

# Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

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## Working and Fighting Must Go Hand in Hand

**B**EFORE we have gone very much farther in the present war those who are legitimately behind the lines must realize that their work is just as essential as that of the men in the trenches. Uncle Sam will give to millions of effective men the privilege and duty of working in this country while he sends other millions to France. If those who stay at home are to contribute their proportionate part to the winning of the war they must somehow get a firm conviction that they are in the fight to the finish. This is more difficult to do than it is for the men in the trenches because our soldiers are closer to the actual firing and trench digging. With the right spirit, however, a man can be just as much a patriot while twirling a controller handle, collecting fares, repairing a trolley wire, scraping a turbine bearing or winding a motor armature as he would be in bayoneting a Hun. There is less thrill to it, of course, but the two acts are intimately related.

For every man-hour of actual fighting at the front there must be hundreds of man-hours of work behind the lines. Fighting is intensive, behind-the-line work is extensive. Just as an apple is small compared with the tree which produces it, so the firing line is quite limited in extent compared with the millions of square miles of territory backing it up. It seems so obvious that the war must be won at home as well as abroad that the appalling and disheartening indifference which still exists is hard to explain.

Dr. Charles A. Eaton, of the Federal Service Section of the Emergency Fleet Corporation, in the course of his recent visits to the large shipyards was accosted by a burly ship carpenter. The latter asked the doctor what he thought he was looking at, and the doctor diplomatically replied: "A sturdy New England ship carpenter." The man replied "No, sir, you are looking at a blithering idiot who, until now, has not realized that in working at his trade here he is backing up his boy on the firing line." Probably thousands of men in the electric railway field have not yet awakened to the same realization. It is high time that they should do so.

## Put All War Transportation and Housing Under One Head

**T**HOSE who spend even a few days in Washington will begin to appreciate the difficulty of so vast a machine finding or co-ordinating itself overnight. While every man is burning to do his best, it would be a miracle to find no multiplication of effort!

At present the Ordnance, the Quartermaster's, the Labor and the Navy departments are grappling with the problems of local transportation as it affects their own workers. The Navy Department, for example, recently commandeered the defunct electric railway at Cape May, N. J., and set it to work. There have been occasions when Uncle Sam sent four different sets of representatives to look over a situation, each set quite ignorant of the doings of the others. Naturally the first comer seizes all the facilities in sight, much to the grief of the tardier departments.

Now with the formation of the passenger transportation service section of the Shipping Board there is available a government agency with a personnel drawn directly from the electric railway and related fields. As its basic assignment is to relieve our direst need—to help produce ships, ships and more ships—this section should be entitled to primacy in securing transportation relating to the building and equipping of shipyards and ships. It would be manifestly injurious to the national welfare to have the scores and possibly hundreds of utilities that are involved subjected to contradictory orders of different departments.

But we may go a step further than this co-ordination of coastal properties. If one section of local transportation specialists can do this best it should also be held responsible for inland electric railway transportation in serving cantonments, aviation fields, manufacturing and supply centers, etc. The Director-General's staff, as at present constituted, has no electric railway specialists on it, despite the fact that we have nearly 50,000 miles of electric railways. This has resulted in overlooking some valuable electric railway freight and passenger handling facilities. In one state, for example, an electric interurban has not been used for camp transportation despite lower fare and better facilities. There must

MAY 7 1918  
**Electric Railways Must  
Move More Freight**

*In the conviction that electric railway track is not being effectively used at the present time, and that its use in transporting freight is essential to the truest economy of expenditure of our national resources, the editors of this paper have arranged for a comprehensive analysis of the subject. Next week's issue will be largely devoted to the possibilities of hauling more freight on electric railway lines.*

be many cases like this, regardless of the opportunities of enlarging the rolling stock and extending the track of electric carriers at small outlay for big results. Obviously all problems of this character can be solved by co-operation between the service section and the Director-General's staff without disturbing the steam trunk-line and big terminal functions of the latter.

We believe it would also be eminently desirable to have the housing experts work hand in hand with the service section. Before going to the trouble and delay of getting thousands and thousands of tons of building material and countless workmen, it is but common-sense to let the transportation specialist determine if it is possible to transport the workers from near-by communities where many have lived for years. Let us bear in mind that 1000 tons of railway material may do more to improve the present industrial situation than 100,000 tons of housing!

### Union Leaders Should Translate Words Into Deeds

THE Amalgamated Association of Street and Electric Railway Employees of America recently took pride in publishing letters written by President Wilson, Secretary Daniels and other government officials in appreciation of the patriotic "declaration of policy" adopted by its general executive board. This declaration strongly emphasized the sacredness of contracts in the present crisis.

One paragraph of the policy said: "Our contracts with employing companies must be observed by our membership. We demand contract observance by the companies, and it is our duty to render strict observance in return. Wherever controversies arise between our local divisions and employing companies, ample means are provided in the contracts and in the laws of our association for adjustment, without resort to drastic acts that repudiate obligations and are in contravention of the laws that the members of this organization have pledged themselves to abide by."

The Amalgamated Association undoubtedly acted in good faith when it adopted this declaration of policy, but principles are sometimes difficult to put into practice. Striking evidence of this is found in the international headquarters of the association, Detroit, where last week a few score of employees broke off negotiations with the local railway and called an immediate strike, thus violating their arbitration agreement. The rebels have now gone back to work, and all differences are to be submitted to federal mediators. The incident is so important, however, that those responsible for the welfare of the Amalgamated Association cannot afford to pass it by.

Actions speak louder than words, and the sincerity of the Amalgamated leaders will be believed in or doubted as they punish or overlook such outbreaks as that in Detroit. In a recent editorial we urged labor leaders to keep a firm hand on employees who repudiate arbitration agreements. Again we say that it is not enough merely to urge employees to keep their contracts. While there seems to be no excuse for revoking the charter of the Detroit "local" in this case, the officials of the union should take drastic action against the recalcitrant members.

### Inflexible Fare and Other Defects of Proposed St. Louis Franchise

THE city authorities of St. Louis need not feel that they have overstrained the civic conscience by approving the ordinance which was recently offered to the management of the United Railways Company. They are to be congratulated, perhaps, on having taken steps to settle the long pending controversy over franchise rights, but they must not be surprised if the security holders do not rush enthusiastically to accept a proposition which offers peace at a price involving the wiping out of a possible \$40,000,000 of capitalization. Besides all this, the ordinance, according to the company's contention, does not provide for any extension to the life of existing grants.

The new ordinance, as outlined in the April 27 issue of this paper, is a compromise which, if it does appeal to the investors, will probably do so because it removes a cloud on the title which has interfered with financing and because its acceptance would pave the way to better public relations. The management refers to it as a "fairly good solution of a difficult problem." If an acceptance is filed within the time allowed, this action may be taken as evidence that the "price of peace" is more agreeable than a prolonged controversy between the city and the company would be.

In scaling down the capitalization of the St. Louis property, the authorities have followed the example set in Chicago, Cleveland and other places where compromises were reached by sacrificing the investors. This form of public policy, even when based on expert judgment, is not to be highly indorsed. The money placed in these properties by street railway pioneers should not be recklessly wiped out by city mandate merely because equipment has been discarded as obsolete. Investors must be compensated for every dollar put into a property. Otherwise there will be discouragement tending to hold back capital from a progressive management.

The St. Louis ordinance is not abreast of the times in regard to the provision for rates of fare. Our old friend "Nichol Coyne" is still retained as the standard until such time as the State commission may see fit to raise or lower the price of a ride. This must have been a disappointment to fair-minded students of transportation charges, who appreciate that the flexible fare based on a service-at-cost plan is the modern solution of this problem. Perhaps when the time arrives when it is necessary to accept or reject the franchise the State commission will have given a favorable reply to the petition of the company for the right to charge a higher fare.

City authorities who are called upon from time to time to grant new franchises or to amend old ones will do well to approach such undertakings with minds unbiased by political considerations or prejudice against corporations. The settlements which they arrange will have an effect for many years not only on the people who have put their money into these utilities but on that portion of the public which uses the cars, because in the last analysis service can be supplied only to the extent that it is possible to pay for it out of the fares collected. An inflexible rate of fare will not render flexible service.

## A Cartoonist Needed to Portray the Situation in New York State

Now that you've got it  
What are you going to do with it?

*Cartoonist Goldberg.*

IT WOULD take a Goldberg to do real justice to the electric railway situation as it has developed in Rochester, Syracuse, Utica and other cities served by the New York State Railways—and in numerous other municipalities where the authorities joined in every possible measure to prevent the street car companies getting increased revenue with which to meet the increased costs of service.

If it were not so serious a matter, one might smile—momentarily—with the genial cartoonist, whose whimsical pictures have pierced with keen understanding the true inwardness of so many commonplace events by a few deft pencil strokes. Very often in life we strive might and main for something which, when we get it, becomes a problem instead of a joy. We realize upon its attainment that we really didn't want it at all, and we're about as happy with it as the toad that swallowed the bumble bee.

It is now nearly nine months since the electric railway companies of New York petitioned the Public Service Commission for increased revenues, placing before the commission an absolutely complete line of testimony bearing upon every pertinent feature of the case. This testimony went practically unchallenged. The city officials, under the leadership of the Mayors' Conference, finally secured a victory in the Court of Appeals, whose decision, in brief, was this: that under the present public service commission law an electric railway company whose fares are limited by contract or franchise, cannot secure an increase in such fares through the commission. It must be obtained through the local authorities.

The victory seems to be of the Pyrrhic variety. The employees of the New York State Railways have made demands for increased wages. Conferences of the employees, union leaders, city officials and officials of the companies make clear that the demands of the employees are justified. The companies' figures of revenues, expenses, etc., show plainly that the enormous wage increases demanded cannot be granted without increased revenues.

Now come various city officials making statements to exactly the above effect. Mayor Walter R. Stone, of Syracuse, is quoted by the *Post-Standard* in the following language:

The justice of the men's demands for more money is apparent. The company claims it can't concede the increase with increased revenues. I believe that some common ground can be reached by free discussion of the factors in the case by the officials of the cities affected together with representatives of the company and of the men.

So far as the city is concerned, we must have good service. We must insist that capable men be retained to operate the cars. The company must keep its trackage in shape and must take care of its share of the pavements in the streets. It is true that the present revenue of the lines does not warrant increases and will not allow the company to carry on essential improvements. Some arrangement should be made to increase their revenue.

Governor Whitman is quoted in the *Syracuse Journal* as saying to Owen Lynch, president of the Trolley Men's Union:

I know the employees of the trolley lines in your city are not getting money enough to meet their necessary living expenses, and I also know that the railway company is not receiving income enough to enable it to increase the wage rate of its employees. In view of the decision of the Court of Appeals, I am now unable to assist the trolley workers in their critical condition.

Stewart F. Hancock, corporation counsel of Syracuse, is quoted in the *Syracuse Post-Standard* as having made the following statement:

I believe that the employees of our street railways are entitled to a substantial increase in wages. The employees have said that they are willing that the truth of the company's contention be settled, either by the Public Service Commission or by arbitration. We have said, I now repeat, that as one of the six cities served by the New York State Railways, we are not only willing but anxious that the question be determined. We believe that at the present time efficient street railway service is necessary not only for the good of the city, but for the good of the country.

President Lynch said:

More employees are leaving the trolley service daily. Some of them have been working on the line for twenty-five years. It is hard for them to give it up and accept employment in shops where they are not familiar with the operations. They will be forced to abandon operations on the lines if not granted the wage increase. All we ask is a square deal on the part of the public. If the accounts of the railroad officials can be proved to be correct, I see no reason why city officials should not be willing to grant a 6-cent fare or 2 cents for transfer charge, in order to restore standard conditions of service.

The above statements need no interpretation. They admit the whole case of the railways. Confirmation of the accuracy with which they outline the situation is found in the statement that the Syracuse property this week was obliged to discontinue the operation of one car on each of its lines, owing to its inability to procure the labor at the price it is able to pay.

Nevertheless, the facts in relation to trolley service in the great upstate cities of New York were just as clear last August as they are now, nine months later. No facts have been concealed; no facts can be concealed. The accounts of all of the railway companies are kept in forms prescribed by law. They are sworn to; they are checked by public service officials. There is no line of business, not even municipal or state affairs, concerning which the general public has available so much and so accurate information as it has about the business of the public utility companies.

The city officials who fought the fare increases now admit the justice of the position taken by the railways almost a year ago. The railways have been forced to go on, month after month, incurring losses that were just as well understood in 1917 as they are in 1918. The difference is this: In 1917 the city officials could not be brought to admit that the municipalities cannot be prosperous without efficient public utility service and that public utilities cannot be efficient without prosperity. When their prosperity is reduced and fare increases are refused, the public's service must necessarily be reduced.

A wise public will now begin to appreciate that the efforts of the Mayors' Conference to prevent increased fares have served only to injure the public which they so vociferously declared they were trying to protect. If it is true that their opposition to fare increases was based largely upon political motives, they would be dull, indeed, not to see that their political shotgun has utterly missed fire.

# Traffic Study in Pittsburgh

City's Sharp Changes in Grade and the Natural Barriers Around Its Business District Make Transportation Problems Difficult—Traffic and Industrial Surveys Help to Suggest Remedies—Elevated and Subway Line Proposed

**E**K. MORSE, transit commissioner of Pittsburgh, has made an extended report on the existing transportation facilities of that city. Briefly, the report recommends the passage of very strict parking regulations for automobiles, the widening of several streets and a rapid transit program to be carried out in two sections. The first line to be built would consist of 1 mile of subway and 12 miles of elevated double track, from the central business district out Penn Avenue to the East End. The report suggests that these lines be municipally owned but operated by the same company that operates the surface car system, provided a satisfactory agreement between the city and the operating company can be reached. If not, the city should build

the streets in existence are far too narrow; fourth, the grades are excessive, there being hardly a car line in the city that at some point does not have a grade of more than 5 per cent and many of the lines have grades as high as 9 per cent; fifth, the amount of thinly settled territory and the fact that many of the lines draw their business from territory on one side only prevent traffic from developing to the extent that would otherwise obtain; sixth, the arrangement and narrowness of the streets in the central district and the awkwardness of the loops due primarily to this narrowness cause congestion and delay both to street car and vehicular traffic.

The surface railway collected on an average week day

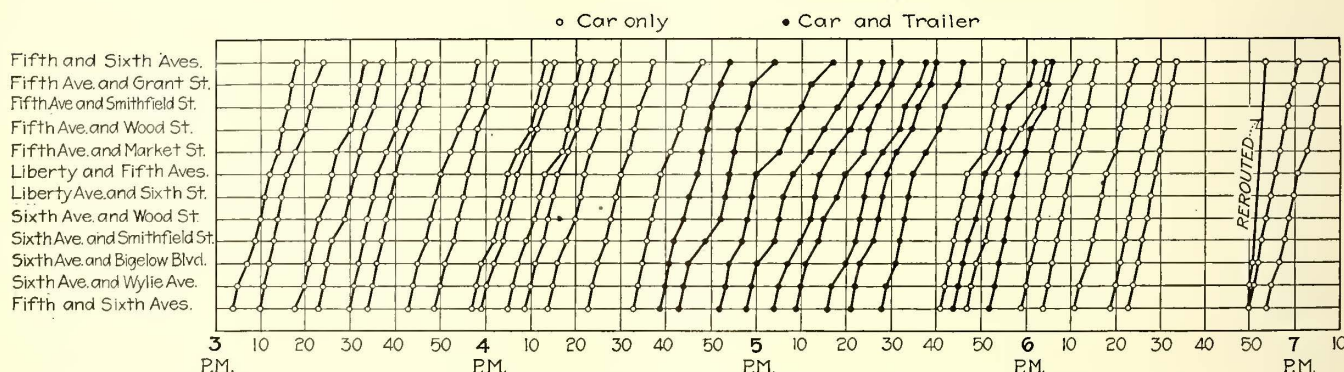


FIG. 1—DISPATCHER'S CHART FOR TYPICAL DOWNTOWN ROUTE IN PITTSBURGH, SHOWING EFFECT OF CONGESTION DURING RUSH HOURS

and lease the lines to another private company or, as a last resort, could operate them itself. A brief abstract of some of the salient features of the report follow.

## TOPOGRAPHICAL FEATURES OF PITTSBURGH

Transportation conditions in Pittsburgh are complicated by the succession of ridges and valleys on which the city is built. The business section at the western end of the peninsula formed by the Allegheny and Monongahela Rivers is level but contains only 218 acres, of which only 124.6 acres are actually used for mercantile and manufacturing purposes, the rest being taken up by streets, wharves and railway terminals. Although there are a number of districts within the city scantily populated because of the steep hillsides, the population per acre is twenty-two and one-half, and the city is fifth in density in the United States among the large cities, being exceeded only by Baltimore, New York, Boston and Milwaukee.

The electric railway problem in Pittsburgh is more difficult than in the average city, for the following reasons: first, the main arteries of travel from the residential to the business district are comparatively few in number because of the hilly nature of the country; second, the topography precludes straight streets; third,

in 1916 a total of approximately 761,000 fares. Only about 12 per cent of the passengers used transfers, as the transfer privilege is somewhat limited. The rides per capita per year is 217, which is low compared with other large cities of the country.

The electric lines in the Pittsburgh district are operated by the Pittsburgh Railways with approximately 600 single-track miles of street and interurban line, of which about 300 miles lie within the city limits of Pittsburgh. The tracks were built and are owned by a great number of separate corporations whose properties are leased to the Pittsburgh Railways. The terms of these leases vary from a fixed lease for 999 years to a lease for one year with a privilege of cancellation by either party on a month's notice after its expiration. Most of the leases are for 999 years.

## TRAFFIC SURVEY

A traffic survey was undertaken and many interesting data were compiled. The congestion in the central business district in the afternoon rush hour is clearly shown by Fig. 1, which is a dispatcher's chart for a typical route and shows the elapsed time between stops for the cars passing around the loops in the central business district. Most of the lines which reach the business dis-

trict are looped back there. It is possible from this chart to determine the points at which time is lost by observing the change in direction of the lines.

The load in the direction opposite to the rush travel is very light. Fig. 2 gives a chart for a typical line, the Bloomfield Line. The distances in miles are given from the center point of the downtown loop. The solid line shows the maximum morning and evening cars, the dotted line the average for the rush hours.

A traffic count showed that the average length of ride on the Pittsburgh Railways within a 5-cent fare limit is less than 3 miles.

To conduct the traffic count, a table of types of cars and seating capacities was furnished to each inspector, and his duty was to determine either the number of empty seats, if the seats were not entirely taken, or the number of passengers standing, if all the seats were filled, or the number of empty seats and number of passengers standing if there were both, as was sometimes the case. From the figures thus obtained, the total number of passengers could be quickly determined. As a check on the accuracy of the inspectors' counts, supervisors boarded every tenth or twelfth car and counted the passengers from the inside. It was found that in no case was there an error of more than 5 per cent. Upon these and other data obtained the suggestions in the report are based.

VEHICULAR SURVEY

A survey of the vehicles entering the central business district was made on July 2, 1917. Men were stationed on every street entering the central business district, so that a complete cordon was thrown around it, and no vehicle entered or left without being counted. The duration of this survey was twelve hours, from 7 a.m. to

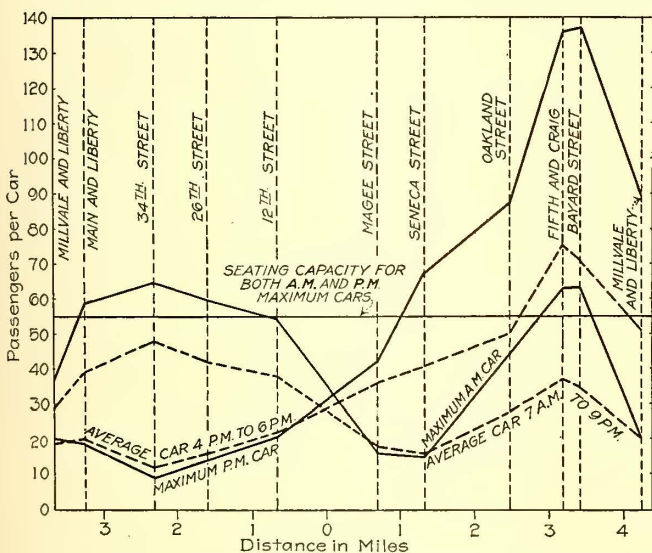


FIG 2—CHART SHOWING TRAFFIC ON TYPICAL ROUTE IN PITTSBURGH, DISTANCES IN MILES BEING GIVEN FROM THE CENTER POINT OF THE DOWNTOWN LOOP

7 p.m. Fig. 3 shows the vehicles entering and leaving, the lower line showing the number of vehicles remaining in the district at any hour. A count was also made of the number of vehicles passing certain busy corners, as well as of the number of vehicles parked on the principal streets and the time parked. Many were found

TABLE SHOWING PERSONS ENTERING BUSINESS DISTRICT ON TYPICAL DAY

Persons traveling on street cars.....	165,452
Persons traveling on steam railroads.....	30,930
Persons traveling in automobiles.....	37,805
Persons walking.....	47,816
Total.....	282,003

to be parked for five, six and seven hours, although the limit allowed by ordinance is thirty minutes.

Surveys were also made of those who entered the

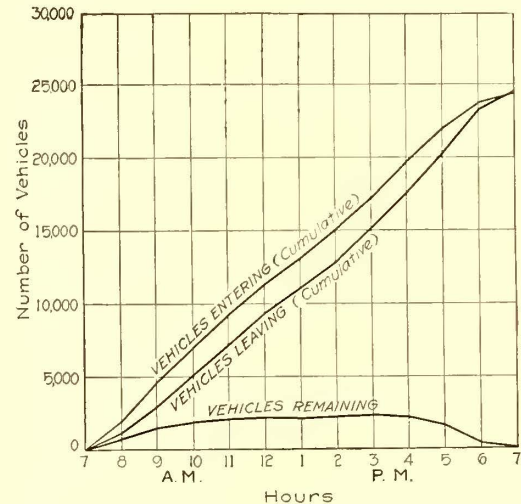


FIG. 3—CHART SHOWING NUMBER OF AUTOMOBILES ENTERING AND LEAVING PITTSBURGH BUSINESS DISTRICT ON JULY 2, 1917

business district by railroad and by walking and the hours. The table above shows the total.

Of this total 78.4 per cent was counted and 21.6 per cent was estimated.

INDUSTRIAL SURVEY

An industrial survey was also made to determine the extent to which transportation facilities were required by workers going to their work. In Pittsburgh, the largest group of persons forming the traffic of the day is composed of the employees of the industrial and commercial establishments; consequently, a survey of the movements of this group was considered of greater value than any other single study of traffic conditions. The method followed was as follows:

The city was divided into sixty-five sections, the boundaries of the sections being natural, such as ravines, hills, etc., or halfway between parallel car lines. Each section received a key number. Loose-leaf tally sheets were printed for the different sections, and small reproductions of the city map, divided into these sections, were made as recording sheets. With this material squads of three men were sent to the offices of employers where they were permitted to see the employment lists, or in some cases only, lists of the addresses of the employees. The first man read the address, the second, who had expert knowledge of the city map, located the address and called off the section number, and the third made one tally on the proper tally sheet. The Chamber of Commerce had paved the way for this survey and had explained that it would not be used in any way to injure either the employer or the employee, as no record of names was to be made. This explanation brought complete co-operation, and in no

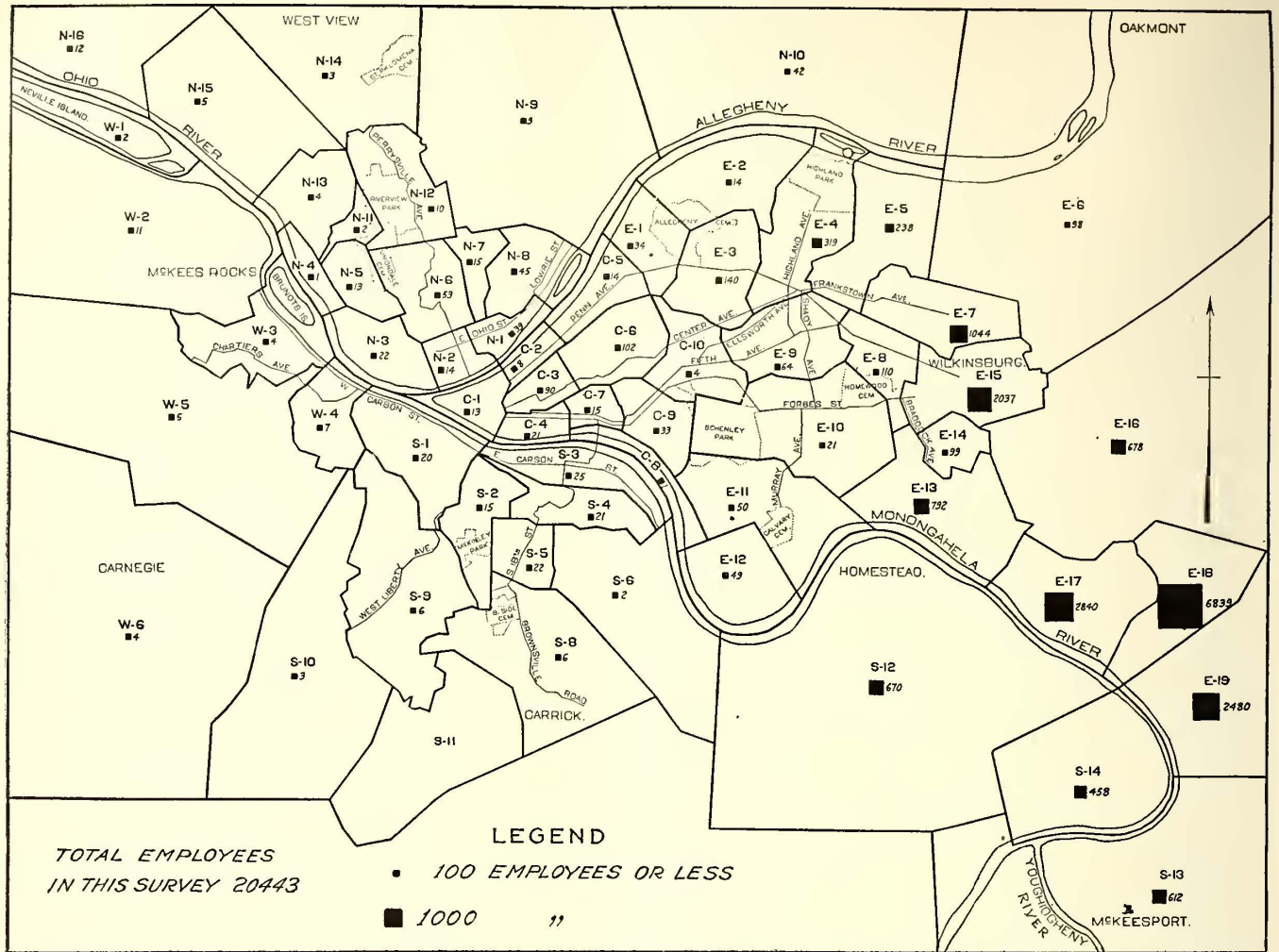


FIG. 4—THE CITY WAS DIVIDED INTO SIXTY-FIVE SECTIONS FOR THE INDUSTRIAL SURVEY—THIS CHART GIVES THE LOCATION OF THE RESIDENCES OF THE EMPLOYEES IN THE INDUSTRIAL PLANTS IN SECTION E-18

case were the requested data refused. Altogether, 274,000 employees were checked and the following totals were obtained:

TABLE SHOWING DISTANCE TRAVELED BY PERSONS GOING TO EMPLOYMENT

Data on Travel of Employees:	
Number of employers	700
Number of employees	274,083
Number traveling from 0 to 1 mile	122,223 of 44.6%
Number traveling from 1 to 2 miles	69,132 of 25.2%
Number traveling from 2 to 3 miles	26,906 of 9.9%
Number traveling from 3 to 4 miles	41,146 of 7.7%
Number traveling from 4 to 5 miles	15,167 of 5.6%
Number traveling from 5 to 6 miles	9,709 of 3.5%
Over 6 miles	9,700 of 3.3%
Average length of ride:	
Disregarding fare zone:	
1-mile walk	2.95
2-mile walk	4.12
Within 5-cent fare zone:	
1-mile walk	2.20
2-mile walk	2.86

The census of population for the district covered by this industrial survey, taken late in 1916, is 1,160,000 persons. This estimate was used for the summer of 1917 when the survey was made. On the basis of one person in every three as an industrial worker or student in the advanced schools, the total number of such persons would be 386,700. The check located 274,000 persons in all, or 70 per cent of the estimated number of industrial workers.

The final four significant lines in the table above give the distance which the employees ride, computed under two different assumptions. The last two lines give the

average distance ridden for a 5-cent fare, assuming, in the first, that all persons living within 1 mile, and in the second, that those living within 2 miles, walk to their places of employment. The two lines under "disregarding fare zone" give the average distances traveled under the same two assumptions as to walking but regardless of the fare paid. They are of interest primarily as giving the average ride of the entire community, which is about the same as in Chicago where, however, a single fare covers the entire area. In these four lines the method of transportation is not taken into account, but owing to the preponderating percentage of persons using the electric lines, they give a measure of the proportion of riders paying two fares.

RECOMMENDED MEANS FOR REDUCING CONGESTION

The report first takes up the subject of the parking of automobiles and says that although the prohibition of all parking is considered too drastic it suggests:

That no vehicles shall park on any street within the central business district for more than thirty minutes at one time.

That no vehicle shall park on either Oliver Avenue or Sixth Street at any time.

That no vehicles shall park within the hours of 7 a.m. to 9 a.m. and between 4 p.m. and 6 p.m. on any street on which street cars operate in the central business district except at specified places.

The report calls attention to the growth of heavy automobile traffic and recommends that the width of trucks, the overhang of loads and the carrying capacity of the wheels should be limited by ordinance.

Within the central business district it also recommends the removal of encroachments on the sidewalk, the restriction of loading and delivery operation of the sidewalks to certain hours and the enlarging of sidewalk intersections where the lines of flow of pedestrian travel meet and form areas of maximum congestion and consequent discomfort to pedestrians.

This can be done by taking a triangle at the intersection of two sidewalks from the building at that corner, as shown in Fig. 5, and by supporting the second story of the building on a column. Such a plan will involve the loss of only a small triangle from the ground floor space and can be made at comparatively small cost.

Outside of the business district plans are suggested for widening thoroughfares and rebuilding bridges.

**SURFACE CAR REROUTING**

A considerable portion of the report is devoted to proposed changes in car routes. In general, they are based on the following objects:

1. To shorten the average time of looping.

2. To assign to the short routes the loops extending farthest into the business district and to the long routes the shortest possible loop.

3. To combine as many as possible of the short routes by changing them to through routes across the district.

4. To establish a steam railroad station shuttle and belt around the district which will accept transfers from both through and loop routes.

5. To restrict the transfer privileges on the new through routes in the downtown district to transfers among themselves and to the shuttle and downtown belts, since

the through routing proposed involves a loss to the railway of the fares of people at present crossing the district.

6. To have transfers given from the shuttle and downtown belt lines.

7. To combine as far as possible the separate routes operating over any trunk line into a single route, thereby supplying more frequent service to the passenger leaving the business district, even though requiring him to transfer from the trunk line.

The report also says that while it is advisable to retain the zone system of fares, an effort should be made to arrange those fares equitably so that the average length of ride determines the zone limits, also that

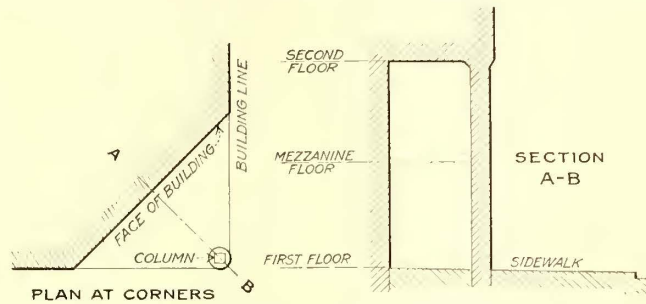


FIG. 5—SUGGESTED PLAN OF INCREASING SIDEWALK AREA AT INTERSECTIONS OF SIDEWALKS

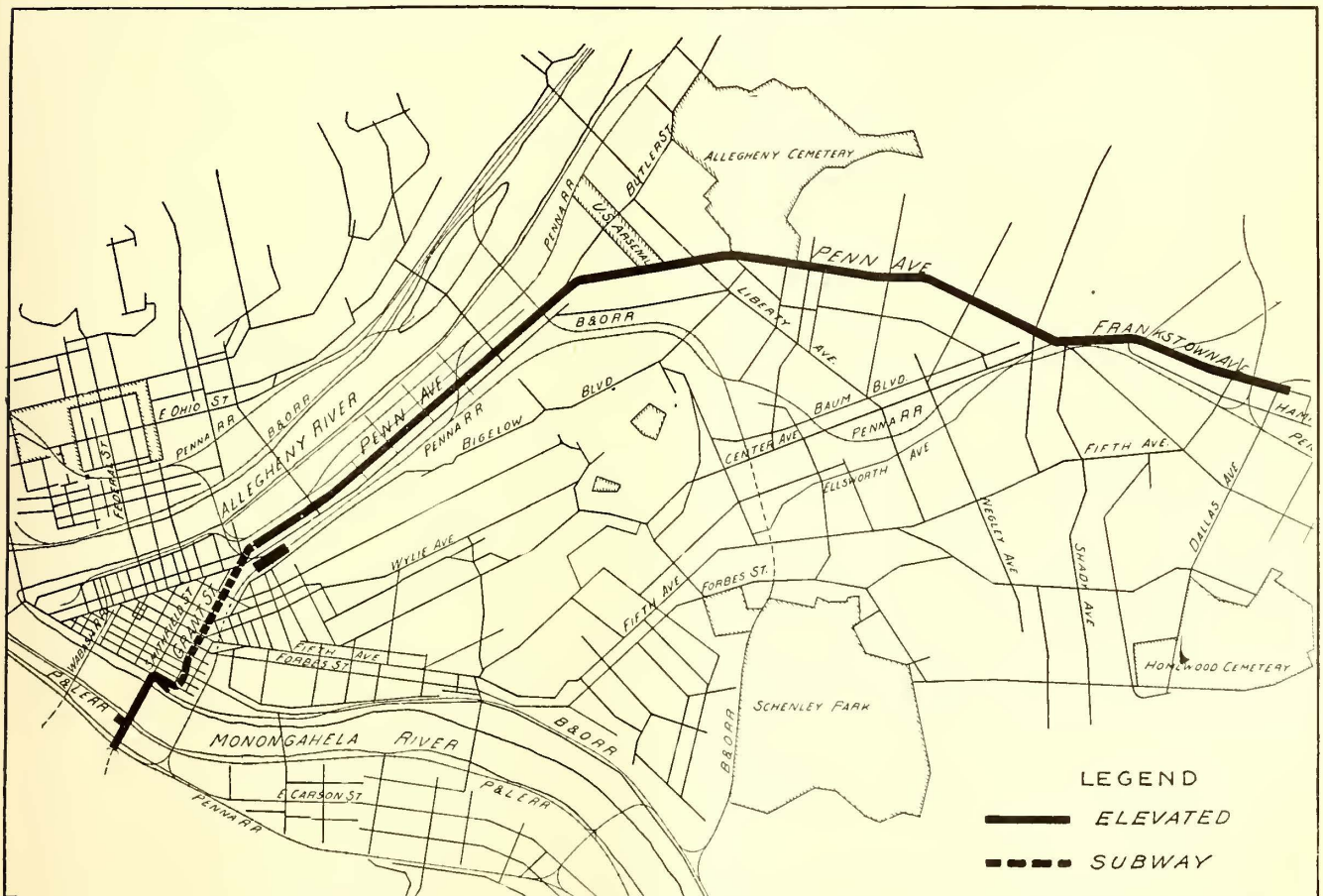


FIG. 6—PROPOSED RAPID TRANSIT ROUTE NO. 1—ITS ESTIMATED COST IS A LITTLE MORE THAN \$7,000,000

where there is a conflict of interest between routes serving city territory only and routes serving boroughs outside the city, the routes serving city territory only should receive preference.

#### RAPID TRANSIT PLANS

The general principles laid down under which the rapid transit system should be constructed and operated have already been outlined. Fig. 6, page 845, shows proposed route No. 1. Route No. 2, proposed for later construction, begins at Allegheny, crosses under the central business district by Diamond Street, and then goes east by Forbes Street, Fifth Avenue, Ellsworth Avenue, and Frankstown Avenue, to the East End, and is largely subway. The report says that Route No. 1 has the advantage of first low cost and soon being self-supporting and recommends its earlier construction.

The elevated railway structure proposed is with ties embedded in ballast and supported on a concrete floor. The extent of elevated track is defended on the ground that very few localities have sufficient density of population to support a rapid transit system built entirely as subway. Modern practice, it is explained, approves the construction of subways in congested districts only.

The report discusses the suggestion of a downtown subway loop to care for the surface cars but rejects it because it will accomplish the removal of only part of the street cars from the surface, while it would not save time for the average rider nor increase the length of ride to be obtained for a single fare. Moreover, it will cost \$5,000,000, or nearly as much as the first rapid transit line proposed, and will be a burden upon the city as it will earn no additional revenue.

#### Air-Raid Warning Sign in Croydon

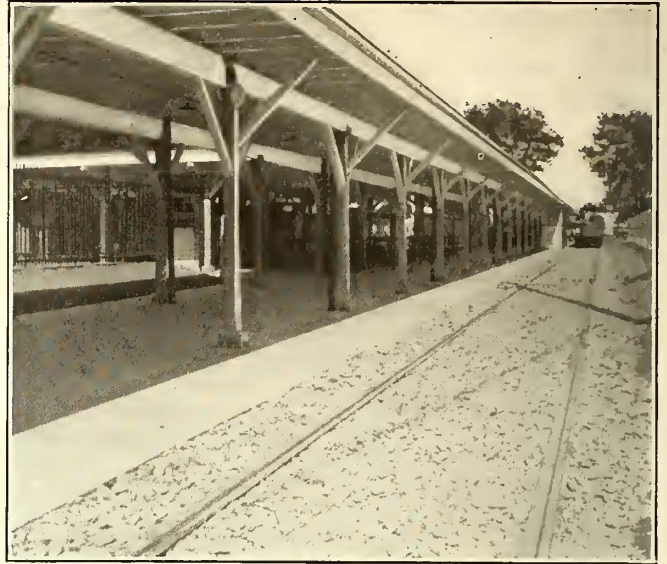
A WARNING sign has been devised by T. B. Goodyer, general manager Croydon (England) Corporation Tramways, for use on the occasion of enemy air raids. As indicated



TRAMWAY AIR-RAID SIGNAL  
IN CROYDON

in the accompanying illustration, Mr. Goodyer's experiment utilizes a tramway pole and illuminated letters. A light box framework is divided horizontally into two chambers, each having a set of electric lights. When an alarm is received, a man switches on the lights illuminating the "Take Cover" lettering. As soon as the information comes that the German raiders have

been driven back to sea, this group of lights is switched off and those behind the "All Clear" sign are switched on. The box has a canopy which renders the illumination invisible from above.

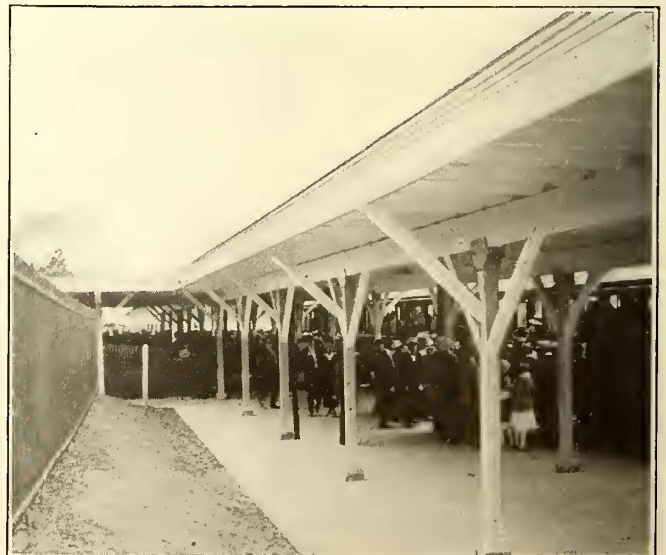


VIEW OF PREPAYMENT AREA AT LOADING STATION

## Handling Crowds at Ohio State Fair Grounds

**New Loop Track with Prepayment Area Solves Large-Crowd Problem of Columbus Railway, Power & Light Company**

**I**N ORDER to provide better service for the immense crowds in attendance on various occasions at the State Fair Grounds, the Columbus Railway, Power & Light Company, Columbus, Ohio, has built loading and unloading stations and a loop track there which has worked out with entire satisfaction. The loop was completed in time for use during the State Fair held in August last year, and the company was quite generally complimented by the citizens and visitors regarding the improved facilities. During that event 106,000 people were transported to and from the grounds in five days, three of which were days of considerably heavier traffic than the others. It was expected that the new facilities would be tested to a greater extent during the National Dairy Show in October, when the crowds are usually very much larger, but on account of the un-



CROWDS AT THE LOOP BOARDING CARS

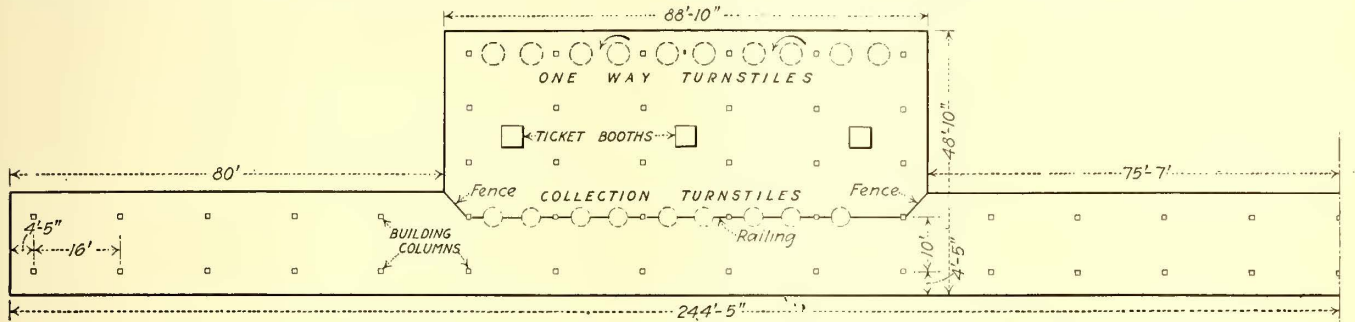


favorable weather conditions people attended in much smaller numbers than was anticipated.

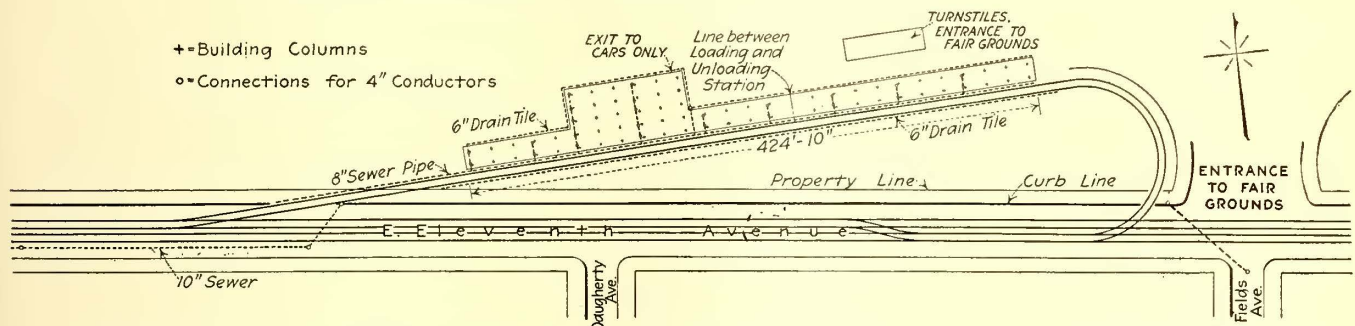
An idea of the track layout at the loop can be had by referring to one of the accompanying drawings. Previous to building the loop, the company had a spur track laid along East Eleventh Avenue coming from Cleveland Avenue on the east to the main entrance, and also a loop at the southwest corner of the grounds which

The loading and unloading stations are properly illuminated to take care of night operation, traffic generally being heavy on the first four nights of the week and light on Friday night.

Upon going to the cars the people leave the Fair grounds through one-way turnstiles and buy their tickets or secure change in the loading station at one of three portable ticket booths conveniently located.



LAYOUT OF LOOP TRACK AT ENTRANCE TO OHIO STATE FAIR GROUNDS



DETAIL OF LOADING AREA AT FAIR GROUND LOOP, COLUMBUS RAILWAY, POWER & LIGHT COMPANY

was used only during the State Fair or other events. From this point the people had to walk several hundred feet and cross the Big Four Railroad tracks, on which trains were not only a source of danger but often caused delays and much inconvenience, especially during bad weather. Upon the separation of the grades at this crossing, which was a part of a general program of grade-crossing elimination throughout the city, the traction company extended its line to join the spur already referred to and built a loop track and loading shelter just west of the fair ground entrance. It now operates on regular schedule over the line made by connecting the two branches.

The fair ground loop surrounds a small triangular-shaped park. Cars coming from the west encircle the loop and return, a cross-over being provided by which cars westbound from Cleveland Avenue can also transfer to the south track to enter the loop.

On the fair ground side is provided a shelter about 425 ft. long with a fence between the loading and unloading areas. A dispatcher's booth is built on this line adjacent to the track, from which the movement of cars for loading is directed. Extra cars are laid in at the old loop west of the Big Four Railroad and are drawn upon, as needed, by the dispatcher, who has all necessary telephone connection for speedily handling the cars. The dispatcher releases cars for loading at the loading station as the number of people in the prepayment area warrants.

Then they pass through collection turnstiles into a prepayment area, depositing their fares in fare boxes. Transfers are issued on the cars by conductors as desired.

### Missouri Utility Commission Report

THE fifth annual report of the Missouri Public Service Commission, for the year ended Nov. 30, 1917, contains a general résumé of the activities of the various branches of the commission during the period under review. In connection with the work of the engineering department, it is stated that the matter of steam and electric railway clearances is now under consideration, as well as the matter of equipping street cars with fenders.

The analysis of accidents during the first ten months of 1917 shows a total of 237 killed and 4356 injured, twenty-nine and 2198 of these respectively being for electric railways. The property damage during the same period amounted to \$226,370, the amount for electric railways being \$2,666.

The report states that the continuation of the European War has materially reduced the demand of the investing public for utility securities. The securities authorized by the commission during the last fiscal year showed a decrease from those in the preceding year. Moreover, practically all of the authorizations were for other than electric railway purposes.



# Skip Stop at Washington Adds 10 to 15 Per Cent to Service

**Co-operation of Public, Commission and Railways Leads to Immediate Success of Skip-Stop Plan—Elimination of More Than One-Third of Stops, Use of Vivid Stop Signs, Erection of Loading Platforms and Front-End Fare Collection Increases Schedule Speeds Materially**

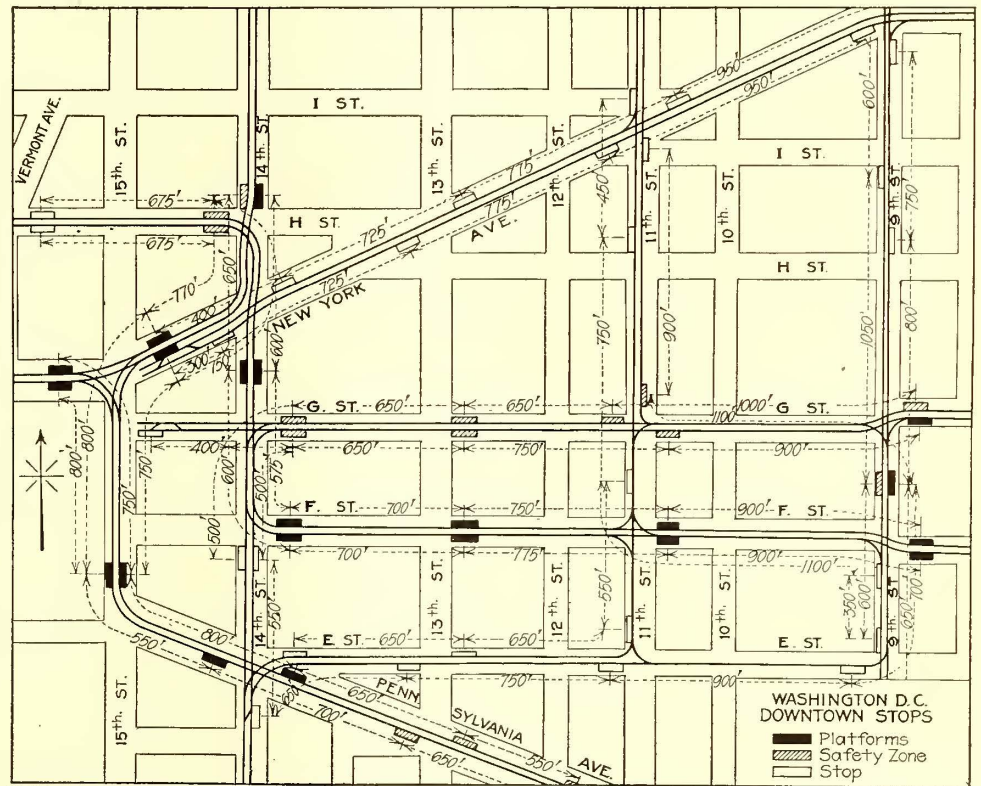
ON Feb. 7, 1918, John A. Beeler, consulting engineer, submitted the second of his unit reports to the Public Utility Commission of the District of Columbia. In this he recommended the abolition of more than one-third of the stops, particularly to clear up the congested downtown section. The downtown changes were made on Feb. 17 and April 7, for the respective railways and the skip stop applied to the entire District of Columbia on Sunday, April 21.

The throat of the Capital Traction Company, comprising a length of 2300 ft. on Fourteenth Street between Pennsylvania Avenue and H Street, was relieved on Feb. 17 by removing about one-half the stops and carefully rearranging the remaining ones for distances varying from 500 ft. to 750 ft. On April 7 the throat of the Washington Railway and Electric Company, F and G Streets between Seventh and Fifteenth Streets, received similar treatment, the spacing in one case being 1100 ft. The accompanying plan shows the stopping places of both companies in the downtown area and the distances between them. It will be observed that these stops frequently are located on the far side at congested junctions.

Before the new stops for the downtown section went into effect the newspapers had given wide publicity to the proposals through the medium of the unit reports; second, through the editorial comments which were distinctly favorable; third, notices in the cars, and fourth, through hearings before the Public Service Commission. Coincident with the inauguration of the system, prominent "Car Stop" signs were installed as described hereinafter. Also through the co-operation of Major Pullman, chief of police, the traffic officers gave the street cars the right-of-way over all other traffic. Loading platforms long enough to accommodate two cars at a time were placed at each stop to provide aisles of safety. About a dozen of these platforms are in use, the heaviest with front-end fare collection.

Another two dozen platforms are under construction. These perform two useful functions; they accelerate passenger interchange in saving a step and they cause the people to congregate on the platforms instead of spreading out in the street, where they are in danger from automobiles.

The great improvement in the downtown section met



PRESENT LOCATION OF STOPS IN THE DOWNTOWN SECTION OF WASHINGTON, BOTH COMPANIES, AND DISTANCES BETWEEN STOPS

with such approbation that the way was well paved for the extension of the skip stop to the entire community.

Sunday, April 21, was selected as the day for making the skip stop universal. According to calculations made by Walter C. Allen, executive secretary of the commission, the built-up sections served by the Capital Traction Company now have 352 instead of 576 stops, or a cut of 39 per cent, and those served by the Washington Railway & Electric Company, 591 stops instead of 944, or a cut of 37½ per cent. On outlying lines the stops total 155, which is only a 10 per cent cut inasmuch as these stops were not closely spaced before the Beeler survey was made. In general the city stops average 750 ft. or seven to eight to the mile. On busy Fourteenth Street, however, the spacing averages 780 ft.

## What Those Interviewed Said About Skip-Stop Service

*A white-haired*

CAPITAL TRACTION MOTORMAN

The people will get used to the skip stop and like it. I remember when they used to get in front of the horses to make me stop in front of their homes; and they sure had fits when we stopped only at crossings!

WALTER ALLEN

Executive Secretary Public Utility Commission

The merest tyro can see that the skip stop will enable the companies to operate more service.

CHAIRMAN BROWNLOW

of the Public Utility Commission

The fact that nobody has protested against the skip-stop principle, and that of the half-dozen protests which were made most had some merit, is indeed satisfactory evidence of the feeling of the public.

W. F. HAM

Vice-President Washington Railway & Electric Company

The difference is that now our schedules are no longer paper schedules, they are carried out!

MAJOR PULLMAN

Chief of Police

This work would have been well worth while if it had resulted in nothing more than clearing up the Capital Traction Company's throat on Fourteenth Street.

J. A. HANNA

Vice-President and General Manager, Capital Traction Company

It is remarkable how the people have taken to it. The loading platform also helped wonderfully in keeping people who are waiting for cars from scattering over the street.

In spite of these important changes, public approval was practically unanimous. Mr. Allen says that but one adverse criticism was made in advance, and the half dozen later protests were readily allayed. To have had so little protest from a community of 400,000 people may well be considered remarkable.

To advise their passengers, both companies issued a window poster as shown, while the *Washington Star* published a complete list of stops in daily installments, a feature which actually was a beat in the eyes of the public. The trainmen received advance booklets giving a complete statement of the stops on every line, whether far, near or some other location. It should be said here that in every instance the stops are located with a view to the local conditions. In some cases they are several car lengths from the street intersections. Some nearside stops were changed to far-side stops, and vice versa.

Motormen are instructed to bring the car to a standstill with the entrance directly opposite the sign so that valuable seconds are saved in boarding. Through the co-operation of the police department, also, a non-parking clearing 96 ft. long, sufficient for double-berthing is being established in front of every stop. A standard alongside the "Car Stop" sign reads: "Please do not leave car between street car safety zone and curb."

Although a few wrinkles in traffic regulation remain to be smoothed out with the aid of the police department, the results to date are remarkably satisfactory. Where cars stood stockstill for minutes at a time or moved at the pace of a glacier, their movement is now so free that Washingtonians can scarcely believe their eyes. As riders they profess to believe that the running time has been cut nearly in half. Of course, this is psychological; but the reality of 10 to 15 per cent increase in the speed attained is satisfying enough to the operators.

As Mr. Ham intimates in the quotation elsewhere, the elimination of delays is quite as important as the increase over the former paper schedules. The Capital Traction Company has not yet prepared new schedules but has put preliminary running times in hand, pending the make-up of such schedules. For example, on Pennsylvania Avenue the thirty-seven and one-half minute westbound run is now thirty-three minute, and the thirty-seven and a half minute eastbound run is now thirty-two and a half minutes. It has become evident

that the need was not for new lines, but for a clear track over which more cars and more miles per car could be operated. In fact, it is certain now that the forthcoming seventy cars ordered by the companies will find full use in taking care of increased travel, much of which will come out of present pedestrian ranks.

### IMPORTANCE OF SIGNS

In discussing with Mr. Ham the matter of making the skip stop successful he said: "A proper sign is one of the absolute essentials." Those who see the sign adopted will admit that it is vivid enough to fulfill its functions admirably. As Washington has no poles or wires, the signs are in the form of standards 6 ft. 6 in. from the sidewalk to the center of a 12 in. yellow disk on which are printed on wood the words "Car Stop" in black. In some places white disk standards are erected bearing the legend: "Cars Do Not Stop Here." These signs and the presence of loading platforms save even the stranger from falling into error. The stop signs were obtained from the Traffic Sign & Signal Company, Gloucester, Mass.

### CONSULTATION, PREPARATION AND CO-OPERATION PRODUCED SUCCESS

In view of the likelihood that the skip stop will be widely tried in the immediate future in response to the request of the Fuel Administrator to save coal, it is not amiss to point out that success in Washington is not the result of arbitrary action. First there was consultation with all the interests affected, second there was preparation in the layout of stops, and third there was co-operation in executing the proposals of the commission's consulting engineer. The skip stop, in brief, was put thought on its merits rather than as a temporary measure to meet an emergency.

The unified government of the District was a distinct aid. The District affairs are administered solely by a board of three men who constitute both the District Commissioners and the Public Utilities Commission. Thus all departments pulled together. Both the large local railway companies, as well as the interurbans, entered heartily into the spirit of the situation, even down to the standardization of such minor details as the stop signs.

As for the newspapers, the headlines and the sub-captions reproduced in the illustration on page 848 tell their own story.

# Selling Service for a Fair Price

This Is the Big Job of Electric Railway Operators To-day—It Is Time for Them To Prove That They Are as Good Merchants as They Are Producers  
—How Salesmanship Paid One Railway

By FRANK PUTNAM

The North American Company, New York, N. Y.

**M**ANY American electric railway operators have begun to doubt whether service can be sold for a fair price.

They can produce it—given sufficient revenue. Nobody else knows so well how to do it. And they can produce it economically. They have had to, for years past.

They know how to run the service, but apparently they do not know how to sell it for a fair price. With labor and capital costs considered, few if any operators are getting a fair price for even the inadequate service which most of them now supply.

They are strong in the engineering and the administrative factors of the business. They seem to be weak, however, in the vital factor of salesmanship. They are good producers, but poor merchants.

## THE PUBLIC MUST BE TOLD

Under commission regulation, electric railways have been trying to prove their need of more revenue to build new lines, buy more cars, pay better wages and assure to investors a fair return. The commissions have not, as a rule, been granting what the companies must get if they are to give the public satisfactory service.

Why? Because the public is the court of last resort—the customer controlling the commissions. The public must first be satisfied that a rate increase is needed in its own interest before commissions will think it safe to grant relief.

Electric railway operators, up against this fact, have “gone down to the tavern and cursed the court” for lacking courage to do what it knows ought to be done, and have let it go at that. They have been so busy blaming the commissions that they have overlooked their own share of responsibility—and it is the larger share.

There have been exceptions. A few companies have gone straight to the public in newspaper advertisements with statements which were *prima facie* proof that they needed more revenue in order to pay good wages, give good service and yield a fair return. Most of these, however, have not made a thorough job of it. They have not sufficiently trusted the public to lay all of their cards face up on the table.

The public is you and I and the other fellow. The public is always fair, even liberal, when it knows all of the facts. It is always suspicious, and properly so, when asked to approve transactions concerning which it lacks facts necessary to the formation of an intelligent opinion.

The utilities should create an informed public opinion to back up the commissions in constructive instead of punitive rate and service regulation. This proposition

has been tested. I have had a hand in trying it out. It works.

During the past year I helped one utility to sell \$2,000,000 of preferred stock across its counters, at par, to customers. The company got better than 97½ per cent net. It secured more than 3000 pocket-interested local partners, many of them active in promoting the company's business, all of them potential defenders of the company's rights against unjust attack from any quarter. It kept \$140,000 a year at home—a 7 per cent dividend to its customer-partners. It held down the cost of service for all its customers, by saving \$120,000 on the cost of new capital needed to pay for plant additions and betterments.

That company's position was exceptional. It had a record of excellent service at low rates. It had, a few months earlier, told its public, in a series of newspaper advertisements, all about its affairs and its policies. It told how it had substituted solid plant values for so-called “water”—injected unavoidably during the process of uniting many competing companies into one to serve the whole community at least cost—by declaring small dividends over a series of years and building itself up with earnings which the owners might have taken out with the approval of the State commission. Its clear, square, candid and complete statement of its conditions and policies, and its sale of shares to more than 3000 customers, abruptly ended a strong movement for a competing municipal system.

I expect to see that company finance all of its after-the-war extensions and betterments—and these will aggregate many millions of dollars as the city grows—by selling new issues of its stock, approved by the State commission, to its customers. I expect to see it, within ten years, have 35,000 home partners—a controlling minority of the electorate upon all public issues affecting its service. Its position, conditioned on continued good conduct, will be safeguarded against any wave of political radicalism. If finally taken over by the municipality, in deference to the theory that all public services should be owned by the public, it will not be robbed in the transaction.

## MAKING A RAILWAY SITUATION PLAIN

I spent the last half of 1917 and the first five weeks of 1918 in telling the people of a Mid-Western city, through advertisements in its daily and weekly newspapers, all about the affairs, policies and needs of its electric railway system. Like many other railways this one, caught between the devil of the usurers, tax collectors and fixed fares on one hand and the deep sea of doubled operating costs on the other, finds itself unable to give satisfactory service, pay good wages or

make any return to its stockholders. Its difficulty being due chiefly to excessive city taxation and the non-compensatory character of the flat 5-cent fare with universal free transfers, and only to a small degree to over-capitalization, the company has very properly "passed the buck" to the city government and the State commission.

The company was asked to pay \$2,500,000 of accrued taxes on franchise values confiscated by the State in 1913. It was asked to pay wage increases totaling more than \$3,000,000 a year. It was asked to spend from \$3,500,000 to \$4,000,000 for new car lines urgently and long needed in districts which had no car service. It had a \$3,500,000 first mortgage bond issue maturing on June 1, 1918. It had a treasury surplus of \$3,000,000. Its net income, steadily diminishing year by year, was a trifle more than \$600,000 in 1917. Obviously it could not meet the demands with its existing revenue.

#### PUBLIC CONVERTED THROUGH PUBLICITY CAMPAIGN

When we began our seven-months advertising campaign, the city government and the daily press declared the company's city taxes must not be reduced more than an average of \$85,000 a year for the term of the franchise, this reduction having been informally agreed upon by the city and company in preliminary conferences. Several of the forty-five advertisements used were devoted to proving from the public records that the company was grossly overtaxed and to exposing the injustice and the absurdity of taxing its franchises five years after all its franchise values had been confiscated by the State.

Within four months from the start the strongest newspaper opponent was editorially demanding that all of the company's franchise taxes, amounting to \$480,000 a year, be repealed and, if necessary, that its property taxes be greatly reduced, as a possible means of avoiding an increase of fares. When the city government, eight months after the campaign started, passed the franchise ordinance, it repealed all of the \$480,000 a year franchise taxes and substituted a gross receipts tax of one-half of 1 per cent, or \$65,000 a year, thus cutting the taxes levied against the company \$415,000 a year.

The city not only reduced the company's taxes but it conceded in the ordinance the State commission's authority to regulate fares. Now it is making only a formal protest before the commission against a fare increase, which it recognizes must be ordered if the company is to pay good wages, give good service, make necessary extensions and yield a fair return on the legitimate investment.

Without the advertising campaign the public would not have understood the necessity for a tax reduction and a fare increase. The city government would have been afraid to cut the taxes, and doubtless the State commission, not unnaturally, would have been reluctant to grant the additional relief which the whole community now knows is needed, in the public's interest as much as the company's.

The cost of the advertising was only a small part of the first year's saving in taxes. Beyond the direct financial relief which it helped the company to procure, the advertising strengthened the company's position by making the public understand these facts:

1. An electric railway, whether publicly or privately owned, is a branch of the public service.

2. The city and State governments are just as much obligated to assure ample good electric railway service as they are to assure ample good water, school and other public services.

3. As long as any branch of the public service is permitted to be built and operated at the cost and risk of private citizens, city and State governments, in the public interest, must let them earn enough to assure ample good service.

4. Aside from the rank injustice of it, the public's pocket loss is many times greater than that of the private investors when city and State governments prevent electric railways from earning enough to give ample good service, to pay good wages, to make necessary extensions and to yield a fair rental return for the money so employed.

I don't pretend to be either an advertising expert or an electric railway expert. I have been going to school for three years to a group of the most intelligent public utility men in America, and I do know some things about the American public. I know what the public, in any big American city, wants to know about its public utilities, and I dug out those facts and printed them, with all the convincing argument and punch I could put into them.

Some electric railway men told me I was giving the public more figures than it would take time to read or understand, and some advertising experts told me my copy wasn't "scientific"—whatever that is. Granting that these criticisms were probably true, we got what we went after, with the public's consent and approval. Real experts should be able to get equal or better results in less time and at a smaller cost. This case is cited merely to prove to electric railway operators that straight salesmanship applied to the public utility business will pay as well as it does in any other big business.

#### IT PAYS TO ADVERTISE

Too many electric railways, untrained in modern merchandising methods, have been indignant but dumb in the face of rising costs and increasing burdens of operation. They have been trying hard to make \$1 of earnings give \$2 of service and have been wondering, I suppose, why that fact did not speak for itself, and why it did not satisfy the demands of an unreasonable public.

The railways are only just now learning to employ the newspaper advertising columns, as all other merchants do, as a means of selling their service to the public for a fair price. They can do it, just as other merchants do it, when they realize that they are merchants and not chartered monopolists.

There is no sanctity in the 5-cent fare. There is no more reason why a street-car ride, each year costing more to produce, should remain forever at the fixed 5-cent rate, than there was for calico to remain forever at 5 cents a yard. The men who make and sell calico have advertised to the public the reasons why its price had to rise. The public, knowing why, pays the higher price without complaint.

There is no mystery about the cost of electric railway service. The state now dictates the form in which the books shall be kept, to show every penny taken in and the nature of every item for which a penny is expended. It is up to the companies to sell their situation to the public—and thereafter keep it sold.

# Here's How the Electric Railways Can Help to Build Ships

**Passenger Transportation Service Section of United States Shipping Board Has Begun Co-operating With Electric Railways to Provide Real Transportation Facilities Quickly—Double-Tracking, Train Operation, Prepayment Areas and Staggered Hours Show Progressive Spirit and Foresight—Learn What Has Been Done by This Department and See Where You Can Help With Brains and Equipment**

ON APRIL 1, the United States Shipping Board Emergency Fleet Corporation formally organized a Passenger Transportation Service Section with A. Merritt Taylor as manager of passenger transportation. By April 3 it had prepared and mailed a questionnaire for all shipyards, some 150, in the land; also for all shipping board district officers in charge of steel ship construction and all district supervisors in charge of wood, composite and concrete construction. By April 6 the War Board of the American Electric Railway Association had prepared and mailed a questionnaire in co-operation with the Shipping Board calling upon electric railways to state what equipment they could release for the latter's needs.

In the meantime, the staff for this vital part of the shipbuilding program was being built up rapidly, as indicated by the accompanying schedule of personnel in the panel on this page.

The functions of the staff are expanding and specializing so rapidly that it would be useless to make an organization chart. It will be more to the point to explain how the traffic surveys are made by the transportation engineers as this will give a hint to the electric railways affected as to what they are expected to tell the manager of the transportation department if they are to be of maximum aid in forwarding the shipbuilding and other war programs. While the procedure will vary with the circumstances, the following has been prepared as a general outline, and should prove of interest.

## PROCEDURE FOR SURVEY

The first duty of a survey engineer is the notification of a district officer, shipyard executive and local transportation companies, by wire, of the impending survey; giving the name of the engineer in charge and assistants, with time of arrival.

The general information to be tabulated and collected by the engineer in charge prior to his start from headquarters follows:

1. Names and addresses of district officer, district supervisor, shipyard executive and local counsel of the Emergency Fleet Corporation.

2. Response to questionnaire sent in by the shipbuilding corporation, including maps and letter requested in questionnaire.

## Personnel of Passenger Transportation Service Section as of April 26, 1918

Name	Title	Reported for duty	Past Employment
A. Merritt Taylor	Manager	Apr. 1	Pres. Philadelphia & West Chester Traction Co.
A. B. Maine	Executive Aide	Apr. 1	Chief Clerk, Dept. City Transit, Phila.
O. B. Cooke, Jr.	Engineer	Apr. 2	Member of Firm Kelly, Cooke & Co.
J. A. Renshaw	Jr. Asst. Engineer	Apr. 4	Asst. Engineer Dept. City Transit, Phila.
J. W. Welsh	Engineer	Apr. 8	Electric Engineer & Traffic Agt. Pittsburgh Railways.
W. C. Solly	Asst. Engineer	Apr. 8	Engineer, New Chester Water Company
C. G.ENZ	Chief Clk. & Acct.	Apr. 8	Asst. Chief Clerk Dept. City Transit, Philadelphia.
M. I. Frantz	Stenographer	Apr. 8	Stenographer, A. M. Taylor, Philadelphia.
G. T. Seely	Asst. Manager	Apr. 11	Assistant General Manager, Chicago Elevated Lines.
M. W. Rew	Asst. Engineer	Apr. 12	Chief Engineer, Pittsburgh Transit Commission.
J. C. Thirlwall	Engineer	Apr. 15	Electrical Engineer, General Electric Company, Schenectady, N. Y.
C. F. Hewitt	Engineer	Apr. 15	Private Engineer and formerly General Manager, United Traction Co., Albany, N. Y.
D. C. Ainey	Progress Engr.	Apr. 15	Assistant Engineer, Public Service Commission, Harrisburg.
Jilson J. Coleman	Engineer	Apr. 22	Agent for Manufacturing Companies.
Wm. W. Handy	Engineer	Apr. 22	Chief, Report-Appraisal Dept. Day & Zimmerman, Philadelphia.
Edward F. Burnett	Special Agent	Apr. 23	General Agent, Western Passenger Association.
Harry C. Kendall	Asst. Engineer	—	Electrical Engineer, Denver Tramways.
Geo. W. Remington	Asst. Engineer	—	Engineer, General Electric Co.

3. Report of district officer, or district supervisor, and any papers or data in file relevant to the passenger transportation situation at the yard in question.

Immediately upon his arrival on the ground the transportation engineer makes arrangements for establishing the local residence and business headquarters for transportation party. Preferably the working headquarters of the staff are in the shipyard or district office.

After the arrival of the survey party, calls are made upon the district officer and district supervisor where reasonably accessible, upon the official in charge of shipyard, and upon the general manager (or other available officer) in charge of each passenger transportation company serving the shipyard in question. The call upon the district officer and the district supervisor is of a general character, to develop possible high points of the general situation. The call upon the shipyard officials is prefaced with a general statement as to the pur-

pose of impending survey, and is intended to develop all facts relative to transportation deficiencies and possible means of relief; examination of any data collected by the shipyard, etc.

The data and information secured up to this point from the questionnaire, from personal conferences with shipyard officials and from independent observations of the survey party is then sifted, and the vital requirements for improvement of the local transportation situation are determined for use as a background for discussing various phases of the situation with the transportation companies.

**NEGOTIATIONS WITH LOCAL RAILWAY**

The call upon the transportation company's executive officer is prefaced with a statement as to the purpose of the impending survey, followed by discussion of the local situation, as it affects the shipyard, and a develop-

and collateral information in the shortest time possible.

After the study and correlation by the survey party of facts and information resulting from a conference with the transportation company in connection with data gathered from shipyard sources, a set of preliminary recommendations is drawn up by the chief of the party on the vital elements of the situation.

The preliminary recommendations are utilized by the chief of the party as a background for a joint conference between the representative of the transportation companies and of the passenger transportation department, at which conference the district officer or district supervisor and local counsel of the Fleet Corporation are present, if practicable. A brief outline of the tentative plan so developed with recommendations is then telegraphed to the manager of transportation by the chief of the party, with his individual views and comments thereon and his recommendations.

**AMERICAN ELECTRIC RAILWAY ASSOCIATION  
WAR BOARD**  
Munsey Building, Washington, D. C.

**A. W. BRADY**, President, American Electric Railway Association  
**F. H. GARDNER**, President, American Electric Railway Association  
**W. W. HILL**, General Manager

**T. N. McCARTER**, Chairman, Emergency Fleet Corporation  
**E. C. FABER**, Manager  
**W. W. HILL**, General Manager  
**E. B. BURRITT**, Secretary

**Bulletin No. 15  
TRANSPORTATION—SHIPBUILDING PLANTS**

**TO ELECTRIC RAILWAYS:**  
THIS REQUEST FROM THE UNITED STATES SHIPPING BOARD EMERGENCY FLEET CORPORATION CALLS FOR IMMEDIATE AND PATRIOTIC RESPONSE FROM THE MANAGEMENT OF EVERY ELECTRIC RAILWAY IN THE UNITED STATES. Acceleration of ship construction is a vital war measure. The Government has called upon you to help speed up ship construction in a letter received from the Manager of Passenger Transportation of the Emergency Fleet Corporation as follows:

**UNITED STATES SHIPPING BOARD  
EMERGENCY FLEET CORPORATION  
WASHINGTON**

**Hon. Thomas N. McCarter,**  
Chairman War Board,  
American Electric Railway Association  
Washington, D. C.

Dear Mr. McCarter:  
The Emergency Fleet Corporation is determined to promptly abate deficiencies in passenger transportation to and from shipyards where such deficiencies are retarding the construction of ships. For this purpose the character and location of all available electric cars, car plant equipment, track and line materials in the United States must be determined forthwith, so that the same can be mobilized quickly when and as required. The War Board's generous and patriotic offer to assemble this information immediately, which you have rendered, is gratefully accepted. Yours very truly,  
**A. M. TAYLOR,**  
Manager Passenger Transportation.

Enclosed herewith is a questionnaire. Please perform your patriotic duty and render signal service to the Government by filling out the same and returning it forthwith to the American Electric Railway Association War Board, 957 Munsey Building, Washington, D. C.

**DO YOUR UTMOST.** THOS. N. McCARTER, Chairman.

To Accompany Bulletin No. 15

**American Electric Railway Association  
WAR BOARD**  
Munsey Building, Washington, D. C.

**QUESTIONNAIRE RELATING TO  
SPARE TRANSPORTATION AND POWER EQUIPMENT  
FOR WAR SERVICE**

Date: \_\_\_\_\_

Name of Corporation: \_\_\_\_\_  
Location of Railway System (City or Town and State): \_\_\_\_\_  
Location of Local Executive Office: \_\_\_\_\_  
Location of Main Executive Office: \_\_\_\_\_  
If local system is owned or controlled by another company please state corporate name and address of such controlling company: \_\_\_\_\_  
Does your Company own, or has it available for operation, one or more passenger cars or any equipment, for cars which can be spared for use elsewhere? \_\_\_\_\_  
If your system is in a territory where adequate passenger transportation service is not an important factor as an adjunct to "war industries," please state if your operating schedules or car routes can be rearranged so as to lessen the number of cars operated, without serious interference with service: \_\_\_\_\_  
Does your Company own, or has it installed, power generating or substation equipment of capacity in excess of that absolutely required for satisfactory and continuous operation of its system? \_\_\_\_\_  
If any other source of power available which, if utilized, would permit your Company to dispose of its power plant in whole or in part? \_\_\_\_\_  
Has your Company any steel rail, track or overhead line material in excess of immediate future needs? \_\_\_\_\_  
Can passenger cars and/or electric equipment of cars or power equipment be released from your system through any other method not covered by the above? \_\_\_\_\_  
If the answers to all of the foregoing questions be "No," please ignore the following form and sign and return this report forthwith.  
If the answers to any of the foregoing questions be "Yes," please fill in such part of the following form as applies to your situation and sign and return this report forthwith, accompanied by a letter giving any further qualifying information as to equipment which can be spared, with your views as to fair and reasonable compensation therefor.

**Inventory and Description  
of Passenger Cars, Equipment of Cars, Tracks and Line Material  
which can be Released for War Service**

Passenger Cars: Number of cars which can be released \_\_\_\_\_  
Make, age and type, giving each type a number to be referred to in following form (note whether single or double truck motor car or trailer) \_\_\_\_\_

General Dimensions:  
Length over corner posts \_\_\_\_\_  
Length over bumpers \_\_\_\_\_  
Width over all \_\_\_\_\_  
Height of rail to top of roof \_\_\_\_\_  
Height of truck \_\_\_\_\_  
Height of opening \_\_\_\_\_  
Number of longitudinal seats \_\_\_\_\_  
Number of cross seats \_\_\_\_\_  
Seat arrangement \_\_\_\_\_  
Type of passenger \_\_\_\_\_

Trucks:  
Type, make and wheel \_\_\_\_\_  
Single or double truck \_\_\_\_\_  
Diameter and tread of wheel \_\_\_\_\_  
Depth and thickness of flange \_\_\_\_\_  
Gauge of track \_\_\_\_\_  
Type of couplers, and height from \_\_\_\_\_

FIRST TWO PAGES OF QUESTIONNAIRE WITH LETTER OF TRANSMISSION SENT OUT BY AMERICAN ELECTRIC RAILWAY ASSOCIATION

ment of transportation company's general views in the matter of ways and means for improving the shipyard service. A direct statement is presented as to the results which the Fleet Corporation is determined to get in the matter of adequate transportation facilities, the talk being shaped in such a way as to leave no doubt in the mind of the transportation company that immediate concrete results are what the Fleet Corporation requires and that it is prepared to give the transportation company whatever assistance may be essential—financial, or otherwise—to bring about the results required. Where undue loss will result to the transportation company, the Fleet Corporation is prepared will absorb such loss to secure essential results. The transportation company is also assured that any and all information supplied is confidential and for use solely in connection with the shipyard situation.

The chief of the party may also make a direct request for the whole-hearted patriotic co-operation of the transportation company, with arrangements to secure the undivided time and service, as and when needed, of the officers representing the traffic and transportation, track and roadway and statistical departments of the transportation company, in order to secure the required data

In cases free from complications, and involving no large financial commitment—an immediate decision may be telegraphed by the manager of transportation. In no case are final commitments made, involving expenditure of money by the Emergency Fleet Corporation, however, except on the authority of the manager of transportation.

If possible, the local counsel of the Emergency Fleet Corporation draws up a tentative form of contract covering the provision of additional transportation facilities for shipyard service, developed as necessary by the joint conference mentioned.

The formal report governing various phases of the local situation investigated and giving specific recommendations of the engineer in charge is prepared at headquarters and is transmitted to the manager of transportation for his approval, so that the office records may be kept in suitable form.

Where there is considerable opposition to the proposed plan or to required changes or additions on the part of the transportation company, immediate conference is arranged between the manager of passenger transportation and the executive officials of the transportation company to develop an agreement covering



construction, equipment, operation and any arrangements as to financial aid to be afforded by the Fleet Corporation.

A formal contract is then prepared by general counsel, embodying the terms of the agreement with the transportation companies.

The foregoing general outline may be supplemented by the following details:

**THE DETAILED INFORMATION DESIRED**

The detailed information compiled by the transportation engineer in charge of the survey naturally groups itself into two divisions, namely, that relating to the needs and that relating to the means available for supplying those needs. The work of collecting the data then proceeds along the following lines after the call on the shipyard officials:

1. General checking over of questionnaire and information sent in by shipyard to develop explanation of points brought out therein and additional points generally resulting from discussion.

and from district in which it is located, as to origin, destination and routes. Where shipyard has not supplied data as to destination of employees, secure approximation either from company or passenger count where necessary only.

5. Detailed and specific consideration and study of features of transportation facilities developed by the questionnaire, as needing correction.

6. Development of a general line of recommendations enumerating in some detail additional facilities to be provided, as:

- Cars: New equipment.
- Rehabilitation of existing equipment.
- Possibility of borrowing from nearby lines.
- Track: Laying of second track.
- Sidings and terminal loops.
- Construction of new lines.
- Rehabilitation of existing lines.
- Possible Re-routing: and reduction in number of cars operating on routes not serving shipyard and transference to shipyard routes.
- Trippler Service: or Special Train Service—Number, type and capacity of cars.
- Headway, schedules, etc.

**DATA OF TRANSPORTATION FACILITIES**

1. Complete map of street railway system or systems, showing:

(a) Routes serving shipyard without change of cars and

**QUESTIONNAIRE ISSUED BY MANAGER OF PASSENGER TRANSPORTATION**  
**UNITED STATES SHIPPING BOARD**  
**EMERGENCY FLEET CORPORATION**  
 1310 F STREET, N. W.  
 WASHINGTON

Date: \_\_\_\_\_

Name of Corporation: \_\_\_\_\_

Location of Ship Yard: \_\_\_\_\_

Are passenger transportation facilities required for the movement of your employees between their homes and your yard deficient to an extent which is retarding the construction of ships in your yard? \_\_\_\_\_

Are the facilities inadequate to transport such additional workers as you will employ before December 31, 1918, to an extent which will retard the construction of ships in your yard? \_\_\_\_\_

If the answer to both of the foregoing questions be "No," please ignore the following form and sign and return this report forthwith.

If the answer to either of the foregoing questions be "Yes," please fill in the following form and sign and return this report forthwith with map and letter which are referred to herein.

How many shifts do you work? (Number each shift and state the hour when each enters and leaves the yard):

How many employees work in your yard (by shifts)?

In April, 1918: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_

How many employees will work in your yard (by shifts) during each month in 1918 and during the two six months' periods of 1919?

In May: Shift No. 1 \_\_\_\_\_ In June: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_ Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_ Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_ Total \_\_\_\_\_

In July: Shift No. 1 \_\_\_\_\_ In August: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_ Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_ Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_ Total \_\_\_\_\_

In September: Shift No. 1 \_\_\_\_\_ In October: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_ Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_ Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_ Total \_\_\_\_\_

In November: Shift No. 1 \_\_\_\_\_ In December: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_ Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_ Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_ Total \_\_\_\_\_

During first six months of 1919: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_

During second six months of 1919: Shift No. 1 \_\_\_\_\_  
 Shift No. 2 \_\_\_\_\_  
 Shift No. 3 \_\_\_\_\_  
 Total \_\_\_\_\_

What passenger transportation facilities serve your yard? (State corporate name of each and address of general manager or executive officer of each company also give approximate number of employees using each line)

Name of Corporation	Name of General Manager	Address of General Manager	*Number of Employees Using Line (One Way)

\*Where lines extend from your yard in more than one direction, please state number of employees using each line to the yard separately.

In returning questionnaire please accompany the same with a map of the territory in which your employees live and in which your plant is located, with the names, routes and character of all transportation lines upon which your employees rely for service, together with the approximate number of employees living in the various districts charted thereon, also with a written statement covering the following:

Statement showing the character and capacity of steam trains, electric trains, electric cars, boats, or automobiles which are used transporting your employees; also include upon which they are operated in both directions, including time of arrival at and departure from your yard; also table showing distances and time and cost of travel between your yard and the various districts where your employees live, by way of each line.

Statement, showing as far as practicable, the name and address of each individual or corporation controlling one or more plants of over one hundred employees who use the transportation facilities which serve your yard, together with the location and character of each plant, the number of its employees—present and prospective—and the hours when they arrive at or leave their respective plants. (Please plot the location of each of these plants on the map which you furnish.) The purpose of these data is to determine which plants, in your opinion, are drawing upon the passenger transportation facilities to such an extent as to curtail the ability of your local transportation lines to adequately serve your yard.

In instances where existing transportation lines should be able to render more adequate service, state what steps, if any, have been taken toward this end. If no such steps have been taken, state the probable or known reason for the failure of such transportation company to render adequate service.

Furnish statement showing total number of ships now under contract in your yard, the type and tonnage of each and the name of the government department, corporation or individual for whom each is being built.

Make recommendations as to what improvement, enlargement or extension of existing facilities and what additional facilities you believe are required to eliminate any present or prospective deficiencies in passenger transportation facilities to and from your yard which might retard the building of ships thereon.

Signature of official submitting report: \_\_\_\_\_

Title of official submitting report: \_\_\_\_\_

**QUESTIONNAIRE SENT BY EMERGENCY FLEET CORPORATION TO SHIPYARDS ASKING FOR INFORMATION AS REGARDS TRANSPORTATION FACILITIES**

2. Secure map, or prepare sketch map of shipyard property, upon which may be indicated information of the following character:

- (a) Location of entrance and exit gates to yard.
- (b) Important streets in the vicinity of yard, with character of paving and transportation lines thereon.
- (c) Availability of nearby sites for sidings or terminal loops, if such are needed, ownership thereof and probable cost; noting also the character of existing structures located thereon, or if any additional structures are proposed.
- (d) Character of adjacent territory, the degree of development for residential purposes, areas available for new dwellings, and kind of industries in the neighborhood. General description of dwellings, within, say about 1 mile, and possibilities for utilizing same to a greater extent, in order to relieve the transportation system. Opportunities for new dwelling construction within walking distance of the plant, and capacity of such new accommodations, as well as capacity of existing accommodations. Note whether high or low ground, and other features affecting living conditions, whether good or bad.

3. Take or obtain photographs of all conditions directly bearing upon deficiencies in passenger transportation facilities, as, for instance, photographs of proposed sites for terminal loops, different types of cars in shipyard service, typical track construction and condition, and photograph of any seriously overloaded cars during the rush-hour period.

4. Rough check of traffic flow to and from yard and to

routes serving shipyard with one transfer differentiated from rest of system.

(b) Industrial and commercial districts served, with notation as to character and extent thereof with respect to transportation facilities required.

(c) Fare and time zones.

(d) Indication of heavy grades, if any, and maximum grade.

(e) Grade crossings with steam railroads and drawbridges, with notations as to delays occasioned thereby, importance of draws.

(f) Ownership and probable cost of land which will, or may be, required for extensions to existing lines, terminal loops, sidings, etc. Have any improvements been projected thereon?

2. Inventory by types and capacities of total cars operated, with proportion of such cars serving the various districts through which the company operates.

3. Number of cars operated on routes serving shipyard:

- (a) During morning and evening rush hours and off-peak periods, by types and capacities.
- (b) Headway during morning and evening rush hours and off-peak periods.
- (c) Number of cars, by types and capacities, used in tripper service for shipyards and adjacent plants.
- (d) Approximate number of stops per mile.
- (e) Essential railway operating statistics by routes, insofar as they are related to shipyard situations.
- (f) Platform labor situation—union or non-union; diffi-

culty of securing and retaining platform labor, etc. Extra compensation for rush-hour service. Where platform labor situation warrants, careful consideration should be given to possibility of utilizing shipyard employees to operate trippers in rush-hour service. Attitude of motormen and conductors toward such utilization; regulation of transportation company respecting same as to necessary qualifications of men. In such cases also responsibility of shipyard employee to railway company during the performance of his platform duties should be clearly specified as should also the responsibility of the company for such employee's action during such time as he is working for the transportation company.

4. Lines serving shipyard and adjacent districts, with turn-outs—Full data should be secured as to distance between and length of turn-outs available for car storage, headway, and schedules in both directions, with notations as to extent of delays in turn-outs morning and evening.

5. Report should be obtained from company's chief engineer, or similar technical official, concerning power house, substation and line capacities, and present maximum demands on power house, substations and various lines. These data need be approximate only, their purpose being to furnish some indication of spare capacity, if any, and degree of overloading, if such conditions exist. Notations should be made as to source of power—hydro-electric or steam—generated by company or purchased. Engineer's report should also give the number of cars in operation during maximum station peak, average kw.-hours consumption per car mile or per ton mile, during winter and summer periods, and information along similar lines. Typical station load curves for different seasons of the year should also be obtained.

6. Availability of additional sources of power supply, and steps necessary to utilize such sources, if needed.

7. Record of car break-downs on a line, or lines, serving districts, if of frequent occurrence, should be obtained; also general report from the master mechanic of the company covering the physical condition of cars, extent and cost of repairs needed to place the cars in good condition, with notations as to car repair shop and carhouse facilities.

8. New or second-hand cars, car equipment, power plant equipment on order, if any; giving capacity and general description, probable delivery date and name and address of manufacturer or vendor.

9. Where conditions would warrant such a step, careful consideration should be given to the possibility of staggering the transportation load as between plants, and within the shipyard plant itself, and by short stopping and starting cars. (Consider rulings on wage and labor conditions by the Shipbuilding Labor Adjustment Board.) In connection with this a note should be made of non-essential industries in the shipyard district which draw upon the transportation facilities to any material extent.

10. Report from engineer of maintenance-of-way, or corresponding official, covering physical condition of track and roadway, bridges and trestles, etc., with extent and cost of repairs needed to place track in good operating condition.

11. General statement from company covering the following:

(a) Its independent recommendations as to what steps should be taken to provide adequate and satisfactory service to the shipyards, and the reason, or reasons, why each step has not been taken, or the obstacles which have, or are, retarding improvement in service, have not been removed.

(b) Estimate of cost in some detail for effecting the desired improvement.

(c) Outline of company's plans for handling additional traffic resulting from shipyard growth, with an estimate of new equipment which would be needed and the probable cost thereof.

(d) Financial position of company, specifying difficulties in the matter of new financing, maturing obligations, etc., and giving its views as to character and extent of financial assistance which was to be rendered by Emergency Fleet Corporation.

(e) Consideration of water transportation facilities in detail.

12. Investigation of feasibility of auto-bus routes. Make notations covering the following points:

(a) *Character of Road:*  
 Foundation and surface, and present condition.  
 Cross-section of road—crowning, etc.  
 Limiting height of overhead obstructions. (This fixes generally the character and type of bus.)  
 Width of roadway (maximum)  
 By whom maintained (State, town or county; name, title and address of responsible official in charge thereof.)  
 Extent of necessary repairs for bus line traffic.  
 Determination of most feasible city streets for routes.

(b) *Character of Territory:*  
 General.  
 Railroad or electric railway crossings.  
 Cities, boroughs and towns passed through; name, title and address of head official of each.  
 Character and extent of vehicular traffic which now uses road.  
 Sites for garages and shops.

(c) *Character of Traffic Which Would Use Busses:*  
 General.  
 Extent of—total, and shipyard traffic.  
 Distribution of traffic as to time.  
 Probable stops per mile.  
 Possibility of routing busses so as to pick up ex-rush hour traffic.

13. Expediting provision of required additional facilities:  
 (a) Plans and specifications to be prepared by company immediately upon consummation of plans.

(b) Execution of necessary local ordinances and permits, compliance with regulations of Public Service Commissions, etc. Quick action required as a war measure.

(c) Complete schedules of requirements of material and equipment, as to specifications and quantities to be submitted to Manager of Transportation by company.

(d) Take up with Priority Board and complete arrangements for source of supply.

(e) Close contracts with manufacturers.

(f) Follow up shop construction and deliveries.

(g) Coincident with (a) to (f) above, follow up and see that agreed upon operating improvements are being worked out and put into effect.

(h) Field observations from time to time to determine the extent to which additional facilities and changes in operation have abated deficiencies in transportation.

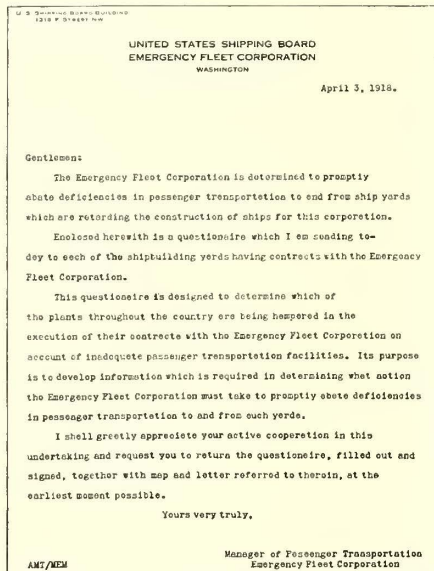
ENCOURAGING PROGRESS ALREADY MADE

In accordance with the procedure outlined engineers of the Passenger Transportation Service Section have already surveyed the needs at the larger Eastern yards such as Chester, Newark Bay and Baltimore. Up to April 26, all the shipyards at Beaumont, Savannah, Houston, Brunswick, Jacksonville, Everett and Bellingham had reported satisfactory transportation conditions as had also at least part of the builders at Mobile, Wass Point, Madisonville, Orange and Pascagoula.

In general the conditions on the Pacific Coast are satisfactory except that more electric service could be used at Seattle.

The Newport News & Hampton Electric Railway is building a 3 to 4 mile extension north of Newport News to a new housing development. The Shipping Board has advanced the money for the line and for the purchase of ten cars.

At Oakland, the Key Route is to be extended ½ mile to the Moore shipbuilding plant. At this location also



LETTER OF TRANSMISSION SENT WITH QUESTIONNAIRE BY EMERGENCY FLEET CORPORATION TO SHIPYARDS

service has been improved by closing the drawbridge between Alameda and Oakland.

As noted in the case of Camden, the section is prepared to use either steam or electric transportation. While it has no commanding powers over inter-state steam lines, it works in close harmony with the Director-General of Railroads. Thus in a recent case, the latter extended a morning and evening service of twenty-six passenger coaches as soon as the needs were put before him.

Ships may be used, as at New London, where a ferry has been installed for service to the Bath Iron Works. To date, however, it has not been found necessary to use motor trucks or buses.

#### CO-OPERATION WITH PUBLIC SERVICE

In the Southern division of the Public Service Railway arrangements have been made with the railway for thirty-three new cars in addition to those assigned from regular service, for the purpose of serving the Gloucester and Camden shipyards. Suitable power plant, transmission and substation equipment will be added by the electric company to provide power for these cars. Additional shop and car storage facilities will also be provided. The Fleet Corporation will finance these improvements at a cost of \$1,200,000, the Public Service Corporation paying 5 per cent interest annually on the total cost. The contract runs until after the war. At the time of the discontinuance of service the company will buy certain portions of the equipment as agreed upon at an appraisal value to be fixed by a board of arbitrators. Of the total expenditure about one-half is for increasing the power facilities. The cost would have been more but for the provision for operation in such a way as to flatten the load peaks.

In the vicinity of Newark the Fleet Corporation has an arrangement with the railway for 2-mile double-track extension across the meadows crossing the Jersey Central tracks, at the Oak Island freight yard, on a long viaduct to be built by the steam railroad and the city of Newark. The Fleet Corporation will pay the bills for this work and also will cross-connect the extension with the neighboring city lines by means of a connecting track on Gotthart Street and Avenue R. Involved in this improvement also is the purchase of eighteen cars, and the service will be sufficient to care for one-half the employees of the Submarine Boat Corporation. The cost will be about \$800,000.

In the Southern Division Mr. Taylor has arranged for an equitable division of traffic among the steam and electric lines, for the staggering of the opening and closing hours in the shipyards and for assistance from the shipbuilders for operating cars during rush hours. The shipyards will furnish one-half the number of men required to run trippers, the railway to pay standard platform wages. Similar arrangements will probably be made also elsewhere on the Public Service property.

It is expected that within ninety days the transportation facilities will have been increased to meet the anticipated demands upon them and that it will be easily possible to expand them as required.

In all of these improvements the railway will have the hearty co-operation of the department in introducing the most efficient methods of operation. For instance, pre-

payment areas have already been introduced at the Camden and Gloucester shipyards by means of fenced loops. The plans contemplate the provision of such prepayment stations at other congested loading points.

#### SHIPPING BOARD'S TRANSPORTATION SERVICE CAPABLE OF HANDLING ALL ELECTRIC RAILWAY MATTERS

The scope of the Passenger Transportation Service Section is really much broader than to supply service to the shipyards themselves. Its job is to speed up shipbuilding just as much in the production of what goes in the hull as in the building of the hull itself. Thus, it is almost impossible to foresee the inland ramifications that may develop. For example there is the Westinghouse plant at Essington near Philadelphia where 5000 men will be making steam turbines for the Emergency Fleet Corporation's ships. Arrangements must be made to transport these men expeditiously although they are not actually in shipyard service.

With the constantly growing degree of co-ordination between the different Government departments it is to be hoped that the efforts in local transportation and housing will be concentrated to avoid duplication of effort and mutual interference. As the department organized by the Shipping Board is the only one composed specifically of electric railway specialists, it is the logical body for this important purpose. The knowledge and vigor it has already displayed gives good promise that the electric railway will play a deservedly big part in the winning of the war.

### Making an Electric Railway "Tank"



THE accompanying illustration shows how the Berkshire Street Railway, Pittsfield, Mass., has camouflaged a single-truck car as a "tank." This car has been doing great work in the Liberty Loan campaign at North Adams and other towns in Northern Berkshire. The tank was designed by W. W. Richmond, treasurer Hoosac Savings Bank, North Adams.

The North Staffordshire (England) Railway has constructed for local use a 17-ton storage-battery locomotive. It is driven by two series motors rated at 41 hp. at 250 volts. The battery weighs about 6½ tons and has a one-hour discharge rate of 150 amp. The locomotive is capable of hauling a 90-ton load at 10 m.p.h. on the level, or 72 tons at 11 m.p.h.

# New Flash Suppressor Applied on the St. Paul

## Addition of Collector Rings to Direct-Current Generator Permits Making of Alternating-Current Short-Circuit, Limiting Internal Disturbances to Armature Windings

BY N. W. STORER AND F. T. HAGUE

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

A DEVICE for preventing flashing, known as the "flash suppressor," which differs radically in its theory of operation from all circuit opening or reactance inserting devices, has recently been successfully developed. It functions to protect the machine from injuring itself when its current output exceeds a predetermined value. The device is being installed by the Westinghouse Electric & Manufacturing Company in the 3000-volt substations of the Chicago, Milwaukee & St. Paul Railway.

The flash suppressor consists of a set of small contactors, arranged to short-circuit the armature windings of the direct-current generator through three collector rings, connected in three-phase relation. This device is actuated and tripped in a manner similar to that of the circuit breaker, but with this difference—the contacts, which carry current only momentarily when the device operates, are very small and light, and have normally but a short distance to travel. It differs also, in that this device closes a circuit while a circuit breaker opens one and must, therefore, quench the arc before it can completely rupture the circuit.

To secure operation equally as rapid as that of a high-speed circuit breaker, only a relatively simple mechanism is required, and it is not difficult to secure a much higher speed without complication. The contactor can easily be made to close in from 0.006 to 0.008 second, which is amply fast to prevent a flash from spreading on any but the higher frequency machines.

### THE FLASH SUPPRESSOR APPLIES A RADICAL REMEDY

The flash suppressor performs a double function—first, closing a short-circuit on the collector rings, which simultaneously reduces the voltage between commutator bars practically to zero. If the voltage per coil were the same throughout the winding, this short-circuit would reduce the voltage between all bars to zero; but owing to the locations of the various coils with respect to the poles, their voltages differ and there will be small voltages remaining between some commutator bars; not enough, however, to support an arc. Consequently, if flashing has not started when the contactor closes, it will not start; and, if it has started, it is instantly suppressed.

The second function of the flash suppressor consists in cutting down the field flux. A short-circuit through the collector rings causes a large wattless current to flow through the armature windings whose magnetizing force opposes that of the field and cuts down the voltage at the maximum safe rate, without opening either field or armature circuit.

It will thus be seen that the stored energy, not only of the line but of the machine itself, is harmlessly short-

circuited through the machine and dissipated in the armature and field windings. The direct-current circuit breaker at the switchboard will be opened automatically, but only after the flash suppressor has done its work and then, of course, the voltage is reduced practically to zero. The use of the flash suppressor, therefore, not only eliminates the danger to the machine from flashing, but also obviates the necessity for opening the extremely heavy short-circuit currents with the circuit breaker, and the attendant surges in the line. In other words, the fire-works are eliminated from the substation.

### WHAT THE OSCILLOGRAMS SHOWED

During the development of this method of suppressing flashing, a large number of tests were made on machines of different types and characteristics. The following tests are representative and apply to the type of generator generally used in high voltage direct-current railway service. Oscillograph records have been taken which portray the characteristics of direct-current generators on extreme overloads and the changes in these characteristics which are brought about by the application of the flash suppressor. The direct-current generator used in these tests was a 1000-kw., 650-volt, 750-r.p.m. machine. It embodies no unusual design features not standard with railway generators that would tend to give it unusual momentary overload capacity.

On the limiting overload which the machine would stand without flashing the armature current rose to a constant value of 13,000 amp., or about eight times full load current. The total circuit resistance measured 0.0287 ohm, and the actual current obtained was 57 per cent of the theoretical current that would be obtained by dividing the terminal voltage by the circuit resistance. The initial rate of current increase was about 2500 amp. per 0.001 second, and the current rose to 95 per cent of its final value in the first 0.010 second.

The shunt field current underwent a sudden increase in value, which is characteristic, even of compensated generators, when a suddenly applied overload or a partial flash occurs. The increase of field current to 2.5 times normal value was due to flux distortions, the demagnetizing action of local currents in the commutated armature coils, and possibly to some of the commutator bars being short-circuited by the partial flashover.

In the next test the flash suppressor was adjusted for short-circuiting the alternating-current side 0.0006 second after the direct-current side. Both short-circuits were made at 650 volts without resistance or reactance of any kind in the circuit. The premises outlined in the foregoing theory were completely borne out, as the flash at the commutator at the time of direct-current short-circuit was confined to a small explosive puff of ex-

tremely short duration which did not damage either brushholders or commutator surface. Many duplicate oscillograph records of combined short-circuits were made which established that the suppression of flashing is entirely independent of the point of the alternating voltage wave at which the short-circuit occurs, and that all armature positions give essentially the same effect. By means of the oscillograph record the delay of the alternating-short-circuit behind the direct-current short-circuit can be very accurately measured.

Since the use of the flash suppressor involves short-circuiting the alternating-current side of a generator a few thousandths of a second after a direct-current overload is applied, it is of interest to know the magnitude of the alternating current flowing when the collector rings are short-circuited upon themselves. The current flowing when the alternating-current side of the machine is short-circuited is very materially less than the current flowing when the direct-current side is short-circuited, since the winding resistance is the principal limiting factor at time of direct-current short-circuit, while the winding reactance imposes greater limitation on the alternating-current short-circuit. Moreover, the polyphase reactance of the armature winding is nearly twice as great as the reactance of an alternator of equal rating, because of the large number of turns required for a given voltage in order to avoid an excessive average voltage between commutator bars.

#### SHORT-CIRCUITING THE COLLECTOR RINGS "KILLS" THE DIRECT CURRENT

Oscillograms of the alternating currents indicate that the resultant current rises uniformly in magnitude until it reaches its maximum value in approximately 0.0014 second (one-half cycle) after the instant of application of the alternating-current short-circuit. It is an inherent condition of any polyphase short-circuit that the resultant armature currents attain their maximum magnitude after one alternation from the instant of short-circuit. The armature current and field have very unusual characteristics under combined alternating and direct-current short-circuit conditions. The oscillograms referred to earlier show that the direct-current begins to increase at the uniform rate of about 2500 amp. per 0.001 second, and in 0.006 second reaches a value of 14,000 amp. The application of the collector ring short-circuit immediately arrests any further increase of direct current, and in the next 0.014 second (one-half cycle) the direct current is steadily decreased until it drops to practically zero. The large decrease of the direct-current in the 0.014 second following the application of the alternating short-circuit, i. e., the time required for the alternating short-circuit to attain its maximum value, is due to the well-known fact that an armature winding can deliver only a definite current on short-circuit. This current is limited by the electrical constants of the armature winding and is not affected by the number of points at which a short-circuit is applied to the winding. This simply means that the transient short-circuit current output from the collector side is subtracted directly from the direct-current output and the decrease of direct current corresponds exactly to the building up of the alternating short-circuit current. On each successive machine alternation, the

direct current pulsates to a maximum and minimum value of steadily decreasing magnitude. The direct current finally settles to a constant value of about 7000 amp. (4.5 times full load) in about 0.075 second.

In case of a direct-current short-circuit through a relatively low resistance the direct current rose only to 57 per cent of the theoretical value obtained by dividing the terminal voltage by the total circuit resistance. In another test where the direct current reached an almost constant value before the flash suppressor was actuated, the current only reached 30 per cent of its theoretical short-circuit value. Extensive tests have shown that high-speed compensated generators will deliver twelve to fifteen times full-load current on direct short-circuit (including the current in the flash-over). This short-circuit is about 25 to 30 per cent of the theoretical short-circuit current based upon the circuit resistance, including brush contact.

The characteristic curves of the various currents are not materially changed, as the time of the alternating short-circuit is further delayed after the direct-current short-circuit is applied. One oscillogram taken in these tests shows the alternating-current short-circuit delayed 0.011 second after the direct-current and this condition was mainly evidenced in operation by a slight increase in the explosive puff of the arc blowing itself out, before it had time to do any damage. The direct current in this case rose to about 19,000 amp., or twelve times full load, while the field current did not rise as high as when the delay of the alternating-current short-circuit was less.

These tests were made on the machine as a separately excited shunt generator, as this is the most favorable condition for operation of railway generators which are required to function on regenerated load. In order to establish the operating characteristics of a compound-wound machine, the series field was connected in circuit. In one test on a compound machine the alternating-current short-circuit was delayed 0.010 second. The maximum value of the direct current was not changed by the addition of the series field, nor was its characteristic oscillation reduced. The shunt field current was affected very considerably, due to the series field magnetization discharging through the shunt field circuit in the period before the alternating-current short-circuit is applied. The operation of the machine was not materially different as regards the volume of flash from a short-circuit, under the same conditions, as a shunt generator.

The characteristics of the direct-current wave show clearly wherein the merits of the flash suppressor lie. The application of the alternating-current short-circuit not only arrests the increase of current feeding into the direct-current short-circuit, but it actually suppresses this current to practically zero for an instant. This characteristic, in conjunction with the reduction of the voltage between commutator bars, effectually snuffs out any arc that has been started by the direct current before the alternating-current short-circuit is applied. The direct current rises to a sufficient value to flash, but it is removed by the alternating-current short-circuit long before a bar can pass from one brush arm to the next, and the flash which actually gets started is summarily suppressed.

The value to which the shunt field current rises is

an accurate measure of the rate at which the main field flux is reduced, and also of the voltage induced in the shunt field coils during the period of short-circuit. An inspection of the field current curve showed that the maximum current is only seven times the normal full load, so that the voltage induced in the shunt field coils is six times the excitation voltage. High-voltage railway generators are invariably separately excited at some low voltage, such as 125 volts, (of which one-half is normally consumed in field rheostat) so that an induced field voltage of six times normal is a negligible increase on field coils which are normally designed to withstand a much higher voltage.

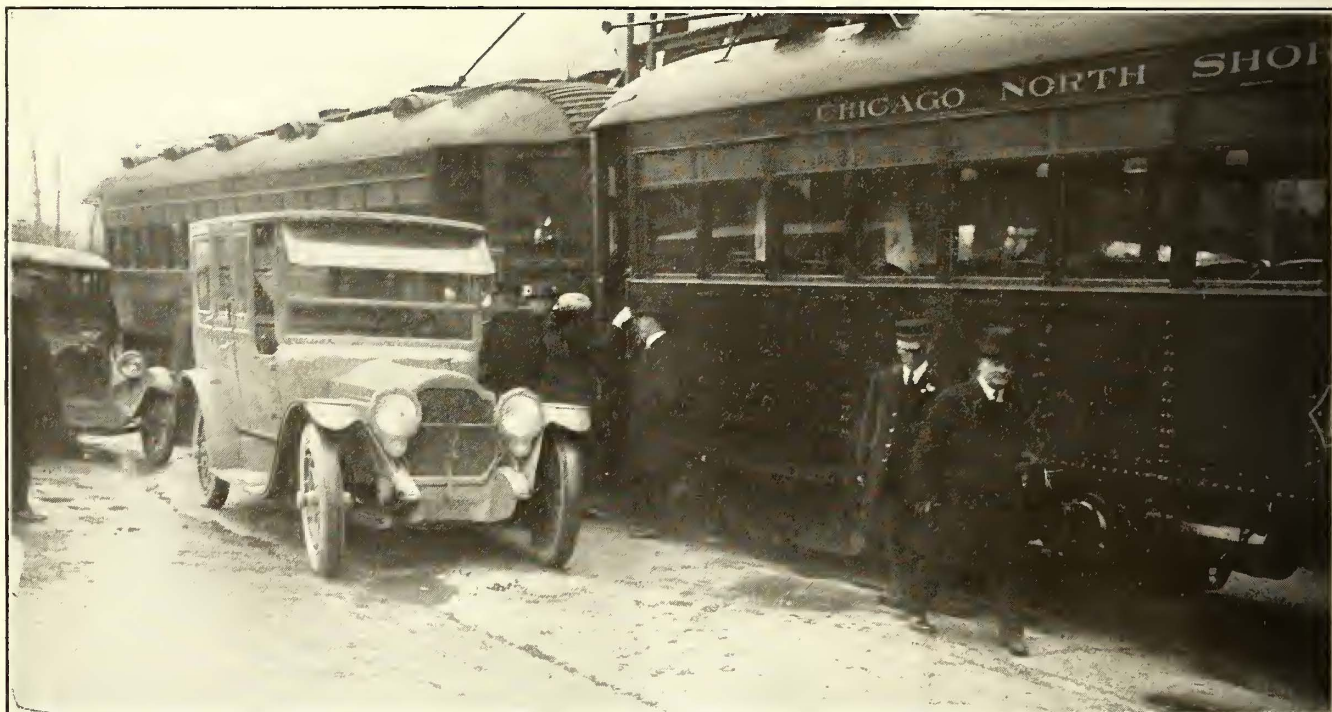
The tests which have been described are only typical of a large number that were made during the develop-

## McAdoo Travels via Electric

North Shore Line Carries Secretary of Treasury and His Party on Successful Excursion to Great Lakes Naval Training Station

ONE of the important features of the Liberty Loan visit of William J. McAdoo, Secretary of the Treasury, to Chicago on April 28 and 29 was a trip to the Naval Training Station at Great Lakes, Ill., via the Chicago, North Shore & Milwaukee Railroad. This is a high-speed electric line, under the management of Britton I. Budd, president Chicago Elevated Railroad.

The party consisted of Secretary and Mrs. McAdoo, F. B. McDougal, Director of the Federal Reserve Bank; General Barry, commanding Central District, U. S. A.:



MR. AND MRS. McADOO BOARDING THE McADOO SPECIAL AT GREAT LAKES

ment of the flash suppressor. All of these tests, on machines of widely different characteristics, point to the fact that in the flash suppressor has been found a real and positive preventive of flashing of direct current railway generators.

It has been designed directly to attack the cause of flashing and suppress it rather than to minimize the liability of flashing or to mitigate its effect more or less completely.

### Illinois Governor Uses I. T. S. Private Car

The private car of H. E. Chubbuck, vice-president executive of the Illinois Traction System, was used to convey Governor Frank O. Lowden and a party of state officials from Springfield, Ill., to Peoria, Ill., to attend the funeral of William H. Stead, formerly attorney-general of Illinois and a member of Governor Lowden's cabinet at the time of his death. The run was made in exactly two hours.

The private car had the right-of-way, the trip being planned to meet cars bound in the opposite direction with a minimum of delay.

Colonel McChesney, U. S. A.; H. C. Merrick, president National Security League; Charles W. Folds, H. L. Stuart and E. K. Boisot of the Liberty Loan Committee; Captain W. A. Moffett, U. S. N., Commandant Great Lakes Station; Commander James Wilson, U. S. N., and Lieutenant-Commander Isbesten, U. S. N.

The trip was personally supervised by Mr. Budd. The train included one combination dining and parlor car and one coach. The train left the Congress Street Station on the elevated lines at 8.30 a. m. and went over the elevated tracks to Evanston, thence over the North Shore Line to Great Lakes. A delicious breakfast was served to twenty-eight persons en route.

At Great Lakes the visitors were driven in automobiles through the big training station, and Secretary McAdoo addressed and reviewed five battalions of Jackies. The special train left at 11.20 and made the return trip of 35 miles in one hour to Chicago. Without the electric line the trip might have been impossible, owing to the limited amount of time at the Secretary's disposal. The trip was similar to that made by Secretary of the Navy Daniels over the same line on April 10, as noted in the ELECTRIC RAILWAY JOURNAL of April 20.

# Insulated Negative Return Feeder System Satisfactory at Lynchburg, Va.

American Railways Designs Simple System for Local Situation and Brings Return Drop Within Easy Control—The Author Explains How the Data for Selecting Feeder Sizes Were Obtained

BY A. P. WAY

Electrical Engineer, American Railways Company, Philadelphia, Pa.

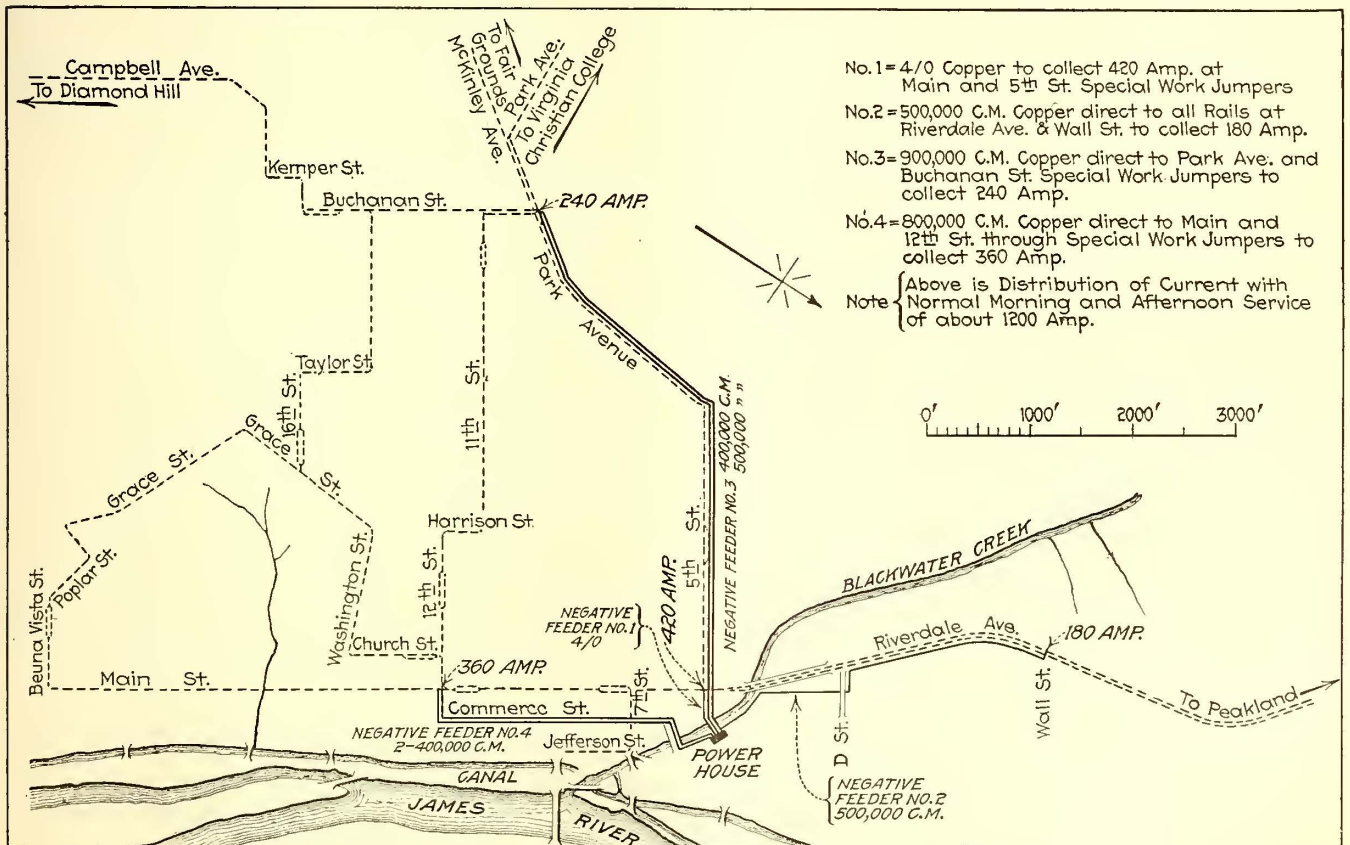
FOR two years to date there has been in continuous operation at Lynchburg, Va., an insulated negative feeder system which has satisfactorily met all expectations. It was installed to prevent electrolysis from stray currents, and the management decided to apply this remedy to the cause rather than the effect of the difficulty; in other words, to prevent current from leaving the tracks rather than to endeavor to prevent damage to underground structures after current had been forced or induced to flow in them. The insulated negative feeder system which reduces the over-all potential drops in tracks appeared to be the best method for Lynchburg, but it must be understood that a successful remedy for one railway system is by no means a solution for all.

Previously there had been no negative feeders supplementing the rails. The entire return current was collected from the tracks through a total of 1,500,000 circ. mil of cables at the corner of Fifth and Main Streets, the point nearest to the power house, about 800 ft. dis-

tant. Electrolysis effects were actually concentrated at this point, except at a point directly in front of the power house there was some trouble where the cables were connected to old rails in the earth. This latter condition was remedied by insulating the feeders from the earth at the power house end.

The entire track bonding was in particularly good condition except at some points where jumpers around special work were not good, but these were soon repaired. In view of the fact that the over-all voltage drop over tracks between given points provides the potential which forces current through parallel circuits in earth, etc., it was decided to reduce these over-all voltages by removing some of the current from the rails by overhead feeders at a number of points in different directions beyond Fifth and Main Streets.

To determine the distribution of the load two maps were made showing the location of all cars at a particular moment during normal operation early in the afternoon and at 5.30 p. m. during the peak-load period.



SKETCH MAP SHOWING RETURN FEEDERS INSTALLED AT LYNCHBURG, VA.

The watt-hour meters at the power house were read every fifteen minutes, and the average load was thus determined for periods of fifteen or thirty minutes, one, eighteen or twenty-four hours. From these it was found that the average current per car was, as follows:

One hour normal period, 55 amp.; one hour peak period, 51 amp.; fifteen minute peak period, 68 amp.

The layout was designed to make an over-all voltage drop of 0.5 volt per 1000 ft. of track during the normal period, with a one hour average station load of 1150 amp. This made about 0.85 volt during maximum fifteen-minute peak. This further made an average maximum one-hour drop of 0.64 volt and average twenty-four-hour drop of only 0.38 volt per 1000 ft. of track. To be sure, there are larger momentary voltage drops that would be shown by an indicating voltmeter, but momentary maximum voltage swings are no more productive of electrolytic corrosion than would a momentary maximum charging current be effective in charging a battery.

By referring to the accompanying map it will be seen the most economical points from which to collect current were at track intersections allowing small current density in diverging tracks beyond. Feeders were run to Fifth and Main, Twelfth and Main, Buchanan and Park, and Rivermont near Wall. Just enough current was allowed to flow in the tracks between these points and Fifth and Main to keep the drop within 0.5 volt per 1000 ft. of track during normal service, and the feeders were designed of such cross-section as to carry back to the plant the excess current delivered to tracks beyond these points.

For example, 480 amp. originated beyond Twelfth and Main, while the track between this point and Fifth and Main should have carried only 120 amp. to produce the allowable drop. Consequently 350 amp. had to be carried by a feeder. Similarly 360 amp. originated beyond Buchanan and Park, while the track would carry about 120 amp., leaving 240 amp. for a feeder, and the conditions were similar for the other feeder. This left about 420 amp. to be collected from the tracks at Fifth and Main, including the local load.

#### FEEDER SIZES WERE DETERMINED BY RESISTANCE NEEDED TO PRODUCE DESIRED VOLTAGE DROP

The cross-sections of cables were determined as follows: A No. 0000 cable was provided to carry the 420 amp. from Fifth and Main Streets with a drop of about 15 volts. Adding to this the drop in the track on Main from Fifth to Twelfth Streets, due to the local current and the 120 amp. originating beyond Twelfth Street and not carried by feeder, we have approximately 18 volts from Twelfth and Main to the power house. This will be the drop in the feeder from Twelfth and Main. Knowing the length, drop and current carried in the cable its cross-section was determined to be approximately 800,000 circ.mil. Similarly the cable to Buchanan and Park Streets had to be 900,000 circ.mil. and the cable to Rivermont and Wall 500,000 circ.mil. In this way no resistance was needed other than that in the feeders. When the cables were installed the current distributed itself very closely in accordance with the calculated values.

No elaborate tests were made after the installation as experience with a similar installation elsewhere had

shown that the voltages between underground structures and rails were reduced to satisfactory values. In that the earth resistance was the same, the reduction of stray current would be directly proportional to the reduction of these voltages. The results of the following two years the installation give the conclusive proof of its success.

## How Electric Lines Can Help

### Secretary McAdoo Disclaims Present Intention to Take Over Electric Railways, but Asks for Co-operation in Freight Hauling

ON HIS recent trip to the Great Lakes Naval Training Station, as noted in another column, Secretary of the Treasury McAdoo expressed to a representative of this journal his views in regard to the status of electric railways.

Secretary McAdoo said that there is no present intention of taking over these properties, for local conditions are such that government operation would be extremely difficult and in most cases not feasible.

The government desires, however, to co-ordinate the electric lines so as to promote the highest degree of coöperation with the steam roads. Mr. McAdoo believes that the electric lines are an important factor in the transportation field, and that it is highly desirable to develop electric railway freight-handling facilities in territories which are not reached by steam roads, where the steam carriers need relief or where a better and more economical service can be rendered by the electric lines.

Speaking of the Liberty Loan, Mr. McAdoo said the spirit of the people throughout the country is inspiring, and that a greater enthusiasm for the Third Loan is being shown than for either of the foregoing issues. The statement that the West does not realize the seriousness of this war is without foundation. On Mr. McAdoo's Western trip the people turned out at any and all hours to hear him speak.

## Publishers Criticise Zone Law

AT A MEETING of the Periodical Publishers' Association, held in New York on April 26 to consider the postal "zone" law, a resolution was adopted unanimously condemning this law and urging Congress to postpone it until after the war. As Allan H. Richardson, president of the Periodical Publishers' Association, pointed out, the publishing industry is today laboring under all the difficulties which were described at the publishers' hearings last fall, and in addition the difficulty of increased costs, far beyond anything which was foreseen at the time of those hearings. Moreover, the industry is rendering incalculable service to the government, and it is more essential, than ever before, that it should be kept wholly intact and should be spared any unnecessary burdens. The resolution follows:

*Whereas*, the increased second-class postage rates, as provided in Section 3 of the Act of Congress, approved Oct. 3, 1917, which becomes effective July 1, 1918, will be most unfair and oppressive to the periodicals of the country and the reading public,

Now, therefore, be it resolved, by the Periodical Publishers' Association of America, that Congress be urgently requested to suspend the provisions of said law, insofar as they apply to increased second-class postage rates, until one year after the close of the present war.



## How Various Types of Special Work Layouts Have Been Developed in Brooklyn

BY M. BERNARD

Assistant Engineer Way and Structure Department, Brooklyn (N. Y.) Rapid Transit System

IN THE issue of the ELECTRIC RAILWAY JOURNAL of March 16, 1918, W. L. Whitlock, office engineer Denver Tramway, describes a type of special work which is designated as the "outside" switch. This refers to the location of the tongue and switch on the outer rail instead of its normal position on the inner rail.

Since the function of special work and any other track structure is to guide rolling stock to its destination in the most economical manner, it follows that the use of proper types is of great importance. A description of the types in use on the Brooklyn Rapid Transit System and the various stages of development leading up to their adoption may be of interest.

Originally all special work of girder construction was of the standard hard-center type as illustrated in Figs.

trailing ends of all standard type layouts. This is illustrated in Fig. 3.

About 1909 the use of the outside tongue switch type was discontinued and the use of the tongue switch on the inside was adopted for various reasons, partly enumerated below. About the same time the use of bolted construction instead of hard-center construction in the jump type was inaugurated. This is illustrated in Fig. 4. Some of the objections to the use of the tongue switch on the outside and a plain mate on the inside are as follows:

With the mate on the inside there is quite a portion of the inner curve unguarded, the length depending on the radius, wheel flange, etc. This condition is liable to produce derailments of cars and is aggravated by the requirement of flange-bearing in most mate designs, so that in time the plane of the wheel treads of cars going around the curve is higher on the inner rail than on the outer. The flanges of the wheels of cars going over the main line, also, cut into the floor of the mate forming

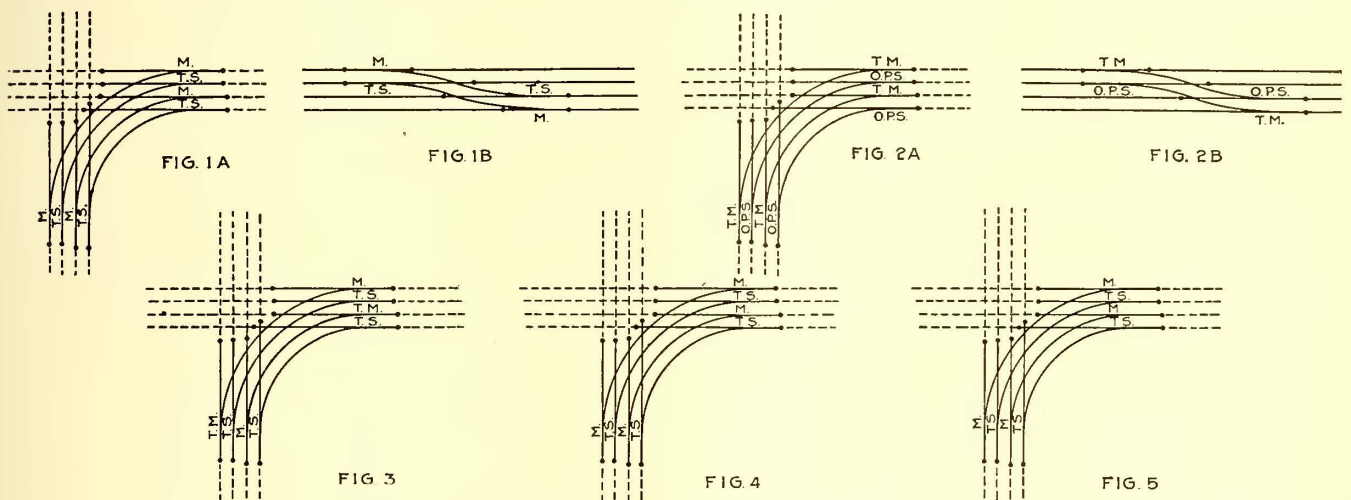


Fig. 1A—Double connecting curves with "hard center" frogs and flangeway in both runs. Tongue switch on inside.

Fig. 1B—Cross-over with "hard center" frogs and flangeway in both runs. Tongue switch on inside

Fig. 2A—Double connecting curves with "hard center jump type" frogs and flangeway for main line only. Tongue switch on outside

Fig. 2B—Cross-over with "hard center jump type" frogs and flangeway for main line only. Tongue switch on outside

Fig. 3—Double connecting curves with "hard center" frogs, flangeway in both runs and tongue mate with tongue switch in trailing ends.

Fig. 4—Double connecting curves with "built up jump type" frogs, flangeway in main line only and inside tongue switch

Fig. 5—Double connecting curves with "hard center" frogs and flangeway in both runs in inner rail while outer rail has "built up jump type" frogs and flangeway in main line only. Inside tongue switch.

### SPECIAL WORK DEVELOPMENT STAGES ON THE BROOKLYN RAPID TRANSIT SYSTEM

1A and 1B. The tongue switch was located on the inside in all layouts, the mate on the outside, and all frogs were constructed with flangeways in both runs. About 1902, as a result of a variation of traffic conditions, these types were modified as illustrated in Figs. 2A and 2B for use at locations where the traffic over one run was negligible as compared to that of another. At such points the tongue switch was placed on the outside rail, the mate on the inside rail, and the frogs were made of the "jump" type, that is, the flangeway for the light traffic rails was omitted, necessitating the wheels jumping over the unbroken main line. The hard center feature was, however, retained. The reasons in favor of this type are well set forth in Mr. Whitlock's article and are therefore omitted here. About the same time, also, to facilitate ease of riding, the practice was introduced of installing a tongue mate with a tongue switch in the

a ridge. Unless this is ground regularly it may become large enough to cause trouble just at the time when least expected or, rather, least desired. This condition also develops in a lesser degree with tongue, switches and mates in their normal position, but it is minimized by the guard action of the tongue. The design of a tongue mate requiring a "break" in the straight gage line where there is more or less pounding also affects the corresponding part of the mate opposite and consequently there is not as much difference in the cost of maintenance of the two types as might at first be inferred. The use of two different types requires a more elaborate system of records and a larger number of stock pieces to take care of the necessary renewals.

The practice of installing a pair of tongue switches in the trailing position in regular layouts was discontinued in 1911 and the original type was readopted as

the results obtained did not seem to justify the additional expense, which amounted to about 40 per cent. The maintenance cost of a tongue mate also exceeded that of a plain mate in the same position.

The bolted construction in frogs of the "jump" type was adopted because of the cupping that developed in the rail abutting the hard center. This has been prevented by the use of an unbroken length of rail in the main line.

Subsequent to the adoption of this design in emergency layouts reports were frequently received that cars would not take the curve because the frogs in the inner rail in many layouts happened to come very nearly opposite those in the outer rail so that both wheels had to jump gaps at the same time, resulting in derailments. This led to the adoption of the present type for such layouts as is illustrated in Fig. 5. It will be noted that this type differs from that shown in Fig. 1A only in the design of the frogs in the outer rail, which are of the jump type.

The types illustrated in Figs. 1A and 1B are at present used on our system for regular operation and those in Figs. 3 and 4 for emergency operation.

### Home-Made High-Potential Test Set

A SIMPLE but effective high-potential testing set used by a New Hampshire electric railway in the armature winding room is shown diagrammatically herewith. The apparatus consists of a 10-watt General Electric potential transformer whose high-tension winding is terminated in plug-handle contacts and whose

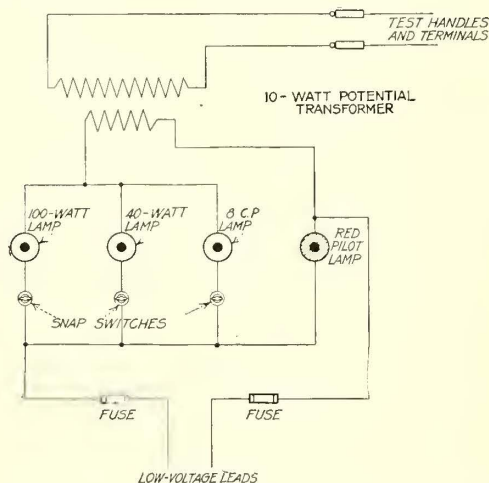


DIAGRAM FOR HIGH POTENTIAL TEST SET

low-tension side is connected through any one of three incandescent lamps to an ordinary 110-volt a.c. lamp socket.

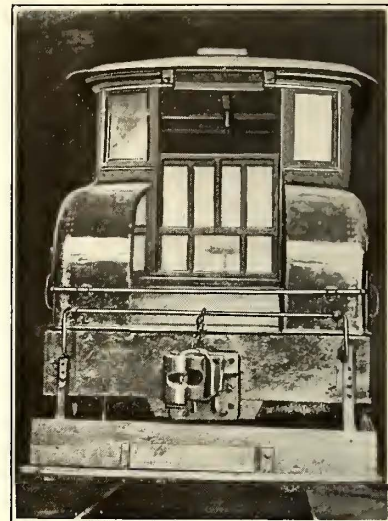
Depending upon whether the 100-watt, the 40-watt or the 8-cp. lamp is thrown into the low-tension circuit, the potential at the high-voltage plugs is 1760, 1200 or 800 volts. When the terminals of the high-voltage side are short-circuited, as when a ground is found between a commutator bar and the motor shaft or core, the lamp burns at full candle power. The red pilot lamp shown at the right in the diagram burns continuously when the transforming low-voltage coil leads are plugged into circuit.

### Efficiency and Safety of Electric Industrial Locomotives

AN ELECTRIC locomotive used by a Massachusetts industrial plant was recently greatly improved by cutting down the cab housing as shown in the accompanying photograph. As originally designed, the housing extended across

the full width of the cab, with the result that the operator could not see the track and coupler at the front of the locomotive, and at times there was delay in controlling the movement of the equipment. The cab housing was accordingly cut down for about 50 per cent of the width, and additional window space was provided in the center of the cab.

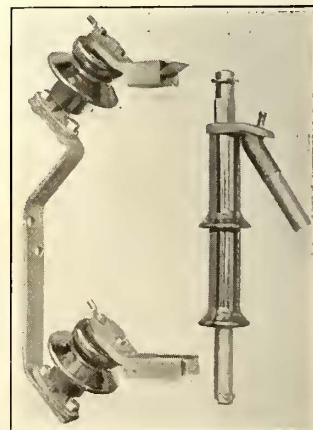
The operator now has a clear view of everything in front of the machine as well as a better lighted working space in the cab itself. Increased production has resulted, owing to the faster and safer handling of the equipment made possible by the change.



ELECTRIC LOCOMOTIVE WITH REDUCED CAB HOUSING

### Combined Disconnecting Switch and Fuse for Outdoor Use

THE combined fuse and disconnecting switch shown in the accompanying illustrations is used for the protection of transformer banks where no primary switches are used. The construction consists of two supporting petticoat type insulators on which are mounted the holders. The ends of the fuse are provided with brass contacts which can be pressed into the stationary clips on the supporting insulator. This type was designed by the General Electric Company primarily for operation in small outdoor substations. The contacts are protected against the effects of ice, sleet and snow by the method of mounting and by means of a punched hood attached to the top of each supporting insulator. This combined fuse and disconnecting switch is made in single-pole units for vertical mounting on flat surfaces. It is available for use at 15,000, 22,000, 35,000 and 45,000 volts. The maximum current rating is 50 amp. and no special arrangements are needed for mounting.



15,000-VOLT COMBINED FUSE AND DISCONNECTING SWITCH

This combined fuse and disconnecting switch is made in single-pole units for vertical mounting on flat surfaces. It is available for use at 15,000, 22,000, 35,000 and 45,000 volts. The maximum current rating is 50 amp. and no special arrangements are needed for mounting.

# American Association News

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*Company Sections Producing Unusually Instructive and Stimulating Programs.*

*Inspirational and Patriotic Talks Are a Feature at Practically Every Meeting.*

*N. W. Bolen at the Jersey City Meeting of Public Service "Hit the Nail on the Head" When he Spoke on "Our Job."*

*Filipinos Are Also Doing Fine Work in Preparing Papers for the Manila Section*

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## **Rousing Public Service Meeting at Paterson**

THREE hundred members attended the April meeting of the Public Service Railway company section, which was held at the Market Street carhouse in Paterson on April 25. The plan of holding the meetings in different division centers is proving to be a great success, as was attested by the Jersey City meeting last month.

The Paterson meeting was a combined smoker and entertainment, J. L. O'Toole, assistant to the president, being the principal speaker. L. J. Tynan, attorney, and H. D. Briggs, assistant general claim agent, also spoke briefly. After the speaking the meeting was turned over to H. E. Feakes, supervisor Paterson carhouse, in charge of entertainment. There was a piano solo by a motorman and a sleight-of-hand performance by a conductor, while the "Boys' Band," consisting of sons of Passaic division trainmen, rendered several selections during the evening.

Mr. O'Toole's line of thought was that electric railway workers can and must stand behind the men at the front. Electric railway transportation furnishes an indispensable cog in the machinery of war preparation. He said not only is it necessary that this fact be realized, but electric railway workers should be leaders in showing patriotism by subscribing to the present and future Liberty Loans. He paid tribute to the results already achieved by the boys at the front and predicted, on the basis of past performance, that "they will continue to prove to the world that America can and will make good her vows."

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## **N. W. Bolen on "Our Job"**

AT THE March meeting of the Public Service company section N. W. Bolen, general superintendent, spoke on the subject "Our Job." As the title indicates, the talk was intended to impress upon Public Service men the importance of contributing their bit by faithful transportation work. After outlining some of the things which he had seen in his thirty-six years of railway service, and the difficulty involved in street railway work now, he raised the question "Why should any man remain in such a business?" His answer was that there is no industry so appealing to those who are really fitted to the arduous demands of this business. No other is so close to humanity, with its faults and

virtues; no other is so closely linked with the industrial growth and prosperity of the community, and no other is more vital to the welfare of the country in the mighty struggle now going on.

To make his line of thought perfectly definite Mr. Bolen gave a list of the most important extra burdens which have been imposed upon Public Service by the war. At the extreme northern end of the line is Camp Merritt where as many as 30,000 soldiers are congregated at one time. At Edgewater is the plant of the American Can Company, which will ultimately employ 3000 men; while near by are the plants of the Aluminum Company of America, the General Chemical Company and the Remington Arms Company. At Bayonne is the Electric Launch Company and across the ferry is the Staten Island Shipbuilding Company, each with employees running into the thousands. On the Hackensack side is the Federal Shipbuilding Company, which will ultimately employ 7000 men; the Foundation Company with 3500 men, the United States Engineers' Depot with 600 men, and the Butterworth-Judson Company, acid manufacturers, with 3600 men. Further down are the plant of the Submarine Boat Corporation which later expects to employ 15,000 men, and also the Quartermasters' Depot employing 3000 men.

On Bloomfield Avenue, Newark, is the International Fuse Company. When an addition is completed for the manufacture of shells the total number of employees will approach 10,000. The Ford destroyer plant shortly to be started will, it is reported, require 12,000 men. Further south are the Weston Electrical Instrument Company and the Dusenber Motor Company, each with 1000 employees, and the new plant of the Standard Aëroplane Corporation which will have 5000 men when running full. The Moore shipbuilding plant in Elizabeth employs about 1800 men, and at Bonhamtown the government is building a great ordnance depot facing on the Raritan River which will employ 6000 men. On the South Amboy line of the Public Service the Union Powder Company is rapidly approaching a total of 3500 employees and the Parlin Plant of the DuPont Company will employ 6500 men in the manufacture of powder. The Wright-Martin aircraft plant at New Brunswick is employing around 3500 men. At New Brunswick also the Johnson & Johnson Company employs more than 1000 people in the manufacture of bandages and surgical supplies.

In the southern division there is the New York Shipbuilding Company with 11,500 employees and the New Jersey & Pennsylvania Shipbuilding Company with 7000 employees. At Gloucester also the War Department will employ about 5000 men when running full. In round numbers, some 90,000 employees in the plants mentioned will be engaged in the manufacture of war materials, and Public Service is being called upon to transport a large proportion of them. Mr. Bolen said "Our job is cut out for us, and it is a big one; but I have faith in the ability of Public Service men to carry to successful conclusion any task to which they set themselves and faith that they will not fail in this national crisis."

### "Patriotic Talks" at New Haven

THE regular meeting of the Connecticut Company Section was held on April 30, at the Hotel Garde, New Haven, preceded by the usual dinner. V. S. Curtis, secretary and general traffic agent, spoke on the "Express Department," and George E. Wood, mechanical engineer, read a paper on "Power Station Accomplishments." A number of "Patriotic Talks" on subjects of current interest were given by unannounced speakers.

### Complicated Piece of Track Special Work

AT THE MEETING of the Capital Traction Company Section held at Washington, D. C., on April 11, the principal speaker was H. P. Hunting, engineer of way. He gave a talk on the installation, last year, of a complicated piece of special track layout at the junction of New York and Pennsylvania Avenues, and Fifteenth Street. This work was done without interrupting traffic, notwithstanding the fact that the intersection is located at one of the busiest points in Washington. An abstract of Mr. Hunting's paper will be given in a later issue of the JOURNAL.

At this meeting also a representative of the local Liberty Loan committee made a strong appeal for the purchase of Third Liberty Loan Bonds. As a result a campaign was instituted in the company's organization, similar to that carried on in the drive for the second loan. At the conclusion of the meeting refreshments were served.

### Portland Section Hears Talk on Army Life

AT THE MEETING of the Cumberland County Power & Light Company section held on April 23 the principal speaker was Lieut.-Col. Frank B. Cummings, lately returned from France. He related his experiences from the time he left the United States until he reached the training camp in France. A lively discussion followed. The entertainment of the evening comprised a chalk talk by a member from the commercial department, a piano solo and a vaudeville act by local entertainers.

### The Abuse of the Transfer

AT THE March 5 meeting of the Manila section, A. I. G. Obligacion, chief clerk transportation department M. E. R. & L. Co., read a paper on "The Menace of the Transfer." From this it appears that the transfer privilege is abused in Manila as elsewhere.

After outlining the advantages accruing to the railway and the public from the use of transfers Mr. Obligacion told of some of the local transfer abuses. The principal points made were these: A passenger asks for a transfer to a certain line and then presents it on a different line; when the conductor refuses to accept it the passenger complains to the management. A passenger on leaving a car meets some friends and forgets about the passage of time until several cars have gone by; he is then indignant because the conductor or the car boarded refuses to accept his transfer, and indulges in abuse of the system. Some passengers are indignant because the conductors will not assist

them in getting a round trip for a single fare. Some passengers ask for transfers at certain transfer points and insist on riding to a more distant transfer point; when not permitted to do this they insult the conductor, give the transfers to their friends, use "late dates," "picked up," "plugged ones," etc.

In Mr. Obligacion's opinion the virtues of the transfers outweigh their defects but they should be checked and accounted for as accurately as fares. They are really parts of fares, and only through proper checking can abuses be prevented. The local company uses special rules for the administration of the transfer system, selects transfer points carefully, prohibits the acceptance of transfers outside of such points, punches the month and day on the transfer before it is sent out from the office, issues an individual punch to each conductor and changes the color of transfer pads on every line every fiscal year.

### Filipinos Read Papers at Manila Meeting

AT THE MEETING of the Manila Section held on Feb. 12, T. Castillo, carhouse starter, outlined the duties of a man in his position. After stating that the first duty of a starter is perfect familiarity with the schedules, he listed the following as inspectors' duties: To keep extra lists properly in order to avoid inequitable distribution of work. To keep an accurate record of absences and their causes, and also a record of the capabilities of the men as to their familiarity with certain kinds of equipment. To study the trouble sheet so as to handle contingencies wisely. To have on hand enough cars and crews to take care of extra traffic, anticipating the needs of the public. To inspect platform men before allowing them to go on duty, to be sure that they are presentable in appearance and have all of the necessary equipment. To call to the attention of crews defects in track, line, streets, etc., which they should know about in order properly to perform their duties. To see that cars go out on time and in perfect condition. To perform their work in such a way as to keep the men contented. To report promptly to their superiors details of accidents and defects in any part of the system. To furnish the public with exact information regarding the operation of the system. To check and correct trainmen's reports so as to insure accurate data regarding car movements. To report daily to the superintendent of transportation as to all unusual occurrences, violation of rules, etc.

At the same meeting M. Fariñas, traffic inspector, spoke on "Trainmen as Witnesses." Mr. Fariñas pointed out that while the most valuable witness which the company can secure in the case of an accident is one who is not employed by the company in any capacity, an employee can be a valuable witness if he is careful to make statements that can be substantiated. An employee giving evidence for the company is placed at a disadvantage due to the fact that the judge is more likely to be impressed by declarations of witnesses for the plaintiff.

In addition to being prepared to substantiate his own statements, the trainman can be of great assistance in securing witnesses of an accident who will be able to give clear descriptions of it. The names of possible witnesses should be secured even though the passenger states at the time that his injury amounts to nothing.

## LETTERS TO THE EDITORS

### R. W. Blackwell and the Electric Railway Industry

LONDON, ENGLAND, April 15, 1918.

To the Editors:

By the sudden death of Robert W. Blackwell, after a very short illness at his residence, "Elmbank," Hampstead, on March 29, the electrical profession loses one of the few remaining and best-known pioneers of electric traction, and one whose name has been intimately connected with the most important branch of electrical engineering, both in the United States and in this country, for the last thirty-five years.

Born in 1858, Mr. Blackwell graduated as M. A. and B. LL. at Princeton University, where he was a contemporary of President Wilson. After graduation for a short time he engaged in the practice of law. Attracted however by the great demand for mechanically operated street cars, the need for which was so urgently felt in the United States, he jointly, with Edward W. Bentley and Walter H. Knight, founded in 1883 the Bentley Knight Electric Railway Company of New York, which installed and equipped an electrically operated tramway system in Cleveland, Ohio. This line opened for traffic in 1884 and was the first line to be operated electrically as a commercial undertaking.

Mr. Blackwell, as a contemporary of Sprague, Van Depoele and Edison, was intimately associated with the great pioneer work carried out in the United States between 1883 and 1889. Speaking at the sixth annual meeting in Philadelphia, of the American Street Railway Association, on Oct. 19, 1887, Mr. Blackwell said: "We entered the electric city tramway field long in advance of all others, and we believe that electric street railways for city service can be used effectively only where the power to drive the car is transmitted to it from a generating station." How true this pre-vision has been amply demonstrated, although at the time many thought the future lay with the storage battery.

He was actively engaged in the management of his

*(Concluded from page 866)*

Mr. Fariñas also outlined the ideal accident report. The spirit of his talk is shown by this quotation: "Trainmen should make every effort to avoid discussions or arguments with passengers, should always be polite and courteous, and should seize every opportunity to make their passengers their friends. They must remember that at any moment they may be obliged to call upon these passengers to act as witnesses of an accident."

In discussing Mr. Fariñas' paper F. P. Santiago said among other things that "employees are good witnesses of any accident if they will just give a fair and unbiased description of what they saw. They should never make the mistake of exaggerating the facts of a case just because they want to favor the company. By misrepresenting the facts they may cause the company to refuse a just claim which may afterwards have to be contested in court. All that the company wants is the truth."

company until 1889, when he transferred the Bentley Knight Company's interests to the Thomson-Houston Company of Lynn, Mass. Mr. Blackwell was shortly afterward summoned to England to give evidence before Parliament on behalf of the first bill promoted by the Central London Railway Co. and it was the experience he gained during this stay which showed him the great prospects of electric traction in the United Kingdom and eventually, in 1890, induced him to take up his residence in this country. In 1890 he became associated with Messrs. Greenwood & Batley of Leeds, in conjunction with whom he opened an office in London for the purpose of introducing electric traction on the tramway systems of the United Kingdom. Speaking about the United States before the Institution of Electrical Engineers in 1892, Mr. Blackwell said: "The public has thoroughly supported those tramways which have introduced electricity, and has rewarded their enterprise by greatly increased patronage. That electric traction will receive the same acceptance here that it has already gained across the water, I do not doubt." Time more than justified Mr. Blackwell's anticipations, although several years of arduous pioneering work were necessary to overcome the opposition of inertia and vested interests before electric traction was definitely established in this country.

In 1894, Mr. Blackwell founded the firm of Robert W. Blackwell & Company which, in 1895 secured the contract from the British Thomson-Houston Company for the construction and electrical equipment of a new tramway in Bristol, and the work there carried out was so satisfactory that it at once secured for the firm the premier position as contractors in the electric traction field. The very great financial success secured by this first electrification on a commercial scale served as an incentive to many others to follow in its footsteps, and Bristol was visited and inspected by delegates from all parts of Great Britain and the Continent as a model electric tramway installation.

As engineers and contractors, R. W. Blackwell & Co. were henceforth connected with a very large majority of all the electric traction systems installed in the United Kingdom, amongst which may be mentioned: Bradford, Bolton, Cork, Central London Railway, Coventry, Cardiff, Chatham, Dublin, Doncaster, Giants' Causeway, Glasgow, Gateshead, Isle of Man, London United, London County Council, Leicester, Liverpool, Norwich, Nottingham, Plymouth, The Potteries, Reading, Southampton, St. Helens and many other British undertakings. Blackwell & Company supplied materials and engineering advice, also, to a large number of Continental firms. They were the expert advisers on traction matters to such firms as the Oerlikon Company, Shuckert & Company and Ganz & Company and their designs and specialties are to be found in a very large number of electric tramway installations throughout Europe, Africa, Asia and South America. It was they who designed the originally successful trolley standards for top seat tram cars and first standardized the pole and bracket arm construction for overhead lines. Wherever anything new was to be seen or experience was to be gained, there Mr. Blackwell went or sent his engineers or representatives to investigate and test, with the result that purchasers always came to him for information and advice. He showed in 1897, at the Brussels Exhibition, an



Mr. Ryder's proposed spiral, the writer believes, covers the first point; it may not cover the second point as fully as may be desired. Nearly all spiral systems now in use, with the probable exception of that of the Connecticut Company, employ too many changes of radius of curvature between the tangent and the circular or center curve. As far as alignment is concerned, if half the number of different radii, and in some cases even a less proportion, were used it would still give the same practical effect upon the running of the cars. In curving rails on a bending machine for spirals of the same length and same final off-set, one with twice the number of radii as another requires from 25 to 50 per cent more time to curve than the other.

It must be realized, of course, that, in order to make a design flexible and applicable to center curves of a range of radii, one must not go to the other extreme and have too few changes of curvature in the spiral. Conceding further that, in order to follow out a system or principle, the increments constituting or forming the spiral must be confined within certain limits, it would seem that Mr. Ryder had arrived at quite a satisfactory solution in the basic spiral, marked 100-A on the diagram. This spiral would be found most generally satisfactory and applicable. It may be that a somewhat longer spiral, as the one marked 100-B, would be preferred in some cases, particularly with center radii somewhat longer than 35 ft., in which case part of the spiral would be dropped off. Spiral 100-C could well be left out altogether, as it would rarely find application to curves with a short central radius. For spirals longer than 100-B and for use with longer central radii it does seem that longer chords and fewer radii could be applied to considerable advantage. Chords of 10 ft. in the 200 spirals would reduce the number of radii to fewer than one-half, to reach the same central radius. Spiral 200-A could thus be developed from spiral 100-B by using the same radii but with 10-ft. chords, making only six changes between 0 and 50-ft. radius. Spiral 200-B might be formed by doubling both chords and radii of spiral 100-A.

We would thus have four spirals, 100-A, 100-B, 200-A and 200-B, to which might be added the spirals shown on the top of the diagram of proposed uniform standards, which Mr. Ryder calls 200-C, but which probably had better be called 75-A. These five spirals would, in the writer's belief, cover all requirements. The two spirals at the bottom of Mr. Ryder's diagram, also called 200-C, are really combinations and any combination might be used, or might be necessary, to cover contingencies such as car clearances or avoiding of obstructions. It would seem that they should not be defined or included in a set of standard spirals.

The past attempts of the manufacturers and of the committee on way matters of the American Electric Railway Engineering Association have shown that the problem is not a simple one. Mr. Ryder has, undoubtedly, given the subject a great deal of thought and study, and the principle worked out and outlined in his article is extremely valuable. Any further development or modifications, and attempts at simplification might well follow the same lines. The comments and suggestions made herein are not a criticism, they are only made with the idea of helping along, in the

hope of arriving at "something" that may finally prove satisfactory to all concerned and give us a real standard of spirals—one that will be used.

V. ANGERER, Vice-President.

THE AMERICAN RAILWAYS COMPANY

PHILADELPHIA, PA., April 27, 1918.

To the Editors:

Referring to Mr. Ryder's article on track spirals, printed in the issue of the *ELECTRIC RAILWAY JOURNAL* for April 6, 1918, page 649, and to Mr. Harvey's letter printed in the issue for April 20, page 775, it seems to me that there are many points in Mr. Harvey's letter which are worthy of careful consideration and which generally meet with my views. In this connection, I beg to quote from my letter of March 15, 1917, to Mr. Ryder as chairman of the committee on way matters as follows:

"As I understand the question it is not spirals which we are standardizing but a method of figuring spirals. In other words, all of the spirals at present in use are generally satisfactory from an operating point of view and this committee should develop if possible a simplified method of figuring the distance from the termination of the center radius to the point of the spiral curve, and this curve should be designed to permit the installation of a standard switch in the plain end without distorting the curve.

"If easy riding qualities can be obtained by a two or three-part compound curve, as suggested by Mr. Falconer of the New York State Railways, it would seem that we are getting into entirely too much figuring for the average draftsman on a small property if we divide our curve up into a greater number of parts.

In our practice we have used Wharton spirals exclusively. These appear to the writer to be well within the grasp of the average draftsman when used with the very complete data issued by the Wharton company. We have seldom found it necessary to use other than the plain-end No. 1 in connection with switch-end A and plain end No. 2½ with switch-end B.

In view of the fact that all of the larger operating companies have developed spiral standards of their own, sometimes with much elaboration, it might be pertinent to inquire how far the larger companies would follow a standard not of their own design. In the smaller companies I understand it is the practice to use whatever spiral is used by the special work manufacturer without question."

C. G. KEEN,

Engineer of Way and Structure.

### War Affects Shop Planning System But Slightly

The planning system worked out for the Portland Railway, Light & Power Company, and described in the 1916 and 1917 Maintenance Issues of the *ELECTRIC RAILWAY JOURNAL*, has been found to be entirely successful and "works fine," Master Mechanic F. P. Maize reports. The system is in operation as described, except that under present war and labor conditions the advances cannot be made as originally contemplated. The only other change in the system is that girls have been substituted for men clerks in compiling the records.

## Recent Happenings in Great Britain

### Traffic Keeps Up Despite Fare Increases—Committee on Production Adjusts Tramway Wages—Miscellany

(From Our Regular Correspondent)

In the House of Commons Sir Albert Stanley, president of the Board of Trade, said that the addition of 50 per cent to railway fares at the opening of last year had not the desired effect in curtailing traveling. In all probability, a considerable number of passenger trains would be canceled at once. Should these restrictions prove ineffective, others will be put in force. "Curfew" regulations announced by Sir Albert provide that all places of amusement shall close at 10:30 o'clock at night. Other restrictions foreshadowed included a considerable reduction in tramway and electric railway services, including the underground services of London, and the rationing of London in coal next winter on a much lower scale than in the past. It is also proposed to extend rationing to the greater part of England. Munition works, hospitals and nursing homes are to be exempted. The reason for these restrictions is the remoteness of this particular part of the country from the coalfields and the difficulties of transport.

#### THE RECENT WAGE AWARD

Threatened strikes of tramway workers in various cities of Great Britain have been averted by the award of the committee on production. It states that men aged eighteen years and over, and the grades of women aged eighteen years and over whose terms of employment include an understanding that they shall be paid the same rates as the grades of men whose places they have filled, shall receive such an advance as would give £1 a week over the pre-war rates of the grades concerned, payment to be made on the basis of a week of six days or shifts. Women aged eighteen years and over who are not covered by this decision are to receive an advance of 4s. a week, subject to a maximum of 20s. a week, over the pre-war rates of the grades concerned. Girls, boys, and youths under eighteen are to receive such an increase as will give them half the additional advances provided by the committee's award to the men or women, as the case may be, in the same undertaking. The advances went into operation on the pay day in the week beginning March 4, 1918. The award does not include women to whom apply the provisions of the orders made by the minister of munitions under the munitions of war (amendment) act of 1916. Officials of the Transport Workers' Federation state that the award is satisfactory.

#### EDINBURGH LEASE EXPIRES IN JUNE

The lease between the Edinburgh Corporation and the Edinburgh & District Tramways expires in June of next year, and steps are being taken to consider the future policy of the

corporation with regard to the undertaking. The sub-committee of the Corporation tramway committee has decided to recommend to the full committee that the time has arrived when a tramway manager should be appointed.

The town clerk at Edinburgh has been notified that the corporation proposes to apply in the present session of Parliament for powers to construct tramways between Edinburgh and Queensferry.

#### SUNDAY SERVICE AGITATION

The Southport tramways committee has decided to recommend to the Council that it run the trams on Sundays. Hitherto there has been no service of Sunday cars on the corporation system, but only on that of the Southport & Birkdale Company, recently acquired by the town for £35,000. The ratepayers have twice voted on the question of Sunday trams on the corporation lines, and have each time recorded a substantial majority against the plan.

The Liverpool tramways committee, having decided to create the office of deputy manager, has appointed to that position J. S. D. Moffet, general manager of the Belfast Corporation Tramways. From 1896 to 1898 Mr. Moffet was assistant borough engineer of Sunderland, from 1898 to 1904 assistant in charge of the tramways and improvements department under the engineer at Rochdale, from 1904 to 1913 general manager and engineer of the Rochdale Corporation Tramways, and from 1913 to 1916 general manager and engineer of the West Ham Corporation Tramways. He went from West Ham to Belfast.

#### LONDON TRAFFIC INCREASES

At the annual meeting of the Underground Electric Railways, London, Ltd., the chairman said that during the past year there had been a remarkable growth in the business done by the various companies included in the underground system, but that this growth had been accompanied by increases of expenditure, due to the increased war bonuses to the staff, both on the railways and on the omnibuses, that offset the gain in gross business. The increases of wages during 1917 would affect the 1918 accounts to a still further degree, even if there were no further advances. Increases in fares during 1917 accounted for a certain portion of the larger receipts. The Underground now controls most of the passenger service in London. It carried approximately 900,000,000 passengers a year. The majority of the fares of these passengers was 2d. or under. The satisfactory result of the through running of the London electric trains to

Watford was encouraging as an indication of what the company hoped to achieve when the program of improvements up for consideration in 1914 could be carried through to completion. The chairman also said that London was grateful to the companies, for without the organization the people would have been stranded and immobile in the present crisis.

Though women drive trams in many provincial towns in Great Britain, they have so far been forbidden to do so in London. It now appears that the ban on women drivers is to be removed. According to a report of a conference of the tramways committee of the Board of Trade James Devonshire stated that it was probable that women would be licensed as tramcar drivers shortly in the metropolitan area, but that the police would take no responsibility with regard to trade union difficulties.

#### NEW FARES FOR NOTTINGHAM

The new scale of fares on the Nottingham Corporation tramcars has been put into effect, notwithstanding protests from various quarters. The raising of prices has been forced on the committee by the increase in wages. Briefly it may be said that all the odd halfpenny charges are raised to the level penny, that the journeys are reduced to something like what they were in the early days after the system was electrified, and that overlapping stages have been abolished. The transfer tickets were done away with some time ago, but this is the first general advance in prices that has been made.

#### FINANCIAL READJUSTMENT PROPOSED

The committee appointed in July, 1917, by the holders of the debentures of the London United Tramways states in an interim report that it has made considerable progress with the representatives of the shareholders in agreeing on a scheme for the readjustment of the capital. The arrangements proposed are, however, dependent upon the passing into law of a bill now before Parliament, and until this is assured it is not possible to submit any definite proposals for the consideration of debenture holders. The bill in question provides, among other things, for an extension of the periods of the various franchises under which the tramways are operated, and also permits of some increase in the fares. The tramway system urgently requires a large expenditure on renewals and repairs.

Subject to the provision of the bill, the committee has agreed to recommend nearly £250,000, and other funds accumulated in the receivership should be applied to the habilitation of the physical system. It has also agreed to the conversion of part of the existing debenture stock into preference shares so that, if necessary, part of the earnings otherwise applicable to debenture interest may for a period be diverted to maintenance.

A. C. S.



# News of the Electric Railways

TRAFFIC AND TRANSPORTATION

FINANCIAL AND CORPORATE • PERSONAL MENTION • CONSTRUCTION NEWS

## Boston Relief Prospects

Terms of New Measure Still Being Considered, But No Wide Differences Have Developed

Prospects appear good for the passage at this session of the Massachusetts Legislature of an act to provide increased revenue for the Boston Elevated Railway. The exact terms of the measure to be presented soon for discussion on the floor of the House are still under consideration in the committee on ways and means, which recently concluded public hearings upon the bill (House 1442) reported by the committees on metropolitan affairs and street railways, sitting jointly.

### COMPANY FAVORS PUBLIC CONTROL

M. C. Brush, president of the company, recently informed the ways and means committee that under present conditions public control along the general lines of the bill appeared likely to lead to favorable results. He said that the most important point to realize was that the public needed high-class transportation service, developed according to its growing requirements. In general, the company supported the idea of public control, with guaranteed dividends and fares rising or falling as required to meet the full cost of the service. The management felt that the company had been too liberal in accepting the burden of subways developed and carried during the last twenty years.

On May 1 Governor McCall sent a letter to the committee stating various objections held by him to the bill as it stood at that time. The Governor's principal objection was that the contractual relations between the company and the State should not be made permanent. He also urged that the State should not give away, as a contract right, any part of its power to regulate the company, should it revert to private management, and that the State should not abandon its power to take the property by right of eminent domain. The Governor also favored the control of the company by unpaid trustees, believing that a higher grade of ability can be secured for this service in such case.

### HOW THE COMMISSION FEELS

At the final hearings Chairman Macleod of the Massachusetts Public Service Commission offered several criticisms of the bill. He pointed out that the State had overreached itself in driving too hard a bargain with the company and said that it was out of the question to maintain a 5-cent fare and relieve the taxpayer from any contributions whatever to meet the cost of

transportation facilities. The chairman objected to that part of the bill requiring the State to turn back the property in better condition than when it was received in the event of private control being restored at the end of the ten-year period.

### SUBWAY PURCHASE FAVORED

The Public Service Commission was still of the opinion that the purchase of the Cambridge subway by the State would be advantageous to both the company and the public. It also believed that there was no sound justification in the bill for requiring dividends of 6 per cent to be paid on the common stock at the end of four years, contending that if, as the result of present conditions, common stock could be issued at par on a 5½ per cent basis, it was better that temporary needs should be financed by the issue of preferred stock at a somewhat higher rate than that the car riders should be compelled to pay an excessive rate indefinitely on all the stock now outstanding.

### Contempt Case Dismissed

At the conclusion of arguments recently in the Superior Court in Seattle, Wash., Judge John S. Jurey dismissed the contempt proceedings instituted against the Puget Sound Traction, Light & Power Company by Hugh M. Caldwell, corporation counsel of the city. The citation ordered the company to show cause why it should not be adjudged in contempt as a result of an advertisement published in a morning paper of April 15 bearing on the city's suit to collect \$60,917, as the company's proportion of the construction cost of the Fremont Avenue bridge, and \$666 monthly for maintenance.

Mr. Caldwell argued that the appearance of the advertisement on the morning the case was set for trial tended to prejudice the city's case with the court or jury. In dismissing the action, Judge Jurey ruled that although the advertisement referred to the case in question, it was self-serving on the face of it, and could not seriously be taken as tending to influence the court.

Attorney Howe, for the company, declared the advertisement was not intended to prejudice a jury.

The company obtained a continuance of the trial until May 6, pending a decision of the Supreme Court in an alleged similar case from Tacoma. Mr. Caldwell obtained a writ of mandate from the Supreme Court ordering Judge Jurey to show cause on April 26 why the case should not immediately go to trial.

## Arbitration for Cleveland

Cleveland Men Accept Arbitration—Company Waives Demand for Open Shop and Women Employees

The Cleveland (Ohio) Railway and its employees on May 3 agreed to submit their wage controversy to the National Labor Board to be adjusted by arbitration. The wage scale, length of runs and conditions for Sunday, night and holiday operation are the ones that will be settled by arbitration. The company agreed to drop its demand for open shop and the employment of women, concessions on other points having been made by the men.

The old contract provided that all differences may be submitted to arbitration. The men argued that "may" in the contract could not be construed as "must" and on that ground they refused to arbitrate the company's demand for an open shop and the employment of women as conductors. J. J. Stanley, president of the company, made these demands in order to render better service. The men say that motormen and conductors who have left the service will return if the wages are made sufficiently attractive.

Mayor Harry L. Davis issued a statement asking that the company and its employees get together. He advanced patriotic reasons for avoiding a strike at this time.

### DEVELOPMENTS ON MAY 2

William B. Fitzgerald, vice-president of the Amalgamated Association, conferred with President Stanley on May 2 and a number of conditions of the proposed contract were discussed. Neither the matter of wages nor the company's demands noted previously had been reached late in the afternoon.

Mr. Faulkner, representing the federal labor department, offered his services. They were accepted by the union. President Stanley, however, preferred that the matters in dispute should go to arbitration. It was understood that he then insisted on the open shop and the employment of women. As has been stated before, Mr. Stanley held that all matters in controversy were subject to arbitration under the old contract, while the men contended that Mr. Stanley's demands were not intended for arbitration under the terms of the wage agreement.

On April 29 the trainmen voted to strike unless their demand for increased wages and improved conditions, as heretofore outlined in the *ELECTRIC RAILWAY JOURNAL*, was granted. No time was set for this action. The contract under which the men have been working expired on May 1.

## New Chicago Proposal Advanced

### Counsel for the Aldermanic Committee Suggests Plan Which Embodies Trusteeship Idea for Surface and Elevated Lines

Chicago Aldermen, who have been considering a new franchise for the local traction companies, had a chance to consider "immediate municipal ownership" in a new form at a meeting of their sub-committee on April 29. This latest development in the ordinance negotiations was brought about by the submission of a "trustee plan of public ownership" by Walter L. Fisher, special counsel for the committee.

#### TRUSTEESHIP PLAN PROPOSED

Mr. Fisher stated that his plan was based on the same general principles as the Boston trusteeship plan and the general railroad policy recently put forward by Theodore P. Shonts, president of the Interborough Rapid Transit Company. He contended, however, that both these plans, by having the taxpayer carry part of the burden of transportation, involve a principle "of more than doubtful expediency."

The new plan requires that all the surface and elevated properties be turned over on agreed terms to a new corporation, to be operated solely for the public benefit without profit and subject only to payment of the actual cost of financing. The new corporation would consist of a board of trustees to be composed of public-spirited Chicago men, having perhaps some official of the city and a representative of the employees as directors ex officio. There would be provision also for an executive committee to give full attention to the properties and to be paid appropriate salaries.

Mr. Fisher would have his new corporation take over the properties subject to the outstanding bonds and other securities to an amount not exceeding the agreed purchase price. Any money needed for extensions and improvements would be raised by the sale of bonds at low interest rates. Present security holders would receive some new form of security and a rate of return to be agreed upon.

The rate of fare would start with 5 cents and possibly a 1-cent charge for transfers between surface and rapid transit lines. There would be provision for increasing or decreasing the fares and transfer charges, so that service might be furnished at cost. Mr. Fisher also expressed the opinion that it would seem to be sound policy not to increase rates when this could be avoided by eliminating the cost of street paving and cleaning.

The Fisher plan is admittedly based on the essentials of the contract plan of municipal ownership advocated by Mayor Dunne in 1905, but its author says it avoids all the objections urged against municipal ownership.

The Aldermen did not take kindly to the idea. They could not see how the present security holders might be persuaded to turn over \$220,000,000 worth of property to a board of disinterested citizens with no guaranty of a return

other than that which might be found in the revenues from operation. They were afraid the proposed board of trustees might develop into a political coterie. The proposal will be discussed at further sessions.

#### WHAT THE COMPANIES PROPOSE

Speaking for the Chicago Surface Lines and the Chicago Elevated Railways, President Busby of the former company on April 25 outlined the terms upon which they will go into the plan for unification of all traction lines and the construction of subways. This statement was presented at a meeting of the sub-committee of the City Council which has been considering the essentials of a new ordinance.

The companies propose a thirty-year franchise, the city to have the right at any time to take over the properties on payment of the established purchase price, or to take them at the end of the franchise subject to the outstanding indebtedness. If the city does not exercise this option at the expiration of thirty years, it is proposed that the company shall have the right to continue operations under the ordinance.

Mr. Busby also suggested the establishment of a "traction fund" into which the company should pay annually a specified amount for amortizing discounts and expenses in connection with the issuance of bonds; also a sum equal to 5 per cent on the cost of city owned subways and equipment; also all "surplus receipts." These "surplus receipts" are to consist of the amount remaining after the following deductions: operating expenses, including payments for amortization and for the "traction fund"; actual interest on bonds within city purchase value; 5 per cent on the excess, if any, of purchase value over the par amount of such bonds; actual sinking fund payments; subway rentals; and an amount equal to 1.75 per cent of the average purchase value for the year, as a minimum allowance to the company in addition to the interest mentioned above, and a per centage to be determined from time to time by the local commission to make up a fair and just return to the company.

#### FIVE-CENT FARE WITH TWO-CENT TRANSFER

The proposal is made that the rate of fare be 5 cents, with a charge of 2 cents for each transfer between a surface and a rapid transit line, and without charge for any other kind of transfers. As a safeguard against having the receipts go below the point where the above payments can be made, it is suggested that the city agree to join with the company in applying to the local commission for an increase in fares when this is necessary.

For the purpose of carrying out the plan at a minimum cost to the traveling public, it is suggested that the service be relieved of all non-transportation

charges such as paving, maintaining paving, and the sprinkling and cleaning of streets. The city is also asked to provide for the carriage of express and light freight under conditions which will not interfere with passenger transportation.

Counsel for the committee announced that he did not agree with some of the proposals of the companies, his principal objection being against an interest return in excess of the actual cost of financing. Mr. Busby explained that the companies' proposal on this point was different in form but not in substance from that of the Traction & Subway Commission, which recommended a varying rate of return. The sub-committee will hold other sessions to discuss these differences.

## Seattle Wage Offer Rejected

### Trainmen Vote Down Raise of Five Cents an Hour, Accepted by Committee as Satisfactory.

The offer of the Puget Sound Traction, Light & Power Company, Seattle, Wash., to raise the pay of its trainmen, and to enter into a new agreement, has been voted down by the union of trainmen, by a vote of 756 against 148.

The proposed agreement provided for an increase of pay for trainmen of 5 cents an hour, and for \$15 a month extra for other crafts paid monthly, the agreement to take effect on April 15, 1918, and to remain in force until Aug. 1, 1919, or until sixty days after the conclusion of peace with Germany, if the war ends before that time. The present agreement between the company and the men expires on July 31.

One of the main reasons for the men's refusal to accept the new agreement was that recognition was not given to their demand for an eight-hour day, with time and a half pay for overtime work.

A. W. Leonard, president of the company, stated that the new wage scale had been previously agreed upon by representatives of the employees, and the agreement had been posted in the carhouses and other company buildings in Seattle and in Tacoma. He said that both the company and the committee representing the employees felt that the increase offered was substantial and that it would have the effect of retaining the employees in the service. During the full period of the proposed agreement the men would have drawn \$295,000 additional. The present wage scale is from 33 cents to 40 cents an hour. The proposed new scale ranged from 38 cents to 45 cents an hour. Under the new scale the average monthly wage of trainmen would have been increased from \$103 to \$118, and the new average for men drawing the highest hourly pay would have been increased from \$115 to \$130 per month. Since the declaration of the war 3319 men have been employed in the various departments of this company, and 3513 have left the service.

## Montreal Commission Named Body Provided for in New Tramway Franchise Will First Take Up Fare Question

Judge Saint-Cyr of the Court of Sessions, Prof. L. A. Herdt of McGill University, engineer, and John S. Archibald, architect, have been appointed by the Lieutenant-Governor-in-Council to be the three members of the permanent tramways commission provided for in the new franchise accorded to the Montreal Tramways and ratified at the last session of the Quebec Legislature.

The first duty of the new tramways commission, will be to fix the rate of fares. This must be done within sixty days from the date of appointment. Various clauses of the new franchise will be the real deciding factor in determining the fares, but expectation has been general that there will be an increase on the present tariffs. For example, there is a fund provided for lowering the fares. When the amount of this fund goes down, the fares will go up, and vice versa. It will be the tramways commission which will decide.

The three members of the commission are appointed for ten-year terms, but can be removed by the Lieutenant-Governor-in-Council for cause, and either the company or city of Montreal, by means of quo warranto proceedings, can demand the removal of any commissioner for fraud, corruption and refusal to fulfill in good faith his duty. The commission or its employees are authorized to look over the books of the tramways company, but to examine, verify or audit the affairs of the company must employ a chartered accountant. Each year the commission must make a report to the city on the state of the railway system.

A brief review of the provisions of the contract for the thirty-five year franchise under which the commission was appointed was published in the *ELECTRIC RAILWAY JOURNAL* for Feb. 9, page 288.

## Arbitration for Salt Lake City

After arbitration had been decided upon as a means of settling the differences between the employees and the Utah Light & Traction Company, Salt Lake City, Utah, questions arose as to what to arbitrate and what not to arbitrate. Officials of the company contended that it was their understanding that the entire question of wages and one-man operation was to be submitted. The employees announced that they would not arbitrate the one-man operation question. Then officials of the company announced that they would eliminate the one-man car question from the matters to go before the arbitration board. A statement made public by H. F. Dicke, general manager of the company, was concluded as follows:

"If the men do not want to arbitrate one-man operation the company will not insist upon it. We will proceed with the arbitration of wages and such other minor matters as have been discussed, and if the settlement involves

any increase in wages the company may find it necessary to ask the Public Utilities Commission for permission to inaugurate this method."

## Council May Take Up Wages

At a conference with representatives of the trainmen of the Toledo Railways & Light Company and Federal Mediator A. L. Faulkner on April 24, Mayor Cornell Schreiber of Toledo, Ohio, agreed that the question of an increase in the rate of fare to meet an advance in wages of motormen and conductors may be submitted to the Council for consideration. This plan was approved by officers of the company.

The Mayor still expressed his objection to any increase. He said the average wage received by men who had been with the company a year or more was higher than he had expected. City accountants figured this from the books of the company to be \$90.30 per month. The Mayor expressed the belief that the men were not entitled to an increase of 10 cents an hour at this time.

John Quinlivan, business agent of the Central Labor Union, declared that the wage estimate of \$90.30 took in overtime and that the men should not be expected to work from thirteen to eighteen hours in order to make a fair average wage.

## Confer on Franchise Relief

Officials of the Rhode Island Company on April 30 met with members of the city government of Providence, R. I., to discuss measures for financial relief, which were recommended in the report of the special investigation commission but which were not made compulsory by the General Assembly.

The report recommended that the company be relieved from the payment of the present heavy franchise tax in Providence. It also recommended that the company be not required to pay for the paving between its rails unless the use of the streets by the company was the actual cause of the damage. Another recommendation was that the city relinquish control over the company in favor of the Public Utilities Commission. These matters all came before the General Assembly, but it was so late in the session before the decision was reached to adopt the zone system that these subjects were left to die in committee.

It is understood that city officials do not favor Providence making concessions if the other municipalities through which the company operates collect their franchise taxes and exact paving obligations. It is also said that the representatives of the city are not in favor of the complete elimination of the franchise tax, although they are inclined to consider favorably a substantial reduction in the tax. There is positive opposition among city officials to granting the request that the city relinquish control over the company within the city limits. It is expected that it will take several weeks before a conclusion is reached.

## For Army Technicians

Government Providing Courses—7500  
National Army Men Now in Schools  
—90,000 to Be Trained This Year

Under plans drafted by the committee on education and special training, appointed by Secretary Baker last February, twenty-five schools are now under contract to give the intensive training needed for various technical and skilled work by the army, such as motor truck drivers, airplane mechanics, carpenters and blacksmiths. There are now 7500 National Army men under such instruction, and the number of schools will be increased until 30,000 men can be handled at one time. The courses are of eight weeks' duration so that it is expected that 90,000 men will be trained this year. The final lot of 30,000 men will go to the schools on Sept. 1.

While the men at the schools are National Army men and come through the draft boards they volunteer for this special training and go to the schools directly from their homes. They are not drawn from the cantonments. To insure proper assignment, a plan is now being worked out whereby all men will be sent first to a number of reservoir schools and then sent to study the work for which they are best qualified.

## News Notes

**Increase in Wages in Everett.**—The Puget Sound International Railway & Power Company, Everett, Wash., has announced an increase of 3 cents an hour, or 25 cents a day, in the wages of its trainmen.

**Wage Increase of Two Cents an Hour.**—The New Jersey & Pennsylvania Traction Corporation, Trenton, N. J., has granted an increase of 2 cents an hour to the motormen and conductors on all the divisions.

**Military Service Folder.**—A folder has been printed giving the names and assignments, as of Jan. 1, 1918, of the executives and employees of the H. M. Bylesby & Company organization in military and naval service.

**Strike on Kansas Line.**—Conductors and motormen of the Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan., went on strike at 4.30 o'clock on April 21. The men demand recognition of their union, but are said to be satisfied with wage conditions.

**Motorman Buys a \$5,000 Bond.**—Charles Owings, a motorman in the employ of the United Railways & Electric Company, Baltimore, Md., has bought a \$5,000 Liberty Bond. Owings has been connected with the railways in Baltimore for more than twenty-five years.

**Tightening of Control Urged.**—A charter amendment providing stricter control of public utilities in Portland, Ore., has been submitted to the City Council by a committee from eight civic clubs which asks that the amendment be put on the ballot at the coming primary election. C. L. Rauch is chairman of the committee, which has investigated the 6-cent fare decision.

**Increase in Wages in Los Angeles.**—The wages of the trainmen on the entire Pacific Electric Railway system, Los Angeles, Cal., were increased on April 16. Those who work on the interurban lines received an advance of 3 cents an hour and those on the local lines 2 cents. Trainmen on the freight and work trains received a proportionate increase. The advance was made voluntarily by the company.

**Trained Men for Washington.**—Practically all of the departments in Washington need technically trained men. One of those from whom this paper has received an application this week is the Bureau of Mines Experiment Station, which has special need of bacteriologists, chemical engineers, electrical engineers, machinists, and steam fitters. Blanks will be sent to anyone who wishes to file an application.

**Trenton Indictments Quashed.**—The Supreme Court of New Jersey has quashed the indictments found against officers and directors of the Trenton & Mercer County Traction Corporation. The city sought to indict the officials for erecting poles and stringing wires on certain streets without proper authority from the municipality. It was a phase of the fight of the city against the company, based upon alleged inadequate service.

**Women May Be Used in Camden.**—The Public Service Railway, Newark, N. J., is seeking applications from women for possible employment on the cars of its Camden lines. Male employees on the division have been asked to recommend women whose husbands or brothers have joined the colors. These will be given preference in filling the places. Up to May no women had been used in the train service even experimentally.

**Mayor Signs Subway Relief Bill.**—The Lockwood bill, authorizing the Public Service Commission and the Board of Estimate of New York City to relieve the contractors building the new subways from the burdens placed upon them by the high costs of labor and materials, and to do whatever is best to complete the work as speedily as possible, was approved on April 30 by Mayor Hylan. It is expected the Governor will sign the bill.

**Philadelphia Hearing Continued.**—The hearing being held in regard to the final ratification of the lease agreement for the operation of the city high-speed lines by the Philadelphia (Pa.) Rapid Transit Company, was resumed before the Public Service Commission on April 25. Director of City Transit

Twining said that the city in the 1907 contract with the company confirmed all the rights and franchises of the company and that the 1907 contract must be recognized in the present negotiations.

**Wage Advance in Philadelphia.**—The co-operative committee of employees of the Philadelphia (Pa.) Rapid Transit Company at a meeting held on April 27 determined in company with the management to advance the rate of pay of all motormen and conductors 2 cents an hour so that effective from May 1 the new scale will be as follows: New men, 33 cents; after one year's service, 34 cents; after two years' service, 35 cents; after three years' service, 36 cents; after four years' service, 37 cents; after five years' service, 38 cents.

**Arbitrators Recommend Increase of Wages.**—The board of arbitration which heard the claims of the employees of the Hamilton (Ont.) Street Railway for an increase in wages has forwarded its report to the Minister of Labor. The men asked for an increase from 24, 26 and 30 cents an hour for first, second and third-year men respectively to 36, 38 and 42 cents an hour—or an increase of 12 cents all around above the present wage scale. The arbitrators have recommended a basis of 30, 34 and 37 cents. The finding of the board was unanimous. The company has also allowed by agreement concessions in the way of overtime pay.

**Gross Earnings Tax Argued.**—Arguments on the demurrer entered by the Puget Sound Traction, Light and Power Company, Seattle, Wash., in the city's suit to collect \$72,443, or 2 per cent of the gross earnings of the company for 1917, were recently heard before Judge King Dykeman in the Superior Court, and the case taken under advisement. Judge Dykeman announced that he would decide the present issue along with the city's application for a writ of mandate compelling the company to do its proportion of paving on West McGraw Street from Queen Anne Avenue to Queen Anne Boulevard, which the court has had under advisement for six months.

**Praise for British Columbia Electric Railway.**—The *Daily Province* of Vancouver, B. C., for March 26 contained a full-page illustrated historical review of the British Columbia Electric Railway properties. In appreciation of the work of the company the paper said: "The history of any great undertaking such as the British Columbia Electric Railway is always tinged with romance. It required great faith in British Columbia for these 10,000 shareholders and directors to send their \$50,000,000 6000 miles away into public utility properties. In a sense this was real empire building, for British Columbia electric development has made Vancouver and Victoria."

**Only One Way Out.**—Following a conference of electric railway employees of Rochester, Syracuse and Utica in his office recently to discuss a de-

mand for an increase of 9 cents an hour in wages, James F. Hamilton, vice-president of the New York State Railways, gave out a statement in which he said the men had put forth the demand for the increase on the ground that the cost of living made higher wages imperative, and that the company recognized the justice of the men's demands, but that it could not grant any increase until the revenues of the company were increased. Mr. Hamilton promised that efforts would be made to convince city administrations that the only source of relief for the company and the men was in increased fares.

**Joint-User Rights Determined.**—Justice Cropsey in the Supreme Court in Brooklyn, N. Y., has decided that the Brooklyn & North River Railroad cannot string its own power-carrying wires on the poles and fixtures of the Manhattan Bridge Three-Cent Line on the Flatbush Avenue extension. Some time after the Three-Cent line began to operate on the Manhattan Bridge the Brooklyn & North River Company obtained franchises to operate on the Manhattan Bridge. The new occupant of the bridge had to buy its power from the Three-Cent line. The rate was considered too high and as a result an arbitration board fixed a rate which was still somewhat higher than other rates. The Brooklyn & North River Company protested to the court against this rate, but Justice Cropsey held that even though it cost the North River company more to buy power from the Three-Cent line than from other concerns, it was not entitled to string its own wires or power-carrying equipment over the Flatbush Avenue extension in Brooklyn.

## Programs of Meetings

### New York Electric Railway Association

The annual meeting of the New York Electric Railway Association will be held at Lake Champlain on June 22. The day will be devoted to a business meeting. In the evening there will be an informal dinner, at which two or three prominent men will speak. A detailed program of the meeting will be published later.

### Iowa Electric Railway Association

The annual convention of the Iowa Electric Railway Association will be held in Des Moines, Ia., on May 23. Because of the additional burdens which have been placed on the members of the association, due to the war, the directors have decided that it will be best not to carry out the usual program this spring. Among the subjects which will be discussed at the meeting are questions of financing and legislative matters. A convention of the Iowa section of the National Electric Light Association will be held in Des Moines on May 22 and 23. This will permit members of the railway association who are interested in lighting to attend both conventions.

# Financial and Corporate

## War Finance Boards Named President Selects Men to Supervise Financing—Names New Capital Issues Committee

The first step in the organization of the \$500,000,000 War Finance Corporation has been taken. On April 30 President Wilson sent to the Senate the names of the four directors who, with Secretary McAdoo as ex-officio chairman, will conduct the work of aiding the financing of essential enterprises. The nominees for two-year terms are William P. G. Harding, of Alabama, and Allen B. Forbes, of New York; and for four-year terms, Eugene Meyer, Jr., of New York, and Angus W. McLean, of North Carolina.

Mr. Forbes, who is senior member of the utility investment banking house of Harris, Forbes & Company, New York and Chicago, has declined the nomination, owing to his interest in past flotations by a large number of utilities which may make application for future loans. No successor has been appointed.

Mr. Harding is at the present time a governor of the Federal Reserve Board. Mr. Meyer, a New York banker, is a member of the national war savings committee and is connected with the War Industries Board. His business activities cover a wide range in connection with the marketing of railroad, mining and industrial securities. Mr. McLean has had a successful career as lawyer, banker, manufacturer and farmer.

The new capital issues committee, as nominated by the President, will consist of the following seven members: Charles S. Hamlin, of Massachusetts; John Skelton Williams, of Virginia; Frederic A. Delano, of Illinois; James B. Brown, of Kentucky; John S. Drum, of California; Henry C. Flower, of Missouri, and Frederick H. Goff, of Ohio. This committee, created under the war finance corporation act, will replace the present voluntary capital issues committee of the Federal Reserve Board.

Mr. Williams is Comptroller of the Currency, a member of the Federal Reserve Board and a member of its present capital issues committee. Mr. Hamlin and Mr. Delano are also members of the Federal Reserve Board and the above-mentioned committee. Paul M. Warburg, now a member of this committee, was not appointed to the successor body, in order that he as vice-governor might be free to manage the affairs of the Federal Reserve Board during Governor Harding's work as a director of the finance corporation.

Mr. Brown is a prominent banker and business man of Louisville; he is a director of the Louisville Gas & Electric Company and has helped to organize many industrial and utility companies.

Mr. Drum is a prominent banker of San Francisco and a director of the San Francisco-Oakland Terminal Railways, the Pacific Gas & Electric Company and other utilities. Mr. Goff, a Cleveland banker, has had extensive experience in banking and manufacturing. Mr. Flower is a leading banker of Kansas City. He was for many years a director of the Metropolitan Street Railway and the Kansas City Railway & Light Company. Both Mr. Goff and Mr. Flower have been members of the advisory committee of the present capital issues committee.

The existing committee, since its organization three and one-half months ago, has developed an extensive system of examining the merits of proposed security issues, through the co-operation of sub-committees in each Federal Reserve District, composed of bankers and business men acting as volunteers. This machinery probably will be used by the new organization. The committee in the last three and one-half months has approved new issues aggregating \$103,000,000. It has refunded obligations amounting to \$238,000,000, and it has disapproved \$44,000,000 of proposed issues.

## Decrease on Boston & Maine Properties

The annual report of the Boston & Maine Railroad for the year ended Dec. 31, 1917, covers the operations of the two owned electric railway branches, the Portsmouth (N. H.) Electric Railway and the Concord & Manchester Electric Branch, Manchester, N. H., and the one leased line, the Conway (Mass.) Electric Street Railway.

The combined operating revenues of the first two lines for the last calendar year were \$264,343, an increase of \$6,462 over the returns of the preceding year. This gain was more than offset, however, by the increase of \$40,002 in operating expenses, which totaled \$217,313. The main rise in operating expenses occurred in connection with repair of motor equipment of cars, maintenance of way, motormen and conductors, production of train power and legal expenses. The net revenue for 1917 was \$47,030, a heavy reduction from \$80,570 for the year before. The number of passengers carried increased from 5,073,785 to 5,210,793, and the number of revenue car-miles run decreased from 1,058,086 to 1,043,149.

The Conway Electric Street Railway made a poorer showing in 1917 than in the year before. The operating revenue decreased from \$10,882 to \$9,258, and the expenses increased from \$8,886 to \$8,924. Tax accruals more than doubled, and the deficit for the year amounted to \$7,253 as compared to \$5,186 in 1916.

## Spokane Merger Progresses

New Company Will Probably Be Formed  
to Take Over Railway Property  
of Two Washington Lines

Progress in the plan for the merger of the railway lines of the Washington Water Power Company and the Spokane Traction Company was reported on April 26 by Attorney Frank T. Post, general counsel for the Water Power Company, at the joint meeting of the Washington and the Idaho Public Service Commissions. The merger has been under consideration for two years. Mr. Post said it was nearer a successful conclusion now than at any previous time, and informed Mayor C. M. Fasset that he could secure confidential information on the progress of the negotiations if he so desired. Mr. Post said:

"The plan is to form a new company to take over both properties. We will need the help of the city in this matter, as many changes are to be made. For this reason I would suggest that the Public Service Commissions of Washington and Idaho value the power and railway systems of the Washington Water Power Company separately, leaving the railway system until later. The changes in the street railway will materially effect its valuation."

Chairman Blaine of the Public Service Commission of Washington was not sure as to what could be done toward delaying the railway valuations. He said that a great many communities were interested in the light and power valuations and that it would be necessary to complete this at as early a date as possible.

The discussion as to the railway property of the Washington Water Power Company arose over the request of J. M. Geraghty, corporation counsel, for leave to introduce the franchises of the company in evidence. He said he was prepared to show that some of the company's chief franchises had expired and that others would expire in a year. He urged that the absence of a grant from the city seriously impaired the value of the property and that this situation should be borne in mind by the Public Service Commissions in fixing the value of the railway.

## Title Taken to Chicago Line

The Chicago & West Towns Railway, Chicago, Ill., took title to the property of the Suburban Railroad, by Emil G. Schmidt, receiver, under date of Feb. 26, 1918, for \$85,970 and \$1. The company subsequently made a mortgage in favor of the Harris Trust & Savings Bank as trustee on its property in the western suburbs of Chicago to secure a bond issue of \$1,000,000 as of March 1, 1918, and payable Sept. 1, 1920. Of the total amount \$750,000 has been issued for the purpose of retiring indebtedness, while the remaining \$250,000 is to be used for purchases and extensions.

## Partial Abandonment

### Interurban Would Discontinue in Four Towns and Abandon Part of Local Service in Another

A petition was filed with the Public Service Commission of the Second District of New York on April 19 by George Bullock, as receiver of the Buffalo & Lake Erie Traction Company, for leave to abandon that portion of the company's railroad from the junction of Main and Temple Streets, Fredonia, to the Pennsylvania State Line. Commissioner Barhite held a hearing on the petition in Buffalo on April 29.

The portion of the road proposed to be abandoned is about 28 miles long and runs through the towns of Pomfret, Portland, Westfield and Ripley. The road operates through Brockton, Westfield, Forsyth and several other villages.

The petition alleges that the earnings from the line proposed to be abandoned are not sufficient to meet operating expenses and that the earnings from that part of the road still proposed to be operated are not sufficient to yield a fair return and take care of the deficit in operating revenues on the non-paying portion. It is also alleged that demands have been made upon the petitioner to pay for paving streets and highways along the line proposed to be abandoned, the expense of which will equal, if not exceed, the total gross operating revenues of the line.

Commissioner Barhite on April 29 postponed hearing the petition for approval of the proposed abandonment of portions of the Dunkirk Street Railway, operated under lease by the Buffalo & Lake Erie Traction Company. The last hearing on the original petition for abandonment in Dunkirk was held on Nov. 26.

### New Mortgage Proposed for B. R. T.

A special meeting of the stockholders of the Brooklyn (N. Y.) Rapid Transit Company will be held on May 23 to discuss the advisability of executing a new mortgage to replace the company's first refunding gold mortgage of July 1, 1902, which authorized an issue of bonds to the amount of \$150,000,000.

The call for the meeting explains that the present mortgage served a useful purpose as long as interest rates were low, but because the maximum rate allowed on the bonds was fixed at 4 per cent, it had been impossible to sell any of them except at a considerable discount. No bonds have been sold since February, 1909.

The notice to the stockholders refers to the necessity of providing for the \$57,735,000 of secured 5 per cent gold notes which mature on July 1. Whether it is desirable to have available additional bonds for collateral or whether the notes should be renewed is also to be discussed.

The directors hope to present a plan for taking care of the gold notes before maturity. These notes were issued for subway extensions, etc., under contracts

with the city. Of the bonds authorized to be issued under the new mortgage, \$87,040,000 will be reserved to take up the bonds heretofore issued. This new mortgage will be dated June 1, 1918, and will mature June 1, 1968. Since the last sale of bonds in 1909 the company has acquired additional properties so that the collateral security on deposit is stocks, bonds, and certificates of indebtedness amounting to more than \$84,400,000. There are also pledged, subject to the lien of the company's \$7,000,000 mortgage of Oct. 1, 1895, securities and stocks of a par value of \$11,605,000, making a total of about \$96,000,000 of collateral. Against this is, the company says, only a charge of \$3,459,000 of the refunding 4 per cent bonds outstanding.

### Accident Cuts West India Net

The total receipts of the West India Electric Company, Ltd., Kingston, Jamaica, for the calendar year 1917 were \$287,210, as compared to \$286,321 for 1916, an increase of \$889. The railway receipts totaled \$196,409, a gain of 80 per cent. The total operating expenses, however, increased from \$144,064 to \$159,189, with resulting net profits of \$128,020 in 1917 as compared to \$142,257 in 1916. The large increase in operating expenses, which was responsible for the reduction of net profits, was entirely due to accident claims arising from a serious collision.

After the payment of fixed charges of \$49,909, there remained a net income of \$78,111 or 9.76 per cent on the capital stock. In each preceding year since 1910 the percentage of net income to capital had been more than 10 per cent, with the exception of 1912, when it was 9.37 per cent. Four quarterly dividends amounting to \$40,000 were paid in 1917.

The property and plant account in 1917 showed an increase of \$7,142. The number of passengers carried in 1917 was 4,825,737, an increase of 12,983 or 2.7 per cent. The operating ratio was 55.42 per cent in 1917 as compared to 50.31 per cent in 1916.

### Remarkable Progress in Shanghai

The street car service in the International Settlement of Shanghai was inaugurated ten years ago under British management. The remarkable increase in receipts—despite the fact that the tracks have not been extended, and despite the sweeping reduction in receipts per passenger from \$0.0193 gold in 1909 to \$0.0086 gold in 1917—is shown by the following summary for 1909 and 1917:

	1909	1917
Number of cars . . . . .	65	167
Number of passengers . . . . .	11,750,000	73,500,000
Receipts . . . . .	\$226,970	\$631,953
Receipts per passenger . . . . .	\$0.0193	\$0.0086
Royalty to Municipal Council . . . . .	\$11,048	\$31,471

The fares in Mexican currency are \$0.03 for first class and \$0.015 for third class for each section, the sections averaging about seven-tenths of a mile in length.

## Effort to Reclaim Road

### Section of Taunton & Pawtucket Street Railway, Sold for Junk, May Be Saved

Plans are under consideration at Attleboro, Mass., for the purchase by the city of the section of the Taunton & Pawtucket Street Railway from Briggs Corner to Attleboro, and for its operation for the benefit of residents of the district served by this line.

The property as a whole was sold at auction in November, 1917, to the Swift-McNutt Company, Boston, and the road is now being dismantled with the exception of the section above mentioned. It consists of about 17.5 miles of single track, and the average gross revenue has been about \$50,000 a year.

The original property was the Bristol County Street Railway, organized about eighteen years ago. This went into the hands of a receiver in 1905, and friendly interests reorganized it soon after as the Taunton & Pawtucket Street Railway. Bond interest was paid up to 1909, but since then the property has been struggling to keep out of the hands of a receiver, being run under the consent of the bondholders.

Following the sale last fall to the Swift-McNutt Company, an application was made to the Federal Court to approve the taking over of the road by Swift-McNutt. This was issued a few weeks ago. Operation of the road ceased in March. The proposed purchase of the branch line by the city of Attleboro involves a plan for the assessment of 5 per cent annually on abutters until half the purchase price is paid. The wrecking firm now owning the property will await the settlement of this matter before dismantling the Briggs Corner-Attleboro section.

## Financial News Notes

**Immediate Payment Not Required.**—Judge Dodge of the United States District Court at Boston has denied the application of the State Treasurer requiring the immediate payment of the 1917 franchise tax of the Bay State Street Railway, Boston, Mass., amounting to \$81,467 with 12 per cent interest.

**Dissolution Proceedings Ended.**—Justice Irving G. Hubbs in the Fifth Judicial District of the New York State Supreme Court has signed an order winding up the dissolution proceedings of the Empire United Railways, Inc., Syracuse, N. Y., the property of which was sold under foreclosure some months ago.

**Usual Philadelphia Company Divided.**—The Philadelphia Company, Pittsburgh, Pa., which controls the Pittsburgh Railways and other utility

properties, on April 29 declared the usual quarterly dividend of 1½ per cent on the common stock, payable on May 15 to stockholders of record of May 2. The directors acted at a postponed meeting, as the usual time for voting on the dividend was a fortnight ago.

**Chicago & West Towns Earnings.**—The gross revenues of the Chicago & West Towns Railway, Chicago, Ill., for the calendar year ended Dec. 31, 1917, amounted to \$587,292. The operating expenses and taxes totaled \$413,597, leaving net revenues of \$173,694. Interest on bonds amounted to \$33,360, and interest on bills payable and rentals to \$6,438, with the result that the net income totaled \$133,896.

**Another Road on the Scrap Heap.**—Announcement has been made that the rails, poles, wires and cars of the Denton (Tex.) Traction Company, operating 4.5 miles of road, have been sold to a junk company and the task of demolishing the system is expected to begin shortly. The Denton Traction Company began the operation of cars in the fall of 1907, but last January the management decided to discontinue the service.

**Indianapolis Net Falls.**—The gross earnings of the Indianapolis Traction & Terminal Company, Indianapolis, Ind., for the calendar year 1917 totaled \$3,654,683, an increase of \$15,725. The operating expenses, at \$2,212,012, showed an increase of \$146,883. The net earnings from operation, therefore, amounted to \$1,442,620, a decrease of \$131,159. There was expended for maintenance of track and roadway and equipment in 1917 the sum of \$611,273, as compared to \$605,737 in the preceding year.

**Will Abandon Part of Its Line.**—The Connecticut Valley Street Railway, Greenfield, Mass., has announced its intention to abandon its line between Turners Falls, Millers Falls and Montague on July 1. The company feels that it cannot be expected to maintain service on the line which shows inability

to meet operating expenses alone, to say nothing of any return on the investment.

**Even in Enemy Territory.**—The Munich correspondent of a Zurich, Switzerland, paper, in referring recently to local conditions in Munich, said: "Not only is the inefficient housing, especially for the middle class, a calamity, but the street car fares are so high. There are increases up to 40 per cent, and a 10 pfennig trip is a thing of the past. They figure on increased receipts of at least 2,500,000 (pfennig). The new fare is in effect on April 1."

**Subscriptions to New Cleveland Stock.**—The Cleveland (Ohio) Railway is reported to have received subscriptions for stock to an amount sufficient to pay its debt of \$1,230,000 and pay for all the extensions and other additions to the property that the company will need this year. While the stock has not all been taken by the stockholders, it is said that it is not likely that the company will offer any of the stock to the public until after the close of 1918.

**Successor to Cincinnati, Dayton & Toledo Incorporated.**—The Cincinnati & Dayton Traction Company, Cincinnati, Ohio, has been incorporated with capital stock of \$1,250,000, by J. M. Hutton, Leo Van Lahr and others. This is to be the successor to the Cincinnati, Dayton & Toledo Traction Company, the property of which was sold under foreclosure recently to the representatives of the bondholders. An outline of the terms of the reorganization was published in the ELECTRIC RAILWAY JOURNAL for April 13, page 723.

**Interest Payment Deferred.**—F. D. Carpenter, president of the Western Ohio Railway, Lima, Ohio, which operates 112 miles of road, notified holders of the company's first mortgage 5 per cent bonds that it would be unable to pay the interest on these bonds due on May 1 and that it would defer payment until Sept. 1. Holders are requested to forward coupons for collection at that

time. It is explained that the severe operating conditions of the past winter with the resultant interruptions to service and the increase in the cost of operation made it impossible for the company to accumulate its usual monthly reserve for the payment of interest.

**Temporary Extension of Commonwealth Bonds.**—The Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., had \$8,081,000 of 6 per cent convertible bonds falling due on May 1. No arrangements had been made for the paying off of the bonds on the above date other than application to the War Finance Corporation for an advance to meet the retirement of the bonds. Anton G. Hodenpyl, president of the company, in a letter addressed to the holders of the bonds, asked that they withhold presentation of the bonds on the date of maturity, as it was not expected that the War Finance Corporation could take action on the matter in such a short time. Coupons were paid on May 1, and bonds will continue to draw interest up to the time they are redeemed.

**Western Pacific to Operate Tidewater Southern.**—The operation of the Tidewater Southern Railway, Stockton, Cal., has been taken over by the Western Pacific Railroad, which heretofore controlled the company through stock ownership. Under the new plan of operation, Byron Bearce, president; J. C. Linaberry, superintendent, and J. C. Lindsey, chief engineer, are no longer connected with the properties. The system is being operated as before, the personnel changes being chiefly in the executive department. C. M. Levey, president of the Western Pacific Railroad, is acting as head of the newly-acquired electric system, and for the present the remainder of the staff consists of C. B. Hotchkiss, auditor and treasurer, and E. L. Gamble, general manager. Mr. Gamble continues in his former position with the Northern Electric Railway.

## Electric Railway Monthly Earnings

** ATLANTIC SHORE RAILWAY, SANFORD, ME.						GRAND RAPIDS (MICH.) RAILWAY					
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Feb., '18	\$8,261	*\$11,696	†\$3,435	\$422	†\$3,857	1m., Feb., '18	\$102,091	*\$76,699	\$25,392	\$19,270	\$6,122
1m., Feb., '17	22,040	21,381	659	667	†8	1m., Feb., '17	103,932	*73,700	30,232	17,392	12,840
CLEVELAND, PAINESVILLE & EASTERN RAILROAD, WILLOUGHBY, OHIO						12m., Feb., '18	1,296,559	*917,866	378,693	222,487	156,206
1m., Feb., '18	\$35,396	*\$26,499	\$8,897	\$11,319	†\$2,422	12m., Feb., '17	1,305,380	*847,091	458,289	193,341	264,948
1m., Feb., '17	32,361	*21,591	10,771	11,435	†664	HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.					
2m., Feb., '18	76,169	*54,473	21,696	22,640	†944	1m., Feb., '18	\$26,644	*\$19,126	\$7,518	\$5,075	\$2,443
2m., Feb., '17	68,798	*43,724	25,074	22,873	2,201	1m., Feb., '17	25,249	*17,635	7,614	5,183	2,431
CAPE BRETON ELECTRIC COMPANY, LTD., SYDNEY, N. S.						12m., Feb., '18	345,198	*219,814	125,384	61,042	64,342
1m., Feb., '18	\$36,294	*\$28,999	\$7,295	\$6,534	\$761	12m., Feb., '17	331,399	*189,658	141,741	63,279	78,462
1m., Feb., '17	32,010	*19,445	12,565	6,552	6,013	PADUCAH TRACTION & LIGHT COMPANY, PADUCAH, KY.					
12m., Feb., '18	471,213	*317,849	153,364	78,618	74,746	1m., Feb., '18	\$24,721	*\$18,195	\$6,526	\$7,901	†\$1,375
12m., Feb., '17	401,499	*236,151	165,348	78,451	86,897	1m., Feb., '17	25,550	*18,830	6,720	7,180	†460
COLUMBUS (GA.) ELECTRIC COMPANY						12m., Feb., '18	302,759	*233,497	69,262	91,766	†22,504
1m., Feb., '18	\$96,461	*\$38,811	\$57,650	\$32,255	\$25,395	12m., Feb., '17	312,229	*222,382	89,847	86,314	3,533
1m., Feb., '17	80,987	*30,744	50,243	28,414	21,829	SAVANNAH (GA.) ELECTRIC COMPANY					
12m., Feb., '18	1,130,911	*436,953	693,958	366,316	327,642	1m., Feb., '18	\$85,198	*\$56,906	\$28,292	\$24,382	\$3,910
12m., Feb., '17	915,378	*356,985	558,393	343,142	215,251	1m., Feb., '17	69,295	*42,645	26,650	23,565	3,085
COMMONWEALTH POWER, RAILWAY & LIGHT COMPANY, GRAND RAPIDS, MICH.						12m., Feb., '18	1,002,397	*672,128	330,269	292,499	37,770
1m., Feb., '18	\$1,619,202	*\$1,154,493	\$464,709	\$478,854	†\$14,145	12m., Feb., '17	843,910	*559,154	284,756	284,061	695
1m., Feb., '17	1,530,735	*925,409	605,326	430,917	174,409	** On May 1, 1917, the Atlantic Shore Railway was divided east and west of York Beach, Me., the western end passing to the operating control of the Portsmouth, Dover & York Street Railway. Figures for the first four months of 1917 are for the entire system. Beginning with May 1, figures for the Atlantic Shore as at present constituted are given. † Includes \$140,707 for depreciation, in addition to \$40,000 charged in the monthly statements. No depreciation included in 1916 operating expenses. † Deficit. * Includes taxes.					
12m., Feb., '18	19,894,954	*12,893,881	7,001,073	5,382,618	1,618,455						
12m., Feb., '17	17,340,513	*9,696,593	7,643,920	5,076,403	2,567,517						

# Traffic and Transportation

## Toronto Fare Increase Lost

Investigators See the Need for More Revenue, but Politicians Apparently Unwilling to Assume Responsibility

The battle of the fares is in progress in Toronto, Ont., on the Civic Railway. One side proposes, but the other fails to dispose. Meanwhile the deficit keeps piling up. Ever since the Civic Railway was placed in operation in 1912, the fares have been notoriously low.

### TWO-CENT CASH FARE

The road consists of only 20 miles of line, but a cash fare of 2 cents or six tickets for 10 cents prevails. This was urged as too low from the beginning by the Commissioner of Works, but the City Council refused to act. In 1913 the Commissioner again recommended an increase in fares. This time he suggested that the municipal lines charge the same rate of fare as the Toronto Railway. But no action followed. The process has been repeated from time to time since, but the proposal to secure more revenue has always gone down to defeat.

The latest refusal of relief occurred only a few weeks ago. It followed the presentation of a report recommending fare increases and other changes which was presented by T. Bradshaw, commissioner of finance, and R. C. Harris, commissioner of work, who also has charge of the construction and operation of the Civic Railway. The board of control sent the report of Messrs. Bradshaw and Harris on to the City Council, advising that the recommendations did not meet with its approval and the City Council acquiesced, so the fares remain as they were before. In this report the Commissioner of Finance and the Commissioner of Works said in part:

### RATEPAYERS TAXED TO MAKE UP LOSSES

"Since the institution of the various civic car lines, the ratepayers at large, up to Dec. 31, 1917, were called upon to pay \$590,688 for special service accorded those in the districts contiguous to the civic lines. As before reported, it cannot be urged that this practice is sound, wise or business-like. Every public utility should be made self-supporting. It is unfair that the citizens at large should be compelled to make good annually, through the tax rate, the deficit created by reason of preferential treatment accorded a section of the community. Furthermore, it provides one of the most potent and damaging arguments against public ownership. We should persistently hold in mind the necessity of conserving every financial resource, against the acquisition of the Toronto Railway, forty-three months hence. We are neither con-

serving nor prudent in furnishing service below cost. In our opinion such policy is unwise and dangerous, inasmuch as it may have some serious collateral bearing upon the 1921 situation.

"We recommend that the fares on the civic car lines be 3 cents cash, or ten tickets for 30 cents; children's fare to be 1 cent cash, as at present; the foregoing rates to apply from 5.30 a.m. to 12 o'clock midnight; night fares from 12 midnight to 5.30 a.m. to be 5 cents cash, as at present. We estimate that the recommended scale of fares will be sufficient to cover the operating, maintenance and capital charges, but not physical depreciation, or municipal taxes, which, in our opinion, should be collected from every public utility, operated municipally or otherwise. If this scale be adopted, the following statement, based upon the number of passengers carried in 1917, and the service provided for in the estimates of 1918, would approximate the situation at the end of this year, viz.:

Operating and maintenance charges .....	\$325,624
Capital charges.....	171,064
Total .....	\$496,688
Revenue passengers .16,478,391 at 3 cents a passenger.....	494,351
Deficit .....	\$2,337

"We cannot too strongly urge upon the administration to give effect to this recommendation. In our opinion it embraces good finance, sound business and efficient administration."

### Consolidation Suggested in Trans-Bay Rate Case

A consolidation of the San Francisco-Oakland Terminal Railways, the Key Route, and the electric system of the Southern Pacific Company on the east side of San Francisco Bay was recommended by the engineering department of the Railroad Commission of California in the continuation of the transbay rate case recently heard in San Francisco. The consolidation of the two systems, eliminating parallel lines, it was asserted, would affect an annual saving of \$600,000 to \$700,000 if consent of the cities involved could be secured for the required changes. If the lines had been consolidated in 1916, engineers for the commission contend that there would be a profit of \$595,700 instead of a deficit of \$41,368 as claimed by the companies.

The report of the commission engineers also contained the suggestion that if a consolidation is not effected, savings can still be made by eliminating duplicate service. Discussion of whether the Railroad Commission has authority to fix rates on roads under government control did not result in a decision on this point up to the time of adjournment.

## Comment on Springfield Cars

Brief Review of Ideas Expressed by Massachusetts Commission in Its Recent Zone-Fare Decision

In the article published in the *ELECTRIC RAILWAY JOURNAL* of April 6, page 663, reviewing the decision of the Public Service Commission of Massachusetts with respect to zone fares in Springfield, Mass., brief reference was made to the matter of car equipment. In general, the commission favored the improved practices recommended by Prof. A. S. Richey, Worcester, Mass., whose report was abstracted in this paper for Jan. 2, 1917.

### ONE-MAN EXPERIMENT SUGGESTED

While the commission did not approve the suggestion of John P. Fox, expert for the city of Springfield, that the existing cars be quite generally operated by one man, by closing up the rear door and making other changes, it did say that with cars properly designed for the purpose, the principle of trailer operation was sound. The commission was not convinced, upon present evidence, that the use of these old cars in the manner suggested was either safe or otherwise desirable. It suggested in this instance that it would do no harm, however, to prepare one car for such use in order that careful tests might be made.

On the general subject of rolling stock the commission said that the company needed more cars and it should also provide for the gradual replacement of rolling stock of obsolete types with more modern and economical equipment. On certain lines, either trailers or two-car trains with multiple-unit control could be operated with economy and to general public advantage.

In the course of the proceedings there was much discussion of the one-man car. Mr. Fox's suggestion that existing cars be quite generally operated with one man, by closing up the rear door and making other minor changes, was not indorsed by the commission on account of the heavy traffic and the present accident record of the company, but it is said that, clearly, one-man car operation deserved very serious consideration on the part of the company.

### ONE-MAN CARS MIGHT DO HERE

The commission said there were lines in the Palmer division on which the service was now very infrequent and inferior, where one-man cars would probably give better accommodation at lower expense, and this was true of the Westfield division and doubtless of certain lines in the Springfield division. It was also possible that the company might have cars which could be reconstructed satisfactorily for this purpose at relatively small expense, without investing in wholly new equipment. The commission strongly advised that this question receive immediately and careful attention.



## Seattle's Traffic Problem

### Unprecedented Industrial Activity and Man Shortage Complicate City Railway Transportation

Following a public assertion by Mayor Ole Hanson, Seattle, that railway service in Seattle has "broken down," A. W. Leonard, president of the Puget Sound Traction, Light & Power Company, declares that Seattle is getting a larger measure of service than ever before and that what has taken place in the city is in reality a fundamental and entirely unexpected change in the direction of service, together with a shift in industrial population.

According to statistics of the company, the railway system is carrying more passengers now, furnishing more passenger car miles of service, and paying a larger volume of wages than ever before in its history. In March, 1916, 7,450,686 passengers were carried; in March, 1917, 8,139,633 passengers, and in March of this year 9,573,725 passengers.

Mr. Leonard said in part:

"While it is true that there is rush-hour congestion and probably always will be, it is not true that our service has broken down. We carry more persons in a shorter time in the morning than formerly, and do it as well as the circumstances will permit. It must be remembered that a large part of our equipment, representing an investment of millions of dollars, can be used only for rush-hour service and that it is in use one-eighth of each working day and idle seven-eighths of the time.

"What we are doing in the aggregate is to furnish 20 per cent more service and carry 30 per cent more load than two years ago, and the service increase would be as great or greater than the load increase if it were possible to get more men to take out more cars.

"In February last, for instance, eighty-seven men entered our train-department service, and 106 men left it. Electric railways here or elsewhere cannot pay shipyard wages. The government carries the shipyard load. We carry our own, and have to get the revenue to do it from the car riders."

## Jitney Regulation Up to City

The Legislative Assembly of British Columbia on April 22 gave the city of Vancouver power to prohibit the operation of jitneys within the city either on city routes or on the interurban route to New Westminster. This is the first step towards the carrying out of the recommendations of Dr. Adam Shortt, who reported last November on the electric railway situation and with whose decision the city of Vancouver and the British Columbia Electric Railway agreed to abide, following a strike of the railway men last June.

The British Columbia Electric Railway took no part in the proceedings before the Legislature. The city arrayed itself against the jitney interests. Formerly the city had refused to

take any action against the jitneys, but on the ground that it would be a breach of faith not to carry out the agreement, the City Council carried its own case to the Legislature. Attempts were made to bar competition only on streets where there are car lines and to exclude from the proposed charter powers the elimination of interurban jitneys. These amendments were voted down.

It now remains for the City Council of Vancouver to pass a by-law prohibiting the operation of jitneys. This it is expected will be done within a few weeks. It will mark the end of a long fight, first, for regulation, which failed to fructify, and, then, for the elimination of jitneys as an economic factor. The fight for elimination started when jitney competition and increasing prices led to the suspension of service last June at the time the electric railway employees struck for higher wages.

## Virginia Lines Seek Relief

### Make General Statement to State Corporation Commission Reciting Their War-Time Burdens

A committee representing eighteen electric railways, fifteen gas companies, thirty-two water companies and sixty-four electric light and power companies serving 1,750,000 people in Virginia appeared before the Corporation Commission of that State during the week ended April 27 with the request that the commission consider the burdens which have been placed upon such corporations.

The members of the special committee representing the public utilities included Thomas S. Wheelwright, president of the Virginia Railway & Power Company; Herbert W. Jackson, president of the Virginia Trust Company; B. B. Ferguson, president of the Portsmouth Gas Company, and John W. Hancock, general manager of the Roanoke Railway & Electric Company and the Lynchburg Traction & Light Company.

The committee explained that because of the unprecedented increase in operating expenses and maintenance costs, many of the utilities have been forced to reduce or abandon entirely the payment of dividends; that others face this necessity in the near future, and that still others may become bankrupt. In continuing the committee said:

"At the present time it is impossible for the utilities to get money with which to maintain their properties, or to refund maturing debts, except at ruinous interest rates. These conditions are halting the development of the utilities and make it necessary for the companies to appeal to the State and municipal authorities for increases in rates sufficient to maintain their credit and efficiency.

"If relief is not granted the utilities will be unable to meet the requirements of the government or the needs of the local communities which they serve, the security holders will lose heavily and the employees will suffer."

## St. Louis Fare Brief In

### Case Regarded by the Company as Imperative, but No Specific Rate Asked

Attorneys for the United Railways, St. Louis, Mo., on April 22 filed a brief with the Public Service Commission of Missouri in the company's application for increased revenue. The brief states that the application is for an "order authorizing the applicant to make such additional charges for the transportation of passengers as will enable it to meet its necessary expenses for 1918 and pay a fair return on the investment in the property."

It is pointed out that no particular form of relief was requested in the formal application, "but the evidence for the applicant suggests that relief may be given, either by increasing the 5-cent fare or by charging for transfers, or by a combination of these methods."

The brief points out that the movement for increased revenue for electric railways in the United States is almost universal, and that applications for such increase have been made by 119 such companies since last fall.

The brief outlines the company's theory for the request as follows:

"Applicant's theory is that its receipts will be curtailed by \$371,453 and its expenses increased by \$2,674,188 as compared with 1917, resulting in a deficit of \$2,452,794 in the payment of interest on bonded indebtedness and a deficit of \$3,529,564 in the payment of a 6 per cent return on the agreed valuation of \$60,000,000; or, to put it another way, after paying operating expenses (including increased costs) there will be only \$70,435 available for return on investment."

The brief repeats the statement made when the commission held its hearing to the effect that unless relief is granted, the Union Depot line bonds, maturing June 1, cannot be taken up, and these lines will revert to the original owners, and become in all probability a separate and distinct system.

## Fair Warning Demanded

The Board of Public Utility Commissioners of New Jersey has instructed public utility corporations that they must notify the commission of all rate increases fully twenty days before they are to go into effect, together with all data relative to the same. The announcement of the commission follows:

"Before any public utility owning, operating, managing, or controlling any street, gas, electric light, power, sewer, water, or telephone plant or equipment for public use with the State of New Jersey, shall increase any existing rate or schedule, or change or alter any existing classification, the said public utility shall, at least twenty-days prior to the date when it is proposed that the said increase change or alteration shall become effective, give written notice to the Board of Public Utility Commissioners."

## New York Transfer Cases Adjourned

### Companies Urge Possibility of Transfer Relief, but Commission Is Still Considering Jurisdiction

The Public Service Commission for the First District of New York has either dismissed or adjourned indefinitely the various fare cases that have been pending before it for nearly a year. After the decision in the Rochester fare case, the commission dismissed the higher unit-fare applications of the Staten Island Midland Railway and the Richmond Light & Railroad Company, and it asked the companies concerned in the 2-cent transfer cases whether in their opinion it could proceed further on their applications. After hearing argument on this point, the commission has now adjourned the transfer cases subject to call upon its decision as to jurisdiction.

#### TRANSFERS CAN BE REGULATED

In asking for the opinion of the railroads as to available means of relief, counsel for the commission expressed the opinion that the transfer cases could not be continued on a rate basis, in connection with system valuations. Alfred A. Cook, attorney for the Third Avenue Railway, averred that the Rochester decision does not prevent the commission from establishing charges for transfers at certain points on the Third Avenue lines between different operating companies. The reason is that the franchises of these companies do not contain any restrictions regarding transfers, and the commission, under its power to establish joint rates, can abolish the transfers or establish a charge for them.

James L. Quackenbush, general attorney New York Railways, explained to the commission that no legal obligations exist for the continuance of many of the transfer points in New York City. In connection with litigation regarding penalty actions, the city companies established many transfer points as a matter of expediency. In general, in Mr. Quackenbush's opinion, the commission has plenary power over statutory transfer obligations. Henry J. Smith mentioned various parts of the New York Railways System where transfers can be abolished or charged for. He suggested that the commission give as much transfer relief as is in its power but then leave the question open for a short time, in order that the city may waive some existing franchise restrictions and thus secure a uniform transfer structure.

#### FEW B. R. T. RESTRICTIONS

A. M. Williams, counsel for the Brooklyn Rapid Transit Company, said that there are only a few places on his system where the franchises prescribe transfers. Most of the transfers exist under an order of the commission in 1914. The commission can abrogate this order or modify it so as not to require the issuance of transfers at certain points except upon the payment of 2 cents. The Brooklyn system has 751

intersections of lines of the same operating companies and 1082 intersections of lines of different operating companies. According to Mr. Williams, the commission can charge for transfers at all of the latter points and at most of the former.

Ernest Baldwin, special counsel for New York City, said that the law provides for the payment of one fare for a continuous ride, and that no one short of the Legislature can change the statutory provision to this effect. Moreover, he pointed out that the commission would not be permitted to discriminate by imposing transfer charges at some points and not at others.

Pending a formal statement by the commission in an electric railway case, the best indication of its feeling in regard to the Rochester decision is given in its Bronx Gas & Electric Company opinion approved on April 18. In discussing the Rochester decision in this case, the commission said in part:

#### HOW COMMISSION INTERPRETS ROCHESTER DECISION

"A rate fixed by a special statute, passed before or after the public service commission law, remains subject to commission revision, downwards or upwards, unless the Legislature has, by the public service commission law, specifically and clearly withheld the power to increase the rates of a particular class of utility above the maximum fixed by such a statute."

According to the commission, five members of the Court of Appeals preferred to join in deciding what the Legislature has done rather than undertaking to decide in advance what it might do, namely, whether a specific delegation of power to prescribe rates notwithstanding the limiting provisions of franchises would be construed by the court to confer validly and effectually any power on the commission to deal with rates fixed by franchises granted under the *aegis* of the Constitution. Continuing, the commission said:

"The question of the possible limits of legislative power with respect to the rates fixed in such contracts the learned court expressly declines to decide unnecessarily, but at least until such time as the Legislature may undertake to confer broadly upon the commission the power to prescribe what rates are reasonable, even in excess of those fixed by franchise agreements, the commission, in the absence of a modification of the contract or the city's consent, has no power to take action looking to an advance in any rate above the franchise figure.

"The ordinary regulative power of the commission may at any time be availed of, on a proper showing of facts, to reduce any public utility rate, even if that involves the fixation of a rate for such utility service below the rate fixed or authorized by the com-

pany's franchise; but if the public utility has obtained the valuable right to use public streets by agreeing to maintain, at the city's option, a stipulated fare, the regulative power cannot raise that fare above the contract figure without the city's consent."

A meeting of the New York Electric Railway Association was held in New York on April 29 to receive the report of the committee appointed a year ago to consider ways and means of securing increased revenues in New York State. The report was accepted, and the committee was instructed to proceed with its work along such lines.

## Step in Auto Regulation

### California Railroad Commission Makes Another Advance Toward Putting Autos on Regulation Basis

The Railroad Commission of California has ordered that within four months from April 1 all public automobile stages shall either own their equipment or lease it for a specified amount on a trip or term basis, the leasing of equipment not to include the services of a driver or operator. All employment of drivers or operators of leased cars is to be on the basis of a contract by which the driver or operator shall bear the relation of employee to the transportation company engaging them. The practice of leasing equipment or employing drivers or operators on a percentage basis is prohibited.

The order of the commission is the result of its investigation. A number of automobile stage line owners or managers were brought before the commission at public hearings in Los Angeles and San Francisco. The commission says that the practice of leasing cars on a percentage basis is not desirable from a standpoint of public necessity, and does not tend to put the industry on a suitable basis. Where the entire upkeep of the car falls on the lessor, the public does not receive proper service, nor does the car owner receive just returns. Stage companies or lessees have in many cases been practically relieved from all responsibility for maintenance or operation and have acted merely as ticket agencies or brokers. These companies or associations have claimed the ownership to operate routes exclusively, and their conduct has sometimes been the cause of poor service to the public and poor compensation to the actual owners and operators of automobiles for them.

## Appeal in Transfer Order Case

L. Edward Herrmann, counsel of the Board of Public Utility Commissioners of New Jersey, has filed in the Court of Errors and Appeals a supplemental brief in the appeal of the borough of Bradley Beach from the decision of the New Jersey Supreme Court in the case of the Atlantic Coast Electric Railway against the Utility Commission and the borough of Bradley Beach.

In this rate case the Supreme Court

decided that the Utility Commission had not the power to compel the railway to issue transfers from one line to another on its system and upon this reasoning set aside an order of the commission. The borough of Bradley Beach had an ordinance under which it sought to enforce the transfer arrangement with the railway, and the commission held that the terms of the ordinance were to be carried out.

Justice Trenchard, who wrote the opinion of the Supreme Court, declared that "this ordinance, with its acceptance and action thereunder by the railway, being to constitute a contract between the company and the municipality, it is incompetent for the Board of Public Utility Commissioners, just as it is incompetent for the municipality itself, to violate that contract by imposing upon the company an additional burden, the effect of which is to require it to carry passengers for the same fare, not to, buy beyond," a certain point.

## Increase for Resort Road

Railway at Ocean City, N. J., Operated Only Four Months a Year, Will Charge Seven-Cent Fare

The Board of Public Utility Commissioners of New Jersey has granted, subject to challenge, the request of the Ocean City Electric Railroad to increase its fares from 5 cents to 7 cents. The request was made by William G. Moore, president of the railway. The company operates a 10-mile road in Cape May County during June, July, August and September. It is one of the few roads which cease operation during the winter. A peculiar fact is that the franchise of the company does not contain any provision as to the rate of fare to be charged.

In the application to the regulatory commission, President Moore of the company said:

"During the seasons of 1914, 1915 and 1916 the income was scarcely sufficient to provide for the operating expenses, taxes and depreciation, and it left no return whatsoever upon the invested capital of the company. The company would have found it impossible to operate the road had not one of the stockholders of the corporation, from time to time, advanced his own money to pay the interest upon the bonds and to meet deficits accruing from operation. We cannot borrow any more money from the same source to meet the future expenses. The funded debt consists of \$75,000 of 5 per cent bonds. On Dec. 3, 1916, the company owed \$196,693 for money advanced. It has outstanding \$100,000, par value, of capital stock, on which no dividend has ever been paid. The company cannot operate the road during the present season unless it is allowed to charge a higher rate of fare."

The road can now charge 7 instead of 5 cents until the municipality of Ocean City challenges its right. In that event a hearing would have to be given.

## More Zone Fares for Massachusetts

Commission in That State Approves This Plan of Fares for Forty-two Mile System With Athol as Its Center

An order approving the establishment of a zone system of fares for the Northern Massachusetts Street Railway was issued on April 30 by the Public Service Commission of Massachusetts. The road operates about 42 miles of track and serves the Athol-Gardner district, with a line to the outskirts of Fitchburg. There is a branch about 11 miles long running from East Templeton through Baldwinville to Winchendon. The company is controlled by a voluntary association known as the Massachusetts Consolidated Railways, which also controls the Connecticut Valley and Concord, Maynard & Hudson street railways.

At present the system is divided into twelve fare zones with a 5-cent fare unit. The company's new schedule, now approved, proposes to divide the line into zones of about 1 mile each, to charge a fare of 5 cents for the first three zones or less, and 2 cents for each additional zone. It is also proposed to issue ticket books with 150 coupons for \$2.80, each coupon good for travel within one zone, except that at least three coupons will be detached for each ride.

### ENTITLED TO 6 PER CENT RETURN

The financial investigation of the commission leads the board to conclude that the investment which may properly be used as the rate base is about \$1,150,000. In accordance with the principles which the commission has laid down in previous cases, taking into consideration the risk of the enterprise, the company is entitled, states the decision, to a return of at least 6 per cent upon the foregoing amount, without any deduction for depreciation, unless failure to make provision for it is due to the payment of unwarranted dividends, or is otherwise attributed to mismanagement. The average annual dividend paid during the entire period prior to the consolidation was about 3½ per cent, and since consolidation (1912-1917) the average rate is slightly more than 2 per cent. A large deficit has been accumulated, and unearned dividends have been paid. Maintenance, renewals and depreciation have been neglected.

The commission holds that at least \$50,000 a year, which is 20 per cent of the railway's gross earnings, is necessary to provide for current maintenance and depreciation. The operating expenses and taxes for 1917, exclusive of maintenance and depreciation charges were \$162,215. A charge of at least \$50,000 as stated, is necessary for maintenance and depreciation and an additional charge of \$69,000 is required to pay a 6 per cent return upon the investment value above set. Upon this basis the company appears to be entitled to a total revenue of \$270,215. Owing to the trend of prices for fuel, labor and supplies, the board says this figure should be increased for 1918 to at least \$275,-

000. As the total income of the company for 1917 was \$247,407, the road is fairly entitled to an increase of about \$27,500 in its gross revenue through a readjustment of fares.

The only opposition offered at the hearings was directed to three subsidiary matters. One of these affected the loop line in Gardner. The patrons there asked the option of traveling to Gardner Center by alternative routes upon the payment of a 5-cent fare. The commission found no good reason for such a privilege, which involves using a more circuitous route and a transfer, with no greater frequency of service than by the direct route. Certain residents of Westminster objected to a fare limit established by the company, but the number was so small that the commission did not feel warranted in extending the zone length to 1.4 miles in this case, pointing out that there was little justification for overlaps when the increase of fares in successive zones is only 2 cents instead of 5 cents.

The other feature of the proposed tariff to which objection was raised, was the abolition of the workingmen's tickets, which were available during certain hours of the day between Orange and Athol. These tickets were sold in books of forty for \$1.25, or at the rate of 3¼ cents each. As there were two fare zones between Orange and Athol, the ticket fare between these points was 6¼ cents as compared with a cash fare of 10 cents. In the form in which the tickets were now issued they could also be used by passengers riding in one fare zone only, thus reducing the minimum fare from 5 cents to 3¼ cents. The commission said that this particular objection could be easily obviated by having the books made up of twenty tickets with two coupons each, but the company in its schedule withdrew the tickets entirely.

These tickets were put in operation many years ago by the Athol & Orange company when it was operated as a separate company, but were retained by the present management. No similar tickets are available between other points of the Northern Massachusetts system. The commission was of the opinion that this ticket rate under present conditions was too low to afford a reasonable compensation to the company and that it might also be regarded as constituting a discrimination against other communities served by the company.

As the proposed fare schedule is on a radically different basis from the one previously employed, it was difficult to make an accurate estimate in advance of the increased revenue which would be likely to result from its adoption. Certain fares under the new schedule will be upon a lower basis than at present and some decrease in riding is to be anticipated between certain points where

the fares have been increased. In view of these facts and in the light of the revenue results from the recent adoption of a similar system of fares by other companies, the commission was satisfied that the actual increase in revenue under the schedule filed would be well within the limit of the amount to which the company appeared to be entitled.

### Rhode Island Zoned on May 5

The Public Utilities Commission of Rhode Island on April 29, at the request of the Rhode Island Company, extends to May 5 the time for the beginning of operation of the zone system.

The new system was to have gone into effect on May 1, but the time to get the details into working order was found insufficient and the extension of five days was asked for and granted. The company also filed with the commission the definite locations of the ends of the intermediate zones, which were only approximately fixed in the act passed by the General Assembly.

The company has adopted a "coin" system for use in the collection of the 2-cent increment in fares. The coins will be considerably larger than a cent, with a hole in the center. They will have a face value of 2 cents. After collecting a 5-cent fare the conductor will sell these disks, which can be collected in the Rooke register now in use. On one side the coin will read: "Two-cent zone ticket—the R. I. Co." On the other it will read: "Good only on continuous ride after 5-cent fare has been paid."

### Staggered Stops for Whole City

The United Railways & Electric Company, Baltimore, Md., is gradually installing the staggered skip stop on its entire system. On April 7 it became effective on the Harford Avenue, York and Frederick Road lines; on April 14 on the Edmondson Avenue line; on April 18 on the Madison Avenue, Emory Grove, North Avenue, Garrison Boulevard, Linden Avenue, Woodlawn and West Arlington lines; on April 21 on the St. Paul Street, Boulevard, Carey Street and Gilmor Street-Guilford Avenue lines; on April 25, Wilkins Avenue, Preston Street, Federal Street and Ellicott City line and on April 28, Gay Street.

At present the stops are indicated by cardboard signs marked, East, West, North or South stop. These will be replaced as soon as possible by the same legends painted on the trolley poles. The change in stops was introduced by a description in *Trolley News* of the staggered skip stop and its relation to fuel conservation as set forth in correspondence between the United States Fuel Administration, the Maryland Fuel Administrator and the Public Service Commission. For the present, the cars will be run without changing the schedules. This will save fuel by permitting a large increase in coasting.

### Zone Rates for Springfield

The Public Service Commission of Massachusetts has approved the detailed plans of the Springfield Street Railway for a zone system of fares worked out in harmony with the recent decision of the board sanctioning a rate increase.

With the exception of the Indian Orchard district substantially all of the city of Springfield will be located within the 5-cent fare zone. This zone will terminate at Pine Point on the Indian Orchard line, the 6 2/3-cent zone ending at Harvey Street and the 8 1/3-cent zone at the end of the line. On the Westfield line the 5-cent zone going out of Springfield extends to Silver Street; a second 5-cent zone thence extends to the Westfield line, and in Westfield a 6-cent fare becomes effective. On the interurban line from Westfield to Holyoke the copper zone schedule of 2 cents per mile becomes effective at St. Mary's Cemetery, and on the Westfield-Huntington line it begins at the Huntington town boundary.

H. M. Flanders, general manager of the Springfield company, stated in a recent press interview that the new rates would go into effect on May 1.

The decision of the commission in this case was reviewed in the *ELECTRIC RAILWAY JOURNAL* of April 6, page 663.

## Transportation News Notes

**Toronto Company Fined.**—The Ontario Railway & Municipal Board imposed on the Toronto Railway a fine of \$1,000 a day for twenty-four days, making a total of \$24,000, for failure to place 100 new cars on its lines as ordered by the board more than a year ago.

**Los Angeles Has a Woman Conductor.**—The Los Angeles (Cal.) Railway is experimenting with a woman conductor recruited from among the company's office help. This is believed to be the first instance on the Pacific Coast in which a woman has been employed in this capacity.

**Dallas Experimenting with Skip-Stops.**—The City Commission of Dallas, Tex., has enacted an ordinance providing for experimental skip-stop operation on several lines of the Dallas Railway. The ordinance as enacted applies only to the downtown section and to the Ervay and South Belt lines.

**Another Massachusetts Fare Request.**—The Northampton (Mass.) Street Railway has petitioned the Public Service Commission for permission to increase its fares. The company has also asked for an extension of its charter privileges which will allow it to carry baggage, express matter and newspapers.

**Cleveland's One-Cent Line Succumbs.**—What is known as the pier loop line, connecting the Public Square and the East Ninth Street pier, Cleveland, operated by the Cleveland Railway at a fare of 1 cent, will hereafter charge the same rate as the other lines in the city. Increased operating costs have made this necessary.

**Rebates Ordered in Fare Case.**—The Public Service Commission of Pennsylvania has ordered the Shamokin & Mount Carmel Transit Company, Mount Carmel, Pa., to comply with a recent ruling of the commission and issue certificates of excess fare to patrons, pending a decision on the litigation against the 6-cent fare.

**Fare Charges Suspended.**—The Public Service Commission of Massachusetts has further suspended operation of schedule 75, the original interurban "copper-zone" schedule, on the Bay State Street Railway until June 1, 1918, also workmen's commutation and excursion tickets until the same date. Decision of the commission regarding these tickets has been pending since Aug. 10, 1917.

**Manchester Would Charge Six Cents.**—In order to maintain the road in reasonable condition, and enable it to earn such a dividend as it has paid in the past, application has been made to the Public Service Commission of New Hampshire by the Manchester Street Railway for its approval of an increase in fares from 5 cents to 6 cents as being the best and fairest arrangement for all concerned.

**Pay-As-You-Enter Service in Minneapolis.**—The Twin City Rapid Transit Company, Minneapolis, Minn., has the pay-as-you-enter plan on trial on the Fourth Avenue N and Sixth Avenue S line. This was the first line on which an electric car was operated in Minneapolis. The change in power was made on Dec. 24, 1889. The present trial provides for entrance and exit at the conductor's end.

**New Jersey Hearing Postponed.**—The Board of Public Utility Commissioners of New Jersey has postponed until May 8 the hearing on the application of the Public Service Railway for increased rates. The adjournment was granted on request of Marshall Van Winkle of counsel for the municipalities which are opposing the proposed increases. He desired additional time for himself and his associates in which to prepare his side of the case.

**Staggered Hours at Camden.**—In an effort to relieve rush-hour congestion on the lines of the Public Service Railway at Camden, N. J., and New York Shipbuilding, New Jersey Shipbuilding and Pennsylvania Shipbuilding companies have put into effect new schedules of working hours, so that the thousands of workers will not conflict with each other in going and coming to the various plants.

**Atlanta Fare Case Set for May 26.**—The petition of the Georgia Railway & Power Company, Atlanta, for permission

to increase fares to 6 cents and to charge 2 cents for a transfer will be heard before the Railroad Commission of Georgia on May 21. The increase in fares would apply to all lines in Atlanta, except the Atlanta-Stone Mountain route, and also to the company's system in Gainesville.

**City Acts Against Company.**—R. S. Houch, city solicitor of Scranton, Pa., has filed a bill in equity asking the court to rescind, cancel and annul all contracts now existing between the city and the Scranton Railway. The bill attacks the company's right to continue to operate on the ground of general violations of franchise agreements. The suit is the outcome of the company proceeding with its plan to put 6-cent fares into effect despite protests from the city.

**Hearing on New Albany Application.**—The hearing on the application of the Louisville & Southern Indiana Traction Company to the Public Service Commission of Indiana for permission to increase its fares in New Albany and Jeffersonville and on the interurban line between New Albany and Jeffersonville was held in New Albany on April 16. The commission took the case under advisement after hearing testimony on both sides in regard to the value of the property.

**Lynchburg Fare Petition Heard.**—The petition of the Lynchburg Traction & Light Company, Lynchburg, Va., to be allowed to discontinue the sale of six tickets for 25 cents was heard before the State Corporation Commission recently. Representatives of both the city and the company admitted that the commission had jurisdiction in the matter in spite of the fact that the company was operating under a city franchise. Further evidence is to be submitted later.

**Appeal from Two-Man Crew Law.**—Stockholders of the Fort Smith Light & Traction Company, Fort Smith, Ark., have brought suit in the United States District Court for an injunction against prosecutor Earl U. Hardin and Attorney John D. Arbuckle restraining them from prosecuting the company for failure to observe an act passed in 1915 by the Legislature providing for two-men crews on all electric cars in Sebastian County. The court is asked to declare the act unconstitutional.

**No Return to Railway-Jitney Competition.**—The City Commissioners of Atlantic City, N. J., have killed a bill, providing for the return of jitneys to Atlantic Avenue, where the Atlantic City & Shore Railroad has enjoyed a transportation monopoly since the jitneys were driven from that thoroughfare a year ago. Those who urged the return of the jitneys to Atlantic Avenue contended that the railway had not complied with promises made in its behalf when the measure was adopted ruling the autos off that thoroughfare.

**Straight Fare Proposed.**—The Chicago, Ottawa & Peoria Railway, a subsidiary of the Illinois Traction System, has applied to the Public Utilities Commission of Illinois for permission to

abolish zone fares and to establish a straight 2-cent fare. The company also desires to collect 3 cents a mile from all passengers who board cars without tickets and to eliminate the sale of round-trip tickets. The commission early in the year approved similar tariff changes for other Illinois Traction System interurban properties. They were noted in the *ELECTRIC RAILWAY JOURNAL* for Feb. 9, page 297.

**Taken Without a Chaser.**—Kirk Miller said recently in the *Washington Post*: "Look at this skip-stop system, which we never thought we could take without a chaser. At first everybody made a sour face when they swallowed a dose of skip-stop and it was unanimously voted that we should declare war on Turkey, Bulgaria and Skipstopia and issue passports to Dr. Beeler and his entire retinue. Now we're ready to elect him first lord mayor of the Skipstopovian islands, and donate him a complete set of flat wheels as medals for his intricate surgical operations in the vicinity of our bad tempers."

**Would Abandon Flat for Zone Fares.**—The Milford, Attleboro & Woonsocket Street Railway, Milford Mass., operating 28 miles of electric railway, has asked the Public Service Commission for permission to change to a zone fare basis. This would eliminate the present fare section of 5 cents and substitute a minimum fare of 5 cents for two of the proposed zones and 3 cents cash for each additional zone traveled, or 2½ cents for the extra zone when tickets are purchased. The company planned to put the new system into effect on April 15, but the commission suspended the tariff until June 1.

**Commission Opposed to Turnstiles.**—The Public Service Commission for the First District of New York, approving an opinion by Commissioner Charles Bulkley Hubbell, has put itself on record as against the general adoption of turnstiles, or passimeters as they are sometimes called, in connection with ticket booths, especially in Manhattan, and the commission has denied an application of the New York Municipal Railway Corporation (Brooklyn Rapid Transit System) for the installation of turnstiles in the Rector Street, Cortlandt Street and City Hall stations on the Broadway subway.

**Segregating the Wets.**—To meet a problem which arises every Saturday night in handling traffic between Pawtucket, wet, and Attleboro, dry, the Interstate Consolidated Street Railway is trying to work out a system of segregating its passengers. On the last trip on Saturday nights two cars leave Pawtucket together. The scheme adopted by the management of the railway is to have the conductors usher into one car, as far as practicable, those who are under the influence of liquor, so that they may keep to themselves and leave the other car for persons who are sober and well-mannered.

**Court Sustains Cleveland Fare Change.**—On April 23 the Supreme

Court of Ohio, announced its refusal to review the decision of the Court of Appeals of Cuyahoga County in the case of the city of Cleveland against the Cleveland Railway wherein was questioned the right of the company to increase its rate of fare under the Taylor franchise from schedule C to schedule B. The Common Pleas Court recently granted an injunction, preventing the company from taking this step, but the restraining order was promptly dismissed by the Court of Appeals. Since the case was filed the rate has been advanced to Schedule A.

**Railway to Operate Buses.**—The New Jersey Transportation Company, a subsidiary of the Public Service Corporation of New Jersey, Newark, N. J., has made application to the director of improvements for the necessary permits to operate eighteen motor buses from Hamburg Place and Gotthart Street to the shipbuilding plants at Port Newark Terminal. It is planned to have the buses connect with cars of the Public Service Railway on the South Orange line terminating at Hamburg Place, the fare to be 5 cents on the electric railway and 5 cents on the bus. The buses will be operated from 6 a. m. to midnight.

**Lincoln Fare Hearing Closed.**—On April 23 the State Railway Commission of Nebraska overruled the motion of the city of Lincoln to take an inventory of the property of the Lincoln Traction Company in connection with the pending fare case and also overruled a motion of the city for a continuance of sixty days, which time was asked for by the city for the purpose of introducing testimony. The case was then submitted to the commission on the record. The company has two applications for leave to issue stock and bonds before the commission, and also an application alleging the present rates of fares are inadequate and requesting the commission to fix reasonable rates. An emergency petition of the company for fare relief was denied by the commission as noted in the *ELECTRIC RAILWAY JOURNAL* for March 2, page 435.

**New Minneapolis Jitney Regulation.**—Effective on May 6 Minneapolis will have a new jitney ordinance, some of the provisions of which are as follows: All such vehicles must be licensed. Drivers must be at least twenty-one years old and have a State chauffeur license. The owner must have a \$10,000 surety bond or an insurance policy or a reciprocal or inter-insurance contract. The license fee is fixed at \$25 for a vehicle with capacity of not more than seven, and \$2 additional for each additional seat. Fares must be collected only when the vehicle is at a stop. Signs must indicate the route of each car. Between 5 a. m. and midnight the fare must not exceed 5 cents for each person for the full route, and at other times not more than 10 cents. Special trips may be made without regular route signs at special compensation.

## Personal Mention

R. Home Smith, Toronto, Ont., has been elected president and director of the Buffalo, Lockport & Rochester Railway, Rochester, N. Y., to succeed William O. Morgan, New York, resigned.

George D. Powell has been promoted to the position of office engineer in the maintenance of way department of the Union Traction Company of Indiana, Indianapolis, Ind. He was formerly draftsman in that department.

C. S. MacCalla has resigned as vice-president and general manager of the Washington Water Power Company, Spokane, Wash., and left on April 25 for New York City, although he had intended to remain in Spokane until May. A farewell dinner to him at the



C. S. MACCALLA

Spokane Club was attended by officers and employees of the company. Mr. MacCalla was graduated from the electrical engineering school at Lehigh University in 1896. He had been with the Washington Water Power Company for sixteen years. Previous to that he was with an Australian railway for the General Electric Company and later with the Brooklyn (N. Y.) Edison Company. He went to Spokane as assistant to the general manager. At that time that official was D. L. Huntington, now president of the company. Mr. MacCalla was later promoted to general manager and then to vice-president and general manager. He had the executive direction of the installation of four large auxiliary power plants now operated by the company. The first of these was at Post Falls, Idaho, on the Spokane River, erected in 1904 and 1905; the steam plant at Ross Park, in Spokane, in 1907 and 1908; the 27,000-hp. plant at Little Falls, Spokane River, in 1908 to 1910, and the Long Lake plant, Spokane River, which was under construction from 1911 to 1913. The last-mentioned plant has a capacity of 67,000-hp. and provides for an ultimate capacity of 90,000-hp.

G. O. House has been appointed superintendent of the St. Paul lines of the Twin City Rapid Transit Company, succeeding A. L. Cunningham, who has been appointed captain in the National Army, Quartermaster Corps. Mr. House has been superintendent of the St. Paul Water Works.

John H. Roemer, of the legal firm of Cummins, Roemer, Flynn, Milkewitch & McKenna, counsel for H. M. Byllesby & Company, Chicago, has been obliged to decline a commission as lieutenant-colonel in the National Army, to act on a board of appraisers on account of his present engagement for the government as a civilian in connection with various boards of appraisers engaged in similar work concerned with terminal and dockage property under consideration for use by the Government in its war activities.

William T. Price has been appointed traffic manager and property agent of the Denver (Col.) Tramway and the Denver & Intermountain Railroad. Mr. Price entered railroading in 1902 as a clerk in the Omaha offices of the Chicago, St. Paul, Minneapolis & Omaha Railroad. In 1904 he went to the Union Pacific as clerk in the freight claim department at Omaha, advancing to the position of traveling freight claim agent and adjuster. In 1911 he was transferred to Denver, where he held the position of contracting freight agent until 1912, when he was appointed traveling freight agent for Colorado territory. On Aug. 1, 1915, he was made commercial agent of the Union Pacific System in charge of southern Colorado, which he handled from Pueblo. He resigned from the Union Pacific System on April 1 to become connected with the Denver Tramway.

Townsend H. Soren has been elected a vice-president of the Hartford (Conn.) Electric Light Company in charge of construction. Immediately after graduation from Harvard he was employed by the General Electric Company at Schenectady and remained with that company until July, 1916. Mr. Soren's duties with the General Electric Company were largely confined to the general supervision of the work of that company in connection with large electric railway developments in New York City. This work started with the equipment of the Ninety-sixth Street power station and substations of the Metropolitan Street Railway in 1897 and was followed by the equipment of the Manhattan Elevated Railway, the Interborough Rapid Transit Company and the Hudson & Manhattan Railroad and the electrification of the main line of the New York Central & Hudson River Railway, including the construction and electric equipment of the locomotives for that company.

J. W. Brown has resigned as assistant general superintendent of the Public Service Railway, Newark, N. J., to become general manager of the Wheeling (W. Va.) Traction Company, taking over with that company, among other duties, those previously performed by W. B. Atwood, general superintendent, who resigned to accept a position elsewhere. Mr. Brown has been connected with the Public Service Railway since April, 1911. He has been assistant general superintendent since 1913. Previous to 1911 he was with the Aurora, Elgin & Chicago Railroad, and prior to that time was superintendent of transportation of the West Penn Railways, Connellsville, Pa. He entered the service of the McKeesport, Wilmerding & Duquesne Railway, McKeesport, Pa., about fifteen years ago as night car dispatcher. He also served as electrician and later as power station engineer of this company. When the Pittsburgh, McKeesport & Connellsville Railway was formed Mr. Brown was



J. W. BROWN

made master mechanic of the McKeesport Division of that road and later was promoted to division superintendent. When the transportation department of the company was organized in 1903 he was appointed superintendent of transportation of the company. He resigned from the West Penn Railways in August, 1910, to become connected with the Aurora, Elgin & Chicago Railroad. Mr. Brown has built up for himself an enviable reputation in the handling of men and in solving problems in connection with the new science of employment. He has been editor of the employees' publication of the Public Service Railway, the *Trolley Weal*, since its establishment in 1917. Mr. Brown has been very active in the work of the American Electric Railway Transportation & Traffic Association, particularly as vice-chairman of the joint committee on block signals for electric railways. His associates in the Public Service Railway tendered a banquet to him on April 10. Among those who attended were R. E. Danforth, J. L. O'Toole, H. V. Drown, M. R. Boylan, A. Jackson, H. C. Donecker, N. W. Bolen, M. Schreiber, W. B. Graham and H. A. Benedict.

# Construction News

## Recent Incorporations

\*Chillicothe & Camp Sherman Electric Railway, Chillicothe, Ohio.—Incorporated with a capital stock of \$50,000. Incorporators: George A. Vaughters, president of the Chillicothe Electric Railroad, Light & Power Company, John A. Poland, J. A. Phillips, Alex Renick, J. C. Martin and Ralph Madison.

## Franchises

San Francisco, Cal.—The United Railroads of San Francisco has received a franchise to construct an extension of its Army Street line to the Union Iron Works.

Chicago, Ill.—Following its custom of not permitting building operations which are not necessary to the success of the war, the Illinois Public Utilities Commission has denied a certificate of convenience and necessity to the Chicago, Fox Lake & Northern Traction Company, which proposed to build an interurban line from Palatine, Ill., north into Wisconsin. The new company also proposed to purchase the property of the Waukegan, Rockford & Elgin Traction Company, which the commission would not allow. [May 26, '17.]

Philadelphia, Pa.—The West Philadelphia Passenger Railway, a subsidiary of the Philadelphia Rapid Transit Company, has received a franchise from the City Council to construct a new double-track extension on Island Road and Eastwick Avenue to the county line.

## Track and Roadway

Los Angeles (Cal.) Railway.—In view of the emergency now existing and the impossibility of procuring grooved girder rails from the mills, the Los Angeles Railway Corporation and the Pacific Electric Railway have petitioned the City Council of Los Angeles to amend the ordinance of the city prescribing the type of railroad construction and railroad rails in streets so as to permit railroad construction of a type other than with grooved girder rail and concrete base outside of the business district of the city.

Jacksonville, (Fla.) Traction Company.—Operation has been begun by the Jacksonville Traction Company on its line to Camp Johnston.

Des Moines (Ia.) City Railway.—The Des Moines City Railway has begun its season's construction work in Des

Moines. The first work is at Seventh and Walnut Streets, in the heart of the business district, where special construction is being placed. As soon as this is done the Fort Des Moines and Sevastapol lines will be routed through the loop. Heretofore these lines have terminated at Seventh and Grand Avenues and it has been necessary to switch the cars.

Manhattan City & Interurban Railway, Manhattan, Kan.—Announcement has been made by the Manhattan City & Interurban Railway that it will rehabilitate its track and overhaul all its equipment.

Shreveport (La.) Railways.—It is reported that plans are being considered by the Shreveport Railways for the construction of an extension of its East End line from Fourteenth Street to the eastern city limits.

Mattawamkeag & Northern Railway, Bangor, Me.—The Public Utilities Commission of Maine has granted an extension of the charter of the Mattawamkeag & Northern Railway, which proposes to construct a line from Mattawamkeag to Millinocket and East Millinocket, 23 miles. George W. Stearns, Millinocket, is interested. [April 13, '18.]

Butte (Mont.) Electric Railway: It has been announced the Butte Electric Railway will expend \$70,000 in street and track improvements within the next few weeks. This sum will be distributed in the following projects: Broadway, from Montana to Arizona Street; West Granite, from Montana to Main Street; East Park, from Main to Covert Street and several blocks on Main Street. In addition, new switches and new material will be installed. Main Street will be double-tracked for several blocks.

International Railway, Buffalo, N. Y.—It is reported that the fast line of the International Railway from Buffalo to Niagara Falls will be opened on May 30.

Harrisburg (Pa.) Railways.—This company is reconstructing its double track in Second Street from Walnut to State Street and is constructing new track connecting the Cameron and Market Street lines.

Pittsburgh (Pa.) Railways.—The Public Service Commission of Pennsylvania has ordered the Pittsburgh Railways to construct a double or single track with turnouts in Wheatland Street, Pittsburgh. The order came as a result of a complaint by the city of Pittsburgh that the company had not constructed a line as required.

Dallas (Tex.) Southwestern Traction Company.—Work is being delayed on the construction of the proposed line of

the Dallas Southwestern Traction Company from Dallas to Irving owing to trouble in getting the right-of-way. About four-fifths of the route has been graded. E. P. Turner, president. [March 9, '18.]

Dallas (Tex.) Railway.—No street car line will be built by the Dallas Railway from Dallas to Love Aviation Field, according to an announcement by Richard Meriwether, superintendent of the company. Mr. Meriwether said material is too high and too scarce and the labor supply is too uncertain to justify the undertaking.

Salt Lake, Garfield & Western Railway, Salt Lake City, Utah.—It is reported that electrification of the Salt Lake, Garfield & Western Railway to Saltair is practically completed and that electric cars will be operated on the line by May 30.

Texas Electric Railways, Dallas, Tex.—The tracks on Tarlton Avenue, Rose Hill, will be lowered to a level with the street by the Texas Electric Railway.

## Shops and Buildings

Philadelphia (Pa.) Railways.—A contract has been awarded by the Philadelphia Railways to William Steele & Sons for the construction of a new car-house and repair shop at Penrose Ferry and Fort Mifflin Roads, to cost about \$28,000.

## Power Houses and Substations

Trenton & Mercer Traction Corporation, Trenton, N. J.—Major Edmund J. Barry, who is in charge of the government munitions plant at Tullytown, Pa., has ordered additional electric power furnished to the Trenton, Bristol & Philadelphia Street Railway from the power house of the Trenton & Mercer County Traction Corporation at Trenton, N. J. Wires will be strung through the streets of Trenton across the Delaware River to connect with the former line at Morrisville, Pa. The work of construction will begin in a short time. Major Barry was prompted to take this action because of the insufficient transportation accommodations placed at the disposal of the workmen from Trenton who are employed at the Merchant's Shipbuilding plant at Bristol, Pa., and the Foundation Munitions plant at Tullytown, Pa. The Trenton, Bristol & Philadelphia Street Railway Company informed the government authorities that it did not have sufficient power at its disposal to warrant the increased service desired.

Virginia Railway & Power Company, Richmond, Va.—A contract has been awarded by the Virginia Railway & Power Company to Nicholas & Linderman, Norfolk, for alterations and improvements in its one-story substation, to cost \$11,700.

# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS

FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES • MARKET QUOTATIONS • BUSINESS ANNOUNCEMENTS

## Review of the Coal Situation

### National Association Predicts Shortage Unless Action Is Taken To Supply Necessary Transportation

According to a statement issued by the National Coal Association on April 28, another coal shortage, more serious than that of last winter, and almost certain interference with the war program, is inevitable throughout the East unless there is soon a readjustment of traffic over Eastern railroads. The enormous demands of other war industries are crowding coal off the rails, and the resultant continued shortage of cars at the mines has cut production to the danger point. This is the season of the year when the mines should be working at top speed to produce stocks for storage against the needs of next fall and winter. The mines, however, are not working at top speed, nor at a rate even approaching top speed. In the face of the heaviest demand for coal in the country's history, the mines have been so hindered by insufficient car supply that they have made little, if any, headway over last year's record—a record which fell 50,000,000 tons short of meeting the nation's demands.

Opinions of operators in the great producing area east of the Mississippi, which furnishes more than 90 per cent of the country's bituminous coal, requested by the National Coal Association, are almost unanimously to the effect that the coal shortage next winter will be worse than that of last winter unless the mines are furnished sufficient cars to enable them to increase materially their present rate of production.

It is understood that the railroads are hauling far more traffic as a whole than they ever hauled before. It is evident therefore that freight of other classes than coal is responsible for all or practically all of this increase. It would seem that the time has come for the War Industries Board, or whoever is running the war, to decide upon a readjustment of traffic over the Eastern railroads so that coal may be handled in sufficient tonnage to take care of the industrial and domestic requirement of the Eastern States.

The latest official summary of the United States Geological Survey shows that with a full-time output of 15,500,000 tons, bituminous mines produced during the week ending April 13 but 70.1 per cent of output or 10,864,000 tons. Production lost because of car shortage was approximately 2,800,000 tons during the week or 467,000 tons a day.

Pennsylvania fields capable of producing 4,385,000 tons during the week lost 762,000 tons, or 17 per cent because of car shortage. The following table, covering fifteen producing sections with a full-time output of 11,810,000 tons during the week, shows the extent to which production was curtailed by inadequate transportation facilities in each field:

Producing Field	Full-Time Output, Tons	Production Lost Because of Car Shortage—Tons
Western Pennsylvania.....	2,000,000	460,000
Central Pennsylvania.....	2,000,000	150,000
Somerset County, Pa.....	185,000	105,000
Irwin Gas Fields, Pa.....	200,000	47,000
Illinois.....	2,450,000	352,000
Indiana.....	945,000	192,000
Southern Ohio fields.....	480,000	130,000
Northern and Central Ohio fields.....	760,000	240,000
New River and Winding Gulf Fields, West Virginia.....	430,000	93,000
Fairmont Fields, West Virginia.....	260,000	145,000
Cumberland and Piedmont fields, West Virginia and Maryland.....	200,000	55,000
High volatile fields of southwest Virginia.....	835,000	255,000
Northeastern Kentucky fields.....	230,000	55,000
Western Kentucky fields.....	355,000	73,000
Southern Appalachian fields.....	480,000	40,000
Total.....	11,810,000	2,392,000

## Rotary Market Dull

### War Situation Is Determining Practically the Entire Demand—Delivery Conditions Unimproved

As with other railway equipment rotary converter demand is very light. Such business as is heard of pertains directly or indirectly to government requirements. Where extensions have been made by the traction roads it is of the same character; that is, to meet the transportation demands at cantonments and camps or other military and naval needs. Prices have remained about stationary for some time, and no changes are anticipated. It is more difficult to obtain material—iron, steel, copper, etc. This is particularly true of steel for the shaft.

Another angle to the situation is that often when commercial orders are made up a government representative comes along and finds the rotary will satisfy the requirements of some government installation, whereupon it is commandeered without ceremony. Of rotaries on order at the present time about 88 per cent are for the government on priority. Even with a certificate of priority a rotary of 2000-kva. rating is not deliverable under six months. On a commercial requirement it is eight months, with from seven to eight months on 500-kva. units.

## Filling Steel Orders on Private Account Held Up

### Facilities of Mills and Blast Furnaces Devoted Solely to Government Requirements for Thirty Days.

At a meeting of fifty iron and steel manufacturers held in New York City April 26, after a conference with government officials, it was decided to hold in abeyance practically all orders for commercial steel. By this action the heads of the industry engaged to put their entire plants at the disposal of the United States and the allied governments for the production of material for the munition factories and shipyards, thereby sidetracking indefinitely contracts entered into with private buyers. Therefore manufacturers of rolling stock, railway equipment, electrical apparatus, machinery, supplies, accessories and a long line of specialties and staples for which steel is essential, unless requirements have been anticipated and sufficient stocks are on hand to meet the demand, will be obliged to curtail or defer production and postpone promised deliveries.

Exceptions from this program, it is understood, will be only those buyers of commercial steel who secure government authorization for the early completion of their orders. The initial steps in this schedule for concentration were taken several weeks ago, when a number of companies decided to shelve for a period of thirty days all commercial orders.

Furthermore, a fresh survey of steel consumption throughout the country made by the government requires that each seller of steel be informed by his customer or the buyer the precise use to which steel already ordered is to be put. All tonnage either on government or civilian orders is to be so itemized. The various rulings that have been made as to priorities in manufacture and shipment are to be elaborated, so that in substance there will be a definite sequence all along the line, the less essential commodities to be placed nearer the bottom of the list.

Department of Commerce, Bureau of Foreign and Domestic Commerce, Washington, D. C., in a recent report describes the strained tariff relations that existed between Russia and Germany much of the time between 1890 and the outbreak of the war. Copies can be obtained at the price of 5 cents from the superintendent of documents, Government Printing Office, Washington, D. C.



## Open-Car Equipment Receiving Slight Attention

Railways Not Buying Material or Supplies as in Former Years—Standard Closed Type Preferred

Contrary to the practice of former years a number of the Eastern electric railway companies are not making their usual preparations for the refurbishing and rehabilitation of their open rolling stock. Manufacturers and agencies which specialize in this equipment frankly say the buying for this purpose, which customarily is in evidence long before this, has not materialized. A majority of the traction roads purchase their essential supplies and requisites in the winter. One of the largest Eastern corporations, when questioned, stated it had not made up any summer budget this year and that this matter was always arranged in the winter.

In explanation of this attitude the vice-president and general manager said he had discussed this matter with the officials of other railways and the consensus of opinion was that no extensive repairs, replacements or refurbishing of open cars, other than was absolutely necessary, would be made.

One reason was that the income of many traction roads was insufficient to met the expense. A second was that even if the funds were available it would be undesirable, on patriotic grounds, so to spend them. All the money that could be spared, the official continued, should be invested in Liberty Bonds to help win the war, and non-essential betterments could wait.

For seatings it was learned that no orders were given, the informant, who has wide experience, remarking that the electric railways were getting away from the regulation open cars. The closed type, with facilities for removing or dropping the windows and depending on the heavy curtains for storm protection, was preferred and being placed in service. Of curtains of duck—striped, plain or colored—very little had been bought for summer equipment. At one time this was an item of importance, but this year, to quote a manufacturer who furnishes curtains for a large portion of the new rolling stock, only one road, a system operating at a seaside resort, had purchased a yard, and the order was for only five cars.

Duck, he said, was scarce—in fact none was to be had, as the government had commandeered the entire available supply. The price had been going up steadily, 75 per cent representing a year's increase. As previously noted in the ELECTRIC RAILWAY JOURNAL curtain fixtures, which are about all patented articles, have advanced 10 per cent in six months on the light-weight kind. So far as could be ascertained, companies which do no overhauling until the cars are actually brought out of the carhouses for summer service were also dilatory in providing equipment of this description.

## Gear Manufacturers Hold Convention and Elect Officers

The second annual meeting of the American Gear Manufacturers' Association was held at White Sulphur Springs, W. Va., April 18 to 20, 1918.

At the opening session F. N. Shepard, of the United States Chamber of Commerce, spoke on "How We Can Get Behind the Government and Help Win the War," and B. F. Waterman presented a paper on "Gear Standardization."

At the morning session on Friday an executive committee and officers for the ensuing year were elected as follows:

Executive committee: F. W. Sinram, Frank D. Hamlin, H. E. Eberhardt, Frank Burgess, George L. Markland, Jr., Milton Rupert, William Ganschow, E. J. Frost and H. W. Chopin.

The officers elected were president, F. W. Sinram; vice-president, H. E. Eberhardt; secretary and treasurer, Frank D. Hamlin.

At the Saturday session the papers presented were: "Uniform Cost Accounting," by J. H. Dunn, and "Hobbs and Hobbing Machines," by F. G. Hoffman and John Edgar.

## Railroad Administration Orders 30,000 Cars

An Additional Lot of 70,000 Also Being Under Negotiation—Completion To Be Rushed

Orders for 30,000 box and coal hopper cars, involving between \$80,000,000 and \$90,000,000, has been placed by the Railroad Administration with the American Car & Foundry Company. This is the first order of its kind entered into on so large a scale since the government assumed control of the railroads. It is expected the cars will be completed in time for the fall and winter business of the roads. Reports also say negotiations are pending for the construction of 70,000 additional freight cars.

The cars will have steel underframes and a sufficient quantity of the materials has been assured by the War Industries Board. The contract was awarded on the basis of an approximate profit of 5 per cent on the manufacturer's cost. The impression in metal circles is that the plans will involve the use of a minimum amount of wood in the box cars and probably some wood in the superstructure of the hopper cars.

## Rolling Stock

Washington Railway & Electric Company, Washington, D. C., which recently ordered twenty-five new cars, as noted in the ELECTRIC RAILWAY JOURNAL of Apr. 3. from the G. C. Kuhlman Car Co., this week added another twenty-five, making fifty in all. The specifications duplicate those published in this department on April 20, page 794. Delivery of the new lot will be in October.

Public Service Railway, Newark, N. J., to equip the shipyards branch of its system in Camden and Gloucester, N. J., last week ordered thirty-three new cars, standard type, of the Cincinnati Car Company, referred to in recent numbers of the ELECTRIC RAILWAY JOURNAL. The rolling stock and other necessary improvements on order of the United States Shipping Board, Emergency Fleet Corporation, will cost about \$1,250,000, and go through on priority preference. Delivery of the cars is to be made in ninety days.

Brooklyn (N. Y.) Rapid Transit Company now states that it is probable no order for the fifty new centre-entrance trail cars, for which specifications are in hand, will be placed within a month. The matter is now in the personal charge of T. S. Williams, president of the company.

Hudson & Manhattan Railroad, New York, N. Y., which submitted estimates and specifications to the United States Shipping Board Emergency Fleet Corporation for an extension to the shipyards at Port Newark Terminal, N. J., and for the purchase of 100 all-steel

cars as mentioned in the ELECTRIC RAILWAY JOURNAL, March 23, page 597, and subsequently, has its proposition still under consideration. Reports say Engineer Drum recommended the improvement, but Admiral Bowles is opposed to the plan on account of the cost, which is placed at \$3,000,000.

Interborough Rapid Transit Company, New York, N. Y., which has been in the market for 10,000 tons of heavy steel rails for its 1919 requirements, has not yet succeeded in placing the order. The steel mills decline to accept its terms, both on price and delivery.

Philadelphia (Pa.) Rapid Transit Company, following the order for 100 new cars, on account of the United States Shipping Board, Emergency Fleet Corporation, for the Hog Island shipyard extension referred to and of which specifications were published in the ELECTRIC RAILWAY JOURNAL, March 16, page 552, is reported as about to purchase fifty additional cars of the same type, to be operated in the same service.

Manila Railroad & Light Corporation, Manila, P. I., controlled by the J. G. White Management Corporation, New York, N. Y., which has been contemplating the purchase of fifteen new cars, as mentioned in the ELECTRIC RAILWAY JOURNAL of Jan. 26 and Feb. 23, is now preparing the specifications in which bids will be asked. The order will be placed shortly, as it will take nearly a year and a half after the car builders have them on delivery before they will reach Manila. The rolling stock is to be two-man single and double truck, and it is reported the St. Louis Car Co., which built the last cars for the Manila corporation, will receive the order.

Trade Notes

Sprague Electric Works of the General Electric Works, New York, N. Y., announces the removal of its office in Boston from 201 Devonshire Street to 84 State Street, room 906; also the removal of its quarters in St. Louis, from the Chemical Building to the Pierce Building, room 1352.

Drew Electric & Manufacturing Company, Indianapolis, Ind., manufacturer of electric railway, light, power and gas materials, has appointed William M. Lawyer its sales representative for the northern part of the State of New York. Mr. Lawyer has headquarters at 383 West Fayette Street, Syracuse, N. Y.

National Bank of Commerce, New York, N. Y., has printed the Export Trade Associations act (Webb act), as approved April 11, with annotations in convenient pamphlet form. The enactment of the law is a decisive step, in the direction of an expansion of foreign trade. Copies may be had by applying to the foreign department of the bank.

Fred W. Godfrey has severed his connection with the Republic Electric Company to become associated with the American Carbon & Battery Works of the National Carbon Company, Inc., of East St. Louis, Ill. Mr. Godfrey will cover all of Minnesota, North and South Dakota, Nebraska, Colorado, Montana, Wyoming, Utah, Idaho and New Mexico. He has traveled the Central West for many years.

Jeffery-DeWitt Company, manufacturer of high-tension disk insulators, will after June 1 move its factory from Detroit, Mich., to Kenopa, W. Va.

Charles C. Schneider, manufacturers' agent, has moved from 329 to 327 Broadway, Market Building, Detroit, Mich., where larger quarters have been secured. Mr. Schneider, who represents the Pittsburgh Lamp, Brass & Glass Company, has recently added to his line the transformers made by the Cumberland Electric Company of Memphis, Tenn.

Aspromet Company, Pittsburgh, Pa., will, after May 1, be the new name of the Asbestos Protected Metal Company. When this company was established in 1905, its sole product was asbestos protected metal. It has now a line of building material specialties, many of which contain neither asbestos nor metal in their make-up. The former name became restrictive to the point of being misleading; hence the change.

General Electric Company, Schenectady, N. Y., had one of the most novel exhibits at the annual meeting of the National Railway Appliance Association in Chicago, Ill., in March, in the form of its large service flag. Due to war conditions, making shipments for exhibits all but impossible, the General Electric Company was unable to install its usual representative exhibit for this occasion. The best answer to this question of why the company's railway appliances were not on exhibit was the service flag, showing 3650 employees in the army and navy service, flying from a flagstaff in the space reserved.

New Advertising Literature

Economy Electric Devices Company, Chicago, Ill.: Bulletin 50, illustrated, entitled "The Economy Meter: An Electric Railway Efficiency Device," has interesting chapters on efficiency in electric railway operation, advantages of energy checking and other subjects of equal import.

Wilson Welder & Metals Company, Inc., New York, N. Y.: Illustrated catalog "Electric Welding Manual," furnishing instructions for the installation, care, operation and maintenance equipment of the Wilson system. It may be interesting to note that the damaged engines of the German interned ships, seized by the United States government, were repaired in part by the Wilson welding system, the details of which are given.

Westinghouse Traction Brake Company, Pittsburgh, Pa.: Illustrated catalog, publication No. 9035, entitled "Motor Driven Compressors: Westinghouse and National Types." Primarily these air compressors were designed for use in connection with air-brake equipment on electric cars, a service requiring an unusual degree of efficiency, reliability, compactness, ease of access and quiet operation. These characteristics also make them particularly suitable for general commercial purposes; and they are finding a wide field of application wherever electric motive power is available. The various types are described in detail.

NEW YORK METAL MARKET PRICES

	April 24	May 1
Copper, ingots, cents per lb.	23½	23½
Copper wire base, cents per lb.	26¼ to 26½	26¼ to 26½
Lead, cents per lb.	6.90	7.00
Nickel, cents per lb.	50	50
Spelter, cents per lb.	6.87½	7½
Tin, Straits, cents per lb.	92	96
Aluminum, 98 to 99 per cent., cents per lb.	†32.10	†32.10

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

OLD METAL PRICES—NEW YORK

	April 24	May 1
Heavy copper, cents per lb.	22	22
Light copper, cents per lb.	19½	19½
Red brass, cents per lb.	18	18
Yellow brass, cents per lb.	13	13
Lead, heavy, cents per lb.	6	6
Zinc, cents per lb.	5½	5½
Steel car axles, Chicago, per net ton.	\$41.52	\$41.52
Old carwheels, Chicago, per gross ton.	\$29.00	\$29.00
Steel rails (scrap), Chicago, per gross ton.	*\$34.00	*\$34.00
Steel rails (relaying), Chicago, gross ton.	\$60.00	\$60.00
Machine shop turnings, Chicago, net ton.	\$16.00	\$16.00

ELECTRIC RAILWAY MATERIAL PRICES

	April 24	May 1	April 24	May 1	
Rubber-covered wire base, New York, cents per lb.	27 to 30	27 to 30	Galvanized wire, ordinary, Pittsburgh, cents per lb.	3.95	3.95
Weatherproof wire (100 lb. lots), cents per lb., New York.	28¼ to 34½	30.40 to 34½	Car window glass (single strength), first three brackets, A quality, New York, discount, F. O. B. factory.	80% to 82-3%	80% to 82-3%
Weatherproof wire (100 lb. lots), cents per lb., Chicago.	33.42 to 38.35	33.42 to 38.25	Car window glass (single strength), first three brackets, B quality, New York, discount, F. O. B. factory.	79%	79%
T-rails (A. S. C. E. standard), per gross ton.	\$70.00 to \$80.00	\$70.00 to \$80.00	Car window glass (double strength, all sizes AA quality), New York, discount, F. O. B. factory.	80%	80%
T-rails (A. S. C. E. standard), 500-ton lots, per gross ton.		\$65.00	Waste, wool (according to grade), cents per lb.	11½ to 22	11½ to 22
T-rails, high (Shanghai), cents per lb.	4½	4½	Waste, cotton (100 lb. bale), cents per lb.	12½ to 13	13 to 13½
Rails, girder (grooved), cents per lb.	4½	4½	Asphalt, hot (150 tons minimum), per ton delivered.	\$38.00	\$40.00
Wire nails, Pittsburgh, cents per lb.	3½	3½	Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton.	\$42.00	\$42.50
Railroad spikes, drive, Pittsburgh base, cents per lb.	4½	4½	Asphalt filler, per ton.	\$45.00	\$45.00
Railroad spikes, screw, Pittsburgh base, cents per lb.	8	8	Cement (carload lots), New York, per bbl.	\$2.65	\$2.65
Tie plates (flat type), cents per lb.	*3¼	*3¼	Cement (carload lots), Chicago, per bbl.	\$2.71	\$2.71
Tie plates (brace type), cents per lb.	*3¼	*3¼	Cement (carload lots), Seattle, per bbl.	\$3.05	\$3.05
Tie rods, Pittsburgh base, cents per lb.	7	7	Linsed oil (raw, 5 bbl. lots), New York, per gal.	\$1.59	\$1.59
Fish plates, cents per lb.	*3¼	*3¼	Linsed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.60	\$1.60
Angle plates, cents per lb.	*3¼	*3¼	White lead (100 lb. keg), New York, cents per lb.	10	10
Angle bars, cents per lb.	*3¼	*3¼	Turpentine (bbl. lots), New York, cents per gal.	43½	43½
Rail bolts and nuts, Pittsburgh base, cents per lb.	4.90	4.90			
Steel bars, Pittsburgh, cents per lb.	5	5			
Sheet iron, black (24 gage), Pittsburgh, cents per lb.	4.90	4.90			
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.	5.80	5.80			
Galvanized barbed wire, Pittsburgh, cents per lb.	4.35	4.35			

\* Government price.