labor Board at Washington, that the wage increase granted the conductors and motormen included the right to wear the union button, one of the principal points in the controversy, which resulted in a lockout three years ago. Union officials said they had received the official award from the War Labor Board. Frank R. Coates, president of the Toledo Railways & Light Company, said he had not received official notification of the award; but rather than disappoint the holiday crowds had instructed the cars to be operated regardless of whether or not the men wore their union buttons.

Restraining the Auto "Nuisance."—An ordinance will be introduced in the City Council of Seattle, Wash., revising the traffic laws of the city, and placing rigid restrictions on automobile traffic. Drastic steps are to be taken to prevent inexperienced drivers from operating automobiles, and Thomas F. Murphine, superintendent of the public utilities, is recommending the passage of such an ordinance. The ordinance will embody the recommendations of the police and utilities departments, and it is believed will do much to relieve the congestion of traffic in the downtown district. One of the provisions of the ordinance will be that every purchaser of an automobile be required to show his qualifications as a driver before being permitted to drive his car downtown. No person will be permitted to drive a car without a permit.

Separation of Construction and Regulation Now Complete.—The rapid transit construction work formerly vested in the Public Service Commission for the First District of New York has been turned over to John H. Delaney, recently appointed by Governor Smith as transit construction commissioner, under the bill separating the functions of the commission, passed by the Legislature of 1919. Commissioner Delaney assumed his new duties on June 2. The rapid transit construction functions were taken over by the Public Service Commission for the First District from the old Rapid Transit Commission on July 1, 1907. Under the commission the contracts were entered into for practically all of the newer lines embraced in the dual system of rapid transit. Mr. Delaney will take up this work and proceed to the completion of the system. A large part of the engineering force of the old Public Service Commission will be under the jurisdiction of Mr. Delaney. The regulatory functions formerly exercised by the Public Service Commission for the First District are vested in Commissioner Lewis Nixon, who, as a single commissioner, succeeded the former body composed of five commissioners. Mr. Nixon has also, since taking office, exercised the rapid transit construction functions.

Programs of Meetings

Pennsylvania Street Railway Association

The annual meeting of the Pennsylvania Street Railway Association will be held at the Penn-Harris Hotel, Harrisburg, on June 27 and 28.

City Officials to Discuss Railways

At the tenth annual conference of city officials of New York State at Schenectady on June 10 to 12, one session is to be devoted to a discussion of the electric railway situation. This session will open at 9.30 o'clock on Wednesday morning, June 11, and will be presided over by Mayor Leroy Barnes of Binghamton. The speakers, as announced in last week's issue of this paper, will include T. E. Mitten, Delos F. Wilcox, Harlow C. Clark and Thomas Conway, Jr.

Central Electric Railway Association

Final arrangements are being made for the mid-summer meeting and cruise of the Central Electric Railway Association from June 30 to July 3. It is planned to restrict the number to 350 to avoid crowding. Up to June 1 tickets had been sent out for nearly 250. It is therefore evident that those who desire to go should make the earliest possible application to secure reservation. In this connection it is pointed out particularly that electric railway officials outside the Central Electric Railway Association territory have been extended the privilege of joining the excursion.

The program for the meeting will probably be announced very shortly. Arrangements for the trip itself were completed some time ago. They include the reservation of the steamer *South American*, one of the finest passenger steamers on the Great Lakes. This vessel, built in 1914, has accommodations in her dining room for seating more than 280 at a time, and is strictly modern in all other appointments.

The *South American* is scheduled to leave the White Star Line docks at Toledo at 9 a. m. on June 30, proceed from Toledo to Lake Erie and up the Detroit River to Detroit, thence through Lake St. Clair and River St. Clair into Lake Huron, thence to Perry Sound, Georgian Bay, Owen Sound, Mackinac Island, from whence the ship will proceed down Lake Michigan, running into Harbor Springs, thence to Benton Harbor, thence across Lake Michigan to Chicago, where the boat will dock on July 3 at about 4 o'clock in the afternoon.

Tickets for the trip on the steamship, including meals and berth for the three days cruise from Toledo or Detroit to Benton Harbor or Chicago will cost \$26.50 each, including government war tax. Tickets should be secured from John Benham, vice-president of the International Register Company, 15 South Throop Street, Chicago, Ill.

Financial and Corporate

Detroit Decline Stops

Increased Earnings in 1918 Almost Succeed in Meeting High Expenses of Operation

During the calendar year 1918 the Detroit (Mich.) United Railway succeeded in largely checking its financial losses. Although the net income in 1918 still showed a falling off of \$80,947 or 3.2 per cent below that of 1917, this was very small compared with the decrease in net income of \$705,262 or 24.4 per cent in 1917 below that of 1916.

The main reason for this showing is that during 1918 the increase in gross earnings from operation was more than sufficient to take care of the rise in operating expenses, as was not the case in 1917. In 1918 the gross earn-

The net earnings from operation in 1918 showed a gain of \$87,530 or 2.1 per cent, which was increased by an advance in other income. The increase in interest charges and taxes, however, was sufficient to cause the above-mentioned decline of \$80,947 or 3.2 per cent in net income. Dividend payments were increased from \$1,118,750 to \$1,200,000, but the depreciation allowance was reduced from \$800,000 to \$600,000. As a result the balance transferred to surplus in 1918 amounted to \$144,584 as compared to \$106,781 in 1917.

WHAT THE TABLES SHOW

The foregoing figures, shown in detail in Table I, summarize the business of the Detroit United Railway, the Rapid Railway System, the Sandwich,

TABLE I—INCOME STATEMENT OF DETROIT UNITED RAILWAY FOR CALENDAR YEARS 1917 AND 1918

	1918		1917	
	Amount	Per Cent	Amount	Per Cent
Gross earnings from operation:				
Passenger.....	\$ 17,696,782	93.1	\$16,370,239	93.9
Express.....	1,265,311	6.6	1,000,869	5.7
Mail.....	12,433	0.1	11,748	0.1
Special car.....	39,492	0.2	45,083	0.3
Total.....	\$19,014,018	100.0	\$17,427,939	100.0
Operating expenses.....	14,758,339	77.6	13,259,790	76.1
Net earnings from operation.....	\$4,255,670	22.4	\$4,168,149	23.9
Other income.....	449,736	2.3	411,737	2.4
Gross income.....	\$4,705,415	24.7	\$4,579,886	26.3
Interest on funded and floating debts and taxes.....	2,610,831	13.7	2,404,355	13.8
Net income.....	\$2,094,584	11.0	\$2,175,531	12.5
Amount credited to depreciation reserve.....	\$600,000	3.1	\$800,000	4.6
Amount provided for federal taxes.....	150,000	0.8	150,000	0.9
Dividends paid.....	1,200,000	6.3	1,118,750	6.4
Total.....	\$1,950,000	10.2	\$2,068,750	11.9
Balance transferred to surplus.....	\$144,584	0.8	\$106,781	0.6

ings from operation gained \$1,586,079 or 9.1 per cent, while the operating increases rose \$1,498,549 or 11.8 per cent. In 1917, however, the gross earnings advanced \$1,391,270 or 8.6 per cent and the operating expenses \$2,043,988 or 18.2 per cent.

Windsor & Amherstburg Railway, the Detroit, Monroe & Toledo Short Line Railway and the Detroit, Jackson & Chicago Railway.

Table II gives passenger and mileage statistics of the system for the last two years. The points to be noticed are the decreases in passenger traffic and in car mileage and the increases in receipts per passenger and car-mile earnings for the combined lines.

\$1,079,278 FOR ADDITIONS

During 1918 the Detroit United Railway and its affiliated lines spent \$1,079,278 for additions to property. The largest items were \$239,858 for right-of-way, \$123,733 for rails, rail fastenings and joints, \$94,059 for grading and \$91,698 for track and roadway labor.

The \$425,000 of first consolidated mortgage bonds of the Wyandotte & Detroit River Railway, which matured on Dec. 1, 1918, were paid and a like amount of Detroit United Railway first consolidated mortgage bonds was issued; likewise with \$50,000 of Detroit Railway bonds.

Indianapolis Merger Approved

Stockholders of Street Railway and of Terminal Company Sanction Corporate Changes

At the meeting of the stockholders of the Indianapolis (Ind.) Street Railway held on June 2 to consider the merger of the company and the Indianapolis Traction & Terminal Company, as outlined in the ELECTRIC RAILWAY JOURNAL for May 31, page 1068, it was decided by vote of 27,879 shares to \$14,863 shares to combine the two properties.

PLAN AMENDED

Amendments were offered and voted upon to meet certain objections offered by the city and others against the merger agreement as first submitted. One amendment provides that the consolidated company shall take over all obligations of existing franchises. This was provided to meet the objection that the consolidated company would be under no franchise limitations of the constituent companies. Another amendment provides that if the new consolidated company should fail in any year to pay 6 per cent on the \$5,000,000 of preferred stock to be issued, then the exclusive voting rights shall go to the preferred stockholders as long as the default continues. A further amendment provides that the right to refund existing bonds under the old mortgages by the issuing of the new merger bonds of the consolidated company shall not be exercised before April, 1931, thus leaving only two years in which the bonds maturing in 1933 can be exchanged to meet the new bond issue. This amendment was made to meet criticism that under the merger the fixed charges of the company might be greatly increased by further bond issues.

SOME PROTESTS ENTERED

During the meeting, protests were heard from attorneys representing certain stockholders who were doubtful as to the advantages to be gained in exchanging Indianapolis Street Railway stock for the new consolidated stock. Mr. Hornbrook, representing the stockholders' committee, asserted that it was shown at the hearing of the fare case before the Public Service Commission last fall, and had been virtually admitted by the Mayor and Corporation Counsel, that the property of the Indianapolis Traction & Terminal Company more nearly represented the value of the bonds and securities issued than did the property leased from the Indianapolis Street Railway, and that by the feature of the proposed agreement, which provides that more than \$2,000,000 of bonds of the two companies retired by sinking fund payments may be refunded to supply money for conditions and betterments, it will be possible for the consolidated company to finance the extensions and improve-

TABLE II—DETROIT PASSENGER AND MILEAGE STATISTICS

	1918		1917	
	1918	1917	1918	1917
Revenue passengers.....	319,843,176	356,208,439	319,843,176	356,208,439
Transfer passengers.....	103,608,353	119,962,123	103,608,353	119,962,123
Employee passengers.....	7,416,741	8,557,264	7,416,741	8,557,264
Total passengers.....	430,868,270	484,727,818	430,868,270	484,727,818
Receipts per revenue passenger.....	\$0.0553	\$0.0439	\$0.0553	\$0.0439
Car mileage.....	53,931,394	58,957,941	53,931,394	58,957,941
Earnings per car-mile.....	\$0.3526	\$0.2956	\$0.3526	\$0.2956
Expenses per car-mile.....	0.2736	0.2249	0.2736	0.2249
Net earnings per car-mile.....	0.0790	0.0707	0.0790	0.0707

NOTE.—In addition to the Detroit city lines, the foregoing statistics embrace all the lines owned and controlled by the Detroit United Railway.

The largest part of the gain in 1918, of course, came from the passenger earnings. These showed an increase of \$1,326,543 or 8.1 per cent. The express earnings, however, showed a marked improvement, the gain amounting to \$264,442 or 26.4 per cent.

ments which have been requested by the city of Indianapolis.

The boards of directors of the Indianapolis Street Railway and the Indianapolis Traction & Terminal Company met on June 3, and confirmed and ap-

proved the amendments offered at the stockholders' meeting. The merger agreement was then executed by the officials of both companies and now awaits the approval of the Public Service Commission of Indiana.

permission to foreclose is granted, the only stipulation being that proceedings be instituted in the United States Court of the Western Pennsylvania District.

Judge Orr remarks, early in his opinion, that the sole answer to the petition brought by respondents was an offer to prove that granting of it would be against the interest of the public. At the hearing this was objected to by counsel for the bondholders' trustee, and the court reserved decision on the objection. In the opinion the objection is sustained and evidence that foreclosure would be contrary to public interest is ruled out as incompetent, irrelevant and immaterial.

Segregation in Pittsburgh

Way Opened to This End in Decision Holding Rights of Mortgagor Are Absolute

The way was opened for the segregation of the properties making up the Pittsburgh (Pa.) Railways on May 29 when the United States Court of the Western Pennsylvania District handed down a decision granting permission to the Union Trust Company as trustee to foreclose the mortgage it holds on the properties of the Southern Traction Company.

COURT ESTABLISHES POINT

Incidentally it was established that, in Pennsylvania at least, the contract rights of a mortgagor must be recognized by a federal court as paramount to the public interest. Counsel for the city of Pittsburgh and the receivers of the company, who are operating the lines under the direction of the Federal Court, had raised this objection to the petition of the trustees of the bondholders for permission to foreclose, but in his opinion Judge Charles P. Orr dismissed this plea without entering into its merits.

There appears to be no immediate prospect of actual foreclosure proceedings. Counsel for the bondholders' trustee admit this, in view of the intention of the city law department to oppose the foreclosure by further court proceedings. The next move will be the filing of exceptions to Judge Orr's ruling by C. K. Robinson, special traction counsel for the city. It is expected that counsel for the receivers will join the city in this opposition.

ANOTHER SNARL ADDED

At all events the foreclosure proceedings, when opened, undoubtedly will add another snarl to the almost inextricably tangled skein of the Pittsburgh Railways' affairs, for the question will arise then as to just what the Southern Traction Company is. On the face of things it is merely one of the underlying companies of the railways. But when the Pittsburgh Railways was organized one of the steps was absorption by the Southern of the Consolidated and the United Traction Companies, the three including the great bulk of the properties now forming the Pittsburgh Railways. One of the probabilities in the case, recognized by counsel for both the city and the receivership, is a claim by the Southern's bondholders for all of the rolling stock of the Pittsburgh Railways, a claim many attorneys feel might be established in court, leaving the receivers with plenty of track but no cars. In the narrower view the bondholders of the Southern

Traction Company are protected only by a mortgage on certain lines operated by it before the consolidation.

The petition for permission to foreclose was presented as a result of default in the semi-annual interest on the first mortgage 5 per cent bonds of the Southern Traction Company. This issue is of \$4,000,000 and as interest was defaulted last October and April the sum directly in question is \$200,000 and interest.

Ranking, as to interest, with the permission of the court to foreclose, is its ruling that bondholders' rights can stand in a federal court in Pennsylvania, against claims of public interest. Heretofore the Federal Court, ruling on the affairs of the Pittsburgh Railways, has seemed to take a somewhat different attitude. Last fall when Charles A. Fagan, one of the receivers, took a decided stand against the further payment of fixed charges while the public was inadequately served by the railway, he was sustained promptly by the court. Shortly after that his colleagues in the original receivership, J. D. Callery and H. S. A. Stewart, withdrew, being succeeded by S. L. Tone and W. D. George.

BASIS OF COURT RULING

Judge Orr based his ruling on two recent decisions of the Pennsylvania Supreme Court, in which the right of a mortgagor to foreclose under the terms of his mortgage is found to be absolute. These cases are Philadelphia Trust Company, trustee, vs. Northumberland County Traction Company, 258 Pa. St., 152, and Columbia & Montour Electric Company vs. North Branch Transit Company, 258 Pa. St., 447. He explains that he accepted the guidance of the highest State court in the matter because the Southern Traction Company is a creature of the State of Pennsylvania and the mortgage in question was made under the laws of Pennsylvania.

The opinion sets forth that to prevent the trustee from proceeding or even to cause the trustee temporarily to postpone exercise of the remedy provided by the mortgage would be to some extent an attempt by the court to impair the obligation of a contract. In answer to a hypothetical objection that the constitutional prohibition against impairment of contracts is intended against legislative and not judicial acts, Judge Orr replies that, as a creature of the Legislature, a court of inferior jurisdiction ought not to have powers higher than those of its creator. So the

Authorizes \$20,000,000 of Receiver's Certificates

Judge Julius M. Mayer, in the Federal District Court, has signed a decree authorizing Lindley M. Garrison, receiver of the Brooklyn (N. Y.) Rapid Transit Company, to issue \$20,000,000 of receiver's certificates.

In the memorandum filed with the decree, Judge Mayer explained his reasons for deciding as to certain disputed points. He dwelt especially upon the point that had been urged by ex-Judge Samuel Seabury, representing tort claimants for the Malbone Street accident last December in which nearly 100 persons were killed and for which claims for damages aggregating \$1,500,000 have already been filed. Judge Mayer made it clear that there is no intention of neglecting such tort claims, but he pointed out also that such claimants are as much interested as other creditors of the system in preserving the property of the company and having it conducted in such a way as to insure an adequate return from the money invested.

Judge Mayer also made a brief reference to the objections that were raised at a hearing on the subordination provision in the proposed decree under which the first refunding gold mortgage of July 1, 1902, with the Central Union Trust Company, as trustee, under which \$27,627,000 of bonds have been authenticated, would be subordinated to the present issue of certificates.

\$25,000,000 Note Issue

Henry L. Doherty & Company, New York, N. Y., associated with the management of the Cities Service Company, are forming a syndicate to underwrite an issue of \$25,000,000 sinking fund, convertible 6 per cent notes of the Empire Gas & Fuel Company, which is the principal oil subsidiary of the Cities Service Corporation.

The notes will be dated June 15, 1919, and will mature on June 15, 1924. They are convertible at any time par for par into a new issue of 8 per cent cumulative preferred stock of the Empire Gas & Fuel Company. The notes will be offered at 97. The net earnings of the Empire companies for the twelve months ended Feb. 28 are reported to be approximately \$23,000,000.

Growing Too Complicated

Special Master Inquiring Into St. Louis Receivership Proceedings Issues a Warning

The United Railways receivership suit now being heard at St. Louis, Mo., is becoming so complicated, in the opinion of the special master hearing the case, that there is danger of both the court and counsel losing a proper perspective of the matter.

COURT ITSELF CONFUSED

Toward the close of the session on June 2, and just before adjourning the hearing to June 5, Special Master Lamm declared from the bench:

This case is growing very complicated. It has come to a point where if I have got to pass on it, I want briefs. I'll give counsel a week in which to file the briefs. There is such a thing as this getting so complicated that the master won't understand it, the court won't understand it, and counsel themselves may be in doubt.

The hearing on June 2 was given over to arguments of Charles H. Cole, Chester, Ill., and W. B. Thompson, St. Louis, for leave to intervene on the part of the defense in the suit for receivership and accounting of John W. Seaman, New York, against the United Railways. The petitioners contended that the company by filing an admission of insolvency in the Adler receivership proceedings disqualified itself for the task of defending itself. They argued that the stockholders should be permitted to defend the company against the charge of insolvency and asked that Mr. Seaman be required to furnish bond to cover cost of the suit and the possible damages of a receivership.

In commenting on the argument of attorneys for the intervenors Mr. Lamm said:

My mind has been dwelling on the timeliness of this intervention. This case has been pending nearly a year and you are just filing this action. It is a question in my mind whether you have not passed the days of grace.

COMPANY ABLY REPRESENTED

During the discussion Henry S. Priest, general counsel for the United Railways, declared that the United Railways as a matter of fact is not insolvent. He said the company was unable to meet its obligations as they matured chiefly because of the agitation aroused through this litigation. Mr. Priest said that he had on his desk a circular from one of the city's best known financial heads saying that an effort was being made to mature the company's general mortgage bonds and cut out the St. Louis Transit Company bonds and other indebtedness. He added that "the extreme depression because of the war" helped to impair the company's ability to meet its obligations as they matured.

In referring to the argument of Attorney Ford Thompson for the intervenors that the company through its admission of insolvency in the Adler suit made it impossible to prove its solvency at the present hearing, Special Master Lamm took occasion again to

compliment Attorney Priest, whose argument in answer to the closing argument of attorney for Seaman during the previous week brought out a strong laudatory expression from the bench. It had been his observation that the defense has been very ably represented in this case, Master Lamm said to Attorney Thompson at the close of his plea for permission from the court to "assist the defense."

Dallas Tells the Public

Company Adopts Policy of Giving the Public Monthly Data on Financial Condition

The net earnings of the Dallas (Tex.) Railway for April, 1919, amounted to \$32,636, an increase of \$6,093 or 23 per cent over the earnings for the corresponding month of last year. The net earnings for April were equivalent to a net return of 4.98 per cent a year on the agreed property valuation. The present franchise allows a 7 per cent return.

Setting forth the financial condition of the Dallas Railway, the directors have published in all the local newspapers of Dallas a five-column advertisement showing in detail the property valuation, earnings since the properties were taken over, authorized return of 7 per cent and deficit. In this advertisement the company makes the following statements:

During 1917 the street railway situation was submitted to the voters for a full discussion and to an election held on April 3, 1917, at which time a certain franchise was granted by the voters of the city to the Dallas Railway. Appreciating that the growth of the city is inseparably linked with the success of the street railway company, and that the surest manner of securing the friendly co-operation of our patrons is by keeping the public fully advised as to the financial condition and the various problems confronting the company, the management, with the sanction of the board of directors, submits the following:

Total property value, determined in the manner provided by the franchise—close of business	
April 30, 1919	\$8,082,682
Authorized return (7 per cent on property value) for April	45,898
Gross return from all sources, April, 1919	202,238
Operating expenses, April, 1919	169,602
Balance earned for return, April, 1919	32,636
Shortage in permitted return, April, 1919	13,262
Amount net earnings for April available for distribution to stockholders	None
Amount net earnings for April available for transfer to surplus reserve	None
Total shortage for nineteen months (from Oct. 1, 1917, to April 30, 1919, inclusive) on permissible return	355,285

The management feels that the railway's problems are also the public's, as a financially crippled railway system cannot expand and give adequate service. From month to month we will keep you fully advised in this manner. If we succeed, we want you to know it; if we are not succeeding, we likewise want you to know it.

This statement is signed by J. B. Walker, secretary-treasurer; Richard Meriwether, vice-president and general manager, and the company's directors. The deficit of \$355,285 is said to be due to three things—First, operation of the jitneys; second, the increased cost of labor, and third, the increased cost of materials.

Council Approves Valuation

Minneapolis Body Fixes Upon \$24,000,000 and a Return of 7 Per Cent for Local Railway

The City Council of Minneapolis, Minn., by a vote of sixteen to ten has approved the report of its committee on street railways placing the value of the property of the Minneapolis Street Railway at \$24,000,000 with a guaranteed return of 7 per cent to the company.

The company now has ten days in which to accept the proposal. If it accepts, a service-at-cost franchise will be drawn and submitted to the company for approval and if approved will go before the voters within ninety days thereafter. Socialists voted against the adoption of the committee report by the Council.

MANY VALUATIONS MADE

Various valuations have figured in the long drawn out preliminaries, that of the city engineer being \$25,914,307, of the City Council \$22,553,150 and of the company \$24,500,000. The franchise will be drawn under the enabling act, Chapter 124, General Laws of Minnesota for 1915, which permits the city to negotiate with the company and submit a franchise to referendum vote before the expiration of the present franchise grant in 1923.

Charles D. Gould, the city attorney, has proposed as purposes in the franchise the following:

1. To furnish the Minneapolis public with adequate street car service at all times, at a rate of fare sufficient to provide the facilities for such service, meet the legitimate cost of operation maintain the property continuously in first-class condition, and pay to the company its fixed minimum return upon capital investment.
2. To provide for effective public control of service and extensions.
3. To provide for such methods and measures of public supervision of the property as will assure honest, efficient and economical management thereof in the public interests.
4. To provide for an equitable division of the surplus earnings between the city and the company.
5. To provide for the purchase of the property by the city, and the terms, times and conditions thereof.

MAJORS OPPOSED TO MEASURE

By decision of the Council at its meeting on May 29 the fourth section is waived as the city will control the division of surplus earnings, and will be able to utilize it to lower fares, retire bonds, make improvements, or for any purpose specified in the ordinance. A clause will give the city right to buy the property at the end of each five or ten-year period, at the end of the period of the franchise (which may not be more than thirty years without renewal), and thereafter at the end of any five-year period upon the furnishing of a one-year written notice to the company.

Mayor J. E. Meyers, who holds that a \$20,000,000 valuation and a 6 per cent guaranteed return are enough for the company, is expected to make a campaign against the adoption of the franchise as proposed.

Sale of Collateral Postponed

The sale of all the capital stock of the International Railway, Buffalo, N. Y., advertised to have been held in New York on May 27, has been adjourned until June 25. The postponement has been consented to by the bondholders' protective committee of the International Traction Company, of which Elliott C. McDougal, Buffalo, is chairman. The junior security holders of the traction company sought the postponement, until after the State Court of Appeals has handed down its decision on the right of the Public Service Commission to intervene and regulate fares in Buffalo under the operation of the Milburn agreement.

The junior interests include those who own the stock, both common and preferred, of the traction company or the debentures that are junior to the traction company bonds. In the event of the sale of the collateral back of the traction company bonds, the interests of these junior debenture holders would be wiped out.

The holders of the stock of the railway company desired a postponement of the sale in order that they might have an opportunity to work out a solution of the financial problem of the International Railway and the International Traction Company. For some time negotiations have been in progress between the traction company bondholders' committee and representatives of the railway and holders of the traction company stock for the purpose of bringing about some sort of an agreement.

**Financial
News Notes**

Memphis Makes Up Interest Payment.—The receivers of the Memphis (Tenn.) Railway have deposited with the Central Union Trust Company, New York, N. Y., funds for the payment of the interest due in January, 1919, on the consolidated mortgage 5 per cent bonds of the company, together with five months' interest at 5 per cent on the deferred payment.

Would Abandon Bartlesville Loop.—Application has been made to the Oklahoma Corporation Commission by the Bartlesville (Okla.) Interurban Railway for permission to abandon and take up a portion of its track on the "loop" within the city limits of Bartlesville. The company set forth that little business was done on this line and that the steel and ties were badly needed for use elsewhere on the system. The matter has been taken under advisement.

Sale of Collateral Advertised.—The American Railway & Power Company, having defaulted in the payment of in-

terest due on Nov. 1, 1918, upon its 6 per cent three-year gold coupon notes dated May 1, 1916, the Columbia Trust Company, New York, N. Y., trustee under the agreement of May 1, 1916, will sell the securities pledged with it, to wit: \$276,000 of 6 per cent cumulative preferred stock of the Burlington Railway & Light Company, Burlington, Iowa, a Delaware corporation. The sale is scheduled to take place in New York, on June 11, 1919.

New Owners in Control at Claremont.—The railway lines of the Claremont Railway & Lighting Company, Claremont, N. H., have passed to the ownership of the Claremont Street Railway. The stockholders in the Claremont Street Railway, a new corporation, granted a charter at the last session of the Legislature, are local manufacturers, who bought the bonds of the old company and brought foreclosure proceedings. The road was struck off to them at public auction recently for \$85,000, no other bidders making an appearance.

Progress Made on Spokane Merger.—Progress is being made in the efforts to work out a consolidation of the city lines of the Washington Water Power Company and the Spokane (Wash.) Traction Company. The engineers of the two companies have agreed upon the lines to be retained, but the details are still under consideration. Waldo G. Paine, vice-president of the Spokane & Inland Empire Railroad, prefers that the proposed charter changes and merger franchise be submitted at a special election and not be deferred until the regular election in November, as suggested at the City Hall.

Common Dividend Payment Made.—A semi-annual dividend of 1½ per cent has been declared on the \$9,460,000 outstanding common stock of the American Railways, Philadelphia, Pa., payable on June 14 to holders of record of June 10. This is the first distribution on the common stock since December, 1917, when a semi-annual dividend of 2 per cent was paid. The declaration of the dividend insures the payment of the semi-annual interest on the \$6,479,750 of National Properties Company collateral trust bonds due on July 1. The bonds now bear 4½ per cent interest. American Railways common furnishes the collateral for the issue of bonds.

Default on Lafayette Bonds.—The Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., having given notice that default would be made in the payment of interest due on June 1, on Lafayette Street Railway first mortgage 5½ per cent bonds, a committee consisting of Dimmer Beeber, president of the Commonwealth Title Insurance & Trust Company, Philadelphia, Pa., Warren G. Griffith, and Walter L. Haehlen of Charles Fearon & Company, Philadelphia, has been formed for the protection of the interests of the bondholders of the

Lafayette Street Railway. The committee has asked holders to deposit their bonds with the Real Estate Trust Company, Philadelphia.

Another Abandonment Hearing.—The Public Service Commission for the Second District of New York at the hearing on May 21 on the petition of the Southern New York Power & Railway Corporation to abandon the Normal School line in Oneonta, decided not to receive evidence of operation of the entire road. The railroad, at a hearing on May 7, sought to introduce evidence which it had overlooked covering operating receipts and expenses and necessary repairs in Oneonta and outside, including an estimate that \$423,000 would be required to put its main line in condition. The commission received evidence as to the Oneonta operation, but reserved decision as to admission of further evidence relative to operating expense and receipts for the entire system. The commission on May 19 decided that it would not take evidence covering the entire road. The case is still open.

Would Purchase Leased Line.—Negotiations are reported to be pending for the purchase by the Interstate Public Service Company of the interurban property of the Indianapolis & Louisville Traction Railway between Seymour and Sellersburg, Ind. The Interstate Public Service Company controls the Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company, and operates under lease the property of the railway between Seymour and Sellersburg, for which it is now negotiating. This purchase will give the Interstate Public Service Company entire control of the interurban line between Louisville and Indianapolis, as the section between the two cities was the only portion that it did not own, with the exception of the bridge over the Ohio River. The company uses the Big Four bridge over the river.

\$1,036,000 of Bonds Authorized.—An order has been signed by Public Service Commissioner Lewis Nixon permitting the Hudson & Manhattan Railroad to issue and sell bonds of the face value of \$1,036,000, under its first lien and refunding mortgage of \$65,000,000 made on Feb. 1, 1913. The proceeds of the bonds are to be used to reimburse the treasury of the company for expenditures made from income between June 1, 1915, and Dec. 31, 1917. The money was spent principally to make payments on real estate mortgages and to meet installments on purchases of cars. The bonds are to draw 5 per cent interest and become due on Feb. 1, 1957. Interest is payable semi-annually. The bonds are to be sold at not less than 80 per cent of par. The company was allowed to use all or such portion of \$207,200 as might be necessary to meet discount and expenses of the sale of the bonds, which sum, however, must be amortized from earnings of the company.

Traffic and Transportation

Jersey Hearings Continue

Experts Approve Principle of Zoning Plan—Professors Richey and Jackson Testify for Commission

Prof. Albert S. Richey testified for the commission before the Board of Public Utility Commissioners of New Jersey on May 20 in the Public Service Railway zone fare hearing. It was his opinion that in the future charges for electric railway service must be upon the basis of service rendered with fares arranged to correspond with the actual distance traveled. Professor Richey also appeared as a witness on May 21. His only criticism of the zone plan as proposed was that it was not flexible enough. He thought that the initial fare of 5 cents should cover not less than two zones, instead of one zone as contemplated in the report of the company. Professor Richey was again a witness on May 26. He was examined as to his business relations with the Public Service Railway prior to the present zone fare hearing.

DAY OF FLAT FARES GONE

On May 27, Robert M. Feustel, of Sloan, Huddle, Feustel & Freeman, was a witness for the commission. He said that the zoning arrangement could be made applicable to the Public Service Railway providing the mechanical difficulties of fare collection were overcome. He contended that flat fares must be eliminated before just and reasonable rates could be established. He favored a zoning system under which passengers could board cars at any point and ride for at least two zones for an initial 5 cents. He regarded the Public Service Railway zone report as a very courageous attempt to solve the American electric railway problem.

On May 28 Frank H. Sommer, counsel for the municipalities opposing the zone fare plan, objected to having the plan go into effect on July 1 and asserted that the municipalities which he represented should be allowed sufficient time to prepare as comprehensive a case against the zone plan as had been allowed to the company. The court took the question under advisement and then announced that the zone hearing would be adjourned until June 4. President McCarter of the Public Service Railway declared that any attempt which would result in delaying the proceedings very long "means a receivership for the railway, if it means anything." The company could not continue to go on unless relief were granted within a reasonable time.

On June 4 the hearings were resumed with Lieut.-Col. Philander Betts, chief engineer of the commission, on the stand. He testified that the commission

has the information needed in checking the valuation figures presented by the railway company, and that the commission had approved expenditures of about \$35,000,000 during the period of its jurisdiction.

On June 5 Lieut.-Col. Dugald C. Jackson took the stand for the commission. Quotations were read from his book on "Street Railway Fares" to show that for years he had favored a zone system. As to the system proposed, he is quoted as saying: "It is a definite well-planned effort to solve the problem."

The following extract from a *Newark Evening News* editorial entitled "The Long and Short of It," summarizes the situation from the standpoint of that paper:

A proper zoning system, in which the general welfare is conserved, appears the correct solution. Such a system, however, must not place an undue burden either upon the city riders or upon those from the outlying districts. The charges must be equalized on the basis of the benefits conferred. This equalization must be provided for here. The question now before the Public Utilities Commission is whether this has been done in the Public Service zone plan. The underlying principle may be right, and yet the details of the superstructure may be wrong or the charges excessive. This is the crux of the whole business in New Jersey. The latest expert evidence given would seem to indicate that a revision may be needed to make the plan equitable.

Increase for Winona Company

The Public Service Commission of Indiana has authorized the Winona Interurban Railway, Warsaw, Ind., to increase its basic passenger fare from 2.5 cents a mile to 2.75 cents a mile; to charge 5 cents straight for fares in Peru; to sell 2000-cent coupon books at \$17.50, and twenty-coupon books at 15 per cent less than the basic fare and to establish a 10-cent minimum fare for interurban service.

The commission found that the road has been earning only 4.03 per cent gross on its tentative value of \$26,500 a mile, and authorized the road to increase fares, but not to the limit proposed by the company. The commission directed the company to credit its city lines with 2.5 cents for each passenger carried to and from the city terminals on interurban cars. The commission denied the road an added cash fare excess charge to be refunded later.

The commission has denied the petition for rehearing filed by the Chicago, Lake Shore & South Bend Railway, which some time ago sought to have its passenger basis increased to 3 cents a mile. The basis now is 2.75 cents.

The commission has denied also the petition of the Central Electric Traffic Association to cancel the Chicago, Lake Shore & South Bend interchangeable and local 2000-cent coupon books.

Berkshire Service Considered

Matter Before Commission of Resuming Operation on \$3,000,000 Line with 8000 Tributary Population

Resumption of passenger service over the \$3,000,000 Lee-Huntington line of the Berkshire Street Railway, Pittsfield, Mass., was urged before the Public Service Commission of Massachusetts at a hearing in Boston on May 29, the petitioners being officials and citizens of the towns connected and adjacent to the line. The line was built about six years ago and is of unusually heavy construction. It forms the only through connection between eastern Massachusetts and the Berkshire district, and has been operated at various periods separated by suspension of service due to severe winter conditions, the influenza epidemic of last fall and inadequate revenue. The company was represented by A. M. Robinson its counsel, and C. Q. Richmond, Pittsfield, Mass., general manager.

The financial disabilities of the Berkshire company, it was urged, render the resumption of service over the Lee-Huntington line inexpedient. The first four months of this year show a loss of \$30,780 below the bare cost of operation plus accrued taxes on the system as a whole. Interest on the funded debt is not included. The company owes the Federal Railroad Administration \$50,000 in back freights and demurrage, and there are \$60,000 of last year's taxes yet to be paid. A fare increase was effective in November, 1918.

TRAINMEN WANT WAGE INCREASE

The platform men ask for a wage increase to \$5 a day of eight hours, with increases in proportion for other employees. It is estimated that the desired increases in wages now under consideration would cost the company \$275,000 a year. Mr. Richmond said that the private automobile has cut heavily into the company's revenue. Seventeen one-man cars have been purchased from the Wason Company and an attempt is being made to recapture some of the lost business. On the Pittsfield-Dalton line, for instance, it is proposed to provide a fifteen-minute headway with light cars and it is believed that this will enable the company to compete with the existing jitney service. The Berkshire company has paid no dividends since 1912.

Mr. Richmond said that the total tributary population along the Lee-Huntington line is only 8000, and that the gross earnings per car-mile in April, 1918, when it was reopened after a severe winter, were 10.81 cents, compared with an average of 31.96 for the entire system. In August the line earned 29.06 cents per car-mile, compared with 38.16 cents for the system. In six days of October the total fares collected on the last fare limit entering Huntington were only \$18.50. After the line was apparently completed it was necessary to expend \$41,831 in preparing it for operation by the

installation of safety-catch sidings, a portable substation, electric locomotive, etc. The line is 24 miles in length and has no car-housing facilities except at Pittsfield, 12 miles from its westerly end. Two substations must be started to secure service. The Federal Court decree requiring the New York, New Haven & Hartford Railroad to dispose of its electric railway properties by 1921 stands in the way of the Berkshire company's securing financial assistance from the New Haven. Its competitive possibilities as a through route have been greatly exaggerated. The company has not refused to handle freight

over the line to and from various industries located upon it, but there seems to be no present means of supplying a paying passenger service.

At a recent conference in Westfield, Mass., to which reference was made in the *ELECTRIC RAILWAY JOURNAL* for May 31, page 1071, L. S. Storrs, president of the Berkshire company, offered to provide passenger service on the line if the towns involved would agree to make up the excess of its cost over revenue, but these communities have so far refused to assume any share of the burden. The hearing has been closed.

1920, the old rates shall be restored automatically unless the commission shall have ordered otherwise.

The decision is the outcome of an application made on Feb. 18 for a further increase in rates after the companies had operated for five months under an increase of fare of 20 per cent.

San Juan Wants Ten Cents

The Porto Rico Railway, Light & Power Company, San Juan, P. R., has applied to the Public Service Commission for an increase in the street car fare to 10 cents. The petition is an amendment to a similar petition filed in April, 1918, asking for a 7-cent fare. At that time, the company states, it was thought that a 2-cent increase would provide gross revenue sufficient to show a reasonable earning on the capital invested in the railway system. It is now estimated that a 10-cent fare is required in order to make the enterprise reasonably profitable.

Unfair jitney competition, together with wage increases granted by the board of arbitration last December without corresponding increased revenues, and the present high cost of materials, are the causes given for the poor showing. Following the filing of the petition the company made a statement in part as follows:

"The company had invested in its railway business a total amount of \$22,587. The gross earnings for the first three months of this year amounted to \$81,897, while the operating expenses for the same period were \$1,164,000, leaving net earnings from operation of \$5,651.

"On this basis the railway earnings for the year would amount to \$22,587, which is only 1.49 per cent of the investment, without any allowance for depreciation of the property.

"There are two reasons for this poor showing:

1. The loss of business resulting from jitney operation, and
2. The very large additional expense due to the increase in wages granted our employees in accordance with the award made by the Board of Arbitration appointed by the Governor in December last, and the greatly increased cost of all materials and supplies.

"We estimate that in the event of our application being granted by the commission, there will be a decrease of about 2 per cent in the number of passengers carried due to the higher rates, according to the experience of companies elsewhere under similar conditions, and our net earnings for a full year operation on this basis would be \$177,243 at the rate of 11.6 per cent on the capital now invested, without any provision being made for depreciation.

"Every effort has been made by the company since the beginning of the war to cope with the situation in the form of operation by effecting economies wherever possible consistent with the service the public demanded, but the infringement on its earning capacity by the unfair jitney competition on one hand and the large increase in wages granted the men in December of last year on the other, has made for increased income to meet the increased wages, on the other hand, has placed the company in a position where it must have immediate relief in the form of increased fares applied for, failing which two courses are open, namely, to reduce the wages of men to the same rate that was in force prior to the arbitration award while at the same time materially curtailing the service (which course would not be satisfactory to the employees or the public), or suspend operations entirely.

"Had the jitney competition been eliminated it is believed that the company, but for the greatly increased cost of operation, the company could have continued to operate at the present rate of fare and derive a fairly satisfactory return on its investment, but under existing conditions that is impossible.

Two-Cent Transfers for Capital

Commission Grants Increase to Washington Railway & Electric Company and to Two Non-Petitioning Competitive Lines

The Public Utilities Commission of the District of Columbia on May 29 granted a transfer charge of 2 cents to the Washington Railway & Electric Company, to be added to the present 5-cent fare. Though the competitive Capital Traction Company and Washington-Virginia Railway had not applied for relief, the same charge was granted to them.

Though the commission had not finished the study of the valuation data recently compiled in the case of the Washington Railway & Electric Company, it estimated the fair value on April 30, 1917, as \$14,919,427. Upon this it said the return should not be less than 6 per cent, adding that "even though in normal times a greater rate of return may be advisable, the commission feels that during the present reconstruction period justice to the public requires distribution of the war burden." Upon this basis the commission estimated that the company would need a net operating income of about \$900,000, and after disallowing as rate factors recent increases in maintenance and damage allowances, the commission determined that \$300,000 should be raised through a rate increase.

THREE METHODS SUBMITTED

Continuing, the commission said:

"The company through its expert witness, Prof. Albert S. Richey, submitted three methods of raising additional revenue, one an increase to 7 cents in the flat rate of fare; another, a charge of 2 cents for transfers; the third, a two-zone system, with fares of 5 cents in the first zone and either an additional 5-cent cash fare in the second zone or tickets at the rate of 3 cents each. After considering all the arguments that have been advanced in favor of each of these methods and having in mind the additional revenue needed, the commission is of the opinion that the best means of raising that amount is by a charge of 2 cents for each transfer.

"The number of transfer passengers carried on the Washington Railway & Electric Company's system during the calendar year 1918 was 23,002,474; during the first four months of 1919 the number was 475,465, or an increase of 10 per cent over the corresponding months of 1918. Assuming that this rate of increase will obtain for the balance of the present calendar year, the commission estimates that the number of transfer passengers for that period will be 15,277,923, which at 2 cents each will amount to \$305,559. There may be some

falling off in the number of transferring passengers when a charge is made for that privilege, but the extent to which this will affect the revenue is problematical and will not be considered at this time.

"The other electric railways in the District of Columbia, namely, the Capital Traction Company, the Washington-Virginia Railway, and the East Washington Heights Traction Railroad have made no request for increased revenue, and if these companies were in no sense competitive with the Washington Railway & Electric Company and were serving different parts of the district, the commission might be justified in authorizing rates of service for the Washington Railway & Electric Company different from those authorized for the other companies.

"The Capital Traction Company, however, is to a very large extent in competition with the Washington Railway & Electric Company, as is the Washington-Virginia Railway. If a charge for transfers were made on the Capital Traction Railway or Electric Company's system and not on the lines of these two companies a very large amount of traffic would be diverted from the Washington Railway & Electric Company's system to these two companies; and if this were done the probable decrease in revenue from this source would more than offset the increase in revenues due to the charge for transfers.

"The East Washington Heights Traction Railroad does not come into competition with any of the other companies. Its line is very short, so that the commission will not order any change in the present free issue of transfers between this company and the Capital Traction Company.

"The imposition of a charge for transfer service has long been recognized as justifiable when increased revenues for an electric railway system must be provided. It does not create a barrier to the use of the public as a whole as would an increase in the flat rate, and it does add the burden to those passengers who are subject to the extra service involved in a transfer. As a general rule, the burden will fall upon long-haul passengers rather than short-haul passengers.

"When this commission required the companies to grant free inter-company transfers, it did so upon the theory that so far as possible the street railway systems of the city should be treated as one. In applying this charge to both intra-company and inter-company transfers, the same theory is adopted.

"It is the present practice on several of the lines of these companies to issue transfers or identification checks to passengers presenting transfers from other lines either of the same company or of other companies. If such a charge were proposed for such transfers were applied without distinction, it would require some passengers now paying 5 cents for a ride between two points involving the use of two transfers or a transfer and an identification check, to pay more for the same ride. To avoid this excessive rate of fare for such transfers the commission is of the opinion that no charge should be made for the second transfer or identification check.

"The 2-cent transfer charge took effect on June 1, 1919, and will remain in force until Jan. 1, 1920. On Jan. 1,

Spokane Increase Disappoints

According to figures compiled by Henry J. Bender, superintendent of public utilities in the office of Mayor Fasset, the financial troubles of the railways there have not improved with the increase in fare to 6 cents, which took effect early in April. While the revenues of the Washington Water Power Company from its city lines increased \$1,263, or 6 per cent, during April, this did not meet the increase in wages made to the men on the strength of the advance in rates. The wage advance had been estimated to cost \$4,000 a month. The company sustained a loss of 1 1/2 per cent in travel.

The earnings of the city lines of the Spokane & Inland Empire Railroad increased \$1,279, or 10 per cent, during April, while the loss of travel was only 4 per cent. The more favorable showing by this system is believed by Mr. Bender to be due to the longer hauls. He thinks the slump in travel was mostly in the short hauls. The traction company also increased the wages of its men 6 cents an hour at the time the increased fares went into operation.

When the question of the increase of 20 per cent in carfares was under consideration by the City Commissioners, the railway managers said that there would be a slump in travel but thought that the 6-cent fare would bring an increase of 15 to 16 per cent in revenues. The actual results of the first month's showing have been disappointing and have demonstrated the need for speedy action to improve conditions.

Waldo G. Paine, traffic manager of the Spokane & Inland Railroad, stated that there was some question in the minds of railway men as to whether a flat increase of fare was the proper remedy. He referred to the zone system as the alternative.

Permanent Increase Denied

The Public Utility Commission of Maine has refused the application of the Lewiston, Augusta & Waterville Street Railway, Augusta, to make permanent the 7-cent fare adopted by the company in June, 1918, with the approval of the commission. The commission has, however, ordered that the schedule which has been in effect "be continued for one year from June 1, 1919, unless sooner canceled by the commission." The commission is "convinced from our examination of the accounts of the company, and from our general knowledge of conditions on this particular railway and on the electric railways generally throughout the State and throughout the country, that no reduction in fares is at present warranted." The commission commented as follows on the results so far obtained:

The company at the hearing on May 21 this year presented a statement of its operating revenues and expenses for the years 1913, 1914, 1915, 1916, 1917 and 1918, and a detailed statement of its revenues and expenses by months from June, 1916, to

May 1, 1919. This statement shows that while the revenues since June, 1918, have been materially greater (with the exception of one or two months) than they were in either of the other years, it also shows that the cost of operation has in most of the months outrun the increase in revenue. It has resulted in the necessity of the passing by the company of its dividends on preferred stock and since October, 1918, has resulted in a deficit each month—such deficit ranging from \$1,751 in April of this year, up to nearly \$20,000 in October, 1918, and it shows that for the calendar year of 1918 the deficit was \$135,915 and that the deficit for the eleven months ending May 1, 1919, was \$57,680.

This latter deficit is, however, substantially less than for the same period a year previously, when the deficit was \$81,759. While the statement is not entirely encouraging, it is not anywhere near as discouraging as were the conditions the company faced a year ago. But in spite of the better showing during the past year a substantial deficit still exists, and the company faces the proposition that wages will probably remain, for a time at least, at the present level and other costs of operation will not be materially lessened for a considerable period of time.

Portland Company Wants Fare Increase

The application of the Portland (Me.) Railroad, included in the system of the Cumberland County Power & Light Company, for a 7-cent fare was formally presented to the Public Utility Commission of Maine on May 26 by A. H. Ford, vice-president and general manager, Mr. Ford in his petition stated that the Portland Railroad operated in 1918 with a deficit of \$110,255, and that for the first four months of the current year the deficit has been \$112,038.

It was further shown at the hearing that the 6-cent fare schedule has been operative for two months, and that there had been a substantial increase in gross passenger earnings, but that the company still fails of earning its operating expenses and rentals. Furthermore, expenditures for railroad improvements and municipal improvements which must be made this year will probably produce a heavy deficit for 1919.

Mr. Ford introduced a letter from Prof. Albert S. Richey supporting his contention. The following schedule of proposed changes drawn up by Professor Richey was also submitted to the commission:

- Mile zones, transfer limits, etc., to remain the same.
- Rate of fare—by ticket—2 1/2 cents per mile.
- Rate of fare, if paid in cash—3 cents per mile.
- Minimum fare, by ticket—3 miles, 7 cents.
- Minimum fare, by cash—3 miles, 9 cents.
- Transfer privileges as at present.

Professor Richey suggests that while the new schedule appears unequal to furnishing the total revenue needed, relief through legislation from unjust burdens as to paying, taxation, etc., would meet the balance of deficits as now appear inevitable.

It is proposed to charge 2 1/2 cents per mile by ticket or 3 cents per mile for cash fares, with a minimum fare of 7 cents by ticket and 9 cents by cash. It is estimated that an increase of 10.15 per cent in revenue of the company will follow the introduction of the new schedule.

California Interurban Wants More

The Oakland, Antioch & Eastern Railway, Oakland, Cal., has filed with the Railroad Commission an application for authority to increase its passenger fares on its commercial line between Oakland and Sacramento. The petition asks the increased fares asked for are mainly between points competitive with the United States Railroad Administration lines, and are in all but a few instances the same and in no cases higher. The increase in rates is necessary, according to the company, because of the increase in cost of operation and because the revenue is insufficient to pay operating charges and a reasonable return upon investment. Comparative proposed and present rates follow:

	(One-way Fare)	
	Proposed	Present
San Francisco and Sacramento	\$2.70	\$2.50
Oakland and Sacramento	2.55	2.50
Oakland and Antioch	1.45	1.35
Oakland and Bay Point	1.10	1.00
Bay Point and Canyon	0.80	0.70
Bay Point and Pinchot	0.75	0.65
Bay Point and Moraga	0.65	0.60

The company asks for a round-trip week-end fare between San Francisco and Sacramento of \$3.60 instead of the present rate of \$3.35 and a round-trip week-end fare between Oakland and Antioch of \$2.25.

Fairmont Company Gets Increase

The Public Service Commission of West Virginia handed down a decision on May 27 granting the Monongahela Valley Traction Company, Fairmont, W. Va., a uniform 7-cent fare on all city lines and on all zones of the interurban lines. The company operates about 150 miles of track. In addition to the fare increase the commission established a new schedule of power rates giving an average increase of approximately 20 per cent.

The new rate affects principally the cities of Fairmont and Clarksburg. The increases in passenger rates were from 5 to 7 cents in the cities, and from 6 to 7 cents on the interurban line, except between Fairmont and Barrackville. Increase between these places was protested and the commission will further investigate regarding it.

An extensive publicity campaign, conducted by Glenn Marston, New York, was of material assistance in enabling the company to secure increased fares.

The publicity campaign was for the purpose of making clear to the general public the necessity of increased rates if the property was to be maintained in first-class condition. Much of the company's property is situated in the heart of the West Virginia coal fields, and the employees of the coal companies have secured large wage increases since 1914. They were quick to realize the increased costs to which the railway was subject. There were only two protests to the commission during the legal period preceding the hearing. Both of these were withdrawn when the conditions were made clear. The absence of protests is attributed to the efficacy of the publicity campaign, which went thor-

oughly into all phases of operating conditions and showed wherein the company was subject to the same increases in living cost as the private citizen. The company was represented by George M. Alexander, president.

New York Commissions Urged to Act

Joseph K. Choate, chairman of the committee on ways and means to obtain additional revenue for the New York State Electric Railways, on June 5 sent a letter to Chairman Lewis F. Nixon of the Public Service Commission of the First District of New York, and F. R. Hill of the Second District, enclosing copies of correspondence between himself and Governor Smith relative to an investigation of the electric railway situation in New York State, and urged upon the two commissions that following the suggestion of Governor Smith they institute an investigation of the traction situation in both the first and second districts with a view to making recommendations for corrective and remedial legislation at the next session of the Legislature.

Mr. Choate's letter was written at the suggestion of the Governor, who had been previously requested, by Mr. Choate, in behalf of the committee, to appoint a committee of citizens for the same purpose.

Transportation News Notes

Wants Six Cents in Ashtabula.—The Ashtabula (Ohio) Rapid Transit Company has asked the City Council of Ashtabula for a new franchise which will provide for a 6-cent fare. Some months ago the company asked for a 7-cent fare. This was refused.

Six-Cent Fare Continued.—The 6-cent fare of the United Railways, St. Louis, Mo., was continued in effect for sixty days by order of the Public Service Commission of Missouri on May 29 to give City Counselor Daues of St. Louis an opportunity to study the financial exhibits of the railway. Mr. Daues did not oppose the temporary continuance of the 6-cent fare. At the end of the sixty-day period the commission will set a date for a hearing on the general subject of railway rates in St. Louis.

Fare Prospects Brighter.—The hearing of the application of the Topeka (Kan.) Railway for an increase in fare to 6 cents will be held by the Public Utilities Commission on June 10. On a previous application the commission denied the increase. Speaking informally, a member of the commission is

reported to have said that there was no doubt that railway expenses had increased materially and that the Topeka Railway would have a chance to prove its financial condition.

Canton-Massillon Fare Controversy.—It is believed the Northern Ohio Traction & Light Company, Akron, Ohio, will not accept the franchise prepared by the Stark County Commissioners for the line between Canton and Massillon, Ohio, as long as it contains a provision fixing the rate of fare. The company has asked for another conference with the commissioners for the purpose of adjusting the fare question. The rate incorporated in the draft is 10 cents.

Jitneys Want Seven Cents.—The members of the Long Branch (N. J.) Auto Bus Association have threatened to stop operating their machines unless the City Commission passes a 7-cent fare ordinance or moves to repeal the ordinance under which bonds may be given. Some of the jitney drivers say they have to mortgage their cars to raise the premium on the bonds. The drivers say the public is willing to pay the higher fare. The business men of Long Branch have petitioned the City Commission to repeal the bond ordinance.

Akron Would Enforce Service Requirement.—A resolution has been introduced in the City Council at Akron, Ohio, to appoint a committee of four to employ counsel to take action against the Northern Ohio Traction & Light Company to enforce the clause in the present franchise which provides for adequate service. Under the resolution engineers and accountants may be employed to investigate the service. As a means of enforcing the requirement the resolution provides for the reduction of the jitney license fee from \$25 to \$2 a year in order to increase the jitney service.

One-Mile City Line Asks Increase.—Application has been filed with the Public Service Commission for the First District of New York by the Van Brunt Street & Erie Basin Railroad for permission to increase its rate of fare from 3 cents to 4 cents. The distance traversed by the line, from Hamilton Ferry to the Erie Basin, is a trifle more than 1 mile. The company buys its power from the Brooklyn Rapid Transit Company. The application says the wages of its employees have been increased from \$3 to \$3.60 a day, that there soon will be a further increase to the standard wage of \$4.10, and that the Brooklyn Rapid Transit Company has raised the price of electric current.

Freight and Express Service in Kansas City.—A freight and express service over the lines of the city is contemplated by the Kansas City (Mo.) Railways. Already the company is hauling rock and other building materials for contractors, and contracts for hauling paving materials to con-

tractors building streets near car lines probably will be made by the company. The freight business will be handled so as not to interfere with passenger traffic, and much of it will be hauled at night. Another source of revenue to the company is expected to develop through an express system. The plans are now being worked out. The express cars will handle cross-town shipments to district stations.

Slight Fare Reduction in Cleveland.—Fares on the lines of the Cleveland (Ohio) Railway will be reduced to eleven tickets for 50 cents with a 1-cent charge for transfers, starting on July 1. The present fare is 5 cents with a 1-cent charge for transfers. Announcement of the change in fare was made by Street Railway Commissioner Fielder Sanders after receiving the report of the earnings and expenses of the Cleveland Railway for April. This report showed that the interest fund, the fare barometer, climbed \$205,468 in April, making the total interest fund on May 1 \$568,700. When the fund reaches \$700,000 the fare goes down. Indications for May were that the fund would climb above the \$700,000 mark.

Obtaining Local Consents First.—The villages of Port Chester and Rye have agreed to an increased fare on the lines of the New York & Stamford Railway, which operates between New Rochelle, N. Y., and Stamford, Conn. The towns of Rye, Harrison and Mamaroneck, and the villages of Mamaroneck and Larchmont have not taken action. The company seeks approval before putting the case for an increased fare before the Public Service Commission. Under the new arrangement, a 5-cent fare will give a ride within the village limits, but another fare must be paid after the line is crossed. Free transfers from the main line to local lines or vice versa are eliminated. Three cents will be charged for transfers.

Basis of Kingston Increase.—The Public Service Commission for the Second District of New York recently authorized the Kingston (N. Y.) Consolidated Railroad to put a 6-cent fare into effect for a period of one year from April 15. The company operates a street surface railroad about 8 miles in length in the city of Kingston. The basis of the complaint in a general way was the large increase in operating costs caused by the war. It is interesting to note that while the petition in this case was filed in June, 1917, the only ground on which an increase could possibly be considered was the estimated figures for the year 1919. The local authorities appeared and formally objected to the proposed increase, but did not cross-examine the petitioner's witnesses or introduce any evidence, the Mayor stating for the record that if a *prima facie* case were made the city would be satisfied with the determination of the commission increasing the fare.

Personal Mention

French Electric Railway Commission Here

Its Members Are Studying American Electrification Practice in Numerous Cities

An official commission of French electric railway engineers, interested in railway electrification, is visiting this country. The commission is made up of the following members: Chairman, Professor Mauduit, professor of electrical engineering, Nancy University; Major D'Anglards, official representative, Minister of Public Works; and Messrs. Balling, chief engineer; Parodi, chief electrical engineer, and Sabouret, assistant manager, Paris-Orleans Railway; Japiot, chief mechanical engineer, and Ferrand, electrical engineer, Paris, Lyons & Mediterranean Railway; Debray, electrical engineer, and Barillot, electrical engineer, French State Railway; Bachelery, assistant manager, and Leboucher, assistant motive power superintendent, Midi Railway.

The commission has made an inspection of the various properties around New York, and has visited among other cities New Haven, Schenectady, Philadelphia, Washington, Bluefields, Altoona, Pittsburgh, Erie and Chicago. It is in the last named city that the commission has been this past week. The Chicago, Milwaukee & St. Paul Railway electrification will be visited before the party returns East.

C. E. Martin, formerly auditor of the Pittsburgh, Harmony, Butler & New Castle Railway and the Pittsburgh, Mars & Butler Railway, Pittsburgh, Pa., has been appointed secretary and treasurer succeeding P. E. Seddon, resigned.

J. R. Perkins has been named as assistant to J. S. Pevear, general manager of the Birmingham Railway, Light & Power Company, Birmingham, Ala. Mr. Perkins is an engineer and an expert operating man. He has been connected with the operating department of the American Cities Company since 1913.

Anton G. Hodenpyl has retired from the presidency of the Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., on account of ill health. He will be succeeded by George E. Hardy, vice-president of the company. Mr. Hodenpyl has been president of the company since its organization about ten years ago. He will remain a member of the board of directors.

J. M. McElroy, general manager of the Manchester (England) Corporation Tramways, who has been spending a

considerable period at Torquay, the noted seaside resort, has now fully recovered and is back in Manchester. This will be good news to those who had the pleasure of meeting Mr. McElroy when he visited this country some time ago to study American operating practices with a view toward relieving traffic congestion at Manchester.

Clarence K. Reed has been appointed general auditor of the Boston (Mass.) Elevated Railway. Mr. Reed is a native of Boston. He has been in the employ of the Boston company since 1902. Previous to that he was engaged for a short time in commercial activities. He began railway work at Boston as invoice clerk in the auditing department and has successively filled every post in the department of which he is now the head. Mr. Reed is at present a member of the New England Street Railway Club committee on electric railway mail compensation, and is actively preparing for the hearing to be held at Boston on this matter on June 13 by the Interstate Commerce Commission.

George M. Wood has been appointed supervisor of power plants for the Connecticut Company, New Haven, Conn. Mr. Wood has been connected with the Connecticut Company in the power department for a period of eight years, first serving for two years as draftsman and later being connected particularly with erecting jobs on the company's power plants and heating systems. In 1913 he was made assistant engineer in the operating department and in 1915 was transferred to the construction department. Mr. Wood is a native of the town of Branford, near New Haven, where he still resides. He was graduated from the Sheffield Scientific School of Yale University, in 1908, from which he holds the degree of Ph. B.

Robert L. Norton, publicity manager of the Boston (Mass.) Elevated Railway, has resigned to become Washington correspondent of the Boston *Post*. Mr. Norton was formerly political editor of the *Post*, and succeeded J. Harvey White in the Boston Elevated organization upon the latter's resignation several months ago. Mr. Norton left for Washington on May 21 to open an office at that city, the *Post* having never been directly represented among Washington correspondents until now. In his few months tenure of office on the Boston Elevated, Mr. Norton made many friends and performed excellent service in co-ordinating local newspaper interest in the operation of the elevated railway by its public trustees and the publicity requirements of the latter work.

W. J. Grambs, after almost two years service for the government in the recruiting service of the United States Shipping Board, has returned to private life, and will devote his time to the office of manager of auxiliary operations of the Puget Sound Traction, Light & Power Company, Seattle, Wash. Mr. Grambs tendered his resignation as supervisor of the recruiting service to take effect on May 1, but was requested to continue in charge until June 1. Mr. Grambs was appointed section chief for the Pacific Northwest in August, 1917, in charge of the government free navigation and engineering schools for the training of deck and engineer officers. In May, 1918, he was appointed supervisor of the sea training bureau of the United States Shipping Board in the Northwest.

H. H. Crowell, a vice-president of the Michigan Railway and the Consumers' Power Company, who has represented the Commonwealth Power, Railway & Light Company interests for the last eight years, has been elected a vice-president of the Electric Bond & Share Company, New York, N. Y., to fill the vacancy recently created by the death of George E. Clafin. Mr. Crowell has been identified with the electrical industry since 1889, when he entered the service of the Thomson-Houston Electric Company. Later he was New York State agent of the Thomson-Houston Motor Company and assistant New York State manager of the Thomson-Houston Electric Company, until the organization of the General Electric Company, in 1893. He was manager of the Syracuse and Buffalo offices of the General Electric Company until 1906 when he became chief engineer of the Commission of Gas and Electricity of New York State and later of the Public Service Commission for the Second District. Since 1911 he has been with the Commonwealth Power, Railway & Light Company properties in Michigan. Mr. Crowell is a member of the national committee of public utility conditions, which has represented the public utilities in Washington during the war.

A. G. Carson, now manager of the Manitowoc & Northern Traction Company, Manitowoc, Wis., and also of the business of the Wisconsin Public Service Company in Manitowoc and Two Rivers, including the Manitowoc steam station, has had his field of operations extended by the additional appointment as general superintendent of the Wisconsin Public Service Company, Green Bay, Wis. This appointment adds to his present duties the supervision of the electric light and power department and the railway department of the Public Service Company at Green Bay, reporting directly to C. R. Phenice, vice-president and general manager. Mr. Carson will divide his time between Manitowoc, Two Rivers and Green Bay, taking charge of the railway department and the electric light and power department at Green Bay

at once, thus becoming principal assistant to Mr. Phenicie, who, through the relief afforded by Mr. Carson will be able to spend more of his time at Manitowoc and Two Rivers. Mr. Carson was born in Michigan thirty-three years ago. Before coming to Manitowoc he was superintendent of the Eastern Wisconsin Electric Company, Fond du Lac. He was chief engineer of the Wisconsin Electric Railway and the Eastern Wisconsin Electric Railway & Light Company, Oshkosh, for several years when J. P. Pulliam was general manager and Clement C. Smith president of those companies. The assignment of a larger field of work to Mr. Carson is in recognition of his long and efficient service with the organization.

Leake Carraway, who for some time has been in charge of publicity work for the Southern Public Utilities Company at Charlotte, N. C., has severed his relations with the company to become publicity director in charge of public relations for the Virginia Railway & Power Company. He will handle the company's affairs in Norfolk, Berkeley, Portsmouth, and Newport News. He will report directly to President T. S. Wheelwright at Richmond. Mr. Carraway went to Charlotte in 1911 as a free lance on the *Charlotte News* from the *Arkansas Democrat* the largest afternoon paper in that State, of which he was editor-in-chief. A year later he was elected secretary of the Greater Charlotte Club and during his term as secretary took active part in a number of civic improvements, among them being the installation of the White Way on Trade and Tryon Streets and also in the putting in of the under pass on East Trade Street. Since his connection with the Southern Public Utilities Company, he has taken a very active interest in newspaper work outside of his regular duties, "covering" many big stories for the papers and keeping in intimate contact with the newspaper men of Charlotte to whom he has been "a friend in need" many times. He has always maintained a policy of frankness with the newspapers and has built up a spirit of understanding between his company and the citizens. To be exact, Mr. Carraway entered upon his duties at Charlotte five years ago. He was one of the first men regularly employed in work of the kind, and so far as the South is concerned he was a pioneer. He edited the company's monthly magazine, which was both informative and inspiring. The *Charlotte Daily News* regards his going as a distinct loss to that city and the other communities which the company served, for as it says "Mr. Carraway has served to strengthen the ties that exist between employer and employee" and "has aided in no small measure in the creation of a feeling of sympathy and co-operation between these two factors within the organization. The results of his work at Charlotte have been the subject of comment in the ELECTRIC RAILWAY JOURNAL.

Obituary

Jesse W. Lilienthal Dead

President of City Electric Railway at San Francisco Dies Suddenly While at Luncheon

Jesse W. Lilienthal, president of the United Railroads, San Francisco, Cal., dropped dead of apoplexy in the midst of a luncheon address at the St. Francis Hotel, San Francisco, on June 3.

When the United Railroads became involved in financial tangles and, worse still, had incurred the opprobrium of the public, it was determined that a new leader must be found to fill the president's chair and rehabilitate the affairs of the company. Mr. Lilienthal was urged to undertake this work, and although he had an aversion to politics he was induced to accept this commission as an opportunity to accomplish a great work. In order to give his attention to affairs of the railroads he had to relinquish much of his share in activities of the law firm of Lilienthal, Raymond & McKinstry, of which he had been the senior member for many years. Under his leadership the United Railroads made very considerable progress in gaining public esteem, and the policy of this company on the subject of public relations has become known the country over.

Mr. Lilienthal personally conducted the negotiations with San Francisco city authorities on the questions of conflict with municipal railway rights and the purchase of the United Railroads by the city.

Mr. Lilienthal was born in 1855 in New York City. While still a young man his family removed to Cincinnati, Ohio, where he received the greater part of his primary education. Finishing his course in the public schools, Mr. Lilienthal entered the University of Cincinnati, from which institution he transferred to the Harvard Law School, receiving his degree there in 1876.

Mr. Lilienthal's career as a lawyer began in New York City, where he practiced for a period of fourteen years after his graduation from college. Owing to the ill health of his wife he moved to San Francisco in 1894. Since then he has been a moving factor in the business life of that city.

Among his other interests, Mr. Lilienthal was a director of the Oakland, Antioch & Eastern Railway and was a director or in other ways active in ten or twelve other organizations in the San Francisco Bay region. He was president of the Society for the Study of the Exceptional Child and had been appointed by the Judge of the Superior Court to membership of the probation committee of the Juvenile Court.

It is stated that Mr. Lilienthal's death will not have any effect upon the

plans for the financial readjustment of the United Railroads, announcement of which is expected to be made shortly after a study of many months.

W. E. Blake, superintendent of the Underground Electric Railways, London, England, died on May 8 following an operation. Mr. Blake, a few weeks previously, was directing the removal of a car when he slipped and received a slight injury to his leg. Septic poisoning resulted and it was necessary to amputate the limb. Mr. Blake, who was fifty-five years of age, was unable to survive the shock of the operation. Those who knew this jovial, generous and hard-working operator will extend their condolences not only to his family but to every one whose daily association with him made a pleasure out of their daily task. Some of Mr. Blake's work with the Underground Electric Railways will be referred to in one of the forthcoming articles on British electric railway practice.

Charles Whitman Wetmore, formerly for many years president of the North American Company, New York, N. Y., which controls the electric railways in Milwaukee, St. Louis and other cities, died on June 2 at his summer home in the sixty-fifth year of his age. Mr. Wetmore was born in Michigan. He was educated there and at Harvard, and was graduated from the law school in 1877. After graduation Mr. Wetmore went to New York and began the practice of law with the firm of Barlow & Olney, which afterward became Barlow & Wetmore. In addition to his connection with the North American Company Mr. Wetmore was one of the organizers of the Montana Power Company. About five years ago he retired from active business and lived in Surrey, England, until the war broke out, when he returned to the United States and took up his residence in Washington.

George T. Hanchett, consulting electrical and mechanical engineer of New York City, died at the Battle Creek Sanitarium on May 6. Mr. Hanchett, who was born at Hyde Park, Mass., Sept. 4, 1871, was a graduate of the Massachusetts Institute of Technology. In 1895 Mr. Hanchett joined the editorial staff of the *Electrical World* and later, after he had opened an office as consulting electrical engineer in New York, became a frequent contributor to the ELECTRIC RAILWAY JOURNAL. In 1900 he published a book entitled "Electric Railway Motors," containing in part articles on this subject which he had written for this paper. Other work which he did in the electric railway field was the invention, with F. B. Sage, of a direct reading ohmmeter, and the perfection and installation of a sectional third-rail system in the Belt Line tunnel of the Baltimore & Ohio Railroad. Mr. Hanchett suffered a stroke of apoplexy a year ago, and the recurrence of that trouble is given as the immediate cause of his death. He was a Fellow of the American Institute of Electrical Engineers.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Better Purchasing of Trolley Wheels

One Manufacturer Reports Volume of Sales This Year Running 33 Per Cent Ahead of Last Year

From all appearances there is a returning confidence among purchasers of some railway material. In the case of trolley wheels and harps there have been found instances where the orders have taken on a rather normal size.

There is without doubt sufficient purchasing to keep the overhead current collectors in operating shape, but when a manufacturer states that he believes railway people are buying these parts of equipment in quantities beyond their immediate requirements, there is added hope in the market.

One Eastern company just ordered 1000 trolley wheels, and other smaller size orders have come to notice. One manufacturer's sales to date are ahead of last year's sales for the corresponding period about 33 per cent. With this in mind it hardly seems that prices will have to be guaranteed to stimulate buying. With rising copper there has been found no intention on the part of manufacturers of copper and brass goods to guarantee any prices.

Some of the large railways are purchasing in better quantities than in the past two years, and are ordering with the prices open. This, it seems, shows the trend of thought regarding present prices where the financial conditions of the road permits of buying.

There are no indications that prices will be lower. In fact, with the higher price of copper it seems more likely that collectors will reach higher price levels before there will be any indications of a recession.

Cotton Advance Sends Bell Cord Higher

Prices Are Up Four and Five Cents a Pound, with Further Increase Anticipated

The rise in price of raw cotton, which took effect about two weeks ago, has left its mark on the price of woven cord for bell ropes and register cords. This product has been found up 4 to 5 cents a pound over the price of two weeks ago. It cannot be said, however, that the demand for cord for these purposes has materially increased, as merely sufficient quantities are being purchased by traction companies to keep their cars equipped. No evidence has been found where any amount of cord has been purchased for stock.

With the signing of the peace treaty it is expected that exporting of cotton will set in in great volume. The present cotton yield is only about 75 per cent of normal, it is stated, so it is reasonable to expect that the heavy foreign demand with the curtailed supply will result in much higher prices. One manufacturer of cord stated that he would not be surprised to see cotton rise to a price level of 50 or 60 cents a pound.

It is not improbable that bell cord will go higher as it is practically the same cord as is used for window weights. The resumption of building in large volume will undoubtedly have its effect on this market with the result of higher prices.

Manufacturing conditions are somewhat better than a few months ago. Although labor is not found any more efficient or any lower in price, it is easier to procure. For the present there is reported sufficient raw material on hand to satisfy present needs.

Copper and Brass Products to Reach a Higher Level

Gradual Advances Expected to Bring Rubber-Covered Wire Up to 25 Cents or Better in the Fall

Within the past month buyers have seen copper products such as wires and brasses advance on a rise of a little more than 1 cent in the copper market. Indications are that this is but the first of a series of rises to last well into the fall months.

In spite of the fact that there are immense stores of copper available, current quotations may be considered as a bottom level. Current prices are not to be taken as any indication of the relation between supply and demand. Psychology rather than the old laws of economics govern the present market.

Copper has been steady now for a couple of weeks. Just as soon, however, as any consumer demand develops prices will advance again, and they will continue to advance just as long as buying continues. When buying begins to ease up price will be stationary. There is no indication that a slump in buying will be accompanied by a falling market.

Advances will probably be made in steps of about 1 cent at a time. The upper limit which should occur in the fall is expected by those in a position to forecast more or less accurately to reach and perhaps exceed 20 cents. That would put rubber-covered wire on a 25-cent base or higher.

Condition of Market for Car Seatings

Demand Better for Repairs, but New Work Is Dull—Supply of Rattan Is Better

The activity in the car seat market is not pronounced. The small number of new city and interurban cars where plush or imitation leather might be used has kept that end of the market dull. The one-man type of car which is coming quite generally into vogue now employs any one of a variety of seat coverings and materials, so that with only a rather light car market anyway, the business created for each kind of material is light. There has been found a better market in repairs, but this in itself is indeed light enough.

The use of waterproofed veneers for car seats has been reported to be in slightly better demand. It was found necessary during the influenza epidemic to leave windows open, and during inclement weather some veneer seats became wet and warped. Slats are rather giving way to veneers on account of their excess weight.

The supply of rattan is coming through from the Orient now in better shape than during the war. No reduction in cost is anticipated so long as freight rates continue high and the Oriental laborers receive a higher wage. There has also been reported a shortage in cargo ships.

Steel Poles Find Good Foreign Demand

Exports of Expanded Type Have Grown in Spite of War—Domestic Business Continues Good

According to A. J. Bates, president Bates Expanded Steel Truss Company, export of the company's steel poles for electric railway service has grown during the last four years in spite of the handicaps set up by the war.

Among the first foreign customers was the Swedish State Railways, which bought these poles for the famous Kiruna-Riksgränsen line—the only electrification within the Arctic Circle! The results on that line have been so satisfactory that the Norwegian State Railways has made the same pole standard for the forthcoming 45-mile electrification between Christiania and Drömmen. From Italy, the demand became so insistent that an Italian company, Società Anonima Italiana Espansione Ferro Bates, has been organized, with headquarters at 2 Salita del Carmine, Genoa. The machinery for this com-

pany has already been shipped. Negotiations are now under way for the formation of a British company.

Still more remarkable are the wartime shipments to such remote spots as Johannesburg, South Africa, and Bombay, India. Through Charles T. Stork & Company, New York, an order came for electrification material for Soerabaya, Java, while Colin S. Douglass of Sydney, New South Wales, has secured orders from properties like Perth, West Australia; Adelaide, South Australia; Sydney, New South Wales, and Hobart, Tasmania. A good domestic business also has been done.

More Manufacturing in Pacific Coast Shops

Jobbers Carry Smaller Stocks in Far West, but Manufacturers Are Increasing Supplies

Electric railways of the Pacific Coast during the war learned to use their own shops for manufacturing far more extensively than ever before. Not only high prices, but delays in deliveries or even the difficulty of getting orders filled at all, made it necessary to turn the repair shop into a factory wherever possible. This was in keeping, too, with the policy that a higher degree of efficiency must prevail in maintenance work. The junk pile on hand was resorted to and nothing was added to it which could, by repair and reconstruction, be made to serve a purpose somewhere.

Trolley poles worth \$2.60 in 1915

cost \$4.25 last November and \$4 now. In face of the difficulty in getting funds for any purchases whatever, trolley poles that would formerly have been scrapped as damaged beyond repair are now carefully rebuilt. Not only does this avoid the higher price but it keeps the cost in the shop account which ordinarily can be defended more readily than can the purchase of new equipment. Four-inch trolley wheels that sold for 68 cents in 1915 were worth \$1.40 last November and sell for \$1.35 now.

Pearing a drop in prices some jobbers and manufacturers' agents are carrying light stocks. Where the normal stock used to be twenty-five track jacks, for example, ten are now carried. On most lines (excepting supplies) the manufacturer has given the agent a price change protection up to July 1. In some lines, say about 25 per cent, this protection extends to next January. Manufacturers, on the other hand, are generally carrying heavier stocks than before the war with the idea of giving better service and while there is practically no movement at the present time there is an optimistic feeling that the electric railways are here to stay, that profitable freight business is in sight for the interurbans and that conditions must improve.

The probability of price reductions is considered unlikely until labor costs and taxes decrease. There has been some slight drop in prices but in the main they are steady and not considered likely to decrease. Changes in the value of copper alone have not and cannot materially affect this condition.

Rolling Stock

Berkshire Street Railway, Pittsfield, Mass., it is announced, has sold ten large open-type cars, which are being shipped to Knoxville, Tenn.

Kansas City (Mo.) Railways, it is reported, has placed in service on the Westport line ten safety cars. This completes the twenty-five safety cars, the equipment of which was given in these columns on April 5. An order was recently placed with the American Car Company for five more.

Track and Roadway

Kansas City (Kan.) Railways—New car line extensions in Kansas City, Kan., are being contemplated by the Kansas City Railways. It is planned to extend the Eighteenth Street line from Central Avenue south to Kansas Avenue. A new line will be built on Seventh Street from Central Avenue, south to connect with the Seventh Street viaduct, and in this event the Wyandotte line on Fifth Street from Riverview south to the Seventh Street viaduct probably would be abolished. The plans also contemplate the changing of the Sixth Street tracks from the private right-of-way at Riverview, to Sixth Street proper between Central Avenue, north to Riverview Avenue, where the present north and south line now connects with Sixth Street.

Trenton & Mercer County Traction Corporation, Trenton, N. J.—The Board

NEW YORK METAL MARKET PRICES

	May 15	June 5
Copper, ingots, cents per lb.	16.00	16 62½
Copper wire base, cents per lb.	17.25 to 18 00	18 25 to 18 75
Lead, cents per lb.	5 00	5 25
Nickel, cents per lb.	40.00	40.00
Spelter, cents per lb.	6.40	6 47½
Tin, cents per lb.	172.50	172.50
Aluminum, 98 to 99 per cent, cents per lb.	31.00 to 33.00	32.00 to 33.00

† Government price in 25-ton lots or more f. o. b. plant.

OLD METAL PRICES—NEW YORK

	May 15	June 5
Heavy copper, cents per lb.	13 50 to 14 00	14 50 to 14 75
Light copper, cents per lb.	11 00 to 11 25	11 75 to 12 50
Heavy brass, cents per lb.	7 00 to 8 00	8 00 to 8 50
Zinc, cents per lb.	5 00 to 5 25	5 00 to 5 50
Yellow brass, cents per lb.	6 50 to 7 00	7 25 to 7 75
Lead, heavy, cents per lb.	4 25 to 4 37½	4 50 to 4 60
Steel car axles, Chicago, per net ton.	\$23 00 to \$24 00	\$23 00 to \$24 00
Old carwheels, Chicago, per gross ton.	\$21 00 to \$22 00	\$21 00 to \$22 00
Steel rails (scrap), Chicago, per gross ton.	\$16 50 to \$17 00	\$16 50 to \$17 00
Steel rails (relaying), Chicago, gross ton.	\$16 50 to \$17 00	\$16 50 to \$17 00
Machine shop turnings, Chicago, net ton.	\$6 00 to \$6 50	\$6 00 to \$6 50

ELECTRIC RAILWAY MATERIAL PRICES

	May 15	June 5
Rubber-covered wire base, New York, cents per lb.	20	21
Weatherproof wire (100 lb. lots), cents per lb., New York	23.00 to 23.25	23.25 to 24.00
Weatherproof wire (100 lb. lots), cents per lb., Chicago	23.75 to 37.35	24.50 to 24.75
T rails (A, S. C. E. standard), per gross ton.	\$49.00 to \$51.00	\$49.00 to \$51.00
T rails (A, S. C. E. standard), 20 to 500 ton lots, per gross ton.	\$47.00 to \$49.00	\$47.00 to \$49.00
T rails (A, S. C. E. standard), 500 ton lots, per gross ton.	\$45.00 to \$47.00	\$45.00 to 47.00
T rail, high (Shanghai), cents per lb.	3	3
Rails, rider (grooved), cents per lb.	3 75	3 75
Wire nails, Pittsburgh, cents per lb.	3.25	3.25
Railroad spikes, drive, Pittsburgh base, cents per lb.	3 35	3 35
Railroad spikes, screw, Pittsburgh base, cents per lb.	8	8
Tie plates (flat type), cents per lb.	2.75	2.75
Tie plates (brace type), cents per lb.	2.75	2.75
The rods, Pittsburgh base, cents per lb.	3	3
Fish plates, cents per lb.	3	3
Angle plates, cents per lb.	3.90	3.90
Angle bars, cents per lb.	3.90	3.90
Rail bolts and nuts, Pittsburgh base, cents per lb.	4 35	4 35
Steel bars, Pittsburgh, cents per lb.	2 35	2 35
Sheet iron, black (24 gage), Pittsburgh, cents per lb.	4 20	4 20
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.	5 25	5 25
Galvanized barbed wire, Pittsburgh, cents per lb.	4.10	4.10

	May 15	June 5
Galvanized wire, ordinary, Pittsburgh, cents per lb.	3.70	3.70
Car window glass (single strength), first three brackets, A quality, New York, discount †	80%	80%
Car window glass (single strength), first three brackets, B quality, New York, discount.	80%	80%
Car window glass (double strength), all sizes AA quality, New York discount	81%	81%
Waste, wool (according to grade), cents per lb.	14 to 17	14 to 17
Waste, cotton (100 lb. bale), cents per lb.	8 to 12½	8 to 12½
Asphalt, hot (150 tons minimum), per ton delivered		
Asphalt, cold (150 tons minimum), pkgs. weighed in, F. O. B. plant, Maurer, N. J., per ton.	\$30.00	\$30.00
Asphalt filler, per ton.	\$2.90	\$2.90
Cement (carload lots), New York, per bbl.	\$3.05	\$3.05
Cement (carload lots), Chicago, per bbl.	\$3.13	\$3.13
Cement (carload lots), Seattle, per bbl.	\$3.13	\$3.13
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.59	\$1.66
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.61	\$1.68
White lead (100 lb. keg), New York, cents per lb.	13	13
Turpentine (bbl. lots), New York, cents per gal.	78	94

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

of Public Utility Commissioners of New Jersey has modified its recent demand that the Trenton & Mercer County Traction Corporation make immediate temporary repairs to the road at a cost of \$3,300 and agrees to President Rankin Johnson's plan to more permanently improve the system at a cost of \$55,000, if allowed a period of two years to make the changes. The board orders certain necessary repairs to the trackage be made at once and that these repairs be maintained in good condition by the use of a track welder.

Interborough Rapid Transit Company, New York, N. Y.—The work of constructing the elevated portion of the Pelham Bay Park branch of the Lexington Avenue subway from Whitlock Avenue to Pelham Bay Park has been started, following the execution of a contract between the City of New York as represented by the Public Service Commission for the First District and Terry & Tench Company, Inc., whose bid price for the work was \$586,700. The column foundations upon which the elevated structure will be constructed are already completed, so that the erection of the steel may progress at once. It is hoped to have practically all of the elevated construction completed by the end of the year, and a large part in service.

Cincinnati (Ohio) Traction Company—In a recent letter to Street Railway Director W. C. Culkins, Walter Draper, president of the Cincinnati Traction Company, states that most important changes in engineering structures along the routes of the system, involving the reconstruction of the Ida Street bridge and the bridge over the Canal at Ludlow Avenue and the reconstruction of various inclined planes, with the possibility of the abandonment of the Bellevue plane, will be made necessary by the substitution of new double-truck cars for single-truck cars on a number of lines.

Power Houses, Shops and Buildings

Southwestern Gas & Electric Company, Texarkana, Ark.—The Southwestern Gas & Electric Company will construct a repair shop, blacksmith shop, carpenter shop, paint shop, machine shop, woodworking shops, storage room and carhouse, all of fireproof construction. The cost will be about \$60,000.

Pacific Gas & Electric Company, San Francisco, Cal.—Plans are being made by the Pacific Gas & Electric Company for the early resumption of work in connection with the establishment of a hydro-electric power plant in the Big Bend of the Pit River with extensive power development in this district. The project is estimated to cost about \$12,000,000.

Chicago, Milwaukee & St. Paul Railroad, Chicago, Ill.—The 100,000-volt transmission line built by the Inter-

mountain Power Company from the Washington water power plant at Long Lake, Wash., to Taunton, the first station west of Othello, Wash., was recently completed at a cost of \$550,000. It is one link of the line to supply power for electrification of the Chicago, Milwaukee & St. Paul Railroad from Othello west to the Coast. The Chicago, Milwaukee & St. Paul Railway is building the transmission line from Taunton to Tacoma. Only a 17-mile gap between Beverly and Ellensburg remains. The line will be completed by the middle of next month. Electrification of one division of the railway, from Tacoma to Cle Elum, is expected to be completed between July 1 and 10. Between Cle Elum and Othello the work is partly done and will be finished in several months. Two divisions, between Avery, Idaho and Othello, are to be electrified later.

New Orleans Railway & Light Company, New Orleans, La.—For the purpose of facilitating current repairs and running maintenance, the New Orleans Railway & Light Company is installing additional machinery at a cost of \$8,000 in the Magazine Street shop. The equipment consists of a new and larger acetylene welder, a large lathe and a radial drill.

Trade Notes

Railway Audit & Inspection Company, Philadelphia, Pa., has opened a Boston office in Rooms 546-547 Little Building. H. G. Hathaway is in charge.

The Lincoln Bonding Company, Cleveland, Ohio, has opened a Chicago office at 504 Fisher Building. This new branch is under the supervision of W. C. Burdick, sales manager.

Inquiry No. 29434.—A man in Portugal requires machinery, rails and electrical materials for railways. He also desires an agency. Terms, letter of credit in New York. Correspondence may be in English.

Inquiry No. 29436.—A merchant in Italy desires to secure an agency from manufacturers for the sale of materials and supplies for electric railways. Terms, cash. Apply, using number, to Bureau of Foreign and Domestic Commerce, Washington, D. C.

Poole Engineering & Machine Company, Baltimore, has moved its general sales office from that city to 50 Church Street, New York. W. C. Tyler, formerly district manager at New York, has been appointed general sales manager in charge of all the selling activities of the company.

George Shields, for ten years purchasing agent of the American Car Company, of St. Louis, and later with the National Safety Car & Equipment Company since its organization, has become associated with the Dayton Manufacturing Company as sales representative, with headquarters at Dayton, Ohio.

Roller-Smith Company, New York, has appointed A. H. Savage its representative at St. Paul, Minn. Prior to 1914 Mr. Savage represented the Fort Wayne Electric Works in St. Paul and in 1914 he became a representative of the Wagner Electric Manufacturing Company of St. Louis, he now being in charge of the St. Paul office of that concern. He is also treasurer of the Dakota Light & Power Company of Flandreau, S. D., and president of the South Dakota Power Association.

Cafeteria for Kuhlman Employees.—The G. C. Kuhlman Company has opened at its Cleveland works an extensive cafeteria for its employees. The excellence of the appointments of this cafeteria in every particular were appreciated by a party of about 140, made up of electric railway and supply men, who visited the shops on March 23 as guests of D. B. Dean of the Kuhlman Company. A short account of the dinner was published in the issue of May 31, but the place of the dinner was incorrectly given in that issue as the Hollenden Hotel.

American Steam Conveyor Corporation, Chicago, announces the appointment of Charles H. Florandin, formerly of the National Electric & Welding Company, New York, as general manager of its Eastern territory with headquarters at 110 West Fortieth street, New York City. Mr. Florandin, who assumes charge of his new duties May 1, was born in France and received his technical education at the Lycée de Marseilles. He is an engineer by profession and upon coming to the United States did important work with the Brooklyn City Railway Company in the early days when the road was being electrified. After five years' service with this company he joined the C & C Electric Company, New York, where he held a responsible position with them for many years. After a brief connection with the Western Electric Company, he returned to the C & C Electric Company and later organized the National Electric & Welding Company. During the war Mr. Florandin was a member of the welding committee of the Emergency Fleet Corporation.

New Advertising Literature

Chicago Mica Company, Valparaiso, Ind.: Catalog No. 26 deals with "Mica-bond," electrical insulating material.

Unit Railway Car Company, Boston, Mass.: Bulletin describing new "unit" passenger and baggage car driven by steam engine mounted on the truck. The boiler is oil-fired and mounted in the front part of the car.

Curtain Supply Company, Chicago, Ill.: Revising its catalog and printed matter for reissuing in the form of bulletins illustrating and describing its various devices. The first of these is bulletin R-2 on the "Rex All-Metal Roller."