

Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

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"The Safety of the State Is the Highest Law"

THIS ancient maxim of Roman law can well be applied in Chicago. In the days when it was expected that any increase in wages would be absorbed by the railway company without any increase in fare the public believed that it could afford to be largely indifferent to disputes as to wages between an electric railway company and its employees. Now that it is recognized that the final bill for such an increase must be met by the public in higher fares, each community must take steps to protect itself against extortion.

Our present system of settling the wages on a public utility places too much power in the hands of the employees. By refusing in a body to work they can paralyze the life of an entire community. The demands of the Chicago employees are for 85 cents an hour on the surface lines and 87 cents an hour on the elevated, with an eight-hour day and time and a half for overtime, and they indignantly rejected an offer of 65 cents on the surface lines and 67 cents on the elevated with an eight-hour day.

But disregarding for the moment the question as to whether the demands of the employees are justified by the prevalent working conditions and wages in Chicago, and we do not believe they are, the same tactics to increase wages could just as easily be used for enforcing a wage of \$1 an hour with a six or five-hour day and a five-day week. Chicago can afford to pay its railway operators liberally but it cannot afford to have wages extorted under a threat. The policy which has been followed by the Chicago employees savors too much of a conspiracy against the life of the state. For its own protection the city must not permit these tactics to prevail. The Canadian arbitration law points one way out. Though not perfect it should help. Some legislation along those or similar lines ought to be put on our statute books.

The Public Takes More Interest Now in Wage Increases

THE controversy over wages and working conditions for trainmen in Chicago during the past few weeks has proved an excellent illustration of the public's changed attitude toward such disputes. When similar discussions were going on in the same city in 1915 the public's only expressed concern was whether the companies would go far enough in a wage offer to prevent a transportation tie-up. This time, owing to the many months of debate over the limitations of a 5-cent fare, the people knew that the companies could not meet even a small part of the demands of the platform men without additional revenue. The statements of the surface and elevated roads to this effect were apparently not disputed either by the car riders or by the employees.

Everyone looked to the State utilities commission as the only possible savior of the situation. Unfortunately the employees have been stampeded by the radical element among them and, failing to listen to reason have tied up the whole local transportation system.

It developed during the conference between the utilities, the unions and the commissioners that there were three important questions—namely,—what minimum the men would accept, what maximum the companies should pay, and above all what size burden the car riders should be required to carry. The original demands of the workers would have added about \$19,000,000 to the payrolls, according to estimates by the management of both roads, and this would have meant a 9-cent or 10-cent fare. No one apparently took these demands at their face value.

The companies, in our opinion, took a proper attitude when they insisted that the wages recently established in Detroit, Cleveland and Boston should be considered a reasonable standard for the rates in Chicago. The War Labor Board in 1918 found the cost of living to be practically identical in these four cities, and if the platform men employed in three of those cities were pleased with a 60-cent maximum to meet increased costs it would appear quite unfair to insist on a higher rate for Chicago. As one of the local newspapers said editorially: "If the 85-cent demand is maintained, it will sound in the ears of Chicago much like the demand of the hold-up man who, with pointed revolver, cries 'Stand and deliver.'"

The eight-hour day having been so much discussed during the past year it was to be expected that electric railway employees would endeavor to have this limitation written into new contracts. The Boston employees gained this point after a strike, but they secured it with restrictions that did not appeal to their Chicago brothers. The latter wanted a "straight" eight-hour day for 80 per cent of the runs, the remainder not to exceed a ten-hour "spread," whereas we understand the Boston agreement calls for no "straight" runs and the men are satisfied to get a premium only when the "spread" exceeds eleven hours.

Now that the Chicago people have come to realize how closely their interests are bound with those of the traction companies and their employees, we are encouraged to look for a settlement which will be fair to all alike. The Chicago ordinance is not a service-at-cost measure, strictly speaking, but in the present financial condition of both companies the effect is practically the same as it would be in Boston or Cleveland. The people know that any addition to the transportation payroll must come out of their pockets, and they are not likely to stand for a settlement between the two other parties which hits too hard. When the public realizes that it must foot the bill, it will want to be shown that the price is not too high.

How Shall "Fair Value" Be Determined?

JUDGING from the questions asked during the recent Washington hearing, the Federal Electric Railway Commission is very much interested in the cost-of-service plan of railway operation. Inasmuch as the initiation of such a plan calls first for the determination of the value of the investment upon which a return is to be allowed, the report of the American Electric Railway Association's committee on valuation, published elsewhere in this issue, is of especial interest at this time.

The report, which treats of principles rather than of details, refers briefly to the original investment plan but speaks of the reproduction cost method of appraisal as being the most practical method, the one in almost universal use and the one to be recommended. In connection with its discussion of this method the report puts much stress on the matters of unit costs and overhead items which should be added to the inventory value of the physical property in order to secure that value which should be used for rate-making purposes.

One of the points insisted upon by the committee, and we think properly, is that the unit prices taken as a basis for such a valuation should be those of to-day. It has been the custom in some appraisals, in the past, to use as unit costs, figures representing the average cost through a period of years. Where this practice has been followed it has been justified on the theory that the unit costs so arrived at would be a fairer index of general current and future values than costs that might obtain at the time the appraisal is actually being made. But if it is true that a distinctly different price level has been reached than existed five years ago, the use of average prices for five years back would defeat the very aim that their original use was supposed to assist in attaining.

There are many other reasons which can be urged for this course. One is that inventory costs arrived at in this way are more nearly in accord with the present prices of material and wages of labor, as well with those of other commodities and the purchasing power of a dollar. It may also be urged that discrimination would result if the prices of to-day are not used. To illustrate this let it be assumed that a property built ten years ago is appraised at \$1,000,000 and that for an exactly similar property just completed the costs, as shown by actual book records, is \$2,000,000. If one of these properties is valued at former prices and the other at present prices we would have the anomaly of two exactly similar properties one charging for return on an investment only one-half that upon which the charges of the other are based.

Again, in the matter of sale, what merchant would sell his stock or what farmer would sell his farm for half its value simply because the half price of to-day was the full price of ten years ago! The committee seems to feel that a utility has the same right as any other industry to enjoy the appreciation of its property or, rather, that it should not be singled out for being penalized because through the change in the standard of values that of money has depreciated. If we are to have an appraisal, it should be an appraisal, not history.

The committee also properly emphasizes the point that while a property should be maintained in good operating condition it is both impractical and uneconomical to maintain it in 100 per cent physical condition since to do so would mean the scrapping of new equipment as soon as its use begins. Nevertheless, although a property

has depreciated say 10 per cent its value, its efficiency as an operating property is just as high as it was the moment operation started and no capital has been amortized. Hence, the full investment in the property remains, and there should be no reduction for accrued depreciation unless there is marked evidence of deferred maintenance. Modern accounting recognizes depreciation as an operating expense and not as a capital charge. It follows from this that any reduction made in an appraisal for rate making purposes either for accrued depreciation or for unamortized superseded property is in effect a confiscation of the investor's capital. This point is emphasized very strongly in the committee's report.

We unite with the committee in the hope which it expresses in its report that its work will result in the evolution of a method of valuation which, based on sound economic principles, will be acceptable alike to investors and regulative commissions. The committee is to be highly commended for its earnest work.

Outside Devices Can Speed Up One-Man Cars

ONE of the valuable by-products of modern one-man car operation is that it enhances the value of any device that will aid these cars to equal, or better still, to exceed the safe schedule speed made by their larger predecessors. The railway manager realizes that the operator of such a car ought to be relieved of all manual effort and that this relief must go beyond or outside the car itself if the savings and increased service which it makes possible are to be fully utilized.

Attention to this aspect of the problem was directed by S. W. Greenland in his Central Electric Railway Association paper of June 30 on "One-Man Car Operation" with particular reference to the matter of signals and automatic track switches. When the cars are operated with two men, a management might hold off on the elimination of the hand-throw signal and the hand-throw switch because one man was always left in charge of the car. Furthermore, the loss of standing time was less since the conductor got off and on the car before it had fully stopped and started as the case might be. With one-man operation, on the contrary, the absence of any official caretaker introduces a hazard slight though that may be; gives an opportunity for the unauthorized boarding of the car; increases the standing time because the operator can board and leave the car only while it is at a standstill, and, finally, subjects the passengers to gusts of rain or icy drafts according to the season of the year.

The obvious way to avoid such unsatisfactory conditions is to install trolley contact signals and electric track switches of automatic type. These will do more than save time and relieve the operator—they will enhance the safety of the passenger. That this will be the case is demonstrated by the experiences of companies which have already done what Mr. Greenland suggests. One notable example is the Tampa Electric Company which has gone a step further in arranging to have a man turn trolley poles to save the time and energy of the car operators! A little by-product of automatic signals and track switches which deserves mention is the reduction of stops, for as already noted this wipes out non-revenue standing time. Stops cost money, annoy the riders and are hardly excusable if any means can be found for avoiding them.

In this connection, the suggestion has been made that

the crossing of unprotected steam railroad track could be accomplished with perfect safety by a semi-automatic device such as a flexible cord plugged in on a low-speed step of the control. In this way, the operator, although off of the car itself, could lead his vehicle across the track much as a cowherd would lead a cow. If this can be done with a telper, why not with a car? There's always a way, where there's a will!

Don't Let the Power Plant Run Down

THE supply of electric power is the life blood of the electric railway, and no amount of attention to time-tables, public relations, traffic development, etc., will avail if the line voltage is not "there" with ample power behind it. Low voltage is bad in every way; reducing schedule speed, and overloading motors, overhead, transmission line and generators. Moreover, the effect is cumulative because low voltage causes more current to be drawn by the cars and this in turn produces more drop, and so on *ad infinitum*. When low voltage is accompanied by uncertainty of supply, as it is apt to be, the case is still worse. Thus neglect of the power plant is a blow in the solar plexus of the railway organism.

The power plant has been hard hit by the war, and railway managers have had to take more than pre-war interest in the power department during the past two or three years. Fuel shortage and expensiveness have complicated the power supply problem, and combined with this has been the reduction of boiler capacity due to poor quality of fuel. Lack of repair parts and of good labor to keep up the plants have also made difficult the work of the power engineer. It is remarkable that he has been able to keep power on the line to the extent that he has kept it.

This note is not one of discouragement by any means. We realize that the power plant naturally suffers with other parts of the system when money and help are scarce and costs are high. But the power plant is out of sight, "behind the scenes" as it were, and as long as it can keep going is apt to be considered passable. Once badly run down, however, it is subject to collapse, with disastrous effects generally. As soon as incomes begin to expand, therefore, the power department ought to have some money to spend.

Pull Together or Hang Separately

IN THESE DAYS of stress and trial there is greater need of a prompt exchange of information on events of importance in the electric railway field than ever before. If one company adopts a fare system or some operating practice which proves popular with the traveling public and results in a larger net return, or if it secures a favorable ruling from commission or court, or if new ideas or a new treatment of old ideas are developed that assist in a publicity campaign, all railway companies are vitally interested.

A prominent electric railway manager, in commenting on this situation, recently said to us that this paper was now of more value to him even than when the industry was prosperous, because of the more perplexing nature of the problems involved, their common character, and the necessity for prompt application of such remedies as are available. He expressed a hope that the JOURNAL would continue to give promptly the news

of important events and the views of those who were attempting to solve the problems of the industry and that they, in turn, would regard the paper as a sort of clearing house in which constructive ideas on these matters could be brought to the attention of all.

We take pleasure in accepting this assignment. It is not possible for the industry to hold a weekly convention and exchange views and obtain suggestions from each other every seven days, but it is possible for the printed page to reach each company as often as that. It is out of the question by personal correspondence for every company to know the efforts made to improve conditions on different properties throughout the country, but through contributed articles, this result can be reached more nearly than in any other way. We pledge ourselves toward even greater efforts than in the past to give the news which is of most vital interest to the industry in this critical period of its existence, and we urge those who have remedies to suggest to make frequent use of these columns.

The Industry Is Convalescent —Now for a Speedy Recovery

ALTHOUGH financially the electric railway situation is critical, this is no reason why operating officials should lose enthusiasm in their work. In fact, they should increase their efforts to give the public proper service. Whatever may happen to the security holder the cars must run and there must be superintendents and managers to operate the properties. This means that these officials must keep up with the times.

No improvement of an engineering nature has done so much to help the industry during the past five years as the safety car. Yet, considering the voluminous amount of data which has been published on the subject in the ELECTRIC RAILWAY JOURNAL and elsewhere in the past it is amazing to find how many operators of electric railways there are who apparently do not yet understand the first principles of this safety car. Every time a paper on this subject is presented at an association meeting, and practically every convention during the year has included such a paper on its program, it is a notable fact that the same questions are brought forth to be answered. This seems to indicate that some operators have not been as attentive to the progress in the art as they should. To speak plainly some operators during the past year have been asleep at the switch. By this we do not mean that the safety car will work a miracle, but it is the best hope in an engineering way that the industry has.

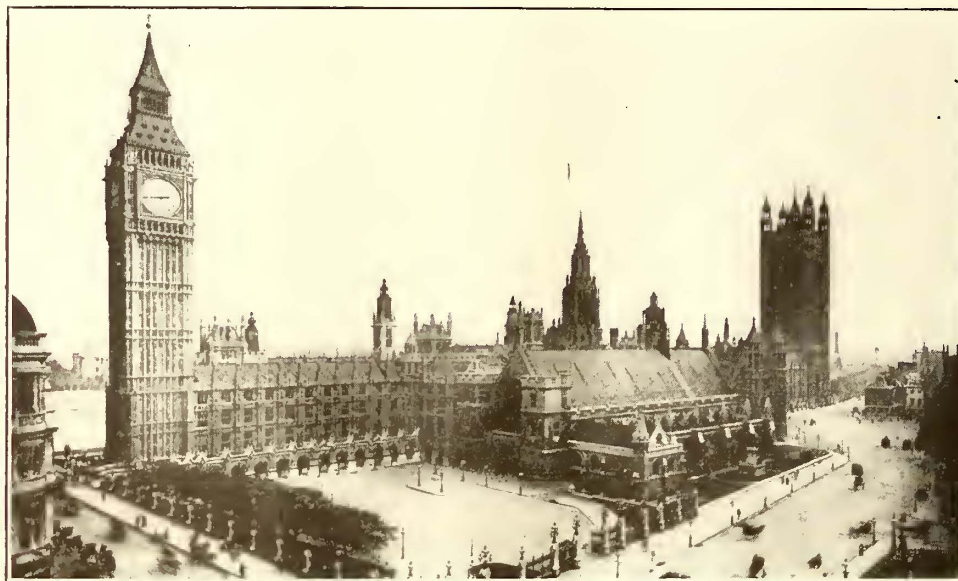
For the benefit of those who do not yet understand about the safety car, we shall say here that this car is applicable to the small and the large city alike; to the long and to the short run; to the residence and to the business district; to the lines with railroad crossings and to those without; in fact, to any location where faster and better service is desirable. As was well said by E. M. Walker at the recent Illinois meeting, "a car in sight all the time" is the slogan. There is no other single thing in the industry which will give such a healthy return on the investment. Some day the banker will inquire of the operator who has been slow to grasp the opportunity, why he was not advised of the economy of the safety car. Every operator is paid to know all there is to be known about such advances in the industry, and if he should not put himself in a position where he cannot answer this question satisfactorily.

The Zone Fare in Practice—

London County Council—Part I

In the Face of Large Handicaps the London Surface Lines Have Gone Ahead Enlarging Their Service and Usefulness—Car-in-Sight Operation Nearly All Day—Number of Lines Are Earning 40 Cents per Car-Mile

BY WALTER JACKSON



HOUSES OF PARLIAMENT IN LONDON

FEW large electric railway systems have been developed under greater difficulties than that of the London County Council Tramways. Shut out by physical limitations from the most profitable traffic throughfares of London's central district, hampered by the encirclement of tramways in other political subdivisions, subjected to the competition of underground, bus and steam suburban lines and saddled with abnormal fixed charges because of much conduit construction—the system indeed faced discouraging handicaps. Yet the L. C. C. has gone ahead undismayed from year to year in enlarging the usefulness of its service.

Now that the war is over plans have been drawn for further extensions, for the linking up of dead ends by means of motor buses, either temporarily or permanently, and for deeper penetration into the business districts. While the actual enlargement of the present system would be only from 141.67 to 146.2 route-miles, the new sections would be of vital importance because they would greatly improve the value of existing facilities. For instance, three dead-ends would be closed up by building but 1 mile of route between Blackfriars Bridge, Farringdon Road and Gray's Inn Road, as shown on the accompanying map by initial key letters in the upper right-hand corner. Furthermore, the Theobald Road extension would avoid blocking the Kingsway subway cars, for although the map indicates an uninterrupted line at this point, it is actually a stub. If it were extended but $\frac{1}{2}$ mile, this part of the L. C. C. system would be brought much closer to the Oxford Street shopping district.

While parliamentary powers are now being sought for the foregoing changes and other alterations, authorization was obtained several years ago for two links on the southern part of the system. For one of these, Eltham Road between Lee Green and Well Hall Roads, material was in hand at the outbreak of the war. The other authorized extension is marked East Hill.

WHAT SERVICE DOES THE L. C. C. GIVE?

Corresponding to the geographical conditions, the L. C. C. lines are divided into two systems, one north and one south of the Thames. As already hinted, one of the present routing troubles is the large number of dead-ends. The only really worth while through connection is via Westminster Bridge to and along the Victoria Embankment and thence through the $\frac{3}{4}$ -mile Kingsway tunnel into the Holborn and Islington districts. The enormously productive commercial district centering at the Bank of England still remains to be served. The southern side of the Thames is less handicapped for through running from east to west. Through running between the northern and southern systems is out of the question under existing conditions.

Regardless of many physical limitations, the operating schedule speeds of the L. C. C. system are very satisfactory. They vary with the time of day as follows: Morning, 9.05 m.p.h., mid-day, 8.92 m.p.h. and evening 8.75 m.p.h. Some lines, of course, are faster than others for speeds (free-running) up to 16 m.p.h. are permitted in the more open districts. The usual Board of Trade regulations, such as 150-ft. spacing between

following cars and a rate of 6 m.p.h., over curves and intersections, apply in the L. C. C. area.

Stops are usually on the near side. They are spaced 660 ft. or eight to the mile. It is rather interesting that this distance should be considered short enough by an electric railway which has every incentive to meet the desires of the public owing to its use of the graduated fare and to the prevalence of bus competition. Yet this is the very spacing objected to as too great in a number of American cities! Furthermore, the L. C. C. stops do not include a large and embarrassing number of fire stops. The compulsory stops are those at important fare stage divisions, some schools and the safety stops, specified by the Board of Trade, at comparatively few locations.

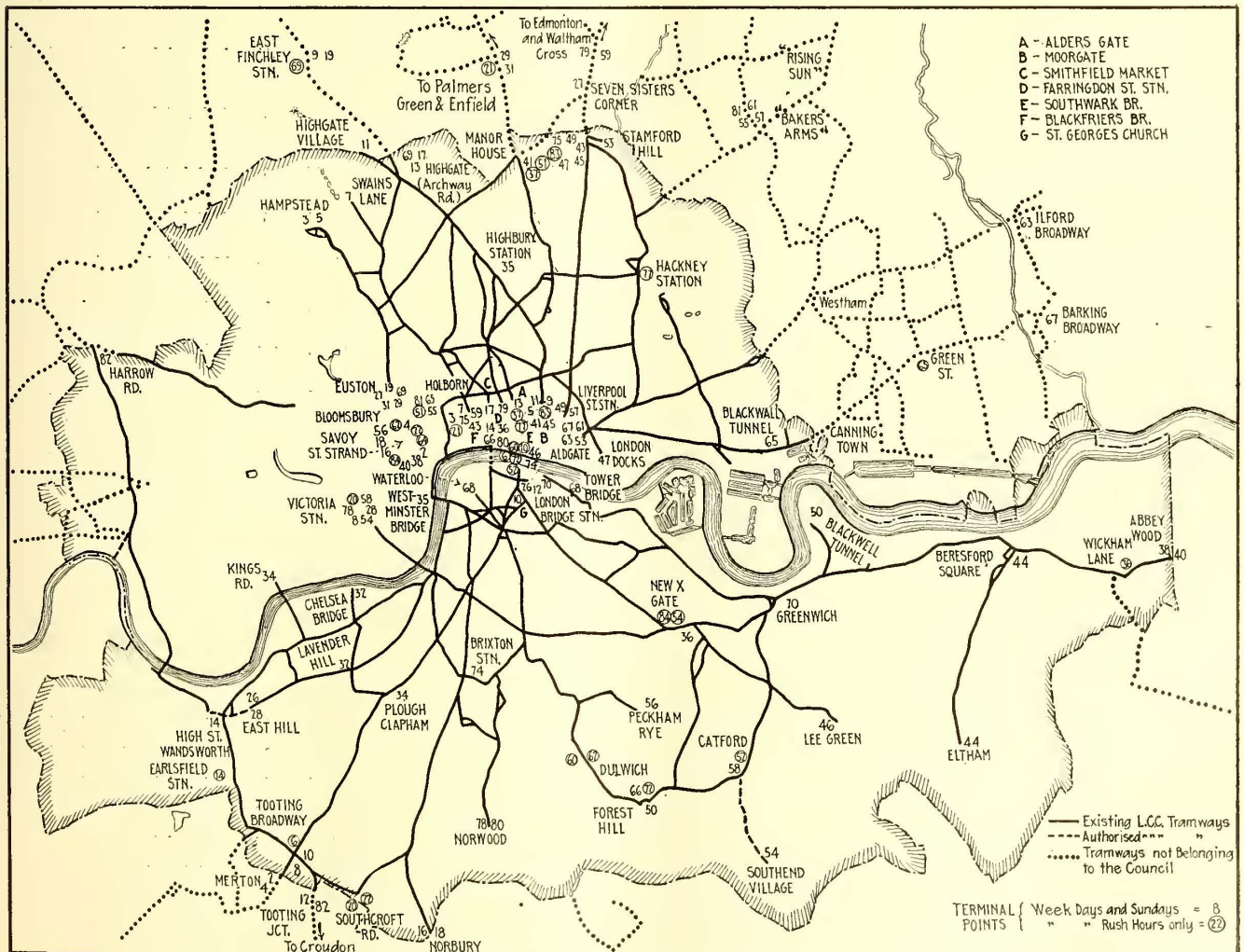
The electric railway service in London covers a longer period of the day than does the service of the motor-bus companies. Several of the London County Council Tramways lines even go so far as to give an all-night service—an unusual feature in the United Kingdom. On the other hand, the buses do not appear until the early workmen traffic has been disposed of on the tramways at less-than-cost fares.

A peculiarity of some of the L. C. C. lines is that no mid-day service is operated over them if passengers can be offered an alternative service between the same points. The reason is that the great bulk of the traffic on these lines consists of people riding to and from work with little or no opportunity for mid-day business. For

example, during the middle of the day, ordinary passengers between Southcroft Road and Victoria Embankment may have to take a second car at Brixton or Kennington on which they pay a second fare instead of getting a transfer or through ticket.

The operation of heavy-hour and special holiday routings is not to be confused with short-line or turnback service. It is customary on the London County Council Tramways to run cars through from terminal to terminal because the density of traffic is much nearer uniformity than on systems which run far out into open country. The only demand for short-line cars comes from intermediate riders who want seats. Under the L. C. C. conditions short-line cars actually have been found to earn less than through cars.

Single-car operation is the rule except for rush-hour service on certain Embankment routes and between London Bridge and Greenwich. Skeptics about zone fare collection may gasp upon learning that the standard double-deck car carries seventy-eight seated passengers, thirty-two below and forty-six above, while trailers seat forty-four and the few single-deck cars, thirty-two. In pre-war days no standing was permitted, but standees are now allowed on the lower deck to the extent of not more than one-third as many passengers as are seated on the same level. The platforms are wide enough for passengers to enter and leave at the same time. At heavy terminals the passengers are regulated to enter at the rear and leave at the front. Queues are not



ROUTES OF LONDON COUNTY COUNCIL TRAMWAYS

always practicable where several routes come in over the same track, for there is no assurance that the cars will arrive in scheduled order.

Other points about car loading are the use of "Car Full" signs, which are not altogether successful because the motorman may keep up the sign long after seats are available; and the recent effort by means of newspaper advertisements to accustom lower-deck passengers to board on the left (bulkhead) side and upper-deck passengers to board on the right (dasher) side of the dividing stanchion on the rear platform.

Without questioning the exceptional value of the motor bus in the busy and tortuous streets of London, one experience of the London County Council Tramways illustrates how important is the feature of line capacity. This was in handling traffic to and from Woolwich Arsenal at a time when more than 100,000 people were employed there. Although hundreds of buses were generally in use, their absence during the bus strike of Aug. 18-22, 1918, is declared to have been hardly felt owing to the far greater carrying capacity of the cars. A rather significant point about the general traffic problem at Woolwich is that when the maximum number of people were employed it was easier to transport them than now, because by special arrangement the peak load was spread over three hours as compared to one to-day. Aside from this case, there are not many opportunities for staggering hours of opening and closing since the relative location of factories and workshops along the



Since 1903 the great system of the London County Council Tramways has been under the guidance of Aubrey Llewellyn Coventry Fell, the general manager. There was plenty of horse traction when he came and, still worse, no entrance for the tramways into any business or shopping section of the vastly important district along the north shore of the Thames. From the latter condition resulted the famous "Battle of the Bridges" with Mr. Fell

as commander-in-chief of the L. C. C. forces. Finally, parliamentary sanction to cross the Westminster and Blackfriars Bridges was obtained, thereby removing one of the great handicaps to the usefulness of the London County Council system. Much still remains to be done to secure full value from the L. C. C. tramways, and Mr. Fell is still at the task as detailed in the article.

Mr. Fell was born in Llangollen, North Wales, in 1869. He studied at Christ Church College, Finchley, and the School of Electrical Engineering, Hanover Square, London, and then he served an apprenticeship with Laing, Wharton & Down, electrical engineers, the predecessors of the British Thomson-Houston Company. He left the British Thomson-Houston Company in 1897, after acquiring much practical experience in the installation of railway, power and lighting equipment, to become electrical engineer of the Sheffield Corporation Tramways. Three years later, having installed complete electrical equipment for the tramways, he became general manager. In 1903 he entered his present position.

Under Mr. Fell's direction the electrification of the London County Council Tramways was completed; the London, Deptford & Greenwich, the London, Camberwell & Dulwich, the Woolwich & Southeast London, the North Metropolitan and the London Southern Tramway Companies were acquired, and the great power station at Greenwich and the central repair depot at Charlton were constructed. Today the staff of the London County Council Tramways under the direction of Mr. Fell numbers about 11,000 persons. That he has retained his early interest in engineering appears from the fact that he is a member of the leading societies in that field, such as the Institutes of Civil Engineers, Electrical Engineers and Mechanical Engineers. He is a past president of the Municipal Tramways Association and a member of the Council of the Tramways and Light Railways Association and other associations.

different routes achieves much the same effect as an actual difference in opening and closing hours. In any event, the shorter workday rapidly coming apace has left the whole matter of staggered hours in a state of uncertainty.

In spite of all the disadvantages enumerated earlier in the article, and particularly the competition of the motor bus, the average number of passengers per car-mile during the year ended April 1, 1918, was 13.18. This is a fair indication of what the zone fare does in promoting riding, despite the encroachment of the buses on the short rider and the rapid-transit lines on the long rider. Even after due allowance is made

TABLE I—SERVICE OF LONDON COUNTY COUNCIL TRAMWAYS—SOUTHERN SYSTEM

No.	Route	Route Miles	Headway in Minutes	Character of District Served
2	Merton to Savoy Street via Westminster.....	7.34	4-6	Industrial and good residential
4	Merton to Savoy Street via Blackfriars.....	7.77	4-6	Industrial and good residential
6	Tooting Broadway to Southwark Bridge (via Clapham)	6.56	6	Industrial and good residential
8	Merton to Victoria (via Clapham).....	6.22	6	Industrial and good residential
10	Tooting Broadway to Southwark Bridge (via Streatham).....	8.01	4-6	Industrial and good residential
12	Tooting Junction to Hop Exchange (via Vauxhall and Southwark Bridge Road).....	9.30	5½-6	Largely industrial
14	Earlsfield Station to Hop Exchange (via Vauxhall and Westminster Bridge).....	8.36	5½-6	Largely industrial
16	Norbury to Savoy Street (via Westminster).....	7.39	5	Industrial and good residential
18	Norbury to Savoy Street (via Blackfriars).....	7.82	5	Industrial and good residential
20	Southeroft Road, Mitcham Lane to Victoria (via Streatham and Vauxhall Bridge).....	6.46	6-6½	Industrial and good residential
22	Southeroft Road, Mitcham Lane to Savoy Street (via Kennington and Westminster Bridge).....	7.36	6	Industrial and good residential
26	East Hill to Hop Exchange (via Wandsworth Road and Blackfriars Bridge Road).....	6.95	6	Mainly industrial
28	East Hill to Victoria (via Wandsworth Road and Vauxhall Bridge).....	4.61	6	Mainly industrial
32	Lavender Hill to Chelsea Bridge (via Queen's Road, Battersea).....	1.23	2½-6	Mainly industrial
34	King's Road, Chelsea, to "Plough," Clapham (via Cedars Road).....	3.36	5	Industrial and good residential
36	Woolwich and Plumstead to New Bridge Street (via Old Kent Road).....	12.23	4-6	Industrial and munition
38	Abhey Wood to Savoy Street (via Old Kent Road and Westminster Bridge).....	12.79	4-6	Industrial and munition
40	Abhey Wood to Savoy Street (via Kennington).....	13.55	4-6	Industrial and munition
44	Beresford Square, Woolwich to Eltham.....	3.03	2½-3½	Industrial and munition
46	Lee Green to Southwark Bridge (via Old Kent Road)	6.29	6	Industrial and good residential
50	Forest Hill to Blackwall Tunnel (via South Street)	5.96	5-7	Mainly industrial
52	Catford to Southwark Bridge (via New Cross and Old Kent Road).....	6.51	8	Mainly industrial
54	Bromley and South End Village to Victoria (via Catford and New Cross).....	9.39	3-4	Industrial and good residential
56	Peckham Rye to Savoy Street (via Denmark Hill and Westminster Bridge).....	5.89	5-6	Industrial and good residential
58	Catford to Victoria (via Forest Hill and Camberwell Green).....	7.80	5	Industrial and good residential
60	Dulwich Library to Southwark Bridge.....	4.84	8	Industrial and good residential
62	Dulwich Library to Savoy Street.....	6.90	8	Industrial and good residential
66	Forest Hill to New Bridge Street.....	8.41	5	Industrial and good residential
68	Tower Bridge to Waterloo Station.....	2.03	4½-5	Industrial
70	Greenwich Church to Tooley Street.....	4.19	3-4	Industrial
74	Brixton Road to Southwark Bridge.....	3.90	5	Mainly industrial
78	Norwood to Victoria.....	5.39	5-6	Good residential
80	Norwood to New Bridge Street.....	5.99	6	Industrial and good residential
82	Harlesden (Harrow Road) to Tooting Junction.....	9.52	3	Industrial and munition
84	New Cross to Savoy Street.....	4.16	5	Industrial and good residential

for the shorter mileage per passenger in contrast with the larger American cities, it is still apparent that the cars are loaded to better advantage than in the United States.

Perhaps the accompanying traffic characteristics graph, which is based upon the number of cars run during the different hours of the day, will help to substantiate the foregoing assertion. This graph shows little of the frightful variations found in American cities. Maximum car service, including trailers, is given for five to six hours of the day, and the mid-day service does not show a severe drop, although luncheon travel in the world's biggest city is not so great a factor as in other British communities. With frequent service nearly all day long, the short rider is attracted. Furthermore, there is a lessened tendency for women shoppers and others to start and return during the periods of maximum traffic as they so often do in the United States.

Table I and Table II, show the headways, length of lines and character of travel.

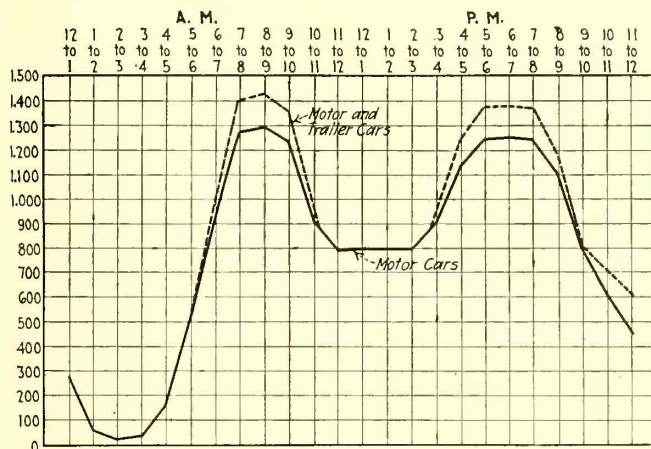
Even without recourse to the map, it is obvious that the services are arranged to catch the short rider. The greater part of many lines is served by two or more routes, thus giving "car-in-sight" operation for nearly all of the day.

It should be noted that the above-stated service intervals include cars run by other undertakings. But, as

is the case with the routes of both the northern and the southern parts of the system, the headways shown do not do justice to the actual service owing to the extent of overlapping. Recent analyses of the L. C. C. lines show that a number of them are now carrying seventeen passengers and earning 20d. (40 cents) per car-mile.

THE TRANSPORTATION STAFF

The services of the London County Council Tramways are handled by a staff which includes thirteen district superintendents, eighteen district inspectors, 153 ticket inspectors, three assistant ticket inspectors, four motormen's instructors, two motor demonstrators, 136 traffic regulators, thirty acting traffic regulators (at motormen's wages), eighty-two assistant traffic regulators, fifteen night inspectors, eighty-four assistant night inspectors (who also act as depot cashiers), nine women depot inspectors, 2560 motormen, 1677 male con-



TRAFFIC CHARACTERISTICS GRAPH BASED ON L. C. C. CARS IN SERVICE THROUGHOUT THE DAY

ductors and 1429 female conductors for a total of 1244 motor cars and 114 trail cars in actual operation.

The following are the rates of pay formerly applying to a fifty-four-hour week, but now under the agreement of March 20, 1919, to a week of forty-eight hours, including signing-on and signing-off time:

District superintendents.....	60 to 90s. weekly
District inspectors.....	52s. 6d. weekly
Ticket inspectors.....	42 to 45s. weekly
Ticket inspectors.....	42 to 45s. weekly
Traffic regulators.....	42 to 45s. weekly
Assistant traffic regulators.....	30s. weekly
Night inspectors in charge.....	45 to 50s. weekly according to number of cars in service
Assistant night inspectors.....	40 to 45s. weekly
Depot inspectors.....	40 to 45s. weekly
All of the foregoing grades are paid a war bonus of 30s. weekly.	
Motormen and conductors.....	5s., 5/3d., 5/9d. and 6/6d. a day during successive six-months periods
War bonus to motormen and male conductors.....	5s. a day
War bonus to female conductors.....	20s. weekly on entering service; 3/7d. a day after three months service; 3/11d. a day after nine months' service, and 5s. a day after twelve months' service

The men classified in the foregoing table as inspectors and traffic regulators are worked in duties of nine hours as follows: Early turn, 6 a.m. to 11 a.m., and 2 p.m. to 6 p.m.; late turn, 11 a.m. to 2 p.m., and 6 p.m. to 12 midnight. The night inspectors have both transportation and fiduciary duties. They keep the time of motormen and conductors, give out conductors' ticket boxes, enter items for the payroll, keep records of lost car mileage and of wheel mileage, make weekly returns of late and sick men, and prepare monthly returns of the

TABLE II—SERVICE LONDON COUNTY COUNCIL TRAMWAYS NORTHERN SYSTEM

No.	Route	Route Miles	Headway in Minutes	Character of District Served
3	Hampstead to Holborn.....	3.81	6-8	Good residential
5	Hampstead to Moorgate....	4.97	4-5	Industrial and good residential
7	Parliament Hill Fields to Holborn.....	3.61	5-8	Good residential
9	Tally-Ho Corner, North Finchley, to Moorgate....	11.51	8	Industrial and good residential
11	Highgate Village to Moorgate	4.83	4	Industrial and good residential
13	Highgate, Archway Road to Aldersgate.....	3.84	5-6	Industrial
17	Highgate, Archway Road to Farringdon Street Station	3.95	5-6	Industrial
19	North Finchley, Tally-Ho to Euston Road.....	10.19	8-8½	Industrial and good residential
21	Wood Green to Holborn....	6.20	6	Industrial and good residential
27	Seven Sisters Corner to Euston Road.....	5.37	8	Industrial and good residential
29	Enfield to Euston Road....	10.63	8	Industrial and munition
31	Palmer's Green to Euston Road.....	7.46	8	Industrial and good residential
35	Highbury Station to Scotland Yard.....	3.58	2½-3	Mainly industrial
37	Manor House to Aldersgate..	4.14	6	Industrial and good residential
41	Manor House to Moorgate..	3.91	4-5	Industrial and good residential
43	Stamford Hill to Holborn (via Kingsland Road)....	4.91	3-6	Industrial and good residential
45	Stamford Hill to Moorgate (via Kingsland Road)....	4.01	6	Industrial and good residential
47	Stamford Hill to London Docks.....	4.49	5-6	Industrial and good residential
49	Stamford Hill to Liverpool Street Station.....	3.77	5-6	Industrial and good residential
51	Manor House to Bloomsbury	4.49	8	Industrial and good residential
53	Thapam Common to Aldgate.....	5.38	3	Mainly industrial
55	Leyton "Bakers Arms" to Bloomsbury.....	8.87	6	Mainly industrial
57	Leyton "Bakers Arms" to Liverpool Street Station..	7.42	5-6	Mainly industrial
59	Edmonton Town Hall to Holborn.....	8.42	6	Industrial and munition
61	Leyton "Bakers Arms" to Aldgate.....	7.77	3-4	Industrial
63	Ilford Broadway to Aldgate	6.94	3-4	Industrial
65	Green Street, Barking Road to Bloomsbury.....	7.83	3-4	Industrial
67	Barking Broadway to Aldgate.....	7.22	3-4	Industrial
69	East Finchley Station to Euston Road.....	5.08	8	Good residential and industrial
75	Stamford Hill to Holborn (via Essex Road).....	4.81	6	Industrial
77	Hackney Station to Aldersgate.....	3.59	6	Industrial
79	Waltham Cross to Smithfield Market.....	13.23	6	Industrial and munition
81	Leyton "Bakers Arms" to Bloomsbury (via Essex Road).....	8.68	4-5	Mainly industrial
83	Stamford Hill to Moorgate (via Southgate Road)....	4.35	6	Industrial and good residential

Stamford Hill & Liverpool St.

SER 40

ROUTE	SHOW UP	LEAVE DEPOT	ARRIVE DEPOT	TIME	TIME	TIME
1	6.15	11.36	2.58	11.35		
2	12.2	2.2	HOUSE 6.29	12.20		
3	4.18	11.8	1.8	6.2		
4	4.21	10.14	HOUSE 4.26	11.10		
5	6.28	12.14	2.16	6.11		
6	4.30	12.20	11.0	8.14		
7	4.34	4.34	1.36	4.18		
8	6.44	1.32	2.32	4.24		
9	12.24	1.34	HOUSE 1.34	2.32		
10	4.48	4.48	HOUSE 4.48	11.54		
11	6.53	12.44	2.44	5.46		
12	12.50	3.48	6.48	12.42		
13	9.46	3.48	HOUSE 3.48	7.46		
14	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
15	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
16	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
17	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
18	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
19	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
20	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
21	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
22	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
23	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
24	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
25	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
26	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
27	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
28	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
29	4.12	HOUSE 4.12	HOUSE 4.12	8.14		
30	4.12	HOUSE 4.12	HOUSE 4.12	8.14		

SPECIMEN L. C. C. DUTY SHEET—MOTORMEN'S RUNS ROTATE DOWNWARD AND CONDUCTORS' UPWARD

STAMFORD HILL AND LIVERPOOL ST. STN. SER 49

Reg. No. 2160 Time WEEK DAYS Route No. 1

STAMFORD HILL	LIVERPOOL ST. STN.	STAMFORD HILL	LIVERPOOL ST. STN.	STAMFORD HILL	LIVERPOOL ST. STN.	STAMFORD HILL	LIVERPOOL ST. STN.	STAMFORD HILL	LIVERPOOL ST. STN.
DEPOT 6/12									
7.5	6.17	6.39	6.44	6.44	6.49	7.11	15	7.49	8.11
7	7.12	7.34	7.39	7.39	7.44	8.6	16	8.49	9.11
3	8.6	8.28	8.33	8.33	8.38	9.0	17	9.49	10.11
4	9.0	9.22	9.27	9.28	9.33	9.43	18	10.49	11.11
5	9.37	10.20	10.24	10.24	10.34	10.36		DEPOT 10/47	
6	10.58	11.20	11.24	11.28	11.34	11.56			
7	4.58	12.20	12.24	12.28	12.34	12.56			
8	12.58	1.20	1.24	1.28	1.34	1.56			
9	1.58	2.20	2.24	2.28	2.34	2.56			
10	2.58	3.20	3.24	3.28	3.34	3.56			
11	3.58	4.20	4.24	4.27	4.33	4.55			
12	4.58	5.19	5.24	5.28	5.31	5.53			
13	5.58	6.16	6.21	6.23	6.29	6.51			
14	6.58	7.14	7.20	7.21	7.27	7.49			

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

TIME-POINT CARD USED ON L. C. C. CAR (The dividing line marks the end of the period during which workmen's fare may be accepted.)

The actual working time and average spreadover of motormen and conductors on motor cars are as follows:

	Average Spreadover (Hours and Minutes)	Average Actual Work (Hours and Minutes)
Weekdays.....	11:51	8:25
Saturdays.....	11:23	8:33
Sundays.....	7:43	7:15
Average per day for one week.....	11:23	8:19
(For conductors of trailers only)		
Weekdays.....	13:6	6:38
Saturdays.....	9:36	7:27
Average per day for one week.....	12:31	6:47

From the foregoing it will be seen that the fifty-four-hour week was the basis, but in practice the number of hours worked was actually less. Under the new agreement, forty-eight hours' pay (at the old fifty-four-hour rate) is guaranteed to men reporting six days a week, but they must be willing to do non-platform work if requested. Arrangements are included for six days' annual vacation with pay. Employees who do not get at least twenty-four hours' notice that they will be required on their rest day are entitled to the differing overtime rates for service on such occasions.

Duty sheets, or assignments of runs, are posted at the several carhouses in the form reproduced. The duties are rotated from week to week in the order of posting so that the men can see what their runs will be for weeks ahead. Relief men always step directly into the duties of the men they replace.

A time-point card is also placed in each car every day by its first motorman. Besides showing the work of the car for the day, the card makes a division between the time-points within and following the time when fares at the workmen's rate may be accepted at a given point. In the case of the car card reproduced this time is 7.39 a.m.

POWER-SAVING CAMPAIGN ALREADY SHOWS PROMISING RESULTS

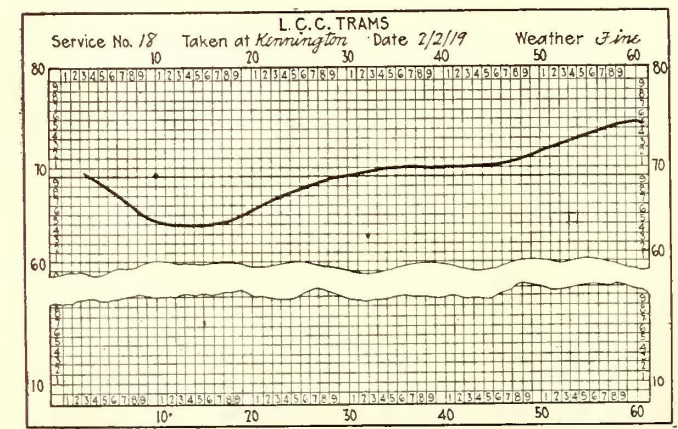
The London County Council Tramways cars are not equipped with car-checking instruments. Nevertheless, an endeavor was made to interest the men in more economical operation by dividing among all platform employees (in proportion to the actual number of days worked by each employee during the quarter ended Dec. 31, 1918) one-half of any saving in coal. Six motor inspectors were put on to assist the motormen

days on which each man worked. In general, they are responsible for local supervision and discipline. Except at the smallest depots, these men have assistants to handle cash and attend to miscellaneous duties.

The duties of the traffic regulators include the time-point checking of the men en route, the giving of correct time to the men, etc. As on other British systems, the ticket inspectors also supervise traffic conditions along the line, whereas the traffic regulators are usually assigned to fixed posts. Inspectors, traffic regulators, and car crews are provided with pegs to permit communication with headquarters through the telephone boxes located on feeder pillars every 1/2 mile.

In addition to the operating staff, eight traffic inspectors are employed by the traffic development department to check car loading, irregularity of service, etc. To facilitate the work of these men, a cross-hatched report form of the style shown is used. The checker does not have to make more than a dot to indicate the number of passengers on each car passing a given point within sixty minutes. From these dots it is a simple matter to prepare the traffic curve.

In a preceding paragraph were presented the wage and war-bonus scales of L. C. C. platform employees.



GRAPH FROM L. C. C. TRAFFIC INSPECTOR'S REPORT ON CAR LOADING

to raise their efficiency in controller handling, and the management put out various publications, including the accompanying amusing poster entitled: "Coasting-Getting there without wasting energy." The saving over the preceding quarter was 3 per cent, equivalent to about \$10,000, of which one-half went to the platform employees in accordance with the plan. In all 351,392 days were worked during the quarter, making the amount paid 1.47 cents a day. The results were set before the employees as follows:

COAL SAVING BONUS TO DRIVERS AND CONDUCTORS

Car-miles run between Sept. 26 and Dec. 25, 1918.....	11,831,457
Based on 1917-1918 figure of 2.27 direct current units (kw.-hr.) per car-mile, the consumption of units would have been.....	26,857,407
The actual units consumed from Sept. 26 to Dec. 25, 1918, were.....	26,026,065
Showing a saving in units (kilowatt-hours) of.....	831,342
The average price paid for fuel was 37s. 10d. per ton, and the cost of fuel per direct current unit was equal to.....	0.622d.
The total saving, therefore, was 831,342 units at 0.622d. or a total of.....	£2,154 11s. 3d.
Half this sum will be distributed in accordance with the scheme approved by the Council on June 25, 1918.	
This will amount to.....	£1,077 5s. 7d.

This notice was issued Jan. 20, 1919, and the awards were paid during the same week. The notice pointed out that a much greater saving than 3 per cent and consequently a greater bonus could be obtained by further perseverance and care.

Part II of this article, describing why and how fares were increased and what the results were, will be published in the next issue.

Railways and Tramways in Holland

Conditions During War and Future Trade Opportunities Described by a Dutch Electric Railway Manager

H. F. Adams, recently general manager of the Haarlem Electric Railway in Holland, is now in this country, as mentioned in a personal note in the issue of July 5. When interviewed by a representative of this paper, he had an interesting story to tell of the difficulties of maintaining electric railway service during the war in a country which was neutral but very close both to the scene of hostilities and to Germany. Many of the effects of the war on tramway operation experienced in this country were duplicated in Holland but on a much larger scale. One reason for this is that Holland in the past has manufactured little or no electric railway equipment and so has had to depend for its supply on imports. Thus, most of the railway motors in the past have come from Germany. Some electric railway equipment has been imported from England and the United States.

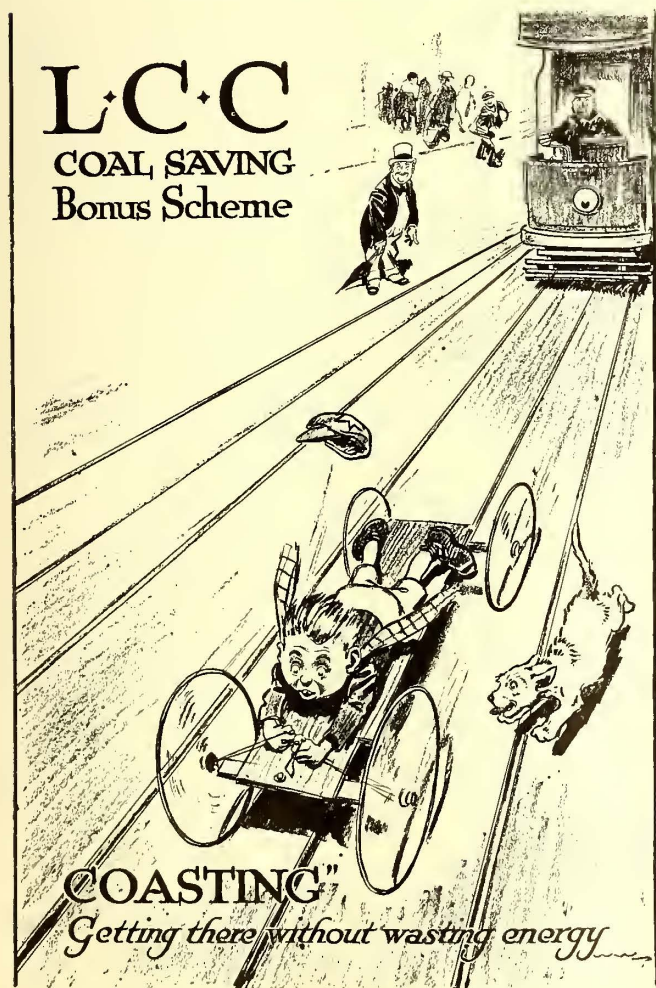
Mr. Adams' own company, which has a high-speed line connecting Haarlem, Amsterdam and Zandvoort, was originally controlled in America, being owned by the Netherlands Tramway Corporation of New York. Later it passed under Dutch control. After the war was declared the company appealed to the British firms for electrical equipment, but the reluctance of the Ministry of Munitions and of the War Trade Department to issue the necessary priority certificates and export licenses made it almost impossible for the company to get anything. Not until the armistice was signed were the British firms able to take the matter up, and even then could accept only small orders for motors and none for rails and rolling stock.

Mr. Adams then took the matter up formally with the President of the Board of Trade last December, pointing out that in spite of the unsettled internal political conditions the German manufacturers of electrical and other apparatus had begun an aggressive sales campaign and were endeavoring to recapture the market in Holland and other small neutral countries. In this they were assisted by the government, which had adopted a scale of priorities just the reverse of that ruling in Great Britain; that is to say, exports to neutral countries were placed by Germany at the top instead of at the bottom of the list.

FARES INCREASED DURING WAR

As to operating conditions during the war, Mr. Adams says that fares were raised from 80 to 100 per cent. It was fairly easy to do this because most of the tramway lines in the country are owned by the municipalities. In fact, the only cities in which this is not the case are Rotterdam, Haarlem and The Hague. The municipal lines having put up their fares, the private lines were able to increase their fares also. There is a strong tendency in Holland at present, according to Mr. Adams toward municipal operation everywhere, as soon as the franchises have expired.

Mr. Adams believes that Holland and its colonies afford an excellent market for American goods, provided that Americans make an effort to cultivate it. According to him, the Germans in the past have always understood how to make their propositions as attractive as possible in meeting the special demands of their



FUEL-CONSERVATION POSTER USED IN L. C. C. POWER-SAVING CAMPAIGN

clients, whereas the British and American manufacturers stick to their standard types in every branch of machinery they manufacture. This is the chief reason for the success of the German manufacturer in the past.

As regards the demand for electric railway apparatus, Mr. Adams considers there will be some electrification of steam railroads in Holland as well as elsewhere in Europe as soon as prices are reduced to, say 30 per cent above pre-war prices. He believes, however, that the electrification of steam railroads in some of the Dutch colonies, especially in the highly cultivated island of Java, is more likely to come first, as in many places plenty of water power is there available. The colonial government authorities have been studying the possibility of such electrification for a long time, and at present seem to be in favor of carrying out their plans in the near future.

Mr. Adams is not planning to return to Holland but will engage in business here.

Getting the Right Kind of Publicity*

The Newspaper Is the Medium Which Is Most Influential and Which Will Coöperate With the Utility in Getting Real News to the Public

BY BERNARD J. MULLANEY

Director Illinois Committee on Public Utility Information,
Chicago, Ill.

IN THE larger aspect of their respective lines of business all utility men and the interests they represent and the properties they manage are in the same boat. All are, or have been, subject to public ownership agitation of which not so much needs to be said now, thanks to the experience with government management of rails and wires and to the publicity given the results.

But all the utilities are still subject to regulations as to rates and service. All have to live on the rates they are permitted to charge for their service. All have to borrow money for extensions of plant and for new undertakings. Therefore, it is to the interest of everybody in the utilities industry that the essential, fundamental facts of controlling influence should be understood by the public. The one sure way of getting into the good graces of the public is summed up in the word "Publicity." This word I dislike greatly because of its misuse, but no other that fits has yet been coined.

Opportunities for publicity are all around us, but the best of all is the newspaper. That "everybody reads the newspapers" is almost literally true, hence the newspaper is the main channel to successful, result-getting publicity. Other agencies can be made to feed and supplement it; they cannot take its place.

How to get newspaper publicity is the crux of the problem. If one could offer a guaranteed, sure-fire method of obtaining desired results he could collect fees that would make Rockefeller jealous of his income. But one can point out some things to be done and some things not to be done. As for results they must be waited for as the farmer waits for his crop.

In summoning "publicity's artful aid," let it be artful, if you please, in the sense of being skillful and ingenious, but not artful in the sense of "tricky, crafty, cunning or artificial." The first requisite of publicity effort that is to be more than temporary is that it shall "come clean;" it must be honest, open and above board; it

must be presented without false pretenses, without specious argument and without special pleading. If electric railways or other utilities haven't a case good enough to stand on its merits, publicity should be shunned as a pestilence.

As for publicity matter, the only good publicity matter is that which is printed. Publicity matter that the utility men think is exactly the kind of stuff that ought to be printed, is usually the worst kind; it is almost sure to be so one-sided. Publicity matter should be prepared with an eye to what will be printed and believed. Relatively slow and perhaps unconscious absorption of facts, which tend to produce a favorable opinion, is more to be desired than quick conversion, for the favorable opinion thus built up will last longer.

Publicity effort for the electric railways should start in the home-town newspaper, by using the advertising columns to boost business. The manager may be a superman in the business; he may give his customers the best possible service at the lowest possible price, but the service will never be appreciated unless the customers are told about it. It is human nature to take things for granted; to regard the thing close at hand as commonplace unless its uncommon character is pointed out.

The newspaper publisher is, of course, a customer of the railway; he has to be. If the railway is not a customer of his it ought to be. The service should be advertised. Being a customer of the home-town newspaper publisher is a long step towards becoming a friend of that publisher. But using advertising space will not buy the publisher's unqualified support. He gives full value received in the advertising space he sells, if proper use is made of it.

RAILWAY UTILITY SHOULD BE A SOURCE OF NEWS

Another step is to make news for the home paper. When the company or one of its officials is starting something the home paper should be told about it. If the business is honestly conducted, as, of course, it is, no risk is run in talking about it.

The railway men should be part of the community life of the town; of the chamber of commerce or other business men's association, both in it and of it. Interest should be taken in the affairs of other men. Common cause should be made with other utility men in the town for the good of the utility industry as a whole. It is up to the utility men, by pulling together, to make other men understand the essential and important place which the utility industry occupies in the financial and industrial enterprises of the country. Utility men can bring the fundamentals of the industry to the attention of all other business men through the clubs and the chambers of commerce in a way that cannot be ignored. At the same time more news will be made for the newspaper publisher. The facts of the situation will become more and more familiar, day by day, to the newspaper-reading public.

To summarize: This and every other branch of the public utility industry needs sound public opinion on its side to make its business safe. The only way to get that public opinion is by publicity. Getting that publicity lies primarily with the home town paper of each of you. Let each man cultivate that field honestly and intelligently and the entire country will be covered. Then the "public utility question" will disappear from controversy and the business will be as sound and as solid and as immune to attack as the public schools.

*Abstract of paper read before Illinois Electric Railways Association in convention at Rockford, Ill., July 16, 1919.

Mechanical Aids in Handling Fares

Detroit United Railway Uses Labor-Saving Devices Which Permit Sorting and Counting of Day's Receipts With 25 Per Cent of Force Required for Hand Operation

THE daily manual labor of handling fares on large city lines is obviously an item of considerable importance. Any equipment eliminating one or more handlings of the money or permitting it to be handled with greater speed, ease and accuracy is valuable in that the railway is thereby able to handle the day's receipts with a greatly reduced force. Such a saving is especially important in this day of restricted income, and the success of the Detroit lines in effecting it should be helpful to other companies.

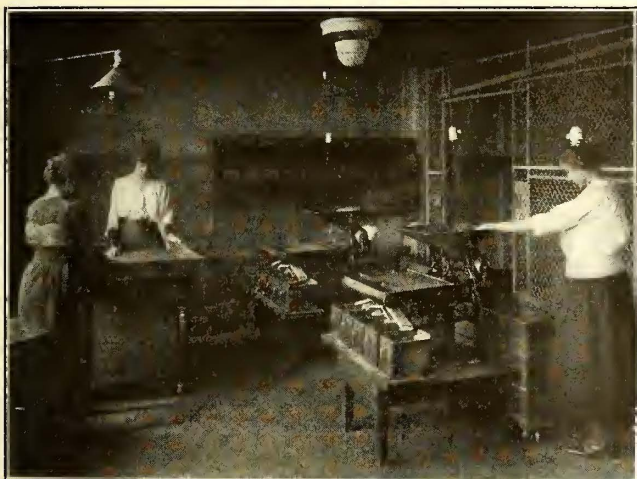
The Detroit United Railway has 1000 cars equipped with Cleveland fare boxes. These represent approximately 85 per cent of the city service, and they operate on twenty lines out of twelve car houses, divided six on the East Side of the city and six on the West Side. The fare box is made with a cash box or, as referred to hereafter, a vault which when withdrawn from the fare box automatically becomes locked. Thus the money

or tickets deposited by the passenger drop directly to the vault when released from the inspection plate by the conductor and never pass through the conductor's hands.

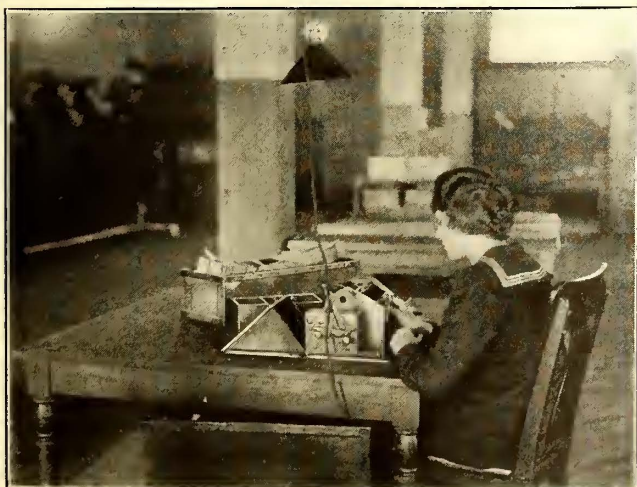
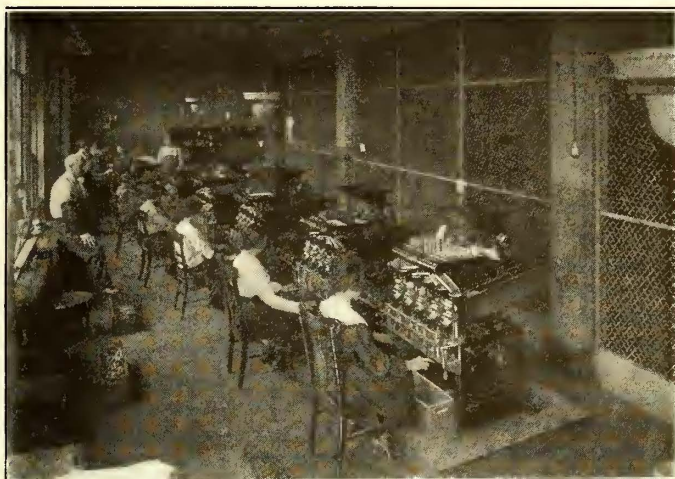
VAULTS ARE CHANGED BY SPECIAL RECEIVER AT CAR HOUSES

The vaults, which are interchangeable, are "pulled" from the cars by a special box receiver at the car house at the end of the day's run, or at any time when a car has to be laid off for repair. In cases where the ladder track passes the office door of the car house, the vaults are changed directly from the office. Here they are stored in specially constructed truck-conveyor racks holding sixty vaults under lock and key. In some cases a small building has been erected beside the ladder track, and the vaults are stored here until the truck conveyor is loaded. This is then locked up and wheeled to the office.

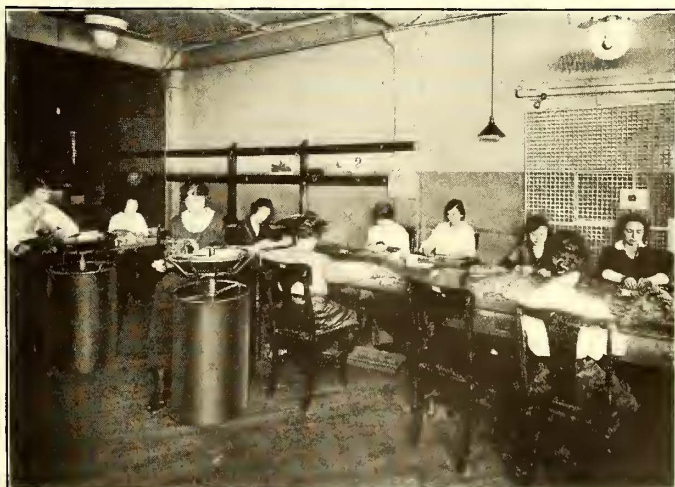
INSPECTION TABLE AND SMALL PRELIMINARY SORTING MACHINES



SORTING, COUNTING AND WRAPPING COINS AT THE RATE OF 200,000 AN HOUR



COUNTING 60,000 TRANSFERS AN HOUR IN DETROIT



SORTING AND WEIGHING TICKETS AND COUNTING BY TICKOMETER

At one yard, where lines of heavy traffic terminate and where the cars returning for the night enter the yard at the end opposite the office, a single-truck car has been especially rebuilt to accommodate the truck conveyors. This car, manned by a box receiver and a recorder, is stationed on a short spur beside the ladder track. During the period immediately following the rush hours in the evening, vaults are removed on an average of every thirty seconds. About nine o'clock in the evening the car makes a trip to the car house office and exchanges its load of full vaults for empty ones.

A record form such as is shown in the accompanying illustration is used by the recorder. Down the center of the page appear the car numbers. As a car or train approaches, the recorder locates the number on the sheet and on the "in" side writes the number of the vault which the receiver says is ready for installation. On the "out" side the recorder inserts the number of the vault withdrawn from the car. Space is reserved

the presence of the station master and empty the contents into the money boxes. An identification slip is dropped into the box, giving the name of the line and the date, and the box is then locked with one of the padlocks mentioned above. Every vault has to be emptied and the contents locked up in the presence of all three men. If one should be called away for any reason, the work must stop. When the work is finished, each man must sign a statement that the work was done in his presence. The collection crews make the rounds of the twelve car houses in from six and one-half to seven hours.

The money boxes turned over to the accounting department contain nickels, dimes, pennies, quarters, half dollars, Canadian pennies, Canadian nickels, about fifteen different classes of tickets, and even a few counterfeit coins. The first step is to separate the coins from the tickets, to accomplish which by hand would require the services of ten girls. For this work a special separator has been designed and built by the company under the direction of Sylvester Potter, master mechanic. The money box containing the day's receipts from one line is placed on the hand-operated elevator, as shown on the next page. This machine operates by a double gear with a brake release for lowering the platform and has a capacity of 800 lb. The platform is raised to the top of the separator, a handle is attached to the box and it is swung over the hopper by a trolley chain tackle.

The contents of the box pass from the hopper onto a horizontal screen with holes of sufficient size to pass a quarter or any coin of smaller size. One end of this screen, operated by belt from a 5-hp. motor, maintains a vertical shaking motion which causes the coins to drop through the screen and keeps the tickets loose and in motion. The tickets are caught by a draft coming up through the screen from a fan located at the shaking end and are blown through a chute into a wire basket. The fan has a horizontal shaft, 20 in. long, and is equipped with four horizontal blades arranged on a 15-in. diameter. It is driven by the same 5-hp. motor. The coins drop into a chute from which they pass into a box 20 in. x 22 in. x 18 in. deep. It will be noticed that this box is equipped with wheels for convenient handling.

ALL COINS ARE SORTED, COUNTED AND WRAPPED MECHANICALLY

The coin container with its identification tag is wheeled into the separating and counting room, and here the money is first placed in the hopper of a Sattley sorting machine, of which there are two in use. From the hopper the coins pass onto a series of five screen plates tilted at a slight angle from the horizontal and maintaining a horizontal shaking motion. The top plate retains only coins larger than a quarter, the second retains quarters and Canadian pennies, the third nickels, the fourth pennies and the last dimes. Canadian dimes pass through the last plate onto a stationary plate. Owing to the shaking motion and the angle at which the plates are maintained, the coins on the various plates work toward the front of the machine and pass through chutes into separate boxes.

The main purpose of these two sorting machines is to eliminate all coins of larger denomination than a dime and larger size than a nickel. Such coins are put into separate boxes for counting at the end of the run in the total for the respective lines. The dimes,

FORM 606										22394									
DETROIT UNITED RAILWAY																			
DAILY REPORT OF FARE BOXES, JEFFERSON LINE																			
BY..					AT					C. H.									
DATE																			
BRT. FWD.	IN	IN	IN	IN	CAR	OUT	OUT	OUT	OUT										
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FORM FOR RECORDING VAULTS DRAWN FROM AND INSTALLED IN FARE BOXES

for four changes of vaults per day, although one change is customary and more than two are exceptional. At the beginning of the day's work the recorder notes at the extreme left of the form the number of the vault last installed. If that should not be the number of the vault next withdrawn, it would immediately become apparent that either an error in recording had been made or the fare box had been tampered with. There are approximately 1300 to 1400 vaults to "pull" each day.

Two collection crews of three men each are employed to collect the money from the twelve car houses. Collection is done at night, the crews starting out from the downtown office at midnight with street cars rebuilt for this purpose. They carry keys to unlock the fare-box vaults (each line using a different lock), but during the day these keys are kept under a combination lock in the accounting department. Each crew carries a sufficient number of steel money boxes, 14 in. square by 15 in. deep, for the receipts from each line to be kept separate. They also carry numbered pad locks with which to secure these boxes, the keys for these being retained by the accounting department.

One of the crew remains at all times with the car as watchman, while the other two open the vaults in

nickels and pennies are emptied together on a sorting table, where three girls sort them over rapidly and pick out any counterfeit or mutilated coins or foreign pieces. The good coins drop through a series of holes at one end of the table into the rolling coin boxes.

The coins are now placed in the hopper of a large Sattley sorting and counting machine. Each of the five machines in use has a capacity for handling 40,000 coins an hour. They separate the coins as did the first machines, but in this case there is individual passage from the hopper to the three top plates, all of which retain the nickel. As before, the fourth plate retains pennies and the fifth dimes. From the shaker the coins drop into a vertical tube, at the bottom of which is a paper tube coin wrapper open only at the top.

These wrappers are automatically fed into position from racks at the back of the machine to a revolving disk which has provision for four wrappers. Each coin that drops into the wrapper is registered on a meter and when a wrapper has received forty nickels, fifty dimes or fifty pennies, as the case may be, the disk revolves a quarter of a turn, an empty wrapper takes the place of the full one, the full one is automatically crimped on the open end and a new wrapper drops into position. With the next quarter revolution the crimped wrapper drops into a box below and the same process is repeated.

The counting meter is similar to the meter on an automobile in that the coins for the run of one line are registered on what would correspond to the trip dial on an automobile, and the total number of coins handled by the machine for the day is registered on a separate dial.

Each girl operating these machines fills out a form recording the number of coins of each denomination counted for each line. At the end of the day she totals this report, indicating the money value of each denomination counted for the day and the total cash counted. This cash report goes to the cashier's department.

COINS ARE SACKED AND SOME WEIGHED AS DOUBLE CHECK

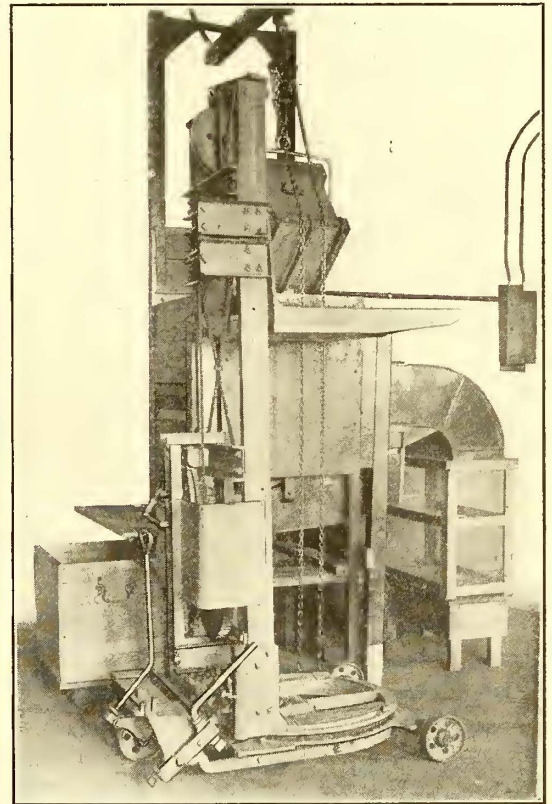
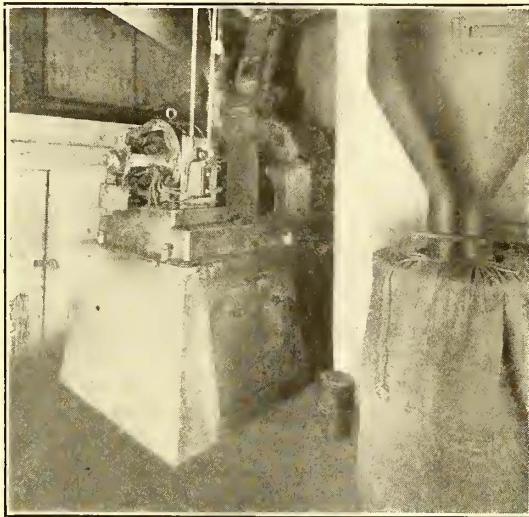
The boxes of wrapped coins are taken from the counting and wrapping machines to the sacking table, where the rolls are placed vertically in boxes of the proper size to hold fifty rolls of dimes, nickels or pennies. These boxes are emptied into canvas sacks which

are tied up, tagged and sealed. A white tag is placed on a sack of dimes, a white tag of different shape on the nickels, a blue tag on the pennies and a red tag on the odd money at the end of the day. In any case the sacker places her initials upon the tag to signify that the amount is correct, as it would be obvious to her if a roll was missing, if a roll of the wrong coins was included or if any of the rolls were not properly filled.

The number of nickels is greatly in the majority, and as a double check on the sacks of nickels these are weighed. The weighing is done by the man who lifts the coin boxes around and does other heavy work, and should the weight be incorrect the seal is broken and the contents examined or if necessary counted. Otherwise the tag is stamped with date and again initialed as O. K.

AT RIGHT, SEPARATOR FOR TICKETS AND COINS, AND ELEVATOR FOR HANDLING MONEY BOXES

BELOW, DEVICES FOR PULVERIZING TICKETS AND TRANSFERS INTO SALABLE PULP



These sacks are placed in a large rolling box which holds approximately eighty-four sacks of nickels. When the box is full of sacks containing coins of various denominations, the cover is locked in place and the box is taken by elevator to the cashier's department. The only sack opened by this department is the one labeled with a red tag, indicating that it contains the odd money ending the day's run. Some of the sacks are sent to the car houses for change and others are sold to the banks, who without opening them, resell them to customers.

The tickets were last left in the wire basket at the separating machine. Those for each line are then emptied into an individual box. There are fifteen different classes of tickets, each made distinctive by a different color or a special marking. The boxes are emptied one at a time on a sorting table, where several girls separate the tickets into the various classes. The coin-counting machine operators generally complete their run about the middle of the afternoon, and for

the remainder of the day they assist in the ticket sorting.

Some classes of tickets, such as the workmen's ticket, the reduced rate tickets, etc., are used more extensively than others. Ten of the fifteen different classes fall in this group, and each of these classes for each line is weighed on a sensitive scale. The weight in pounds and ounces gives a very accurate record of the number of tickets, and this is recorded. The other five classes are each wrapped separately for each line and are counted on the tickometer shown in the accompanying illustration. There are two of these machines in use.

The tickets are placed in the feeder of the magazine and by the turning of a crank are conveyed by small rubber wheels from the feeder to the rim of the revolving disk top of the machine. Each ticket is counted on a meter and on the disk is held in a clip. The rim has a capacity for 200 tickets. When it is filled or when all tickets for one class on one line have been counted, the tickets are dropped into a container below by pressing down a lever with the left hand. This lever operates a brass strip above the tickets which pulls them from the clips. An efficient operator can count approximately 15,000 tickets an hour with this machine. All tickets, after being either counted or weighed, are placed in a steel case and the cover is locked in position.

A machine of a similar principle to the tickometer is used to count the transfers, which come to the department with the conductors' trip sheets. This machine is, however, operated by electricity and will count 60,000 transfers an hour. The transfers are placed in the feeding device with one hand, and a lever operated with the other sets the rubber wheels in motion. The machine has a recording dial for both the individual run and for the day's total operation. The operation of a small lever between successive runs sets the run meter back to zero. The transfers pass into a large box below the table.

Each night the tickets, cancelled transfers and unused transfer pads are emptied into a chute and pass down five floors to the basement and into the hopper of a swing hammer pulverizer. Here the material is beaten into pulp. This machine is driven by a 25-hp. motor. The pulp is drawn from the pulverizer through an 8-in. pipe by suction created by a fan driven by a 5-hp. motor and passes into a large sack.

It will be noted from the illustration that the lower part of the sack is canvas to prevent the pulp from being blown through the sack, while the upper part is gunny sack to permit the escape of air. The average amount of pulp resulting from a day's run of tickets and transfers is from 1200 to 1600 lb., and it is sold for an amount which more than pays for the disposal of the waste material.

War-Time Progress in Maintenance of Way*

Better Track Will Result If Less Money Is Spent On Construction and More on Maintenance — Paving Burden Should Be Assumed by Public Authorities

By JOHN B. TINNON

Engineer Maintenance of Way Chicago & Joliet Electric Railway

THE principal trouble confronting the maintenance-of-way engineers on electric railways for the last year or so has been how to maintain roadbeds without money. In the past the maintenance-of-way department has only in isolated cases had sufficient money allotted to it properly to maintain the property. Whereas our electric railways have in most cases been constructed in accordance with the highest standards, our standard of maintenance has always been low. On account of the pressure of increased prices and inadequate receipts during the war period, even this standard has not been adhered to, and on most properties the maintenance-of-way department has been forced to devise all kinds of contrivances to make worn-out tracks serviceable for operation long after their life had gone. Incidentally, this has developed some very excellent devices and has been a very good education for the maintenance-of-way engineers.

On most electric railways, even to a great extent on the largest properties, maintenance work and construction work have been carried on by practically the same supervising forces. It is only natural, therefore, that the larger amount of the engineering department's time has been devoted to construction and reconstruction work rather than maintenance. Only during the last

two years or so, when practically no construction work was done, and it was necessary for the engineering department to spend considerable thought and energy on repairs, has the industry made any marked development in maintenance-of-way work.

For years past the larger part of our electric railway standards and methods have been based on steam railroad standards and methods, partly because most engineers on electric railways had their original schooling in steam railroad methods and partly because of the feeling among the electric railway men that the steam roads had worked out many of these problems and what had proved satisfactory to them should also be satisfactory for electric railway practice. And indeed the work on interurban lines and open tracks is about the same as on steam roads with maintenance of distribution systems added. Up to two or three years ago we had no books of authority on electric railway track maintenance, and, in fact, we have now no complete and adequate books on this subject which can be turned over to the newcomer for his guidance. Each man has therefore been forced to work out his own problems to a considerable extent, which has led to a great diversity of practice without the establishment of any particular standards.

Many electric railway engineers have in the past felt that the way to solve the maintenance problem was in

*Abstract of paper presented at summer meeting of Illinois Electric Railways Association, Rockford, Ill., July 16, 1919.

the original construction. In our larger cities very heavy, expensive types of construction were adopted and the smaller companies followed the larger cities without giving any consideration as to whether they could afford the expenditure or whether the types adopted met their conditions. We have spent our money in new construction only to find that the type of construction adopted did not bring about the results that we expected and that we now have very expensive maintenance work to keep up the tracks so constructed. I believe that we are rapidly coming to the point where, with the adoption of lighter equipment, we will develop a more economical track construction that will be just as serviceable as many of the heavy types in use during the past ten years.

At present prices, the types of track construction commonly used by electric railways in city streets cost not less than \$40,000 a mile. Let us assume that by the adoption of cheaper construction we can build a serviceable track for \$35,000 a mile, saving \$5,000 on the original cost. The interest charge on this \$5,000 will amount to at least \$300 per year. Most properties figure their track depreciation at from 4 per cent to 5 per cent. The saving therefore in depreciation would amount to \$200 or \$250 per year, or by the saving of \$5,000 in the original cost of construction approximately \$500 per year would be saved in operating charges. Now, if even 75 per cent of this \$500 is given to the maintenance-of-way department in addition to the usual allotment, it would amount to an addition of \$375 per year, or \$7,500 over a period of twenty years, which is about the life of track in city streets.

During the past two or three years we have developed methods of repairing defects in track work that we never thought of a few years before. Welders and grinders of various types have come into common use. We are learning to repair special work parts instead of buying new ones when failures occur. We have learned that battered joints and broken rails can be welded and repaired at no unreasonable expense. We have learned that we cannot build a track that does not have to be maintained and that repairs on tracks recently constructed is no great criticism of the construction but a wise precaution, and we are, therefore, willing to accept a less expensive type of construction and spend a little more money keeping it up after it is built.

A SUCCESSFUL REPAIR JOB AT JOLIET

The question of track maintenance in city streets, paving not considered, is mainly a question of maintenance of joints and special work. Ties in paved streets are seldom renewed, nor indeed is renewal often necessary even with the cheaper grade of ties until the track is rebuilt. The principal cause of so much trouble with joints in paved streets is that the paving prevents the tightening of bolts and other precautions that are used on open track. But even if the joints do become battered and the rail ends broken there are many ways in which very satisfactory repairs can be made at a comparatively small expense. For example, on the Joliet property we had a piece of track about a half-mile long which had reached such a point that a few years ago we would have almost recommended its reconstruction. Without the purchase of any new material except bolts and bonds the joints were repaired at a labor cost of about \$3 a joint. This track is now in fairly good

condition, and reconstruction has been postponed some five or six years.

The rail section was 6-in. Lorain 263 and the joints were 24-in. fishplates. The rails had become battered at the ends and broken, and it appeared like a hopeless task to do anything except relay the rail. We had in our yard a quantity of old 36-in. continuous joints that had been removed from a piece of track that had been relayed. The ends of the rails were cut off about 4½ in. back from each end and a piece of second-hand rail about 9 in. long was inserted. The old continuous joints were heated in the center and drawn up to fit tightly against the insert. The rail was then drilled to fit the new joints, one hole being placed in each end of the insert piece, and the joints were bolted up. The surface of the rail was then ground smooth with a track grinder.

There are many methods such as this that can be used for the repair of track joints. After all, the joint problem is not so serious as we have been accustomed to believe, as a good blacksmith can repair old joints for such use, when satisfactory smiths can be found, and even new joints can be purchased or the insert piece can be welded by the use of an old pair of fishplates. Track special work can be repaired in many similar ways. Broken switches and frogs can be readily welded and made almost as serviceable as new ones. I am not an advocate of trying to build up new wearing surfaces for permanent wear, as this is very seldom done in such a manner as to make it more than a temporary repair. New centers can be purchased, however, and inserted in old pieces at a very great saving over the cost of an entire new part and this method makes a permanent repair, whereas the building up of wearing parts generally destroys the entire part sooner or later with no permanent result.

THE PAVING PROBLEM IS ALWAYS WITH US

One of the greatest sources of expense to the maintenance department having city tracks is the maintenance of paving. The type of vehicular traffic on our city streets has changed very much in recent years so that the type of pavement that was found satisfactory a few years ago is wholly unsatisfactory for the fast moving, heavy traffic that we have to-day. Paving requires more maintenance now than ever before, due partly to the additional wear and tear which we now find the heavier loads and high speed traffic cause, and partly to the necessity of having a smoother pavement on account of the increased speed of traffic. The granite block was formerly considered the best pavement to be used on heavy traffic streets and brick on streets with lighter traffic. We now find that the impact, suction and vibration caused by the heavy automobiles passing over pavement of these types cause them to deteriorate very rapidly. If we are to expect our pavement to give satisfactory service, we must adopt something that is much smoother than either brick or granite block. Where a few years ago many engineers considered creosoted block, asphalt and concrete unsatisfactory for pavement around car tracks now a large number advocate such types.

The cost of relaying old pavement is very high and where the track is not worn out and the paving has become rough it may be possible that satisfactory results can be obtained by pouring over this pavement a coat of asphalt or other similar material. We expect to try about a half-mile of this in Joliet this season, at a cost of about \$500 or \$600.

Determining "Fair Value"*

American Electric Railway Association Committee Outlines the Fundamental Principles Which Should Underlie Valuation Procedure

THIS report is predicated upon the assumption that public utilities in the future will be regulated by national, state and municipal authorities to the extent necessary to insure good service to the public and to provide a sufficient income to cover the costs of the service, including fair wages to labor and a fair return upon the investment. The rate of investment return should be such as will attract investors and the security of the investment should be placed beyond question so that the companies may obtain, at minimum rates, the capital required for the extensions, betterments and improvements necessary to keep pace with population growth and future transportation requirements. It is further anticipated that public service commissions and other interested governing bodies will recognize the opportunity that the present emergency affords them to perform a good and useful public duty by safeguarding the integrity of utility investments and by establishing methods that will insure good service to the public. They should be as liberal in their dealings with the companies as the urgency and gravity of the present general situation demand, and a proper consideration of the public interest and general economic stability will permit. On the other hand the companies should only ask for such treatment as a fair analysis of the conditions warrants, and that they can with propriety and reasonable assurance defend.

HOW SHALL "FAIR VALUE" BE DETERMINED?

Two very important items involved in determining the proper rates of fare that any company may charge to produce an adequate gross income are the "fair value" and "rate of return" to be allowed upon such value.

In view of the great importance of the item of "fair value" in rate making negotiations, the association requested the valuation committee to prepare, at the earliest possible date, a report setting forth its recommendations as to the proper procedure to follow in determining "fair value." It was the hope that through the work of this committee, representing practically all of the street railway companies in the United States, there could be evolved a method of valuation based upon safe economic principles, and acceptable to investors, public utility commissions and other public rate making bodies. In attacking this problem your committee realizes the many conflicting opinions that have prevailed and the many mistakes that have been incorporated in public utility valuations in the past. However, it is the unanimous opinion of the committee that it is the earnest desire of all interested parties, the courts, public utility commissions, municipalities and other governing bodies, as well as the companies, to evolve a method of arriving at the fair amount of capital upon which

to base a return and that this can be accomplished by the application to the problem of common sense business methods.

There can be no question but that the investor in any public utility serving the public is entitled to a fair return upon his investment until it has been returned to him. Accepting this principle as an "axiom" every dollar spent in creating the property including the individual efforts (the equivalent of money) of the promoters, organizers and builders of the property, and including the superseded property unamortized out of the earnings of the road, should be included in the "fair value," also, an investor in a company is entitled to a reasonable return upon his actual original investment, plus the appreciation of the property, including its value as a "going concern," as compensation for his "initial risk" or "hazard" and his skill in successfully operating the property. In other words, an increase in capital value is the same as an increase of new capital.

GENERAL PRINCIPLES OF VALUATION STATED

With these general premises in mind the committee makes the following statement of general principles involved:

1. Where "original investment" is used as a basis of "fair value" and complete "original cost" data, covering all expenditures including promotion, organization, cost of financing, contingencies, etc., are available, there should be added to these original cost figures any appreciation, including a fair value for going concern, and there should be no deduction for unamortized superseded property or for accrued physical depreciation in a well maintained property.

2. Where full and complete original cost data are not available, the "cost to reproduce new" method should be used. An inventory of the existing property should be made using prices as of the date of the inventory. This date should coincide with the time the valuation is being made, the prices being expressed herein as "prices of to-day." To this "bare bones" inventory and unit price summation should be added the proper "overhead" percentages, "going value" and other development costs to complete a full "fair value" for "rate making purposes," and there should be no deduction for accrued physical depreciation in a well maintained property.

It is seldom that the older properties have a complete, reliable record of total actual expenditures and therefore it has become the almost universal practice to inventory the existing property and apply unit prices to the different items of construction.

In some cases, valuations have been made upon several different bases: (1) Original cost data. (2) Reproduction cost with prices as of dates of construction. (3) Reproduction cost with price as of to-day. (4) Reproduction cost with prices averaged over several years.

In all cases the proper overhead charges and development costs should be added to determine a fair value for rate making purposes.

*Abstract of the report prepared by the American Electric Railway Association's committee on valuation for presentation at the Atlantic City convention this fall. The committee consists of Philip J. Kealy, chairman, George Weston, Martin Schreiber, W. J. Harvie, B. E. Tilton, J. N. Shannahan, W. H. Sawyer and Charles E. Bailey. Owing to the importance of the subject at present this report is being made public now by the executive committee.

Items to be considered in estimating fair value for "rate making."

- (a) Promotion expense
- (b) Organization expense
- (c) Brokerage
- (d) Construction costs
(Based upon actual property inventory at prices as of the day and date of inventory.)
- (e) Overhead direct charges not included in (d)
 - Engineering and superintendence. Storeroom expenses, cost of handling materials, clerks, general office help, contingencies. Contractors' profit. Carrying charges during construction. Taxes during construction. Insurance during construction.
- (f) Going concern
 - (1) Cost of consolidation
 - (2) Superseded property
 - (3) Created value
 - (4) Development costs.
- (g) Working capital

DEFINITION OF TERMS

Promotion Expense.—The initial work necessary to start a public utility enterprise requires the time, effort and work of capable men to plan the proposed service, to show its public necessity, to estimate the possible business and prepare construction costs, gross receipts and operation expense statements, and the preliminary work necessary to procure franchises, etc. This work is a service of value to the public and represents a money value properly chargeable to capital account.

Organization Expense.—An efficient organization must be carried during the formation and construction period consisting of legal, financial and business experience and ability to arrange for and carry on the details of company organization and the creation and construction of the property. This expenditure is a proper charge to capital account.

Brokerage.—The money necessary to create the properties must be arranged for through sales of stock and bonds, and bankers or brokers are generally engaged to place the securities and collect the money as required. This means: The payment of commissions, preparation of mortgage, service of registrar (corporate and individual), service of trustees, cost of certification, revenue stamps, cost of recording mortgage, public service commission costs for approval, advertising, and other expenses, and this brokerage cost should be included in any investment estimate for rate making.

Construction Costs.—A detailed inventory and classification of the existing physical property forms the basis of all "cost-to-reproduce-new" valuations, to which should be applied unit prices and costs or values as of the date of inventory. The value based upon present day prices is then in accord with the current rates of wages, the current cost of material and the current value of a dollar and is economically sound. To the "bare bones" inventory at unit prices must be added the direct and indirect overhead charges not included in the unit prices for rails, other construction materials, labor costs, etc., all as enumerated.

Overhead Charges.—The items of direct overhead charges enumerated above should require no further explanation. The purchasing of the materials, their transportation, sub-delivery, accounting, inspection, etc., require supervision and direction and the effort of large forces of storeroom and general office help, inspectors

and checkers, the cost of which is not included in unit prices.

The general and detail design of all parts of the property requires the work of engineers and architects and their assistants to prepare drawings, bills of material, working specifications and purchase contracts, take the general direction of the work in the field, make estimates of cost, progress estimates and partial payment estimates for all contracts and generally supervise the progress of all parts of the construction, the cost of which could not be included in unit prices.

During the progress of the work, cash must be provided to pay the current labor, material costs and partial payment contract estimates, and interest must be paid upon this capital as it is invested during the period of construction and before the property can earn a return. The same is true of taxes, and insurance, both fire and accident. Interest, taxes and insurance during the construction period are a part of construction costs and should be a capital charge.

In the building and erection of a large property many contracts are entered into for specific kinds of materials in quantities, special machinery, track work, buildings, etc., and the item of contractors' profit is one of the construction costs that must be included in "fair value" for rate making.

The item of contingencies is an important one in any cost estimate whether it is to furnish advance information to financiers and promoters, or in connection with any large public improvement, or our own problem "the establishment of a reasonable and just investment value." This item covers the uncertainties, commissions, additions and extras attendant upon any construction job, large or small, and among many other things, includes the following unforeseen but ever-present items of delay: Removal of obstructions, the appearance of conglomerate, hard pan, or solid rock in excavations where earth had been estimated, slides in open cuts, the removal and restoration of water pipes, gas pipes, electric wires and other underground improvements, under-pinning of buildings, etc. The item of the removal of underground obstruction alone often equals 25 per cent of the total construction costs in subway work. To quote from the paper on "Overhead Charges" presented by Philip J. Kealy in the 1916 report of this committee, the following statement appears under the heading "Incidentals or Contingencies."

During a recent hearing before the Valuation Committee of the Interstate Commerce Commission, Mr. Holbrook, Chief Engineer of the Union Pacific Railroad, stated that after the completion of the Lucin cutoff across Great Salt Lake, he had his engineering staff estimate the cost of the work already completed and the highest estimate was 40 per cent under the actual cost.

This item of contingencies is a real item of cost in every job and ranges from 10 to 50 per cent of the total cost and in some hazardous undertakings such as under-water tunnel or foundation work the actual cost is sometimes many times greater than the "bare bones" bill of material contract-specifications estimate of costs.

Going Concern.—(Health of the Property). This represents the value that exists in a completed, matured, successfully operated property and embraces the items of "readiness to serve," a "built up successful business," etc., as compared with a new property in the course of construction, or the immature condition usually prevalent at the beginning of its operation. Other development costs, including an amount equal to the de-

iciency of net earnings below a fair return upon the fair investment due solely to the time and expenditure reasonably necessary and proper to the development of the business and property to its present stage and not comprised in the valuation of the physical property are also involved in this cost.

Cost of Consolidation.—In the past competing companies were granted franchises in the same community and duplication of operating organizations and other expenses resulted together in less efficient and more expensive service to the public. Under one management the public has benefited by a lower average fare, the more direct routing of cars and an extension of service for a single fare. Much time, effort and expense are usually involved in bringing about a consolidation. This development expense is of value to the public, and its cost is a proper charge to capital account.

Superseded Property.—A public utility company is entitled to repayment for all of its property consumed in the service of the public. The ordinary replacement or renewal of property actually worn out in the service is charged to operating expense and is therefore amortized out of earnings. It is only when large replacements of property are made necessary by extraordinary changes of motive power such as from horse car to cable or electricity or both, or by wreckage due to violent storms, earthquakes or other unusually destructive calamities, or when because of improvements in the art, the general type of car or other property in service is replaced in large quantities that it becomes impracticable to amortize immediately out of earnings and new capital must be used. This new capital should be included in "fair value" upon which to base a return until such time as it has been amortized.

Created Value.—This item covers an important element of value that properly may be a part of "going concern value." It represents the value due to the utility having been brought into existence and becoming alive and a vital part of the community. Having pioneered the growth of the city or community and enhanced the value of both private and public property, the utility itself should be justly credited with part at least of the value it so created.

Working Capital.—Every business should have a "cash reserve" or "working capital" to "cushion" the rise and fall between income and expenditure, to carry the materials and supplies account, and especially to fortify it against any reasonable financial emergency that may arise. An adequate allowance for this item should be included in capitalization.

Bond discount.—This item has been set up as one of the problems to be considered in "rate making." A new public utility seldom sells its securities at par, but bond interest is paid upon par value and must be included in the rate of return. The question of "bond discount" has been considered in many public service rate cases and has been allowed as capital in some instances. In the majority of cases, however, it has been considered as representing prepaid interest and therefore a matter to be included in rate of return rather than to be capitalized.

ACCRUED DEPRECIATION

The prevailing practice in making valuations for rate making adopted by public service commissions and other public utility supervising bodies in the past has been the "cost-to-reproduce-new-less-depreciation" meth-

od. There has been little argument between the companies and those representing the public about correctness of inventories. More differences of opinion have arisen with respect to unit prices, overhead and "going value" percentages, and the method of determining the amount of depreciation to be deducted.

Depreciation has been classed by all students of the subject as an operating charge and not a capital account item. The only provision that can be made to take care of depreciation is by making proper repairs and proper renewals when necessary and these expenditures should be charged as an operating expense, that is, in the case of renewals the original cost of the thing replaced should be charged to renewals and any excess or betterment is a proper charge against capital. The integrity of the capital investment is thereby maintained against depreciation to the extent practicable or economically possible. An exact standard of percentage physically good to apply to any well maintained electric railway property is difficult to establish because this percentage will vary in different properties and is influenced by different types of property and equipment, the physical characteristics of soil and other local conditions, and usage. A property consisting of a large percentage of elevated or subway construction will show a much higher percentage of the total investment physically good than a surface electric railway property. Every public utility property should be maintained at 100% operating condition, but it is both impractical and uneconomical to maintain any property approximately 100% physically good. This is true for the reason that the physical per cent good of any property will vary from approximately 100% in the case of a new property, to 80% or less, in an older property, depending upon the age, the different stages of renewal cycles through which the property has passed, and the amount of additions and betterments.

There is a certain amount of total accrued depreciation that never can be taken care of in any operating, growing property. In other words, as stated above, the only practicable, economical expenditure that can be made to offset depreciation is to make repairs, and renewals when physically necessary. There is no fairness or logic in an attempt to penalize a company because it has not done the impossible. The full original investment remains in the property and the investor is entitled to a return upon every dollar until the investment is repaid to him. Where a property has not been kept in good physical condition and there is unmistakable evidence of "deferred maintenance" the subject should receive special consideration and if the property being valued has been a prosperous one in the past and the fact is in evidence that the money that should have been expended for renewals and repairs has been diverted to other uses of benefit to the company, the company should be required to make good this deferred maintenance, the cost to be charged to its individual account and not to operating expense.

If, on the other hand, it can be shown that a company carrying deferred maintenance has been well managed but that the income has not been sufficient to pay the increased costs of operation, franchise obligations and interest and, in addition, properly maintain the property, then provision should be made in the rate adjustment to permit the company to earn the amount necessary to put the property in good operating condition.

Your committee wishes to emphasize its conclusions with respect to the subject of accrued depreciation in the strongest manner possible, as follows:

Where a property has been maintained in good operating condition and an appraisal is being made to determine investment value for "rate making" or for sale to municipality, state or government, no deduction should be made for accrued depreciation.

No attempt has been made in this paper to specify the percentage to apply for overhead charges or the other items of auxiliary expenditures, going value, etc., because they will vary in different properties, and there-

fore must be separately determined for each particular property.

This committee recommends to the constituent member companies of the American Electric Railway Association, state public utility commissions, the Interstate Commerce Commission and other national, state and municipal governing, supervising and regulating bodies, that the fundamentals and procedure contained in this report be used as a basis for determining the "fair value" of public utility properties for "rate making purposes" or for sale to a municipality, state or government.

Electrification Work to Be Pushed Forward In Sweden

Marked Activity in Water Power Development Aided by Government Loans Will Hasten Broad Application of Electric Drive to Railways as Great Economy

THE Guarantee Trust Company of New York reports that probably in no other country in the world, with the possible exception of the neighboring state of Norway, is there more intensive development in progress in the utilization of electrical energy than in Sweden.

There is in Sweden a remarkable tendency to apply the use of such power to every phase of the economic life of the country—to industry, to public utilities, to state and privately-owned railroads, to agriculture and to home life in remote districts as well as in the cities. The importance of the development is out of all proportion to population. Sweden's population is less than that of New York City, and is widely scattered over an area of 173,000 square miles, broken by mountains, heavily forested, and extending well within the Arctic Circle.

Sweden possesses some coal, but it is not of the highest quality, and the supply is inadequate for domestic needs. Her immense forests are her greatest present source of national income, but the day has passed when wood fuel can be broadly and economically employed. War markets afforded great incentive to the expansion of old and new industries, yet the difficulty and cost of importing raw materials, especially coal, created a handicap which would have been insurmountable but for the driving power at hand in the Swedish lakes and streams. The value of existing and future development of this tremendous national asset has been emphasized by bitter experience.

WATER POWER DEVELOPMENT

Great strides were made during the war, and greater developments are planned. Sweden has seen a new vision of industrial and commercial greatness, but the past four years' experience has brought home to her the weakness of her position so long as she is dependent upon imported fuel. The solution lies in a full utilization of her magnificent "white coal" resources, the development of which is proceeding on a remarkable scale. There is no desire to repeat the war ex-

perience of running her railroads on wood, 40,000,000 cubic meters of which was consumed in 1917, or upon imported coal at 175 crowns (\$46.90) per ton, the price in October, 1918. Power, comparatively cheap, abundant, and available with little regard to conditions abroad, will assist immensely in realizing the industrial and commercial possibilities of her future.

The amount of water power normally available in Sweden may be conservatively set at 5,000,000 hp. Such a figure places her above any other country in Europe in this respect, with the exception of Norway. Water power has been used in her industries for centuries, and before the outbreak of war produced more than one-half of the mechanical power in the country, the total consumption exceeding 1,000,000 hp.

DEMAND FOR ELECTRICAL ENERGY

The demand for electrical energy has not been confined to any particular branch of industry. The call has been universal from the great iron mines of Norrland, within the Arctic Circle, to the extreme South, where power is already being transferred to Denmark by cable and still greater export is planned. The electrification of the railroads has already commenced and it is to be pushed as rapidly as possible. It is felt that trains must be made more rapid and the locomotives more powerful, to attain higher average speed rather than a greater maximum speed. In many cases of long hauls, as for instance, Stockholm to Kiruna, it is believed electric operation will cut the running time in half.

RAILWAY ELECTRIFICATION

In 1915 the government requested the railway department to make a thorough investigation and report on the question of electrification. The report, only recently completed, states that in view of the desirability of extending the existing system, the abnormal cost of fuel, and the greater efficiency and economy possible, the introduction of electric service is essential. It is estimated that the work will require ten years and it

is proposed that separate conduits be established for lighting along the railways and for the distribution of power to agriculturists. It is felt that electrification would be profitable even were water power not available, since coal can be utilized in a steam power station with far greater efficiency than in the locomotive. Peat and inferior coal could also be used if necessary.

It has been estimated that the saving in fuel alone during the last four years, if the system had been electrified at the outbreak of war, would have equalled the entire cost of installation. Railroad coal which cost \$20 per ton in 1917, had risen to \$46.90 per ton in October, 1918. The fuel item alone in the latter year amounted to nearly 70 per cent of the entire cost of running the state lines in 1917, and largely accounted for the net deficit resulting from gross revenues never before approached in Swedish history.

SWEDEN'S RAILWAYS

The Swedish railway net includes approximately 9500 miles of lines, a greater mileage per 1000 of population than is possessed by any other country of Europe. Development in this respect is the greatest economic achievement in recent Swedish history, and is largely due to the enterprise and initiative of private capital. In 1917 only 34.4 per cent of the total mileage belonged to the state, the proportion being higher in North Sweden, 81.8 per cent, and lower elsewhere. This included, however, the majority of the main trunk lines. The balance of the mileage is split up among many private corporations, the number having been placed as high as fifty, though some reduction has probably taken place through the amalgamations of recent years.

With full realization of the part played by private interests in the past in the growth of the system, it is felt that systematic development of the means of communication in the future will be hindered by the division of the railways between the state and a great number of private companies. This is but a reflection of the general tendency throughout Europe toward centralized control by the state, but the situation has undoubtedly been affected by the demand for a comprehensive scheme of electrification. The Crown has charged a special committee to investigate the situation fully.

ORE TRAFFIC

Electrification has already been applied with a high degree of success. The first attempt on a large scale, aside from the electric street railways of such cities as Malmo, Göteborg, and Stockholm, was on the Kiruna-Riksgränsen line in Norrland, well within the Arctic Circle. This line is 93 miles long and carries annually a heavy tonnage of iron ore. Single phase current at 30,000 volts is sent from the government power stations at Porjus to four transformer stations along the line, of which the first is 87 miles and the last 160 miles distant. The voltage is stepped down to 15,000, at which tension power is supplied through the overhead contact device.

The freight locomotives in this case weigh about 100 tons and the passenger locomotives about 70 tons. A normal freight train includes two electric locomotives and forty-one cars of 46 tons each, a total weight of 2,000 to 2,100 tons. Normal speed for freight is 18½ m.p.h. and the maximum 31 m.p.h. Maximum speed for

operation the road transported 1,104,000 tons of ore. passenger trains is 62½ m.p.h. In the first year of barely one-third of its normal capacity. In spite of this low traffic, a distinct saving over steam operation was scored.

The continuation of the Kiruna-Riksgränsen line to Svartön on the Baltic coast has been decided upon at an estimated cost of \$7,800,000 for the extension of 143 miles. It is said that with an annual ore traffic of 3,000,000 tons, electric traction can compare favorably with steam traction even when coal is as low as \$6.70 per ton. Current for the whole road will be supplied from Porjus.

Another project calling for electrification in connection with ore movement is the proposed construction of six and a half miles of line from Hultebo Station to the Riddarhyttan mine district on the Dagarn-Hultebo division of the State railroad.

An important matter now under serious discussion is the building of a new electric express route between Stockholm and Göteborg. Such a line would care for the transit traffic between England, Finland and Russia, to which Sweden is looking forward in the near future with high hopes.

For the electrification of railways seven main sources of power are available. These contemplate a total ultimate output of over 1,000,000 hp., including the sites now developed and those under active proposed development. It is also proposed to link up several of these sources of power to permit a more complete utilization of all power generated. New power stations completed during 1917 comprised about 65,000 hp., while work begun in 1918 calls for 90,000 hp. Other new plants begun this year call for about 50,000 hp.

EXPORTING SURPLUS POWER

Present facilities are said barely to meet domestic requirements during the dry seasons, even in the most favored regions, though there is a considerable surplus of power available at other times. Some of this surplus is already being exported to the northern sections of Denmark by a single cable, but the street railways of Copenhagen and Frederiksberg expect to employ large amounts of Swedish power as soon as further cables can be laid.

The Water Power Commission, granted \$2,200,000 in 1918, asked an additional \$268,000 for the purchase of further sites, etc., the same amount for the current year, and \$690,000 for 1920, to be used in the construction of new power stations and the improvement of existing plants.

To foster such development as has been outlined above the Swedish Government has recently created the State Water Power Loan Fund and the State Power Transmission Loan Fund, with yearly grants of about \$650,000 and \$325,000, respectively. The stated purpose of the first fund is to permit loans up to two-thirds of the cost of harnessing waterfalls belonging either to the state or to private individuals and for the regulation of water levels; the last is for loans to co-operative associations for the building of distribution systems and power-transmission lines. It was found, however, that the appropriations were insufficient, since applications under the Transmission Loan Fund soon reached \$2,000,000. The Board of Trade and the Board of Agriculture, in a joint memorandum have asked that the sums available be doubled

during 1919 and 1920 in order to permit greater assistance in the electrification of the country districts.

The production of the heavier types of machinery required is an important industry in Sweden, but the drop in her German imports in many allied lines has been seriously felt.

Heretofore, Sweden has paid heavy toll to Germany for her lack of direct shipping connections with outlying countries. Plans now being formulated will bring Swedish ports into direct and regular communication with this country and the new policy of her big men is predicated upon the cultivation of closer commercial and financial relations with the United States.

Prior to the war our part in supplying electrical equipment to Sweden was almost nil. Heretofore a very large part of the buying in this line has been done in Germany. It is only in the past two years that our share has grown appreciably and it would appear to be entirely up to the American exporter of these commodities whether the figures rise to new heights or fall back to their old level.

Status of Swiss Electrification

THE director of the Swiss official information bureau in New York is authority for the statement that a number of sections of the Swiss Federal Railways are to be electrified soon, and that the work on others now under way is to be pushed rapidly. Among the latter is the Gothard Railway, whose 68-mile Erstfeld-Bellinzona section will be completed this fall, while the Bellinzona-Chiasso and the Erstfeld-Lucerne lines will be completed in 1921. The cost of the electrification of the Erstfeld-Bellinzona line is estimated at \$8,000,000, while the cost of electrifying the entire government-owned system of 1800 miles is estimated at \$200,000,000.

In 1918 the electrification of the following steam railroads was decided upon, and work on them was commenced: the sections of the Federal railroads Sion-Bri-gue and Berne-Thun; the section Hasle-Langnau of the Emmenthal railroad and the section Bevers-Filisur of the Rhaetian railroads. The lines first mentioned are part of the Berne-Lötschberg-Simplon railway, which was inaugurated in 1913.

The new locomotives which are being used by the Swiss Federal Railroads on the section Berne-Thun, besides those of the Berne-Lötschberg-Simplon line, are each equipped with four single-phase alternating current motors, each of 450 hp. The electric parts were furnished by Brown-Boveri & Company, Baden, and the mechanical parts by the Swiss Locomotive & Machine Company of Winterthur.

The electrification work on the Bevers-Filisur line was completed by the middle of last April and from April 16 steam engines have been duly replaced by electric motors, the current being supplied by the power station of Bevers, which furnishes the necessary energy for the Engadine lines electrified in 1913. The progress of electrification in Switzerland has been very much accelerated by the acute shortage and high price of coal during the last few years. Recent estimates show that only 887,000 hp. out of a potential waterpower of 2,173,000 hp. has been utilized so far, and that further development of waterpower will go far toward taking care of railway power requirements.

The Coming Washington Hearings

Aug. 4 Hearings Postponed—Labor to Have Hearings—Many Mayors to Appear, Governors and Other Prominent Men—Plans of Federal Commission

CHARLTON OGBURN, executive secretary, Federal Electric Railway Commission, Washington, has advised the *ELECTRIC RAILWAY JOURNAL* that there will be no hearings during the week of Aug. 4. This change in plans was made because so few answered the invitations to appear. The commission will now try to hear both the economists and the mayors during the week of Aug. 11, beginning at 10 o'clock Monday morning.

Those who had replied to invitations to appear before the commission next week, and who presumably will now appear during the week of Aug. 11, include the Secretary of War, Newton D. Baker; Prof. Irving Fisher; Milo R. Maltbie and Delos F. Wilcox. W. R. Wilcox, Prof. E. R. A. Seligman, and Otto Kahn of Kuhn, Loeb & Co., will probably be present.

Some of the mayors who have answered the invitation to appear before the commission are: Andrew J. Peters, Boston; William Hale Thompson, Chicago; Alexander T. Cronnel, Scranton, Pa.; E. P. Smith, Omaha, Neb.; James Couzens, Detroit, Mich. and Alfred L. Roper, Norfolk, Va. Others who have expressed their intention to appear include a representative of the governor of Rhode Island, a representative of the governor of Massachusetts; Richard T. Higgins, chairman of the Connecticut Public Utilities Commission; C. Murphy Candler, chairman of the Railroad Commission of Georgia and Francis J. W. Ford.

It is understood that in the absence of the regular counsel for the electric railway side, Mr. Ogburn will act informally to occupy the position taken by Bentley W. Warren in the former hearings.

LABOR QUESTION ALSO TO BE CONSIDERED BY THE COMMISSION

Discussing the future plans of the commission with the Washington representative of *ELECTRIC RAILWAY JOURNAL*, Chairman Elmquist of the Federal Commission said that he did not know how long the hearings would last each week, but that they would continue until "they got through." He said that the Amalgamated Association had expressed its desire to be represented and present its side of the case, and that probably a week, after the week of the 11th, would be given over to the labor question.

Chairman Elmquist also said that a comprehensive questionnaire is now being drafted, which will be sent to the mayors of the various cities, public utility associations and commissions, etc. In drafting this questionnaire, the knowledge and efforts of some of the best economists of the country are being employed.

The commission will complete its work of investigation by Oct. 1, at which time it will proceed to prepare its report to President Wilson. Mr. Elmquist was reluctant to indicate any definite course of action of the commission with regard to the disposition of the report, or as to what probable use might be made of it. It is possible that it may be submitted to the National Association of Public Utility Commissioners, if completed in time for the fall meeting of that association.

Electric Railway Hearings Before Federal Commission Completed

Railway Officials, Bankers, Economists and Engineers Endeavor Fully to Inform the Commissioners of All Phases of the Present Situation — Many Prominent Men Give Their Opinions on the Causes and Solution of the Difficulties

THE ELECTRIC RAILWAYS have completed the presentation of their case to the Federal Electric Railway Commission. So great was the volume of evidence and so thorough the manner in which the commissioners questioned the witnesses that one would imagine the commissioners must have in their minds a most comprehensive picture of the history, engineering development, operation, financing, the economics, the public relations aspects and the legal aspects of the industry, and of all the conglomerate difficulties which have conspired to bring about the necessity for this hearing.

The final hearing on Friday afternoon, July 25, was completed at 6 o'clock, at which time the commission adjourned until Aug. 4.

The report of the hearings presented in last week's issue of ELECTRIC RAILWAY JOURNAL carried through the Wednesday morning (July 23) sitting. The following matter continues the running narrative of the hearing from Wednesday noon on.

The testimony of L. R. Nash of Stone & Webster, though covered last week, continued over into the Wednesday afternoon sitting. He was followed by Charles L. Henry, president Indianapolis & Cincinnati Traction Company, who was given opportunity to present the case of the interurban railways. Counselor Warren, in presenting him to the commission, said that he was sometimes called the "father of the interurbans," to which Mr. Henry with his usual ready reply answered that such reference was made by those who had no respect for his age.

The witness first reviewed the development of the interurban railways and told how the class of service rendered had changed from its limited beginning to its present broad scope. He read extracts from several letters by business men which served to emphasize the value of the service being rendered by the interurbans to the merchants and to the public. The president of the Merchants' Association of Indianapolis, Ind., wrote that no other factor had done so much to increase the down town merchants' business and that Indianapolis had a larger out-of-town trade than any other city, due to the large interurban mileage entering the city. The merchants' credit files showed that there were thousands of persons all over the state, the majority within a 100-mile radius, who maintained regular accounts with the Indianapolis merchants. A letter from the Detroit Board of Commerce stated that 70 per cent of the shipments of the wholesalers there went out over the electric lines.

Mr. Henry also read a letter from a livestock shipper to show the value of this class of service being rendered to the community by the interurbans, in which the shipper stated that because of the better, quicker service afforded by the electric lines, he had been able to save

practically all the transportation charges through the elimination of shrinkage. As the result of this also, he had been able to pay the farmers a few cents a pound more for their stock. Mr. Henry figured from this that the electric lines of that community had put \$7,100 more money into the farmers' pockets than they would have received, had the shipments been made via steam routes.

The witness also brought out the long distances over which this freight service was supplied, citing one haul regularly of 125 miles, another of 262 miles and another of 171. He said the volume of this class of traffic available seemed to be limited only by the company's ability to provide facilities. During 1918 the freight hauled out of Indianapolis alone was 151,654 tons, and there was 12,673 tons of express. Attention was also called to the service supplied by the interurban companies in the way of light and power to numerous towns which would otherwise be without electricity.

TROUBLES OF THE INTERURBANS

As to the trouble faced by the interurbans, Mr. Henry said there was no such crisis as the urban companies are feeling, but that it consisted of an accumulation of a number of difficulties which are preventing the lines from making any money or developing the full use of existing facilities. Among these difficulties he pointed out the limitations upon hauling freight cars through city streets, various franchise limitations, necessity to pay for street paving in many towns and villages, loss of express business formerly carried due to the policy of the American Railway Express Company of routing all express business exclusively over steam lines, unfair competition of trucks, etc.

He said there was a movement in connection with the building of new highways to force the traction companies to eliminate grade crossings to an extent beyond their ability to pay. Further this served as an assistance (along with the tax upon the company, part of which is devoted to the road construction work) to the principal competitor of the interurban lines—the motor truck. He said he had no fear of the competition of the trucks if they were put on equal footing with the electric lines, and he did not ask that they be done away with. But what he did want was that they be required to file schedules and to live up to them and give a regular service; in other words, that there should be no "wildcatting." He quoted from a United States Bulletin a statement by the general manager of a large motor truck company being organized in the Northwest, in which this gentleman also expressed his concern that "wildcatting" competition would be very disastrous for he proposed to file schedules and give a regulated service. Mr. Henry stated that the Pacific Electric Company was losing \$1,400 a day, \$500,000 a year, from

"interurban jitneys"—jitneys doing country business. Then he reiterated that the electric lines were not afraid of this form of competition if it were made subject to the same regulations.

Mr. Henry told how the rulings of the War Labor Board had indirectly required the interurban roads to meet the same scale of wages for track laborers as paid by the Railroad Administration. He also pointed out how the latter's fixing of prices had resulted in what in effect were combinations which made it necessary for the electric lines to pay the same high prices. The maintenance of the ridiculously low commutation rates for suburban service on the steam lines was also working a very great hardship on the electric lines and the steam lines are losing money on it too. These rates he showed were as low as 0.4 cent per mile, and were increased only 10 per cent at the time the 3-cent fare was inaugurated. This of course makes competition by the electric lines almost impossible.

How the rate of fare in the Central Electric Railway Association territory had been increased from 1½ cents a mile to the present 2¼-cent rate was mentioned by Mr. Henry. He did not believe that a 3-cent rate in that territory would result in greater revenue. There had been practically no public remonstrance against the fare increases. On his own property, he had called a meeting in every town served and told them the situation frankly, and in every case he had secured an indorsement of his petition to the state commission for an increase. He stated that the commissions have generally shown a disposition to grant increases but that there had been some disastrous delay in getting decisions due to the uncertainty about the 2-cent fare statutes.

Asked about the condition of the street car companies in the small cities, Mr. Henry said it was even worse than in the large cities. Not one was paying dividends of any kind. The jitney competition was more virulent, and the companies were loaded down with taxes. There was no reason now nor never was any why any charge should be made against any line except as it entered into the production of transportation. With this phase of the problem cleared up, it would greatly improve the outlook for the small properties.

Questioned as to the effect of the fare increases on the number of riders, Mr. Henry said that there had been little loss up to the present 2¼-cent fare, but he thought there would be a greater loss with a 3-cent fare. On his own property, the last 10 per cent increase had been accompanied by a 20 per cent increase in passengers over the same period the year before. This was still less than the number of passengers which the traction lines carried two years before, however. He believed that a reasonable increase of interurban fare does permanently increase the revenue obtained.

In reply to a query from one of the commissioners, Mr. Henry gave the opinion that the city companies would be able to realize some revenue, an additional source of revenue, from carrying express packages over their lines. He said the amount of such revenue would be greater, the less compact the city's population, and vice versa.

As another source of relief for the interurbans, none of which are paying dividends he said, Mr. Henry advocated the application of the principle that an electric railway has no value for taxation except its earning power. On this basis the assessed value of his road would be \$700,000 less than it now is.

Charles W. Kellogg of the Stone & Webster Company, Boston, and chairman of the committee of the A. E. R. T. & T. Association which is now making a study of the safety car, was the next witness. He was called to the stand just before the close of the Wednesday afternoon sitting and continued his testimony at the evening hearing. He reviewed briefly the history and operating features of the safety car and then presented a few

figures gathered by the Traffic Association committee through a questionnaire sent to some fifty member companies. As the report of this committee is not yet completed, it is expected that the figures given will be amplified and made more representative and accurate, so that the data will be more valuable when the report is later presented to the association.

In its questioning of Mr. Kellogg, the commission evidently sought to satisfy itself that the safety car is not a remedy of sufficient magnitude to give relief from the present ailments and also that its use to a greatly increased extent should be recommended.

From the Laboratory of Thomas A. Edison, Orange, N. J., July 22, 1919

Federal Electric Railway Commission,
Washington, D. C.

Gentlemen:

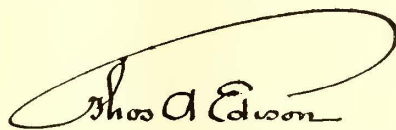
I have been very much interested in the progress made by the electric railways since I first built one at Menlo Park, N. J., in 1880.

The systems operated and the apparatus have now reached great perfection. Some of the greatest engineers in the country have given almost the whole of their lives to attain this end. The end is not yet reached. The great trunk lines will in time be added to the electric domain. It is to the greatest advantage to the public that every encouragement be given to those who have and will still further act as pioneers in the further perfection of this flexible and highly economical system of power distribution, whereby our natural fuels are conserved to a greater extent and all the power of water falls utilized.

At the present time the electric railway industry has reached a serious stage. Everything has stopped advancing. Countless millions of securities based on this industry are held by conservative investors, families, etc., who are possessed of a dread for the future. No more capital can be obtained except in special cases.

The iron-clad contracts between the roads and cities made in the pioneering days under normal conditions have no protective clauses against the greatest change that has taken place in centuries, due to the world war. The municipalities can exact their pound of flesh if they so desire, with the ultimate bankruptcy of these organizations, but the spirit that is now abroad in the world is against this. We are now all trying to play fair. If suffer we must, let us suffer alike. If prosperity comes, all should participate in a like manner.

I hope the commission will succeed in placing this industry on its feet again. This in its turn will stop stagnation; give the roads stability to raise plenty of capital; new extensions will go on; new things will be perfected and introduced. The restless Americans who work all day and far into the night are forever pushing higher and higher that great line of the thirty degree angle, illustrating the rise of the American nation in wealth and power.



Frank J. Sprague, the well-known inventor of many important electric railway devices, a member of the Naval Consulting Board and the builder of the first electric street railway, in Richmond, Va., was the next witness. He reviewed some of the conditions and difficulties of the very first electric railway installations and pointed out how not a vestige of these early equipments could now be found, so complete had been the obsolescence and replacement. Questioning by the commissioners brought forth his opinion that the development of the art, so far as the electrical equipment is concerned has reached such a state of perfection that the factor of obsolescence will be very much less important in the future and the industry may therefore be considered to be upon a more stable basis. Factors contributing to this opinion were the high perfection of the turbo-generators and motors reached and the settlement of some of the old controversies of the engineers as to the relative merits of different systems of electrification, etc.

Asked for his opinion on the future of the electric railway industry, he said that it was absolutely a permanent institution, though having before it a steadily increasing competition. He said the automobiles, air-

"Automobiles have taught the people not to walk, so they ride the street cars when the autos are not available." RICHARD SCHADDELEE.

craft, etc., will to a certain extent create a traffic of their own in addition to the street car traffic. He believed that the electric railway has a field of its own and that provided it is well managed, well maintained, and good service rendered, that it will continue to have sufficient passengers to make the business profitable.

As to what the remedies were for the present crisis, he said that first it was necessary to gain the confidence of the people, for if they would believe the real facts when they are put before them, they could not help but approve increased fares. For they want good service; they do not want to go backward in this respect. He believed it to be a matter of securing an appreciation on the part of the leading men in the communities of the real situation in order to establish a basis of fair dealing. Second, it was necessary to set up a system of regulation which would assure a fare representing the actual cost of the service, no more and no less. A more equitable system of fares is probably desirable, he remarked, suggesting the possible use of a zone system, but a general increase of revenue is certainly necessary, whatever plan is followed.

MR. MORTIMER TESTIFIES

J. D. Mortimer, president of the North American Company, was the first witness heard by the Federal Electric Railway Commission at its sitting on Thursday morning, July 24. He reviewed at some length the history of the entire situation in Milwaukee, discussing the operating conditions and the rulings of the Wisconsin Railroad Commission during the past two or three years, endeavoring to show by his testimony information which would tend to offset some of the statements that had been made before the commission to the effect that the companies do not make public the

facts and that it perhaps would be better if they would fight back. Asked his opinion of the commission system of regulation, he said he was a believer in the public utilities commission, that it offered a means of solution of the many complex problems that arise between the public and the company, but he was very strongly of the belief that the law should be revised or so established as to avoid the shifting bases employed by suc-

Speaking of municipal authorities—"The breathing of self-manufactured incense is one of our best outdoor sports. The headlines destroy more men than the obituary notices." JOB HEDGES.

ceeding members of the same commission in arriving at decisions.

To illustrate what he meant by shifting bases, he said that in the matter of physical valuation of a property, the personnel of the commission at one time would have one idea while a succeeding personnel would have an entirely different one, and each would hand down decisions according to its own views so that the company could not count upon any set policy in connection with its expenditures or financing. Another example cited was the fact that the Wisconsin commission had at one time granted a depreciation allowance of 4.46 per cent, and later with a different personnel had granted only a 2.82 per cent allowance—a difference of 1.64 per cent which, figured against gross receipts of a million and a half dollars, represented a considerable difference for the year. He cited other examples to illustrate the instability of the commission's attitude.

Mr. Mortimer pointed out that the Wisconsin public utilities act contemplated a service-at-cost plan, but that it had not worked out that way. The commission had at one time established 7½ per cent as the reasonable return which would be allowed on the value of the property as determined upon a physical evaluation. However, at no time during the last two years has this rate of return been earned and more recently the commission issued a statement that it had never said that the utility companies were to secure this reasonable return in good times and bad times. He said that the administration of the public utility law in Wisconsin had brought about a situation so bad that, as a result of his experience, he could not conscientiously recommend the

"The present principles of taxation are based on the theory of plucking the most feathers with the least squawk." PROF. CHARLES J. BULLOCK.

placing of any more money in the electric railway business in that state.

In summing up why the service-at-cost plan in Wisconsin has not worked out, he said the first reason was the shifting bases of opinion, and second, the long period involved before the commission rendered a decision. There can be any number of reasons for delay if the commission desires delay. There is no guarantee of the integrity of the capital invested in the property.

The cost of capital is continually changing, but there is no provision for determining in due time the proper return which will be allowed on the new capital required. There is further no assurance that a company will be able to collect sufficient revenue to pay the fixed returns allowed. The costs of operation are increasing so fast that there is no certainty that enough revenue will be collected to keep the property going.

"What would you think of a doctor who took a year to find out whether you were sick when you applied to him for relief?"

CHARLES L. HENRY.

Mr. Mortimer then told the Federal Commission of the circumstances which had developed a new kind of contract at Kenosha, Wis. He said that one-man safety cars had been installed in the town and had made a very bad impression upon the public, principally because the town has twenty-five railroad crossings, so that the principal function of the conductor in the past has been to act as a flagman. Subsequently the men asked for an increase in wages and the company replied to the petition of the employees that it did not have the heart to deny the increase but could not pay it. They went on strike and for five weeks the city did not have any street car service. Finally the railroad commission ordered the jitneys off the street and because of the complete change of public opinion, the company resumed service with a five-cent fare and using the small cars. This company is now paying the best of any of the North American properties.

But the citizens of Kenosha wanted extensions built which the company reported it was unable to finance under existing regulations. The city then talked about buying the property and Mr. Mortimer said that he had offered no objections to this. When he was called by the city to find out if he would sell, he first informed the city representatives that he had no objections. Then he began trying to sell the property to them. The harder he tried to sell it, the less they wanted it. They then asked him what plan of agreement he would have to have in order to be able to finance the improvements which they desired. He then outlined the necessity for a municipal guarantee of a fixed small return on the capital invested in utility properties. This rate he

"The American people never do an injustice unless influenced by politicians who indulge in too much vocal exercise and not enough physical."

RICHARD SCHADDELEE.

set at 6 per cent plus fixed charges. The plan also included the provision that any earnings in excess of 6 per cent should be divided, 40 per cent to the municipality, 10 per cent to the employees, and 50 per cent to the company. He also specified that the fixing of fares should be left entirely to the company.

Later the fundamental terms of the plan he had outlined were adopted, and the legislature was induced to enact bills which made the plan operative, not only in

Kenosha but in all other cities of the state except Milwaukee and Superior.

Upon questioning by the commissioners, Mr. Mortimer stated that there had been two noticeable influences working to increase the cost of carrying passengers. The first of these was the very great wage increases, and the second was the fact that the companies have been quite generally forced to extend their lines into unprofitable territory, thus adding unremunerative car-hours, car-miles, labor, etc. This has resulted in Milwaukee in an increase in the average length of haul in the last five years of about one-half mile per passenger, it having formerly been about 2.6 miles and is now about 3.1 miles. In this comparison, he referred to the length of haul within the single fare area of the city only. The present situation clearly shows that the revenue is too low or the operating expenses too high, and these may be due either to too low a fare or to hauling too great a distance. He said that Kenosha was now showing a larger depreciation fund available than Milwaukee, due principally to the comparatively short distance it was necessary to haul passengers. He pointed out that during the last ten years there had been an incessant demand on the part of the public for

Speaking of public service commissioners—
"The proposition is to find a mind and a spine that will synchronize."

JOB HEDGES.

increased service, irrespective of the amount of traffic. This demand has been so pronounced, that in Wisconsin the commission finally ordered a ten-minute minimum service on any line. In some cases this ruling has not worked altogether to the injury of the company, for it has brought about some slight increase in the number of riders.

None of the North American companies has ever asked for an increase in fares above 5 cents for they were very desirous of retaining the short-haul riders. Mr. Mortimer commented that the rates on some of the suburban lines around Milwaukee have been increased, but that this has not affected the growth of the territory. This had been done in attempting to carry out the policy of making the end of the line profitable, but he had found that this could not be done.

The most pressing problem aside from the matter of revenue, Mr. Mortimer said, was the labor trouble. He believes that fundamentally and individually, the workmen are desirous of being put on an individual basis of payment. He had experimented with the gain-sharing plan of emolument which includes a certain wage, with a reward for good conduct and efficiency. The employees have an intense curiosity as to what their share is going to be for that month in the earnings of the company and this tends to keep them interested. The plan also makes it possible to disclose to the employees the most intimate results of their acts and to give them a thorough appreciation of the company's problems and its work.

At the present time the board of directors of the Milwaukee Electric Railway & Light Company includes a director who represents the employees of the company. This director was elected by the Employees' Mutual Benefit Association through a primary nomination and

secondary election, the employees' association comprising all of the employees of the company. The first director so elected was one of the watch engineers of one of the company's power stations. In order to meet the requirements of the law, the company placed one share of stock to his name. He has the same power on the board of directors as any other member and he sits in on all of the board meetings, and is gladly heard on any question to which he desires to contribute discussion. The plan for representation on the board in the Milwaukee company originated with the employees, but was willing acceded to by the company. In fact, Mr. Mortimer said that he would be willing to have a larger representation of the employees if they so desired.

At this point Mr. Mortimer's testimony was interrupted to give way to Ex-Governor Foss of Massachusetts who had, upon his request, been assigned that particular hour for a hearing. Mr. Foss's testimony appears a few paragraphs below.

Continuing his testimony at the Thursday afternoon session, Mr. Mortimer pointed out that there was no uniform remedy which the commission might hope to recommend for application to the entire industry. In order to determine what would be best to do would

"Governor Foss thinks he is radical. If we had Lenine and Trotsky, we would not only have municipal ownership of the utilities but of the Governor's factory and his nine autos too."

RICHARD SCHADDELEE.

require a study and approximately two years experimental period upon each property. While he fully believes this two-year experimental period to be highly desirable in working out what is best for the industry, he emphasized very strongly that in the meantime relief has got to be supplied in the way of immediate flat-fare increases, in order that the industry may be saved from bankruptcy and in order that credit shall be restored so that the companies will be able to attract new capital at the end of the two-year experimental period when it will doubtless be needed to install whatever proves to be the necessary changes in operation of the roads. Any business of shrinking nature is not attractive to private investors. But the flat-fare increase has in every case in which it has been applied brought about in time an increase in revenue, although this increase was not in the same ratio as the fare increase. Hence the flat-fare increase as a temporary expedient may serve the end of re-attracting capital.

Speaking of the number of passengers which might be expected, Mr. Mortimer remarked that in all the industrial centers where the population is increasing, it would be expected that the number of street car passengers would also increase. This, however, is somewhat influenced by the higher fare, which induces more people to walk, particularly those who would be classed as the short-haul riders. From this Mr. Mortimer continued that the principal competition of the street railway is the walking which takes place. The number of cars which a company should have on the street at any time should really be determined by the number of people walking, rather than the number of people on the cars.

Turning to a discussion of depreciation and obso-

lescence allowances in reply to questioning from the commissioners, Mr. Mortimer stated that the purpose of accumulating such allowances was to insure the future replacement of the elements of the property at the end of their physical life. These are not so much to provide for the wearing out of the physical property as for its replacement in order to operate the property in perpetuity. He said that the public would never allow a rate of fare which would amortize a property to its scrap value within a fixed franchised period, the average term of which is twenty to twenty-five years. The depreciation allowance creates a liability more than is used in any one year, but this is necessary if the balance sheet of the company is to show the true assets and liabilities. This records the liability of the corporation to the utility to preserve the property.

MUNICIPAL OWNERSHIP THE REMEDY, SAYS FOSS

E. N. Foss, for three terms governor of Massachusetts, was given audience before the Federal Commission at 12 o'clock on Thursday, July 26. He said that he appeared in private capacity and as a large holder of street railway stocks, and as a former director in many electric railway companies in Massachusetts and New York. The ex-governor quickly unveiled his mission by saying that he had "come to the conclusion, though reluctantly, that public ownership was the only solution of the electric railway problem. Private ownership with public regulation has fallen down and is out of the question." The very principle of this is wrong, he said, for one could scarcely imagine that any man owning a piece of property would get along with some one else who tried to tell him how it should be run or what should be done with it. The utilities must be operated by their owners, and owned by their operators.

The witness said that he was primarily interested in public ownership of electric railways because it means better democracy, for he believes that our transportation systems and then our factories must be democratized or the country will be in the same condition that the nations are in Europe.

Referring to the general unpopularity of the government operation of the steam railroads, the governor remarked that we have not had public ownership of railroads, that they had simply been leased under stress because they had fallen down under private operation. This lease had been made at the enormous rental of \$150,000,000 a year, which was much more than should have been paid. The deficit of \$200,000,000 in 1918 from the operation of the railroads by the government was not chargeable to the railroads or to the government, for practically the same people had operated the roads after the government took them over. This deficit was simply chargeable to the war. He said it would take five years to work out and effect the economies which were certainly possible under government operation. He would not admit for a moment that it is impossible to get as good efficiency under government ownership as it is under private. He was not willing to admit that the post office department was not efficiently operated.

Questioned upon some of the financial aspects of the transition to public ownership, Ex-Governor Foss turned his remarks to another phase of private ownership. "Banker management has got to cease," he said, "because the temptation to wreck the roads and reorganize

them about every ten years is too great." He believed that the bankers had had absolute control of the operation of the public utilities in general and that the boards of directors had been practically ignored. The management of the utility goes direct to the banker over the heads of the directors when any great policy is at issue, and the banker's decision is the one which controls. He said Mr. Mellen of the New York, New Haven & Hartford did not know some of his directors when he met them on the street.

Asked about the ability of the various communities to raise the necessary funds to take over the electric railways, Mr. Foss answered by saying that it would not be necessary to raise the \$6,000,000,000 which represents the outstanding securities of these utilities, but that the securities would be cashed at their fair worth and that the railway holders would be willing to accept that value. In another part of his talk, he remarked that the state should stand morally responsible for the money which people have risked in the utilities in order to supply the services to the people in general. The value at which the property should be taken over should be determined by a state tribunal, although the property should be taken over at once and the valuation determined thereafter. In other words, nothing should be allowed to stand in the way of the immediate carrying out of the public ownership program.

Instead of the usual remarks made about the utilities, that they must cease being political footballs, Mr. Foss made the statement that they must cease being speculative footballs. Also, he said that the quasi-public corporations must be taken over by the government in order to keep them out of politics, accusing these corporations of maintaining the greatest lobby in the country. He cited one instance of a man representing the utilities, to whom he referred as the "king of lobbyists," who had received a salary of \$25,000 a year for his work. Legislatures and legislators have been made and unmade by the utilities. The public cannot get a square deal from private ownership with public regulation, so that municipal ownership is simply inevitable.

SERVICE-AT-COST PLAN A MAKESHIFT

Directing his remarks to the service-at-cost franchise, the witness said that the people of Massachusetts had become all worked up about it. As a result of this plan, the Boston property has been steadily increasing fares until it has finally reached 10 cents. This has resulted in carrying 25 per cent less people and a loss in revenue of \$4000 a day. "The act is abortive and a makeshift and is doomed to failure." He thought that "the 5-cent unit fare has got to stand" within the strictly city area.

Asked by the commissioners how he would make up the deficit in operating expenses with such a low fare, he said that it should be made up from general taxation. Every one is taxed to make the highways smooth and safe for the automobile. Why should not every one be taxed to make the people's automobile—the street car—safe and comfortable and of greatest service. The street railway is a necessary part of the social and industrial life of any community. The government must take the industry in hand and make the fare as low as possible as one step toward better democracy. There will be a campaign in Massachusetts this fall for the purpose of determining this issue. Governor Coolidge has asked and received permission of the legislature to

appoint a special committee to investigate the street railways of the State. Then he expects to call a special session of the Legislature to consider the question of public ownership and that alone.

THE COMMISSIONERS ASK PERTINENT QUESTIONS

Commissioner Sweet asked Mr. Foss if he had any data or figures or statistics which he used as a basis for his opinion. The governor replied that he had not, but was relying entirely upon his own experience. Further, he would apply the same reasoning to all public utilities, the steam railways, gas and electric light plants, electric railways, telephone and telegraph industries.

Asked further if it would not be a menace to have such a tremendous number of employees under government control, he replied that this did not need to be a factor for when there is a change of administration the same employees carry on, and there is no particular change in the conduct of the work. When it was suggested by the commissioners that government employees were very poorly paid and that it was, therefore, impossible to secure as efficient or competent men as it is with private ownership, he replied that gov-

"The period of recovery and the restoration of the purchasing power of the dollar depend upon the courage of intellectual men to discuss things as they are."
JOB HEDGES.

ernment employees were, as a general thing, underpaid, but that he had never had any difficulty in getting very able men to do the state work in Massachusetts, and he believed that there would always be plenty of public-spirited men entirely competent who would be glad to serve in the employ of the state. Further, if the people were told the whole truth, he had confidence that they would be willing to provide higher salaries. The trouble has been that the people have been told only half the truth.

Speaking of paving charges and various other taxes and imposts which have been assessed against the street railway industry, Mr. Foss said that the electric railways have been attempting to give too much, and that public ownership would adjust all of this. He said that it ought to be adjusted under private ownership, but this could not be done, for it had been tried for years and had proved a failure. The public service commissions do not have courage enough to increase the fares promptly, because the railroads have been wrecked so many times by the bankers that the commissioners know the public will not tolerate the higher fares.

The commissioners asked Mr. Foss numerous questions in regard to how he would overcome the difficulties in the way of public ownership, such as the financing of the project, the constitutional limitations existing in many instances, etc. The only remedy Mr. Foss had to offer was government ownership, and in reply to the statement of the commissioners that this would necessarily involve great delay, his only reply was, "Go to it now." Later, however, he agreed that pending the working out of the plan and as a temporary expedient that it might be wise to grant a flat-fare increase generally, but that public ownership was the only permanent plan.

The setback to government ownership which has resulted from the government operation of the railroads during the war was referred to by the commissioners in their cross-questioning. Mr. Foss vigorously replied that that was due to propaganda spread from Wall Street and the railroad owners. "The people's minds have got to be disabused of the idea that they have had an example of government ownership."

In reply to a question as to whether he thought that the Federal Commission should recommend a general application of public ownership, he replied that it should by all means, and if it would do so "it would be the greatest recommendation in my memory."

COMMISSION REGULATION SERIOUSLY AT FAULT

James L. Quackenbush, counsel for the New York Railways and the Interborough Rapid Transit Co. for the past 15 years, expressed the opinion that decided changes were necessary in order to make the public utility laws more effective. Fundamentally, the law in New York is satisfactory, but its administration has been decidedly defective. Mr. Quackenbush referred to the



Seeing smooth sailing ahead, these four live Mid-West executives smile for the world despite the gloom pervading the hearings. They are E. J. Denman, Richard Schaddelee, Robert I. Todd and Charles L. Henry.

recent order of Commissioner Nixon of New York approving a 2-cent charge for transfers as the only commission decision in his recollection which has been in the slightest way a benefit to the railways. Instead of carrying out the spirit of the authors of the law that the commission should act as a fair and impartial tribunal between the industry and the public, in which it had absolutely failed, it had concerned itself only with the control of the expenditures of the company and with continual orders for increased service. Apparently the commission had never concerned itself with how the company was to get the necessary money to give the service demanded.

Nor was it a question of politics, for there had been a great variety of combinations of the two parties in the state during the existence of the public utility act, accompanied by corresponding changes in the personnel of the commission, but there always seemed to be the same motive behind the decisions. Mr. Quackenbush said that the principal reason that the commission form of regulation had failed was that the commissioners had not courageously put a stop to such sentiment as that expressed by Ex-Governor Foss at the morning session, which Mr. Quackenbush characterized as "stuff and non-

sense." He challenged every statement the ex-governor had made as regards the application of municipal or public ownership of any kind to the New York transportation lines. "They should put a stop to this cheap talk, this buncombe, and the facts should be kept before the people."

The up-state New York commission had shown more disposition to function as it should than the down-state, the witness observed. But one of the most serious criticisms which Mr. Quackenbush had to make of the utilities law administration was the long delay in acting upon petitions. Endeavoring to show what this meant, he said that the New York Railways, now in the hands of a receiver, had issued certificates under the direction of the court in order to make necessary improvements, but owing to the inability of the receiver to secure additional revenue, it now appeared that the receiver would be unable to pay the interest on these certificates and Mr. Quackenbush suggested that it might be necessary to appoint a receiver of the receiver.

THE FINANCING PROBLEMS IN NEW YORK

Mr. Quackenbush then described the detailed situation in New York in connection with much of the financing which has been necessary to build the extended subway system, the Manhattan Bridge 3-cent line, and some of the other lines, endeavoring to show the federal commissioners the attitude of mind taken by the public utility commissioners and the municipal authorities. Commenting upon the manner in which the subway program had been carried out, whereby the commissioners had aimed to secure competition through the building of another Z-shaped subway, Mr. Quackenbush said that there could be found "no justification for this plan either in finance, economics, railroading or common sense." This resulted in the present dual system of subways, which is now nearing completion and the building of so many railroads in Manhattan that none could possibly pay its interest charges. He then told how the Interborough had raised some \$80,000,000 when the city had been unable to finance its projects, and had entered into a contract with the city in good faith with all of the facts fully known by both parties and that now the city authorities had shown a decided tendency toward repudiating their contract if they could find any way so to do.

This brought up the subject of the ability of the city to take over the system should it so desire. Mr. Quackenbush stated that neither the city nor the State of New York has any power whatever to finance such a proposition except through an amendment to the constitution of the State. This can be brought about only through a constitutional convention or through the approval of two successive legislatures, of which the second senate must be a new one resulting from a new election. He estimated then that if the effort was made to put through such an amendment right now, the earliest that it could be expected that the law would be provided would be three years, or 1922. This statement was made as a reply to the earlier remark of Ex-Governor Foss that there need be no particular delay in bringing about public ownership.

In presenting the present financial status of the Interborough company, Mr. Quackenbush made it plain that the only remedy which can solve the present difficulties of the company is a blanket increase of fare to 8 cents on the rapid transit lines. Such an increase would

also necessitate an 8-cent universal fare in New York, to include the surface lines as well, in order that the element of competition would not defeat the purpose of the increase. This might be brought about through an act of the Legislature giving to State Commissioner Nixon the necessary power. This, of course, would entail much delay and undoubtedly subsequent litigation. This might be avoided and the fare increase secured if Commissioner Nixon, the local transit commission, and the Board of Estimate and Apportionment would concur in the measure. These three bodies could jointly approve the increase without the necessity for any legislation.

Mr. Quackenbush then sounded the seriousness of the situation when he said that unless a fare increase is granted so that the credit of the company will be restored before Jan. 1, 1920, the company will pass into the hands of a receiver. Had it not been for the assistance of the War Finance Corporation last year, the company would not have kept on until this time. Mr. Quackenbush's hope was that the Federal Commission would sound such a clear note of duty to the regulatory authorities generally, that there would be a cessation of the prevailing tendency to starve the electric railway companies. He said that the aim in New York apparently was to starve the Interborough to the point that it would surrender its life, but that this could never be done, although it might result easily in the appointment of a receiver who would then proceed to carry out the existing contract under the direction of the court. In concluding that the 8-cent fare would produce the necessary increase in revenue, Mr. Quackenbush said that ample allowance had been made for the loss in passengers, based on studies made by several prominent engineering firms.

WHAT THE COMMISSIONER SHOULD RECOMMEND

Summing up his talk as to what action the Federal Commission might take which would be helpful in the present emergency, Mr. Quackenbush said that the recommendation of greatest importance would be to point out that it was the duty of the regulatory commissions or local authorities to be courageous in providing the necessary relief, and to determine the proper rate not by ancient history, but by the facts as they now are. The second suggestion offered to the commission effectively pictured the gravity of the situation. In the words of the witness, it was this, addressed to the commissioners: "If you are going to do something, by all means hurry up. Put a little oxygen in the patient to keep him up, and then if a major operation seems necessary, go to it." Get the public to see that it is to their interests to have the proper rate of fare in force. The interest of the people is the supreme law. If the contracts which were entered into many years ago do not now fit the case, it is to the people's interest to recognize the defects of the old contracts and grant new ones.

Concluding his testimony, Mr. Quackenbush reiterated that his criticism was not of the regulatory laws but of the administration of them, and that the opinion of the commission, as expressed in its forthcoming recommendations, could be of greatest help in supplying higher authority for the local authorities and commissioners, mayors, etc., to base their decision and to do the duty which they feel but hesitate to execute.

At this point, Bentley W. Warren, counsel for the

electric railways, presented a letter by Thomas A. Edison for inclusion in the records. It had been expected that Mr. Edison might appear personally as a witness, but it was impossible for him to come. His letter appears in full elsewhere in this issue.

A FORMER COMMISSIONER TAKES THE STAND

James O. Carr, formerly a commissioner of the New York up-state commission, was the next witness called to the stand. The theme of Mr. Carr's testimony was that the public utilities commissions should have full power to execute the law, and that their procrastination in acting was largely due to the absence of a clear establishment of their powers. He thought that many commissions would be inclined to give aid speedily if free to do so. He also thought that it would be possible for the railways to establish such prima facie cases before the commission that in a great many instances the latter would be justified in proceeding to grant temporary relief, even without full authority in law.

Mr. Carr's testimony carried over into the evening sitting of the commission on Thursday. He expressed the thought then that the appointment of commissioners should be removed from politics. Also, municipal ownership could never be successful because of the political aspect of the problem and the continual change in management through the appointment of political friends with each change in party control.

Richard Schaddelee, vice-president and general manager, United Light & Railways Company, Grand Rapids, testified verbally that commissioners should be appointed for life, that because they were afraid of losing their jobs, unless financially independent, they were much more influenced by what they heard from politics than they were by the opinion of all the experts in the industry. He also confirmed the statement of previous witnesses that great delay was always to be had before a commission would render a decision. He had never secured a decision in less than six months. Mr. Schaddelee also pointed out some of the local situations in Grand Rapids and in cities where his company had properties and endeavored to show that the American people are very just when they know the facts and when these can be told to them without discoloration by politicians. A written statement presented by Mr. Schaddelee appears elsewhere in this issue.



Ex-Governor E. N. Foss, the "Go To It Now" Municipal Ownership Advocate.

H. J. Pierce, Seattle, formerly president International Railway Company, Buffalo, outlined briefly what in his opinion would solve the present difficulties of the industry. His relief would include the continuance of a straight 5-cent fare, the abolition of all transfers and the remission of all taxes. If this program did not supply sufficient relief, he would charge an extra 5-cent fare outside a central zone 3 miles in diameter.

He would allow the company 8 per cent on its investment, this capital to be not in any event greater than the reconstruction cost of the property, but including replacements of obsolescent equipment. All net earnings beyond 8 per cent should go into the city treasury. This rate of return would satisfy the require-

ments of financing, and the placing of the surplus in the city treasury would have a good influence upon the public.

If this plan fails, Mr. Pierce could see no other alternative but municipal ownership. This he would very much dislike to see take place, for it is un-American. The function of the government is to govern and regulate, not to operate. He cited the very bad treatment which the public received from employees of the public-owned utilities abroad.

F. B. deBerard, director of the Research Bureau of the Merchants' Association of New York, and a member of the committee of the United States Chamber of Com-

"The court ordered the jitneys to desist. But do you suppose they desisted. No they increased."

RICHARD SCHADDELEE.

merce, which is now studying the electric railway situation, discussed the importance of cheap rapid transit and stated that adequate transportation was absolutely essential to the welfare of a community from the standpoint of health. He also presented an 86-page pamphlet on "Government Ownership and Operation of Public Utilities," which was the report of a special committee of the Merchants' Association of New York. A brief review of this pamphlet was presented in the issue of ELECTRIC RAILWAY JOURNAL for Feb. 15, 1919, page 337.

The Thursday evening sitting was adjourned at this point.

Friday's Session

At the beginning of the Friday morning hearing, Counselor Warren read into the record a letter by Samuel Insull, which follows in full:

CHICAGO ELEVATED RAILWAYS

Chicago, Ill.

July 23, 1919.

TO THE FEDERAL ELECTRIC RAILWAY COMMISSION,
Washington, D. C.

GENTLEMEN:

The demands for increased wages by the employees of the Chicago Elevated lines (of whose board I am chairman) has produced a serious situation in this city, and as it is impossible for me to leave to appear before your commission, I should like to set forth briefly the situation in regard to this property which serves (together with the Chicago Surface lines) the transportation needs of the second largest city in the United States.

The increased cost of operation, due to labor and material, has decreased the earning power to such an extent that the Chicago Elevated lines are barely able to cover the interest charges on the underlying companies. The Chicago Elevated Collateral Trust, which owns the stock of the operating companies, had \$14,000,000 notes maturing on July 1, 1919, which could not be refinanced and on which we were unable to meet the interest payment due the same date.

The Chicago Elevated lines have been a very important factor in the development of Chicago, and have never earned but a small return on the actual money invested. The rising costs produced by the war have not been offset by an adequate increase in fare, although the fare was increased from 5 to 6 cents, going into effect on Nov. 22, 1918.

We are faced with the problems of meeting the demands of the men for a further increase in wages and changing working conditions at the present time. The condition which confronts us is illustrative of the electric railway industry throughout the country, the earning power being curtailed to such an extent as to destroy the ability of the companies to obtain money or even maintain the integrity of their present securities.

Your commission can, I feel sure, perform a signal service to the nation as a whole by bringing to the attention

of the public the present deplorable conditions obtaining in the industry and by recommending as an immediate measure of relief such increase in fares as will prevent the ruin of this necessary public utility and by recommending a comprehensive plan for readjusting relations between the company and the public on a basis that will secure good service for the public, adequate maintenance of the physical property, and such a return to capital as will attract it into the business.

Yours truly,
SAMUEL INSULL,
Chairman.

John H. Pardee, president American Electric Railway Association, then read a formal statement of the situation as applied to the street railways in the smaller cities. The statement follows:

A considerable part of the electric railway business in the United States is located in the smaller cities.

The conditions governing the operation of these street railways in small cities are in general identical with those governing operations in larger communities. All suggestions made during these hearings for the general relief of the electric railways are applicable to the smaller lines—prompt increase in rates of fare, relief from the unjust burdens and service requirements, prompt action by public authorities on applications of the railway company, co-operation on the part of the public authorities, labor and general public, in the institution of safety cars and other equipment, and methods that will contribute to the solution of the difficulties now being experienced, are urged.

There are, however, some inherent differences due to the size of the communities served which make the electric railway problems in the small cities particularly difficult. Distances of travel being shorter results in fewer rides per capita of population. Also, in order to compete with other methods of getting about and satisfy demands of the public for frequent service even in outlying sections, it is necessary to operate cars on a more frequent schedule than is warranted by the number of passengers to be carried. Under the traffic conditions which prevail in small cities, it seems that the one-man car can be operated to particular advantage.

Public authorities and the public should recognize the necessity for the elimination of unjust franchise requirements in order that the fare may be kept within the limit which permits its greatest possible use.

Counselor Warren then introduced into the record a copy of the New Hampshire law relating to the exemption of electric railways from taxes.

CALIFORNIA ROADS ARE ALSO PINCHED

W. E. Creed, legal adviser for the San Francisco-Oakland Terminal Railways, was the next witness to testify. He reviewed some of the local conditions in connection with the company he represented and stated that it was earning less than 0.5 per cent on the evaluation of the property set up by the public utilities commission, without any allowance for depreciation being taken out. The company had to pay a 5½ per cent state franchise tax on the gross revenue, and this was not the only tax collected. If the utility companies have any non-operating property such as real estate, this is taxed in addition. The result has been to throw the burden of taxation upon the larger corporations and remove it from the public. He told the commission that there was little opportunity to effect further economies in the cost of operating the property, since this was now down to bed rock and that the employees were receiving generally low salaries and that the executive officers salaries were ridiculously low.

Mr. Creed also contributed some testimony to the question of contingent reserve and expressed the opinion that the consideration of this subject was one of the most important conditions of the permanent settlement of the electric railway problems.

Harlow C. Clark, editor of *Aera*, called to the stand, presented a statement expressing certain recommendations as follows:

MR. CLARK'S OUTLINE FOR RELIEF, IN FULL

"The continued furnishing of efficient and sufficient urban and interurban transportation is a recognized vital necessity of modern community life. It is recognized to be a function of the government of each state to provide that such service shall be performed.

"Heretofore the custom, with few exceptions, has been that these necessary facilities should be provided by private agencies, with the use of private capital, and subject to such regulations by governmental agencies as would insure that the service should be continuous, reasonable, sufficient and efficiently rendered.

"To provide service of this character by private capital, it is necessary that the terms and conditions prescribed by the authorities shall make such investment safe and enable them to secure a return which will induce private capital to select investment in the utility to such an extent as will provide the necessary funds for capital purposes. Such further return should be allowed as would stimulate the operating utility to the greatest measure of economy, efficiency and initiative and thus insure the development of the art and the maintenance of the public service at the high standard demanded by the American public; otherwise, private capital will elect to seek other investments, the standard of service will be depreciated, the maintenance and improvement of these properties will have to be provided for from state or municipal sources and the deficits in operation will have to be made up by taxation or the service permitted to deteriorate and finally terminate. As the last alternative is impossible in modern life, the actual question is:

"Shall the service be provided by the use of private capital, or by the use of public credit and resources?"

"As existing laws and conditions in the different states do not make a general adoption of the principle of public ownership or operation feasible at this time, the industry must be conducted by the use of private capital, whatever final policy the public may adopt in this respect. This is feasible if the following suggestions for emergency relief and for a permanent plan are followed:

Emergency Relief

"Such an immediate temporary increase in the charge for transportation (subject to revision by the subsequent permanent plan) as is necessary to meet the present crisis and to prevent that financial disaster which is imminent to a large majority of the companies of the industry. This would maintain the service during the development and formulation of a permanent plan, by which also any suitable revision in such emergency increase could be made.

Permanent Plan

"A plan for the permanent conduct of the business, under state or municipal regulation, capable of automatically adjusting itself from time to time to varying conditions. The machinery for such permanent plan should include:

"1. The ascertainment of the amount upon which the enterprise should, in fairness and justice to both the investors and the public, be allowed to earn a return.

"2. The establishment by the authorities of a system of charges for service by which rates will automatically

increase or decrease above or below the initial rates named in the permanent plan by a defined method and schedule so as to yield at all times sufficient revenue to meet all the payments contemplated by the plan, including such protective reserves as should be established; and also sufficient opportunity for participation in benefits resulting from economy, efficiency and initiative to induce the greatest efforts by the utility.

"3. Power of regulation, either by state or municipal authorities, in respect to all matters affecting conditions and character of service, including extensions, improvements and betterments.

"4. The utility to be conducted on the so-called indeterminate franchise principle and to be subject to such regulation as may be prescribed by law in respect to accounts, to capital investments, and other matters.

"5. The establishment of the right of the municipality or other governmental agency to purchase, as shall be set forth in the plan, which shall in particular establish the price or the method of ascertaining the price.

"6. All special taxes and all special charges and assessments paid by the utility are in fact paid by the car rider, being a part of the cost of transportation. Car riders as a class should not be subjected to such indirect or special taxation and should, so far as the particular circumstances in each community will permit, be relieved therefrom."

After reading the above statement, Mr. Clark was very closely questioned by the commissioners, bringing out a number of interesting points. Among these was the statement that if the commission should make it clear in its recommendations that a real crisis exists, it would have a tremendous influence over the country for the good of the railways and the public and would fortify men in public positions in making the proper decision. It would also serve to inform some commissions

"My humble opinion is that the gentlemen on earth in 1850 knew considerably more than the highbrows that have come around since."

JOB HEDGES.

which have assumed that the emergency due to the war was over and have withdrawn their war measures of relief, that the emergency has not passed.

In questioning about the service-at-cost plan of operation, the commissioners brought out the opinion of the witness that the lifting of rates ought to be simply a matter of arithmetic. If the public knew that its demand for increased service would necessarily be accompanied by an increase in the rate of fare, this knowledge might serve to restrain unreasonable demands. As to whether the paving should be left in under the service-at-cost plan or removed and assessed against the abutting property owners, it was stated that the presence of a street car line on any street is not a detriment to the property owners along that street, since it serves to enhance the value of the property in every instance. Therefore, it is not necessary to place a paving tax upon the car riders, or rather relieve the abutting property owners from it as a recompense for the presence of the car line. The opinion of the witness and the commis-

sioners seemed to be that this paving burden should not be placed upon the car riders and that while the service-at-cost plan would provide a fare sufficient to take care of this item of expense should it be left in, yet that this seems to be the proper time to bring the cost of transportation down to the proper basis and wipe the slate clean, so to speak, of all those imposts and items which do not enter into the production of transportation. As to what was the most pressing immediate need of the industry, the witness stated that practically every company was faced with the immediate necessity of a flat increase in fares, and that unless this was provided,

"We offered to get off the streets and let the jitneys operate one month, and then they get off and we operate one month, and let the people choose which they wanted."

RICHARD SCHADDELEE.

there would be no use in discussing the permanent remedy.

Prof. J. W. Jenks, professor of government research, New York University, was the next witness. He outlined the general principles of the relations between government and business and pointed out that there should be no conflict between the two, for they were largely made up of the same people looking at the problem from two different angles. His belief was that if the public were given all of the facts that it would be inclined to provide the necessary funds with which to supply good service.

ANOTHER OPINION ON PUBLIC OWNERSHIP

On the subject of public ownership, Professor Jenks said that in the small towns where everyone knows everybody it might work out satisfactorily, but generally, it had been the experience in the United States and in Europe that municipal management was not satisfactory. He said it was impossible to get the same spirit or interest in the work in public ownership that can be derived from employers with private ownership. It is also impossible to pick or control the employees as well.

The great trouble with the civil service system of this country has not been with its ability to get men, but to get rid of them. He said he had worked sometimes three or four months to get rid of men whom he knew even to be dishonest. This, of course, can be done quickly and efficiently with private management. The tremendous work which has been done during the war by government employees has been wonderful, but it has been done without regard to cost. Such a policy could not be allowed to prevail in times of peace.

Professor Jenks thought that a great deal of the delay and slow action of the public service commissions has been due to the differences of opinion as to the theory to be applied in determining the proper rate of return, depreciation allowances, evaluation, etc. He thought that the Federal Commission could do a very great service if it could find it possible to recommend a definite basis of computation of these things.

A minimum earning upon the utility investment should be assured, with perhaps a division of the profit over that safe amount, with the municipality. He thought that if the city were to derive all of the earn-

ings above the fixed guaranteed return, that the railway operators would lose the desirable incentive for economy and increased earnings. Also, if the city shared partly, it was desirable for this would tend to give the city an interest in increasing the profits. In any case, in drawing up the contract for the permanent settlement of the transportation difficulties, the terms should be so constructed as to make the contract self-adapting to the many changing conditions, for this would then avoid such emergencies as the present and bring about the desired service, with less friction and under better conditions all around. Professor Jenks advocated the indeterminate franchise giving the privilege to the city to buy, but said that the city should never buy.

At this point Counselor Warren put into the record eight letters expressing the views of prominent economists on the question of the probable future price level. The substance of these letters was to the effect that there was no hope for any particular decrease from the present price levels.

Several letters were also read into the record dealing with the question of what relief or economies or increased revenue might be expected from the use of double deck cars. The opinion expressed in each of these letters from various electric railway managers who have tried out this type of car was that the cars were not in general satisfactory and that they offered no particular assistance in the present emergency.

A letter from William B. McKinley, president, Illinois Traction System, was put into the record at this point also.

PROF. CONWAY URGES SERIOUSNESS OF SITUATION

Dr. Thomas Conway, professor of finance, University of Pennsylvania, was the next witness and his testimony somewhat upset the previous general trend of thought from the electric railway men in two respects. First, it was his opinion that a flat fare higher than 7 cents was more likely to produce a decrease than an increase in revenue. Second, the industry is now face to face with a new phase of the crisis, resulting from the very recent wage settlements in several cities which point very definitely to a new general higher level of wages in the electric railway field. An increase granted by any one company has a much greater effect than indicated, as evidenced by the practical standardization

"Put a stop to this cheap talk, this old stuff (about public ownership). The thing to do is not to talk buncombe but to recognize facts."

JAMES L. QUACKENBUSH.

of three wage scales for three classes of cities by the War Labor Board. With the thorough organization of the trainmen now in effect, the recent granting of a new high level of wage in several of the principal cities means that the industry will be called upon to take on at least a 25 per cent increase in wages generally. The problem is not, what are the companies to do this fall or this winter, but rather how is this new situation which is upon us now to be met?

If the increases of the last few days which include a rate of 60c. in Detroit, Cleveland and Boston, and a demand for 85c. in Chicago, are forerunners of a general new demand, then all of these increases in fares

which have been granted will be as inadequate as the rates in effect before. Reflecting on the problem of meeting this increase, Dr. Conway said that the man on the street did not appreciate the extent of the increase in operating costs and that our great problem was to educate him. The average commission opinion does not point out the facts so that the layman can understand them—they are over his head. The commission talks in the language of the court of review, but he believed that it was just as important if not more so that the commission should speak in the homely language which would serve to justify the decision in the minds of the public.

VIEWS ON THE LABOR ASPECTS OF THE PROBLEM

Dr. Conway remarked that it would be highly desirable if the unions would appear before the Federal Commission and present their aims so that the companies might know how high a hurdle they would have to get over. He said we have got to come to the arrangement whereby labor must take a responsible share in the management of the utilities. We must get away from the feeling which labor now seems to manifest that it is dealing with an enemy alien when dealing with its employer. Labor must be made to realize that there is only a certain amount of money in the business and if it intends to force the industry beyond the point of self support, when it will have to assume municipal employment, that it should at least make this choice with its eyes open.

Reference was made to the large turnover of labor in the street railway industry, which existed before the war, as an unhealthy condition. The rate of wage was then undoubtedly too low and it did not hold a good class of men in the employ of the companies. The pendulum was probably now swinging the other way. The witness believed that the industry would eventually profit by attracting and holding a higher class of labor. If the trainman could make \$30 to \$40 a week, with the seven-day week and year around work, he would be able to earn much more at a lower rate per hour than the brick layer or highly paid skilled laborer.

WILL THE TEN-CENT FARE BE HELPFUL?

Upon a court evaluation, the Kansas City Railway has recently made application for a 10-cent cash fare with two tickets for 15 cents. The Eastern Massachusetts

"The utilities and the commissions are more influenced by the politicians than by the people, because the people in these matters are inarticulate, while the politicians are very much articulate."
RICHARD SCHADDELEE.

Street Railway Company instituted a 10-cent fare on July 1. The Boston system followed shortly thereafter. President Busby, of the Chicago Surface Lines, says that a 9- or 10-cent fare will be necessary to meet the present wage demand there. These rates of fare may indicate a general need for that amount to meet expenses while continuing the flat fare system. An increase in fare to 6 cents represented no particular difficulty, but when a 10-cent fare is reached, the industry begins to get into deep water. If for a while 10 cents is made the price to solve the problem in the larger cities, it will mean that the small cities will have

to collect a corresponding increase and will then not attract enough riders to pay their operating expenses. What the solution is, then, no one knows.

In this connection the public utility laws of Pennsylvania and Connecticut have one great advantage in that they permit the companies to proceed with the instigation of an increased fare subject to subsequent approval by the commission. The commission cannot suspend this rate of fare unless a complaint is made and followed by a hearing and inquiry. This same policy should be made somehow to be effective all over the country in order to give the companies freedom of action

Speaking of competition—"Jitneys are like lice, while these motor trucks are full grown animals."
CHARLES L. HENRY.

to experiment with different rates of fare and different modes of collection as a means of finding out what is best for the industry.

Another problem which the industry faces is the eight-hour working day. Different from any other industry, the electric railway can not in any manner increase its production to offset the shorter number of hours in the working day. An eight-hour day in the street railway field means not only the problem of financing the increased wages, but the problem of having more men to pay. Its application is very difficult without a great loss of man-hours, which makes it necessary to pay for a great deal of labor which is not very productive.

An eight-hour day would mean a complete readjustment of the working hours and a decided increase in operating expenses. Either two separate sets of men would be required, one for the morning rush hour and another to operate through the evening rush hour, which would be prohibitive in its cost, or else it will be necessary to use the same men with spread hours, which is one of the objectionable features in the eyes of labor to this class of employment.

EFFECT OF THE 7-CENT FARE ON NUMBER OF RIDERS

Dr. Conway then testified regarding the splendid opportunity he had had in connection with the complete study of traffic made on the Public Service Corporation of New Jersey property to determine the effect of the 7-cent fare upon the gross revenue, and to proportion the loss of riders between classes, as determined by the length of ride.

The installation of the 7-cent fare on the property, which represented a 40 per cent theoretical increase in revenue, resulted on the Public Service lines in an increase of 15 to 16 per cent. But there was a wide diversity in this increase on the various routes of the company, varying from no increase at all or an actual loss in revenue to the opposite extreme where the line earned more than the theoretical 40 per cent. On lines where the length of haul was under 1 mile, not only was there a loss in number of passengers carried, but a loss in revenue. On lines hauling from 1 to 2 miles, there was less loss of passengers and 12 out of 13 lines showed a slight increase in revenue. Where the length of line was from 2 to 3 miles, the results were mixed, due to the varying lengths of rides for different passengers and the presence or absence of jitney competition.

Where the average ride exceeded 1½ miles some increase in revenue was realized. The loss of passengers on the longer rides was not nearly so great as with the shorter hauls.

In general, the 7-cent fare seemed to drive away a large share of those passengers riding under 1½ miles, particularly in the cities. In the rural districts where an equal length of ride was involved, the loss was not so noticeable.

The effect of the 7-cent fare on the jitneys in competition with the Public Service Railway was to secure for them a 100 per cent increase in traffic by actual count. The jitneys were charging a flat fare of 5 cents.

From this study, Dr. Conway drew the conclusion that it was idle to talk about 8, 9 or 10-cent flat fares and that if that were necessary, the companies might as well close up shop. This practically points to the necessity for some other scheme of fare collection which will retain the short haul riders and at the same time produce the increase in revenue necessary. He was satisfied that the flat fare drives a continually increasing number of people away with increasing fares.

PRESENT PROBLEMS MOST DIFFICULT IN THE INDUSTRY'S HISTORY

Concluding his testimony, Dr. Conway said, "The street railway industry stands at the greatest crisis in its history. The problems now presented are far more serious than those which were faced when the horse cars were abandoned and the unknown field of electricity entered. The problems in that day were purely mechanical. The problems of to-day are far more serious, for they go to the economic basis of the business. It is now clearly demonstrated that to endeavor to perpetuate such an unsound basis as the flat fare is an economic fallacy. The entire industry must be reorganized and it will require courage and willingness on the part of the electric railway officials and the public service commissions to try experiments and assume the responsibility for possible mistakes, in order to work out the solution of the present problems before neglected maintenance and the failure to keep up with the natural growth of the community by providing new cars and other facilities overwhelms the operating department, destroys public confidence and forecloses the future of the business."

Halford Erickson, consulting engineer and formerly a member and chairman of the Wisconsin Railroad Commission, presented a written statement to the commission in which he reviewed the principal needs of the industry, pointing out the emergency and the necessity for immediate relief. He recommended the sliding scale fare franchise with state regulation. He pointed out the wholesome stabilizing effect of the service-at-cost permit, for any demand for a wage increase is immediately reflected directly to the public in the way of a fare increase. This makes of public opinion a jury which will be as fair to the company as to labor, a condition which does not now obtain.

An abstract of Mr. Erickson's formal statement appears elsewhere in this issue.

At the conclusion of Mr. Erickson's testimony, an exchange of courtesies between Counselor Warren and Chairman Elmquist was followed by the announcement of the latter that the hearing would be adjourned until Aug. 4.

President Pardee Discusses Hearings

JOHN H. PARDEE, President of the American Electric Railway Association, was asked last week by a representative of this paper to express his opinion of the hearings. He said:

"We are very much indebted to the Federal Electric Railway Commission for giving us every facility for presenting our case. The members of the commission manifested a deep interest in the evidence presented, and to allow us to give all of our testimony held sessions in the evening during the last week.

"It is the opinion of the Committee of One Hundred that full evidence on every phase of the situation which is hampering the electric roads has been presented at Washington, and so far as the members of the committee have heard from other railway men, they believe also that the subject has been fully covered. A brief will be presented, summarizing the testimony, but this will be after the hearings have terminated.

"The Committee of One Hundred will be represented at the hearings of the Federal Electric Railway Commission to be held during the week beginning Aug. 4, and also those during the week beginning Aug. 11, and it is just as important for railway men to be in attendance at these hearings as when the committee presented its case. It is also the expectation of the subcommittee on information and service to continue the publication of the bulletins giving a digest of the evidence presented until all of the evidence is in. This week, two bulletins will be published, containing some comments by the daily press on the hearings and also some testimony not heretofore included.

"Beginning next week, the daily issue of the bulletin will be rebegun. The edition of each issue of this bulletin has been about 50,000, and it has been sent to railway companies all over the country and to others who have expressed a desire to have it. The companies seem well pleased with this service."

Commissions Have Failed Properly to Administer the Intent of the Law*

BY RICHARD SCHADDELEE

Vice-President and General Manager United Light & Railways Company, Grand Rapids

DURING February, 1918, the President, the Secretary of State and the Comptroller of the Currency of the United States issued an open letter urging the various rate regulating bodies to give prompt and adequate relief to the utilities under their jurisdiction, where need for relief was reasonably shown. The primary purpose of these appeals by the government was to enable these utilities to function efficiently and adequately in response to the enormously increased demand for utility service caused by the conditions created by the war. The Government realized the vast importance of this in its prosecution and winning of the war.

Previous to this time the utilities as a whole had patriotically and enthusiastically responded to the demands for increased service and facilities, and many had strained their credit to or beyond the breaking point in raising the vast sums needed for additional service, facilities and equipment. The interests of the investors were relegated as of secondary importance

*Abstract of statement presented to Federal Electric Railway Commission in Washington, July 24, 1919.

to the winning of the war and to patriotic duty. Yet as an example of the treatment received from the regulatory commissions, the following is typical.

In August, 1918, a street car company filed with a state commission a rate schedule providing for a 7-cent car fare to replace the existing 5-cent fare. After a so-called valuation of the visible physical assets of the company by the engineers, a long drawn out audit of the books by the auditors and after several hearings, the commission finally decided, on July 9, 1919, that the company did not need relief. Thus the idea of this commission of promptness is a decision in one year's time from the filing of the application, and its idea of adequate relief is no relief at all. This is given merely as a very recent illustration of the failure of some commissions to be responsive to national emergencies.

The failure of commissions and other rate regulating bodies properly to function is, in my opinion, due to the personnel of these commissions, their manner of appointment and the influences they are subject to, much more than to the laws themselves. The object of the people in passing these laws through the legislatures of the various states was to insure the public good and adequate service at rates reasonable and fair to both the customers of, and the investors in, these utilities. Ultimately, a fare that is not adequate or fair to the utility, is not fair or adequate to the public, for the reason that an inadequate fare will result in inadequate service and facilities.

I am sure that the American people desire that the utilities serving them shall be empowered to collect a charge or fare that will enable them to earn their fair and reasonable operating expenses, taxes, depreciation, etc., and in addition a sufficient rate of net return on their investment to make the investment in street railways attractive to the investor.

Of all the factors to which the present critical condition of the electric lines have been attributed, there is only one against which the commissions cannot afford us protection. This single exception is the competition of the private automobile. And this factor is the one that, in my opinion, is least responsible for our critical illness.

The automobile has fastened the riding habit on the public, has accustomed it to rapid transit and thus has been rather beneficial to us than otherwise. The electric lines with which I am connected or have knowledge of are collecting more fares now than ever before. Our gross business is very satisfactory and will continue to increase if we receive enough money to restore our credit with the investors.

The electric railways are not sick and will not die by reason of being economically obsolete, or superannuated, nor by reason of natural decay. If these were the causes of our illness, or if we were threatened by extinction by a superior mode of locomotion that can perform our functions under the same restrictions as to fares, and under the same requirements as to service, taxes, etc., then in that case it would be useless to ask or request for relief. For no private interests can successfully resist real economic evolution.

Electric railways are now more necessary to, and enter more intimately into, the social and industrial life of our urban, suburban and interurban population than ever before, even if a small percentage of this population is not now as exclusively dependent upon electric railway transportation as it was ten or twenty years ago.

The automobile has been a great factor in relieving congestion in cities by encouraging suburban residence. People who live in the suburbs feel that the automobile makes them independent of the electric lines, yet they will use them habitually, using their car or our cars as their convenience or caprice dictates. Our present critical illness is entirely by reason of an artificial cause, and that is insufficient financial nourishment.

REGULATORY BODIES HAVE BEEN DILATORY

I am sure that your commission is convinced that these state commissions as a whole have wholly failed to live up to expectations and the intent of the people in establishing them. Inasmuch as they were given unlimited authority, they must now assume full responsibility for their failure.

The failure of the commissions to function effectively is due to many and widely different causes. The main reason for the failure of the commissions to function effectively is the fact that they have not been immune from political influence as the people expected they would be.

This summer, in at least two states, to my personal knowledge, numerous bills were introduced either to abolish these commissions or otherwise greatly to curtail their power. In one state the commissioners were compelled to defend themselves against the most ridiculous charges prepared against them by municipal officials and contemptible, self-seeking politicians. The mayor of one city bitterly and unjustly attacked the commissioners, and then sought re-election as mayor shortly afterward, appealing to the people to vote for him and he would see to it that the commission would be abolished, that car fares would not be raised, etc.

In the primaries this man was snowed under, being the low man of three candidates, which indicates how the people feel about these matters.

These commissioners are but human. As a rule they like to retain their positions, and under the conditions cited they cannot be expected to make purely judicial decisions without fear or favor. If they are to function effectively, they must be absolutely removed from political influence and they must be secure in their tenure of office as long as they execute their duties ably, justly and fearlessly.

Under present conditions the commissioners have no backbone, they have no courage, they are not free agents. They are much more influenced by what the local politicians and officials tell them than by what the people are thinking. They hear the words of designing politicians, but they do not know what the people are thinking.

The local politicians themselves are usually entirely wrong as to what the people desire in these matters, as they are much more influenced by what fifty people tell them than by what fifty thousand people do not tell them.

The commissions show by their actions and decisions that they are consciously or unconsciously dominated by the theory that their duties are much more largely toward the people than toward the company and that the people established them mainly as rate reducing bodies instead of rate regulating bodies. Rate increases were practically unknown before the war and the habit of reducing rates like other habits is not easy to break.

Rate reductions have been made with more alacrity than rate increases. Reduced rates are put in effect for indefinite periods. Rate increases are authorized

for one year or for 6 months, and the companies are required to file quarterly or monthly statements with the commissions and with the municipalities, so that as soon as the company shows its head above water, a properly administered kick will again submerge it.

These conditions have paralyzed all incentive to economy in the utility business, and no staple financial conditions can be created until they are remedied. The biggest handicap to a utility is to appear before a utility commission with a record and data showing effective operation and careful, economical management. The result is verbal commendation, but the establishment of a lower rate than is allowed another company not so well operated or managed.

There is really now no incentive to economy, nor any incentive to expend effort and money to stimulate expansion of the business.

If money is spent in improved equipment to effect material economies in operation, and thus increase your rate of return over the six per cent or seven per cent allowed you, the commission will eventually confiscate this excess and maybe more and will also confiscate part of the capital you have invested to procure these economies, fixing a so-called depreciated value on the property representing this capital.

In applications for increased fares or rates the commissions examine too much in the past and not enough in the future or present. They are willing to base their decisions on anticipated decreases in the cost of labor and material, but never on anticipated increases in the cost of these items.

Neither the state commissions nor the War Labor Board understand that there is a physical law which is also an economic law, viz.: that the total outgo cannot be in excess of the income. That is the reason we denied the right of the War Labor Board to fix the wages we should pay unless it or some other authority could at the same time regulate our income to enable us to pay the increased wages. Yet my sympathies are all with our workingmen. They have been and are now in the same position as we are, or nearly so.

The local authorities and the commissions must be made to realize that if they withhold prompt and adequate relief from us, they are also withholding prompt and adequate relief from our workingmen and all of our employees.

They must be made to realize that commodity prices have not yet reached the top, and that, under our economic system, the price of labor follows the upward trend of commodities and does not precede it, while on the downward trend the reverse is true. So we are facing increases in the cost of labor; labor must have and is entitled to increases, and both the people and their representatives, as well as labor itself, must recognize that the real employers who must pay these increased wages are the patrons of these utilities.

The fact that a commission decides that a 6 per cent or 7 per cent investment is reasonable does not compel an investor to accept that view and cause him to invest his money on that basis. Commissions have apparently acted on that theory. Neither the commissions, nor the legislatures, nor Congress, nor the President can compel the flow of capital in directions where capital does not desire to go.

This is also an economic law that the commissions must take cognizance of and act upon. The solution of our problem lies in the establishment of mutual confi-

dence between, not only the people and the utilities, but also between the commissions and the people. The spirit of mutual confidence must pervade the relations of all these three parties.

If both the companies and the commissions will cultivate closer relations with the people and take them into their confidence, our problems will be finally solved and solved right.

I have great confidence in the common people and their high sense of justice and fair play, but very little in the political demagogues that infest every community. Where there is real antagonism on the part of the people against the utilities, the blame can be put usually on political demagogues or on the companies themselves, or both. The politicians, demagogues and newspapers often succeed in inciting hostility against certain utilities, when there is no real reason for such hostility. This is because they talk to the people very much, and the utilities talk to the people very little.

Financing, State vs. Local Regulation and Service-at-Cost Plan*

BY HALFORD ERICKSON

AFTER covering in a very thorough manner the history of development of the industry and the conditions which have placed it in its present financial predicament, the author gets into the subject of what are the costs involved in determining a proper rate of return. On this he has to say in part:

"A living wage in any industry consists of earnings that are high enough to attract all the capital and all other factors of production that are required in the business. In the street railway and public utility fields this means that under normal conditions the earnings must be high enough to yield reasonable returns for the operating expenses including taxes, depreciation, and interest and profit on the fair value of the plant and the business.

"Reasonable returns are represented by fair prices for all the labor, services, materials, supplies, and other things that are needed as well as by fair prices for the capital employed and for the enterpriser or employer."

Taking up the question of what is required in order to attract capital to the electric railway field, the author writes:

"The fact that investment securities must be protected by more property than their par value and by much greater net earnings than the ordinary interest and dividend charges shows:

"1. That the cost of capital is represented by the amount of the net earnings that are required in order that the securities which thus represent the capital may sell on the ordinary investment or income basis, and

"2. That the rates charged by a utility for the service it furnishes must in the long run be high enough to yield such net earnings."

This is followed by an outline of the investment conditions in these respects which prevailed for several years prior to the war; after which the cost of obtaining capital for public utilities during this period is illustrated.

"Twelve representative, 20 to 30-year, first mortgage bond issues covering gas, electric and street railway

*Abstract of statement presented to Federal Electric Railway Commission in Washington, July 25, 1919.

plants brought out before the war and bearing interest at the rate of 5 per cent, were placed on the market at prices under which they yielded the investors from something over 5½ per cent to more than 6 per cent. The cost to the issuing companies, when discounts, commissions and other expenses averaging about 7 per cent are included, amounted to about 6½ per cent. These issues did not cover more than about one-half of the book values of the property and were protected by net earnings that averaged considerably more than twice as much as the amounts required for interest on the bonds.

"During the same period fifteen, 25 to 30-year, representative second mortgage bonds covering similar properties bearing rates at 5 and 6 per cent were offered at prices which would net investors about 6.7 per cent. On these bonds the accounts and selling expenses amounted to about 8 per cent on the par value of the bonds. These costs when pro-rated on the life of the bonds brought the cost of the capital to the utilities up to over 7 per cent. These issues were protected by half again as much property as their par value and by net earnings that amounted to about twice as much as the interest charges.

"The situation with respect to older issues is about as follows: A group of 27 five per cent first mortgage bonds, most of which are underlying liens upon the whole property and all of which are underlying liens upon at least a part of the property were taken in the 1916 markets by investors at prices upon which the approximate yield was 5½ per cent. There was outstanding about \$170,000,000 of these securities, back of which stood a book value of nearly \$420,000,000. It is clearly indicated by these figures that these issues cover much less than one-half of the book value of the properties. Net earnings available for these issues amounted to over \$27,500,000, of which sum only \$10,320,000 was absorbed by interest and sinking fund charges leaving an excess for safety of \$17,180,000. Interest charges on these bonds were thus earned 2.7 times over and the margin of safety was 63 per cent.

"A small group of long term 4 per cent bonds whose security is rated highly were similarly demanded by investors at a price to yield approximately 5.09 per cent. The average income available annually for the past five years was three times the interest requirements.

"Another group of about forty utility bond issues, protected on the average by not far from twice as much property and earnings as the face value of the bonds and the interest charges thereon, have sold at prices on which the yield averaged over 6 per cent. The cost to the utilities, however, when all discounts, commissions, outlays and deductions of about 8 per cent are included, increased these figures considerably, or to about 7 per cent.

"A group of eleven collateral trust securities, eight bearing 5 per cent interest, two bearing 4 per cent, were issued to the extent of nearly \$120,000,000. The security of these issues is rated high (by Moody). These issues yield approximately 5.84 per cent on an average price, and the interest is covered three times by the income available on a five-year average basis.

"A great many five-year note issues have of late years been offered at prices which would yield investors from 5 to 7.5 per cent. In many of these cases the issues bear interest at 6 per cent. The discounts and other expenses amounting to about 10 per cent make the cost to

the utilities in practically all cases more than 8½ per cent per annum. Many such note issues were undertaken for the purpose of postponing comprehensive refinancing plans to a time when long time securities would find a market, and when it is expected that the money market will be easier so that permanent long time mortgages or bonds could be offered at a less financial sacrifice.

"Several preferred stocks protected by ample assets and by net earnings amounting to from 10 to 30 per cent thereon have sold at prices on which they yielded from a little less than 7 per cent to about 8 per cent. With discounts and other expenses, the capital obtained on these issues cost the utilities at least one per cent more than this. Twenty-nine preferred stocks amounting to about \$170,000,000, protected by earnings that amounted to 2½ times the ordinary direct dividend charges sold on a 7 per cent to an 8 per cent income basis.

"The public utility securities which have thus far been discussed belong in large part to those large utilities which are fairly well known and for whose securities there is a fairly well developed market. They represent the leading listed and unlisted securities in all stock exchanges and prominent markets upon which reliable data can be secured. They are mainly of an active class, although some are included, which, though somewhat inactive, are of proven worth.

"All of these facts clearly show that for several years up to the earlier years of the war, the utilities could not obtain all the capital they needed on normal terms and conditions unless the net earnings for returns on the investment amounted to at least 8 per cent on the fair value of the plant and the business.

"These facts show further that during the same years the net earnings for returns did not on the average amount to much more than about half of this or to only about 4 per cent.

"It is further disclosed that the unsatisfactory conditions in which the street railways found themselves at the beginning of the war have steadily grown worse since then. During the past two years they have earned but little more than enough to cover the operating expenses.

"It is clear to all that this is a situation that cannot last. No one will continue to render service at a loss. Unless the street railways are allowed to earn reasonable returns the service is certain to become so bad as to be unbearable. The choice therefore lies between good service at reasonable rates and poor service that is gradually growing worse at the existing rates. As good street car service is indispensable in all growing cities the choice is plain."

LOCAL VERSUS STATE COMMISSIONS

Concluding from this that the electric railways must have assistance, since they are precluded from helping themselves because of the various regulatory limitations, the author urges that full authority be delegated to state or local commissions to deal with the situation. He then treats at some length upon the relative merits of local and state commissions, his thoughts being fairly completely summed up in the following:

"Experience has taught us that the problems of regulation are so complex in their nature, so far reaching in their effect, so persistent in their tendencies that they cannot be successfully handled by any but the strongest and best equipped commissions. Such commissions should be backed up by comprehensive laws

and a strong government as well as by adequate appropriations. Less well equipped departments than this will not be able properly to cope with the work. Poorly equipped departments may cause more harm than good. For, lacking the necessary information, their orders are likely to go either too far or else not far enough, and in these and other ways seriously disturb many sensitive industrial and commercial relations.

"This work can be carried on much more cheaply and much more effectively on a large scale by the state, than on a small scale by each local unit or city. The state can employ service experts, appraisers, accountants, statisticians and other assistants at moderate salaries and keep them constantly employed. None but the largest cities can very well do or afford this. Most of the cities feel they cannot afford even occasional service of such experts. The state has broad powers and wide jurisdiction. The information it obtains covers large areas and many plants, and so do the uniform practices and rules which it puts into effect and enforces. Its powers are state wide. The activities of the city on the other hand cannot extend beyond the city limits. Its powers therefore are limited, the information it can obtain is restricted, and so are the rules it can put into effect and enforce. It is in its very nature debarred from doing and seeking most of those things which are essential to effective regulation, economically administered.

"As local units have nothing to say beyond their boundaries, many utilities would have to be regulated by as many bodies as the units they serve if the local principle of control should be carried out. This would obviously be so impracticable that even the most ardent supporters of local control shrink from advocating it.

"A state commission, on the other hand, not only has the necessary jurisdiction over each of the units served, but it is in position to view the situation in a much broader light, and is better equipped for such regulation from every other point of view than local units.

"It is often said that the regulation of municipal utilities through a state commission is undemocratic and deprives the people of power which is theirs by right. This charge is baseless. All power of government and consequently of regulation is vested in the state. The city is simply a creature of the state, given certain powers for the purpose of aiding the state in its functions. Can anyone truthfully say that a city council is more democratic than a state legislature? Both are elected by the people and responsible for their acts to the people.

"In thus considering the source and nature of regulation, the character and scope of the work involved therein, the cost of property administering it, the equipment that is necessary to that end, the jurisdiction required, past experience in these matters, and other conditions, the conclusion would seem inevitable that from the point of view of public interest, state regulation is better and more advantageous than local control."

HOW SHALL THE REMEDIAL WORK PROCEED?

Assuming that all needed power to cope with the problems of relief are supplied to state commissions, the author proceeds to a discussion of how this relief can be administered. He points out that the usual program followed by commissions in rate cases involves necessarily great delay before all the considerations

can be thoroughly taken into account and is hence too slow for the present emergency. In order to avoid such delays he suggests that:

"The order of the commission might go far enough to provide for a so-called sliding scale of rates which rates would automatically change with changes in the cost of the service. When the operating expenses increased so as to leave less for depreciation and interest than the amount determined upon, the rates would go up. When the operating expenses fell so as to leave more for depreciation and interest than the amounts determined upon for these purposes the rates would move downward. Such rates would represent true cost of service. The rates first established in this manner would cover the cost of the service as it stood at the time.

"Such sliding scale rates if fairly applied would automatically and fairly meet all necessary changes in the cost of operation, whether these changes were brought about by changes in the prices of labor and material or by additions to the plant and the amount of business obtained from new extensions of the lines. Such an arrangement further would relieve the commissions from at least a part of their work, the controversies and other complications that are certain to arise in connection with all rate changes that are made under prevailing methods. It would operate promptly as well as automatically and would therefore prevent many unjust and embarrassing delays. Through proper examinations and supervision of the accounts, records and practices, such sliding scale, service-at-cost rate arrangements can also be equitably applied without any material increases in the cost of regulation.

"The additional amount of work involved in so extending and broadening the orders of the commission is not great. This extra work would largely consist of determining how much the rates should be changed at each step. With zone fares and ticket systems this extra work would also have to be extended to cover the form of the rate schedules or the proportion in which each specific rate or part of a rate should be effected by the change in the cost. This extra work might also have to include a somewhat closer supervision over the accounts, records of the plants, and over certain other practices and rules than would otherwise be necessary. Such work as this however, the commissions are already equipped for doing.

"It is obvious that service-at-cost rates may offer many advantages. Such arrangements, if carefully entered into and strictly complied with, would greatly reduce the risks involved in the business and therefore tend to lower the cost at which capital can be had. When once fully understood and entered into it is also likely that such agreements would be more cheerfully complied with than is the case with agreements and orders in which sliding scale provisions of this kind are not included."

The Youngstown & Suburban Railway, Youngstown, Ohio, which operates between Youngstown and Leetonia, some months ago installed coasting recorders on its cars. Before the recorders were installed, the consumption was 5.66 kw.-hr. per car-mile. In the first month afterward this was reduced by 10.06 per cent and in the second month by 14.31. When the latest report was received the coasting time amounted to 41 per cent of the total.

AMERICAN ASSOCIATION NEWS

Demands for Exhibit Space

Already 51,000 Sq.Ft. Has Been Leased—Big Meeting Expected

SECRETARY BURRITT announced on July 29 that 51,000 sq. ft. of exhibit space at the October convention has already been leased. This insures the success of the meeting, as in 1916 the total amount of exhibit space taken was 57,000. The exhibit committee expects to lease more than 6,000 sq. ft. of space before October and thus exceed the 1916 figure.

MEMBER COMPANIES WHICH, TO JULY 26, HAVE BEEN ASSIGNED SPACE FOR THE 1919 CONVENTION

American Abrasive Metals Company	Heywood Brothers & Wakefield Company
American Brake Shoe & Foundry Company	Hubbard & Company
American Car & Foundry Company	Indianapolis Switch & Frog Company
American Steel Foundries	Ingersoll-Rand Company
Albert & J. M. Anderson Manufacturing Company	International Register Company
E. C. Atkins & Company, Inc.	International Steel Tie Company
Atlantic Hand Brake Corporation	Irving Iron Works Company
Baldwin Locomotive Works	Jefferey-DeWitt Insulator Company
Bethlehem Steel Company	H. W. Johns-Manville Company
The J. G. Brill Company	
The Buda Company	
Carnegie Steel Company	Lincoln Bonding Company
Cheatham Electric Switching Device Company	Locomotive Superheater Company
Chicago Pneumatic Tool Company	Lorain Steel Company
Chicago Varnish Company	Marlin-Rockwell Corporation
Consolidated Car Fender Company	Metal & Thermit Corporation
Consolidated Car-Heating Company	Midvale Steel & Ordnance Company
Curtain Supply Company	More-Jones Brass & Metal Company
Drew Electric & Manufacturing Company	Nachod Signal Company, Inc.
Duff Manufacturing Company	National Brake Company, Inc.
Dunbar Manufacturing Company	National Car Wheel Company
DuPont Fabrikoid Company	National Lock Washer Company
O. M. Edwards Company, Inc.	National Pneumatic Company
Edgewater Steel Company	Newman Clock Company, Inc.
Electric Railway Improvement Company	R. D. Nuttall Company
ELECTRIC RAILWAY JOURNAL	Ohio Brass Company
Electric Service Supplies Company	Ohmer Fare Register Company
<i>Electric Traction</i>	The Okonite Company
The Ellcon Company	Oxweld Acetylene Company
Galena-Signal Oil Company	The Pantasote Company
General Electric Company	Perey Manufacturing Company, Inc.
Globe Ticket Company	Pratt & Lambert, Inc.
Gold Car Heating & Lighting Company	The Q. & C. Company
Griffin Wheel Company	The Rail Joint Company
Hale & Kilburn Corporation	Railway Improvement Company
Hauck Manufacturing Company	Railway Materials Company
	Railway Track-work Company

Railway Utility Company
Reade Manufacturing Company
Rooke Automatic Register Company

Safety Car Devices Company
Safety Nut & Bolt Company
Schutte & Koerting Company
Shanklin Equipment Company
Sherwin-Williams Company
Simmons-Boardman Publishing Company
Peter Smith Heater Company
Standard Underground Cable Company
Star Brass Works

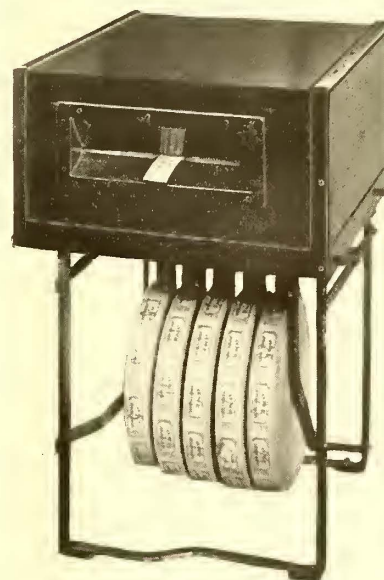
Taylor Electric Truck Company
Templeton, Kenly & Company, Ltd.

Thayer & Company, Inc.
Trigger Lock Reversible Controller Finger
Trolley Supply Company
Tubular Woven Fabric Company
Tuco Products Corporation
United States Graphite Company
Universal Lubricating Company
Western Electric Company, Inc.
Westinghouse Electric & Manufacturing Company
Wm. Wharton Jr. & Company, Inc.
Wheel Truing Brake Shoe Company
The White Company
Wilson-Imperial Company

Ticket Issuing Machine for Fare Collection

Detailed Description of a Machine Which Is Intended for Prepayment or Postpayment Zone System of Fare Collection

A NEW type of ticket-issuing machine has just been perfected by J. F. Hibner of the Automatic Cashier Corporation, Brooklyn, N. Y. It provides for issuing and cancelling tickets to meet the conditions encountered in prepayment and postpayment zone systems.



TICKET ISSUING AND CANCELING DEVICE FOR VARIOUS SYSTEMS OF FARE COLLECTION

The accompanying illustration shows a machine built for a five-zone prepayment system. It provides for five rolls of tickets, with the different denominations of fare that would be necessary to be collected for the complete route. The rolls of tickets are supported underneath the ticket-issuing mechanism, and the passenger, on paying his fare, receives the ticket through a slot at the front of the machine. To issue the tickets the conductor presses a lever, and this operation automatically stamps the number of the zone on the ticket issued. There is a cylinder in the machine which carries the several zone numbers, and is controlled by a lever on the back. As a new zone is entered, the cylinder is changed by the conductor by the movement of the lever, so that the punching on the ticket will correspond to the number of the zone in which the car is operating. The mechanism cannot be reversed or set back. This cylinder perforates the printed tickets, so that at each issue of a ticket the zone number is

punched automatically, providing a positive record of every transaction. In addition each trip is registered. The tickets are numbered consecutively, each roll having a different series of numbers.

With the prepayment system a ticket indicating the zone and the amount paid by the passenger is issued when the car is boarded, and as the passengers leave the car the tickets are collected by the conductor and canceled by the same machine. This canceling is accomplished by inserting the tickets in a slot and operating a canceling lever. The number of the zone which is punched on the ticket in the canceling operation will be the same as for the tickets issued in that zone.

For a postpayment system of fare collection only a single roll of tickets is necessary, and the machine can be operated either by the conductor or the passenger. The pressure of a lever issues a ticket indicating the zone in which the car was boarded, and the passenger delivers the ticket to the conductor at his destination. The conductor cancels the ticket by inserting it in the machine and charges the passenger for the ride as indicated from the point of destination. For front-entrance and rear-exit cars, the issuing part of the mechanism is set at the front of the car and the canceling mechanism in the rear. Both are connected and interlocked so that they work as a unit.

Springfield Street Railway Starts Energy-Saving Campaign

ON JUNE 1, after a preliminary study of the energy consumption per car-mile on the property as a whole, the Springfield (Mass.) Street Railway inaugurated a comprehensive energy-saving campaign with the aid of power-saving recorders. The 225 cars which the company has in active service were equipped with this device. Its inventor, William Arthur, New Haven, Conn., was engaged to act in an organizing capacity in co-operation with the company officials. He is giving general supervision to the details of record keeping and instructional methods used.

SPRINGFIELD STREET RAILWAY CO.

ALL DIVISIONS
GENERAL ORDER NO. 18

ISSUED JUNE 1, 1919

EFFECTIVE JUNE 1, 1919

TO MOTORMEN AND CONDUCTORS:—

The cost of every item used in operation of the Street Railway has gone up, electricity, wages, materials and in fact everything, yet the public pays only a little more for a ride than it did years ago. It is then necessary to further economize in every department.

One of the chief items of expense is the electricity used to run and heat the cars. When we save electricity we save money. How can electricity be saved?

The way to save electricity is to coast more, using good judgment in starting and stopping the cars, in order to give more time for coasting.

If you save only four seconds by notching up a little quicker than usual and you save another four seconds by using good judgment in applying the brakes and then if the conductor saves two seconds in giving the starting signal promptly, that will make a total of ten seconds saved per stop. This will enable you to coast for ten seconds longer than before and yet run on time. **All the time the car is coasting you are saving power.**

This does not mean that you should skip notches and spin

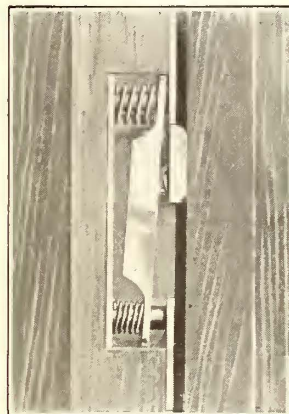
PART OF FIRST PAGE OF FOLDER USED IN
ENERGY-SAVING CAMPAIGN

Preliminary to the campaign a small folder was issued to the motormen and conductors, containing general order No. 18, relative to energy saving. This was signed by H. M. Flanders, general manager. It directs attention to the extreme need for economy confronting electric railways everywhere and explains the company's plan for encouraging it on the local property. It states that cash prizes of from \$2 to \$5 are to be awarded every three months to the motormen on each line on a basis of the record made. It will be possible for from 60 per cent to 70 per cent of the motormen to participate in these prizes.

The issuance of the circular was followed by a meeting, to which all motormen, conductors, inspectors and others interested were invited. The subject of efficient car operation was explained and other matters affecting the repair and inspection department were also taken up. C. V. Wood, president of the company, arranged for a similar illustrated talk to be given before the Springfield Rotary Club.

New Window Sash Brake Device

THE device shown in the accompanying illustration has just been placed on the market by the O. M. Edwards Company, Inc., Syracuse, N. Y., for retarding



COMPRESSION BRAKE
DEVICE AND STOP FOR
WINDOW SASH

The Philadelphia Rapid Transit Company has purchased 72,000 of these devices for cars being reconstructed on its system.

the downward movement of car window sashes. As indicated in the illustration there are two springs of different strengths with the heavy spring at the top of the device. In raising the sash, a movable shoe slides to the bottom due to the friction on the window casing and compresses the weaker spring. This allows the sash to be raised readily and at the same time prevents all rattle. In lowering the sash, the shoe automatically slides to the top and compresses the heavy spring. This increased pressure gives sufficient friction to prevent the sash from falling, and at the same time holds the sash firmly against the outer stop when the window is closed.

New Type of Headlight Switch

A new headlight switch has just been placed on the market by the Crouse-Hinds Co., New York. This is provided with "Off," "Permanent Dim," "Temporary Dim," and "Full Glow" positions. The switch is self-contained and dust tight. In turning the switch off, the "Dim" position is reached before the "Full Glow" position. This gives the lamp filament a chance to heat up before full current is passed through it.

The "Temporary Dim" position is provided for use in passing other cars or when picking up signals. The motorman holds the switch handle in the "Temporary Dim" position until he has passed the other car or signals, when, by releasing the handle, the switch automatically snaps back to "Full Glow" position.

Recent Happenings in Great Britain

Inquiry Into London Traffic—100 New Cars for District Railway—Glasgow Has Semi-Jubilee

(From Our Regular Correspondent)

The outstanding feature of the month of June in traction matters was the inquiry conducted by a select committee of the House of Commons into the problem of congestion in London passenger transport. Many witnesses have been examined and a mass of statistical and other facts has been produced. The first branch of evidence was that of leading officers of the Metropolitan Police who produced figures and information as to the volume of general street traffic. They had, however, no suggestions of importance in the way of remedy.

TRAFFIC BOARD SUGGESTED

An important witness who followed was Sir Lynden Macassey, secretary of Royal Commission which in 1905 recommended the formation of a traffic board for the whole of Greater London. He adhered to the view that in such a board, armed with full powers, lies the solution of many of the difficulties. It was noteworthy that many other witnesses agreed that such an authority should be set up.

Evidence was next heard on behalf of London County Council Tramways, where the difficulties encountered by the undertaking owing to the war were set forth. Hostile questions were put to the witnesses as to the great increases of tramcar fares, but the witnesses maintained that the increases are necessary to meet the higher expenses. Many of the fares have been increased 100 per cent, but the working expenses have increased by more than that, and the immediate prospect points to 15d. per car-mile or more.

Although the fares have been increased, they do not reach the statutory maximum of 1d. per mile. The inference to be drawn is that before the war the fares were too low, and this is in fact self-evident because it was not possible to put aside sufficient allowances for reserve, renewals, and depreciation. It was also brought out that the County Council has plenty of cars if it could only get the labor and materials to put them all in repair.

AVERAGE FARE INCREASE 33 PER CENT

A great deal of interesting evidence was afterwards given by representatives of the "Combine" which owns the underground railways and the London General Omnibus Company. In 1913 the average receipts per passenger were 1.47d. while in 1918, owing to increased fares, they were 1.83d. The average rate of dividend in the same period rose from 3.18 per cent to 3.59 per cent. The combine did not object to having a traffic board. The average increase in fares had been 33 per cent. The length of journey for a penny varied from a mile to a mile and a half.

In regard to motor omnibuses, the pre-war cost of a vehicle of this sort

was £682, while now it is £1,170. These were the prices of the associated manufacturing companies, but new railway cars had to be purchased outside and prices in that case had increased by 200 per cent. Five hundred new buses are to be built with lower floors and seating accommodation for forty-six passengers each instead of thirty-four. The doors will be wider so as to allow passengers to get on and off simultaneously.

An account was given of improvements contemplated on the underground railways, including the purchase of 100 new cars for the Metropolitan District Railway. The motor cars will have eight doors and the trailer cars six, so as to reduce time of loading and unloading. It was also brought out that the military lorries now being used as omnibuses to diminish congestion were being worked at a loss of 30s. a day each. In regard to railway extensions, some witnesses put forward the consideration that besides the difficulty of the high cost of labor and materials, companies are deterred through uncertainty as to the future owing to the prevalent talk about nationalization.

GOVERNMENT ISSUES FARE REPORT

Apart from the evidence presented to the Parliamentary committee, an independent report of the fares and expenses of the London General Omnibus Company has been issued as a government paper. From this it appears that the working expenses have increased from 7.1d. per mile-run in 1913 to 14.05d. in 1918. The report finds that the increased fares are fully justified by the increased working costs.

On July 1 the Glasgow Corporation Tramway undertaking celebrated its semi-jubilee, the Town Council having taken over the railway from the original company on July 1, 1894. It is well known in America that the business is one of the most successful municipal tramway undertakings in the world. As ample details of the system were recently published in the *ELECTRIC RAILWAY JOURNAL*, it may be sufficient to say that during the twenty-five years 64 miles of track have grown to nearly 200. Electrification was completed in 1901. The capital debt was paid off more than a year ago.

The Glasgow tramway accounts for the year ended May 31, 1919, show some interesting results, and the tremendous effect of the increased working expenses is brought out. The surplus to be handed over to the "Common Good" is only £14,772, as compared with £177,552 at the end of the previous year. The total receipts were £1,531,319 against £1,412,635, but the expenditure came to £1,249,998 against £1,044,183. The great increases in cost were in materials and wages. In disposing

of the surplus, £183,543 is allotted to the renewals and depreciation fund compared with £123,894, but the increase allowance is regarded as none too large in view of the high prices and wages, not to mention arrears of maintenance. It is after this and all other net revenue account allowances that the net sum mentioned above for the "Common Good" remains. If interest and sinking fund charges had still been going on, the balance, if the same net revenue account allowances had been made, would have been badly on the wrong side.

EDINBURGH TAKES OVER RAILWAY

The Town Council of Edinburgh took over its tramway system on July 1. The property has been owned by the Corporation since 1893, but has been worked on lease by a private company. The corporation will as soon as possible convert the undertaking from cable to electric traction. The valuation is £1,507,000 and the outstanding capital indebtedness £470,000. When the change-over has been completed the only cable railways left in Great Britain will be the Glasgow District Subway and some short gradient lines.

The accounts of the London County Council Tramways for the year ended March 31 last, which have just been issued, show that the total revenue was £3,578,256 and that the working expenses were £2,858,414, leaving a surplus of £719,842. For the preceding year the figures were respectively £2,932,140, £2,128,686 and £803,454. After deducting interest on capital, sinking fund contribution, income tax, etc., the net credit balance is only £8,069, compared with £95,559 in the previous year. In the earlier years of the war, however, there were deficits. Nothing has been added to the renewals fund for several years except the small net credit balances. It is hoped, however, that the recent large increases in fares will enable the undertaking to meet the great rise in working expenses and to show a more substantial credit balance. The system extends to 149 route-miles, nearly all double track, of which 122 miles are on the conduit system. Nearly all the rest is overhead wire. The number of passengers for the year was more than 636,000,000, an increase of some 40,000,000 over the previous year.

COMMUNICATIONS BILL CHANGED

In the House of Commons in the beginning of July an important change was made in the Ministry of Ways and Communications Bill which has the result of disarming much of the opposition to the measure. Under this compromise, while the Minister may still order improvements in facilities at any harbor or dock, the owning authority may appeal to the Lord Chief Justice to appoint an arbitrator to decide whether the changes would be injurious to the undertaking. The provisions of the bill with respect to railways and tramways remain substantially unaltered.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

Ouster Order Overruled

Councilmen However, Refused to Recall Order Directing Railway to Cease Operating on Aug. 1

The City Council of Toledo, Ohio, meeting on the evening of July 28, by a vote of twelve to four, refused to rescind its ouster order against the Toledo Railways & Light Company. Immediately afterward an organization made up of business men of the city began the circulation of a petition for a referendum vote on the ordinance which ordered the railway company to cease operations at midnight on July 30.

ORDINANCE SET ASIDE

The campaign of the business men met with immediate success. In consequence petitions containing the names of 12,000 voters asking for the submission of the ouster ordinance against the company to a referendum vote were filed with the City Clerk on July 30. Only 7000 signatures were needed. The action in filing the referendum petition automatically set aside the ouster ordinance until that measure has been passed upon by the voters on Nov. 4. It is said that 50 per cent of the names on the petition were those of union labor men. As a body, however, union labor supported the ordinance to oust the company from the streets.

Members of the various civic organizations of the city volunteered as circulators of the petition.

The Council took under advisement an ordinance offered by the Toledo Railways & Light Company through Frank R. Coates, its president. This franchise is based upon the Cleveland plan of operation at cost plus a proper return on the investment, with some modifications to suit conditions in Toledo. It provides for a permanent settlement of the railway controversy and improved service pending municipal ownership of the line, extensions and other items which will be of benefit to the city.

CLEVELAND PLAN SUGGESTED

Under this ordinance a sliding scale of fares is provided, with an initial fare of 5 cents and 1 cent additional for transfer. The maximum is to be 6 cents with 2 cents for transfers, and the minimum, 2 cents with 1 cent for transfer, to be rebated when the transfer is used. The rate is to be based upon the receipts, expenses and cost of operation, plus the dividends on the stock.

In order that the city may exercise

supervision over the operation, as provided in the franchise, the Cleveland plan is followed in the provision that a street railway commissioner may be appointed at a salary not to exceed \$10,000 a year, to be paid by the company. Differences between the city and company, under the terms of this franchise, are to be arbitrated at the company's expense. The grant is to cover a period of twenty-five years, if the Council decides to submit it to a vote of the electors.

Community ownership on the basis worked several years ago may be exercised in case the city desires to take over the property. Apparently the terms of the proposed franchise are very fair and, if adopted, it will put an end to a long fight which has resulted in no benefit to either side.

The business men are anxious to find some way out of a difficult situation.

Tacoma Ready to Purchase Railway

The city of Tacoma, Wash., through the Council, has submitted two definite propositions to the Tacoma Railway & Power Company, one for the purchase of the railway lines of the company, based on a price of \$1,500,000, providing a vote of the people sanctions the purchase; and the other, a resolution passed by the Council to ask the people of Tacoma to approve at a special election the elimination of franchise obligations, including the 2 per cent gross income tax, paving obligations and upkeep of bridges.

The city is frankly taking the action in order that the railway might not claim, in the coming wage negotiations with its employees, that the company had no alternative but an attempt, through a cut in wages, to eliminate the deficit under which it is now operating. Under the offer to purchase, the company is asked to enter an agreement to assist the city in financing the sale of \$1,000,000 of public utility bonds with which to rehabilitate the railway system.

In the past, the company has put a valuation of \$6,000,000 on its properties. Fares were raised from 5 cents to 7 cents on recommendation of a city committee nine months ago, but reports of the railway to the city show that wage increases and decreased patronage more than wiped out the additional money from increased fares.

The men were to confer with officials of the company on July 25, to discuss wage contracts, which would expire on Aug. 1.

Detroit Problems Up

Engineers Report Against Subway—City Not Impressed With Tayler Plan Operated in Cleveland

In a recent report to the City Council of Detroit, Mich., and Street Railway Commissioners, a representative of the firm of Barclay Parsons & Klapp advised that a subway competing with the surface lines in the city of Detroit would not be practicable. It was considered that a 12-cent fare would be necessary for a period of about fifteen years if a subway were built and that only about 40 per cent of the people could be depended upon to pay that amount. On the other hand the Detroit United Railway could earn 6 per cent with a straight 5-cent fare.

MANY SUGGESTIONS MADE

A subway, rerouting of cars, additional trailers, more skip stops, and better service on interurbans, with unified system of transfers, were all suggested as aids to better traffic conditions.

The Public Utilities Commission of Michigan has issued an order authorizing Dean Mortimer E. Cooley of the College of Engineering, University of Michigan, to complete the valuation of the Detroit United Railway property and its subsidiary branches, to July 1, 1919, for the purpose of enabling the company to refinance itself and make extensions which are being planned. Present plans of the company are understood to include 14 miles of trackage, new equipment and rolling stock, mostly on the city lines of Detroit.

The Tayler system as carried out in Cleveland was not found to be entirely satisfactory by the delegation of street railway commissioners and Councilmen from Detroit who visited Cleveland to investigate. The delegates were advised that the success of the plan which is in operation in Cleveland depended to a great extent on the good will of the two parties involved, the city and the railway.

Although not entirely in accord on all details, the members of the Council favor a subway to relieve congestion in the downtown section.

FARE ARBITRATORS SELECTED

Frank H. Goddard, president of the F. H. Goddard Company, Detroit, contractor, has been agreed upon as the third arbitrator in the matter of inquiry into the rate of fare on Detroit lines under Judge Marschner's Circuit Court order. William H. Maybury, Detroit, is the city's appointee, and John J. Stanley, president of the Cleveland (Ohio) Railway, was chosen by the railway.

Surface and Elevated Lines Tied Up

All Chicago Walks Following Strike in Which Unionists Shout "To Hell With the Public"—Settlement Referendum Arranged

A compromise proposition on wages and working conditions was cried down by conductors and motormen of the surface and elevated roads in Chicago, assembled in mass meeting on July 28, and at 4 o'clock the following morning every car on both systems was at a standstill. No attempt was made by the companies to operate. The strike came at a time when race riots were resulting in the death and injury of hundreds of persons in the city.

STRIKE A SURPRISE

The people and the company officials were taken by surprise. At the close of business on Monday union leaders appeared confident that the proposed settlement terms would be accepted. The terms offered to trainmen on the surface lines were as follows:

Maximum wages to be advanced from 48 to 65 cents an hour, and all other union employees to get a 17-cent increase; eight-hour day with time and a half for overtime; 60 per cent of all runs to be completed in eight hours and all runs to be completed within fourteen hours. The elevated employees were offered a 67-cent maximum wage; an eight-hour day with time and a half for overtime; 70 per cent of all runs to be completed in eight hours and all runs within thirteen hours.

The union demands, formulated at a joint meeting on July 11, called for the following:

A maximum wage of 85 cents an hour, (2 cents higher on the elevated roads); an eight-hour day, time and a half for overtime; 80 per cent of all runs to be straight time, the balance to be completed within ten consecutive hours; no run, regular or extra, to pay less than eight hours; work on Sundays and holidays to be not more than six hours at a rate of time and a half; six-day week to be established for all employees; fall backs or dinner reliefs to be not less than thirty minutes.

These demands, together with the increased pay to all other employees, if granted, would cost the surface lines about \$14,000,000 additional a year and the elevated roads about \$5,000,000, it was estimated. This would mean a 9 or 10-cent fare.

NEGOTIATIONS ON SINCE JULY 12

Negotiations between the companies and the men looking toward a settlement were carried on almost continuously from July 12. At the direction of Governor Lowden the Public Utilities Commission acted as intermediary beginning on July 21. There was little evidence of progress for almost a week because the employees would not talk compromise unless the straight eight-hour day and time and a half for overtime were conceded. Presidents L. A. Busby and Britton I. Budd of the railroads showed the commissioners what these conditions would mean. It was evident from the start that the car riders would have to pay whatever terms were fixed.

A compromise offer was made by the companies on July 25, on a basis of the Detroit wage scale—60 cents an hour, with minor changes in working conditions. The union committee claimed to take offense at the fact that this offer

had been made public. At a meeting the following day before the commission they walked out and announced that a meeting of the men would be held July 28 to take action.

Governor Lowden again got into touch with the leaders of both sides, and arranged for a continuance of conferences on July 28. Company and union officials were in session all day with the utility commissioners and at last the terms named above were agreed upon as being a fair compromise. Public hearings were to have been held on July 29 for the purpose of fixing rates of fare sufficient to meet the additional expenses which were estimated at \$7,000,000 for the trainmen of the Chicago Surface Lines alone. It was conceded that this would require at least a 7-cent fare with the possibility of a 1-cent transfer charge or even an 8-cent rate. The new contract and higher fares were to become effective on Aug. 1.

"TO HELL WITH THE PUBLIC"

At the union meeting on the evening of July 28 it was evident from the start that a radical element was in control. They cheered the announcement of International Committeeman Bland that the eight-hour day and time and a half for overtime had been conceded, but when a further explanation showed some restrictions on these terms a big demonstration followed. Mr. Bland told them that the wage offer was the highest for any electric railway and the working conditions excelled by none. He asked for a referendum on the offer, but the radicals had their way. They would not concede forty-eight or even twenty-four hours notice to the public. They were told that their fight would not be with the companies, but with the public of Chicago. "To hell with the public. Let us strike now," they shouted. Without waiting for a formal vote the meeting broke up and a few hours later all cars had been returned to the carhouses, and the people faced the prospect of an indefinite use of jitneys, trucks, steam roads and "shank's mare."

NO ATTEMPT MADE TO OPERATE

The strike situation in Chicago marked time on July 30. According to the companies, no attempt will be made to operate either the elevated or the surface lines, so long as the strike continues.

There has, of course, been an enormous increase in vehicular traffic. This, coupled with the necessity for removing all the traffic police from the loop for race riot duty, has created a condition of traffic congestion such as never prevailed before. It is being urged by the police that all trucks and jitneys discharge and pick up passengers outside the loop district, where most of the business houses are located, in order to relieve conditions.

Everything on wheels has been called into service. The suburban steam lines were pretty well prepared for the strike, having profited by their experience of four years ago. Arrangements had been made so that equipment was rushed to Chicago from other cities immediately upon notice of the strike. Trains of eight and ten cars are being operated by the Northwestern Railway on less than an eight-minute schedule during the rush hours.

MR. MAHON ARRANGES REFERENDUM

L. D. Bland, international treasurer of the union, charges that the rejection of the compromise was due to the activities of less than 300 radicals who went to meeting determined to strike unless every demand was conceded. Since W. D. Mahon, president of the Amalgamated Association, approved the settlement as offered to the men it is expected he will institute a rigid investigation of their action.

Mr. Mahon took hold of the Chicago situation on July 30. He arranged for a referendum on Aug. 1 on the settlement offered by the companies, but turned down by the men on July 28. If the compromise proposition is accepted service may be resumed on Aug. 2. Mr. Mahon is said to favor acceptance.

On the other hand, Mr. Bland indirectly blames the companies. He says that the meeting on the evening of July 29 would never have been called had it not been for a break in the conferences caused by the belief of the employees that President Busby of the Chicago Surface Lines had broken faith with them by issuing certain statements to the newspapers.

BANKERS EXPLAIN OWNERSHIP

The bankers of Chicago formulated a statement on the afternoon of July 30 giving the financial view of the street railway situation. This was published in the daily papers. Among other things the statement said:

The general public and probably the employees of the railways apparently believe that the railway system is owned by multimillionaires familiarly known as traction barons who have made vast fortunes in the manipulation of securities and fleecing the public.

While it is probably true that in the past men like Charles T. Yerkes and his associates made large profits out of the manipulation of traction securities, nothing of the kind has occurred since the adoption of the present franchise in 1907.

The chief beneficiary has been the city of Chicago, which without a dollar invested in the property has taken close to \$25,000,000 from the receipts of the traction companies.

There are approximately \$100,000,000 of first mortgage bonds outstanding, largely held in the city of Chicago by persons of moderate means who bought them very close to par. At the present time these bonds are selling at 75 cents on the dollar and under, showing a total loss of more than \$25,000,000.

Adequate transportation is absolutely necessary. This cannot be secured without raising additional capital from year to year. This capital cannot be raised unless investors are guaranteed protection.

The leading daily papers have commented editorially on the strike with severe criticism of the men for their hasty action in refusing to consider a compromise which would have given them the highest wages paid in the United States for similar service.

The employees of the Evanston Railway also went on strike on July 30 because the management could not see its way clear to agree to offer them whatever settlement might be decided upon in Chicago. The Chicago & West Towns Railway, however, has agreed to place in effect with its employees any agreement which was settled upon in Chicago and the men have remained at their places.

The employees of the Aurora, Elgin & Chicago Railroad, which has interurban and city lines in the Fox River Valley and third-rail interurban lines from these towns to Chicago, struck at 3 a.m. on July 31. The strike vote on July 30 was taken as a result of a conference in which E. C. Faber, general manager, notified the men that

their demand for a general increase in wages of 41 cents an hour could not be granted unless the company was permitted to increase its rates. Several towns including Elgin, with a population of 50,000, have thus been deprived of electric power, upon which they depended for light and water supply and upon which many of the largest factories depend for current for their operation. An appeal was made to the union by the City Council to permit the operation of the power plants, but no action had been taken up to the night of July 30. Circulars were sent out in some of the towns prohibiting use of water except during certain hours and then only for drinking, cooking and sanitation. A serious condition will exist in case of fire.

former Norwood, Canton & Sharon Street Railway. An act was passed requiring the Boston Elevated Railway to transport the pupils of public, private and industrial day and evening schools within the district served by the company to and from schoolhouses and their homes at not more than one-half the regular fare charged by the company for the transportation of other passengers for the same distance.

The Public Service Commission and the Transit Department of the city of Boston are directed to investigate jointly the desirability and feasibility, from the engineering, operating and financial standpoints, of extending the present rapid transit system of the Boston Elevated Railway (1) from the terminus of the Dorchester tunnel at Andrew Square by surface tracks to Mattapan Square, and (2) from the Forest Hills elevated railway terminal to Dedham. The investigation may also include an inquiry as to handling freight, express matter and mails on these so-called "rapid transit circuits," and the construction of transfer stations at suitable points between the surface lines of the Boston Elevated Railway and the rapid transit circuits. The joint board is to report to the Legislature not later than Jan. 10, 1920.

Traction Problems Referred to Special Commission

Critical Condition of Operating Companies in Massachusetts Is Considered Likely to Demand Extra Session of Legislature in November — Investigating Committee Named

The Massachusetts Legislature of 1919 adjourned on July 25 after the second longest session in the history of the State. More than 600 acts and resolutions were passed. Of these the most important to electric railways was an act providing for the investigation of the electric railway financial situation by a special commission of thirteen members. This committee, whose members have just been announced by Governor Coolidge, is to report by the middle of November to an extra session which the Governor plans to call to relieve the existing intolerable state of transportation affairs.

RELIEF MEASURES ARE KILLED

Practically all measures of importance bearing upon electric railways which were under consideration in the closing days of the session were tabled or killed in view of the forthcoming extra session. Contrary to the newspaper report mentioned last week, the attempt to re-establish a 5-cent fare in Boston and elsewhere was unsuccessful. Efforts were also made during the session to commit the State to a policy of public ownership of electric railways, but without avail.

As the session closed, opinion was divided between the possibilities of applying zone systems with lower fare units and the retention at least on some systems, of the flat fare, with operating deficits to be made up from tax levies. The feeling was widespread that the high fare unit applied on a flat-rate basis cannot cope with the existing situation.

COMMISSION TO BE REORGANIZED

The investigating committee which will now study this matter is composed of the following: Robert F. Herrick, Milton; former Congressman Charles G. Washburn, Worcester; Federal Judge George W. Anderson, former Interstate Commerce Commissioner,

Boston; James L. Doherty, Springfield; Senators Cavanagh, Everett; Hardy, Hampden, and Walsh, Suffolk, and Representatives Kneeland, Winchester; Allen, Norwood; Young, Weston; Maloney, Chelsea, and McDonnell, Boston.

Electric railways are interested in the reorganization of the Public Service Commission and the Gas & Electric Light Commission into a single Department of Public Utilities, effected as a result of a constitutional amendment cutting down the various departments of the State from about 100 to twenty. The new department, which will retain the powers of the predecessor boards, will be composed of a chairman with a maximum salary of \$8,000 and four other commissioners with maximum salaries of \$7,000 each. The commissioners are to be appointed by the Governor with the consent of the Council for initial terms of one to five years respectively, future terms being of five years duration. Power of removal is also vested in the Governor and Council.

WILL FACILITATE BOARD HEARINGS

The work of the board will be facilitated by a provision that in all but purely formal or administrative matters, two or more commissioners may participate, and, if all parties consent, a single commissioner may sit. The majority opinion with at least three commissioners participating is required in findings. Appeal in equity to the Supreme Court of the State is retained, together with the power of enforcement of the commission's acts by this tribunal. A separate act provides that it shall be the duty of the commission to give reasonable notice by mail to any member of the Legislature of any matter affecting the interests of his district.

The town of Sharon was authorized to acquire and operate a portion of the

MANY MEASURES FAILED

A large number of measures affecting electric railways failed to pass. These chiefly had to do with the relief of taxation burdens, fares, service and public ownership or operation. Carefully worked-out plans for the reduction of taxation burdens were included in a bill presented by President C. V. Wood of the Massachusetts Street Railway Association, which was heard at length, but the House displayed much hostility to any form of relief for street railways during the present session, and the favorable attitude of the Senate on this general subject went for naught. Undoubtedly the hostility of the House was a primary cause of the special message of Governor Coolidge, which was written almost at the end of the session and urged in no uncertain words the necessity for action in order that the present impasse may be permanently removed.

Attempts to secure appraisals of the Boston Elevated Railway and the Bay State Street Railway (now the Eastern Massachusetts Street Railway) by the Public Service Commission or other special commission failed to pass. A strong sentiment developed in the Legislature against public ownership, the experience of the country with the federal administration of railroads, telephone and telegraph lines being considered so unfavorable. A bill which would have materially helped the Boston Elevated Railway and perhaps have temporarily forestalled the use of the 10-cent fare was one providing for the purchase by the State of the Cambridge subway. This would have provided about \$8,000,000 for the imme-

diate needs of the road, and its failure was greatly deplored in electric traction circles.

Another bill which failed was that introduced at the request of Ralph S. Bauer, Lynn. This provided for the purchase by the city of Lynn of the local lines of the Eastern Massachusetts system, the furnishing of free transportation to car riders and the levying of the cost thereof upon taxpayers. The discontinuance of the public operation of the Boston Elevated Railway was sought in another bill as a protest against the 10-cent fare, but it failed to pass. Forty-five bills were considered by the committee on street railways alone and twelve by this committee sitting jointly with the committee on metropolitan affairs.

Minneapolis Franchise Draft

Council Committee Is Holding Hearings on Proposed Service-at-Cost Ordinance

After a long series of negotiations the first real step has been taken toward solution of the Minneapolis Street Railway franchise situation through the presentation to the company by the city attorney of a draft of a proposed ordinance. This is now before the Council committee on street railways.

A 7 PER CENT RETURN PROVIDED

The franchise will give the company the right of operation of surface lines for twenty-five years with a net return of 7 per cent on a valuation of \$24,000,000 as of Jan. 1, 1919, with 1 per cent on additional value put into the system above that capital amount. A fund of \$250,000 will be set aside to stabilize fares, and when this fund is increased from earnings to \$500,000 the fare is to be reduced. The fare is fixed at 5 cents for three months from the effective date of the ordinance. At that time the stabilization fund will act to advance fares if the stabilization fund has been reduced to \$150,000.

The city may buy the company's property at the end of any five-year period. The city will supervise the company operation and maintenance, and have access to its books. The supervision operator shall be paid by the company. An amortization fund is provided for. The city may construct new lines and extensions out of its own funds when the company fails to build them, the company to operate them and the city to get the same return on its investment that the company is allowed under the franchise.

F. A. Sager, public utilities expert, has informed the Council committee that the capital value of the Minneapolis Street Railway was increased \$1,341,540 between Jan. 1, 1916, and Jan. 1, 1919, or \$216,540 more than the figure given by the company when it accepted a valuation of \$24,000,000 for franchise purposes. The principal increase was in tracks and a new steam power unit.

Wages Advanced in Los Angeles

Increase in Wages Announced by Both Pacific Electric Railway and Los Angeles Railway

The Pacific Electric Railway and Los Angeles Railway on July 22 announced increases in pay for conductors and motormen, effective on July 30, and Aug. 1, 1919. This action upon the part of both companies was entirely voluntary.

The Los Angeles Railway, beginning July 30, raised the wages of trainmen 3 cents an hour and also increased the guaranteed minimum wage for extra men and beginners from \$90 a month to \$100. Increases for employees in other departments are, also, under consideration.

The Pacific Electric Railway on Aug. 1 increased the wages of about 1600 conductors and motormen 2 cents an hour and 3 cents an hour for those who do not elect to avail themselves of the annual twelve working days vacation under full pay, now granted by the Pacific Electric. Employees who so desire may take their vacation on full pay this summer, and on return, elect the 3-cent increase effective from the date of signing it. The company has already put into effect as of July 1, 1919, a minimum wage of \$100 a month for all platform men who report regularly for duty on extra runs. Previous minimum guarantee for such men was \$90 a month.

HIGH COST OF LIVING RESPONSIBLE

There were some 2000 other Pacific Electric Railway employees not included in this increase of pay as announced, but H. B. Titcomb, vice-president, added that these employees would also receive substantial increases to their present salaries. The action of the Pacific Electric is voluntary and due to increased cost of living. Mr. Titcomb states "that while the present revenues of the Pacific Electric Railway do not justify any increases whatever, the company looks with confidence to the State Railroad Commission taking into account the wage increases just made, in dealing with the company's application now before the commission for increase in rates."

The advances in wages will cost the company \$250,000 annually.

The wage scale to be made effective by the Pacific Electric Railway for those who do not take the twelve days annual vacation on full pay, is in full as follows:

City service, motormen and conductors—First three months, 41 cents; next nine months, 43 cents; second year, 44 cents; third year, 45 cents; after third year, 47 cents.

Interurban service, motormen and conductors—First three months, 43½ cents; next nine months, 44½ cents; second year, 46½ cents; third year, 47½ cents; after third year, 49½ cents.

Freight and work train service, flat rate throughout—Motormen, 53 cents; conductors, 53 cents; brakemen and switchmen, 48 cents; trolleyman, 43 cents; yard foremen, 53 cents.

For those who elect to take the twelve days' vacation, wages will be 1 cent an hour less in all cases.

The new wage scale of the Los Angeles Railway is as follows:

First three months, 41 cents; next nine months, 43 cents; second year, 44 cents; third year, 45 cents; after third year, 47 cents.

This increase was voluntary in accordance with the company's established policy to meet the requirements of employees so far as possible.

Conditional Wage Settlement

A conditional settlement of the controversy over wages between the Des Moines (Ia.) City Railway and its employees was arrived at on July 28 by the three arbiters, Fred Sargent, representing the company, J. B. Wiley, representing the union men, and Rev. C. W. Reese.

The arbiters agreed upon a tentative wage scale retroactive to March 1, 1919, and to continue in effect to March 1, 1920. The agreement is conditional, however, upon the calling of a special election to permit the people to vote upon an increase in fare. The call for this election must be issued, so it is provided, by the City Council by Aug. 7 and the election must be held not later than Sept. 22. The election is to be called only if the special committee of citizens which is endeavoring to settle the strike or Judge Martin J. Wade of the Federal Court finds by Aug. 4 that the receivers for the Des Moines City Railway are not receiving sufficient revenues to meet the increase.

The scale agreed upon by the arbiters is as follows: first three months, 50 cents; next nine months, 55 cents; after one year, 60 cents. At present the men are receiving 43, 45 and 50 cents for the periods above mentioned. They demanded 55, 60 and 65 cents.

The men voted to strike at an election on July 24, but agreed to withhold action pending an arrival at an agreement on the part of the arbiters and the citizens committee. If the election does not result in an increase an immediate strike is to be called.

Pittsburgh Strike Suit Before Court

The Amalgamated Association has filed a demurrer to the suit brought in the courts of Allegheny County, Pennsylvania, for \$2,035,000.78 as damages which resulted from the strike last May of the employees of the Pittsburgh Railways.

The plaintiff in this litigation, Attorney A. E. Anderson of Pittsburgh, brought the suit several weeks ago to test, as he announced at the time, just what the right to strike consists of in cases where direct expense and inconvenience are caused the public. He sued in the name of himself and the rest of the usual patrons of the Pittsburgh Railways, his bill of damages including an estimate of all it had cost Pittsburghers to travel by steam railways and motor bus during the strike, over ordinary expenditures for car fare. The 78 cents is his own personal share of the bill.

Seattle Wage Offer Rejected

The trainmen of the Seattle (Wash.) Municipal Railway have voted to reject the wage scale offered by Thomas F. Murphine, superintendent, as a counter-proposal in answer to the trainmen's demands for increased wages. The carmen reiterated their demand for a minimum wage of \$5.50 and \$6 a day, the higher wage to be paid after six months service, and rejected Mr. Murphine's offer of a minimum of \$5, to be increased to \$5.50 after ninety days service, and to pay a bonus of 5 per cent at the end of one year to all trainmen who were credited with twelve months of uninterrupted service.

The objections to Mr. Murphine's plan were based largely upon the bonus feature, the committee stating that "the bonus system, as the carmen view it, is not a bonus, but the difference between the proposed wage scale offered by Mr. Murphine and a living wage demanded by the men. . . . Why hold back the bonus for one year? We need the money now."

Speakers at a recent meeting of the carmen, who represented the majority sentiment, stated that if the city would add the 5 per cent bonus to the wage proposed, and put it in the semi-monthly pay checks, the city and men would not be far apart on the matter of wages. There has been little or no talk of strike, officers of the union declaring that they have faith in the ability of the union to convince the city that a satisfactory wage settlement can be reached, provided the bonus payment plan is eliminated and increases made in the scale proposed by Mr. Murphine.

Franchise Rights Questioned

That the Southern Traction Company of Illinois, the assets of which were bought at public auction by H. D. Mephram, St. Louis, Mo., and associates for \$400,000, nas at present no franchise rights on the Free Bridge across the Mississippi River or on any St. Louis streets, is the opinion of Associate City Counselor Hamilton of St. Louis.

The Southern Traction Company was given the right to run over the highway deck of the Free Bridge by an ordinance passed by the City Council of St. Louis on April 11, 1911. This ordinance, however, was amended in November, 1912, and repealed Nov. 7, 1914.

In May, 1913, the City Counselor of St. Louis expressed the opinion that the city could not legally repeal the franchise ordinance. This opinion was disregarded by a later city counselor. The city's policy now is to make the Free Bridge available for any railroad or electric railway which may wish to use it. The Southern Traction Company thus will be able to obtain a license to use the bridge for entrance into St. Louis from southern Illinois, but will not have exclusive rights.

Mr. Mephram stated that he and his associates propose to carry through the

original plans of the Southern Traction Company and operate freight and passenger cars between southern Illinois points and St. Louis, with a loop in downtown St. Louis. It has been expected that the road would be valuable as a coal carrier.

The city of St. Louis now has electric railway tracks on the Free Bridge and owns two cars available for use on the bridge.

Shore Line Strike Unsettled

The strike of the employees of the Shore Line Electric Railway, which includes 221 miles and provides the only service in the triangle formed by Westerly, Norwich and New London, with branches north to Willimantic, which became operative on July 16, continues with traffic completely tied up.

It was thought that the appointment of mediators by the Connecticut Chamber of Commerce would have satisfactory results, but a meeting held by the arbitrators in Norwich on July 21 was without results, caused in the main by the insertion of a proviso by the company "that in the event of an award of increased wages the increase should not become effective until the board of arbitrators could determine that the company was financially able to bear the increase."

The representatives of the strikers would not accept the proviso and withdrew from the proposition to arbitrate the differences.

The system, which is owned by the estate of Morton F. Plant, consequently remains idle, matters being complicated by the statement of the executors of the estate that they are without authority to divert to the company other funds of the estate which would be necessary if an increase in wages was granted.

Pittsburgh Protests Paving Provision

The controversy between the receivers of the Pittsburgh (Pa.) Railways and the city administration over the paving question flared up so hotly during the week ended July 19 that both sides issued peppery statements to the public.

The city administration, through its special bureau for traction litigation, announced that if the receivers continued to lag in performing their share of such paving as the city considers necessary, franchises would be annulled as having been violated by the company.

The receivers countered next day with a statement that any move on the part of the city to interfere with their operation without consent of the United States Court would constitute contempt.

Pittsburgh franchises contain a provision that the company must bear the expense of paving and repaving between its tracks and 1 ft. on either side. On the ground that funds available are insufficient, the receivers have declined to enter into the city's street repair program as extensively as the

administration considers proper. The whole question was brought to a head over the matter of repaving West Carson Street, on which the city had gone ahead to the point where further work became impossible without the co-operation of the receivers.

Called into conference with the City Council, counsel for the receivers announced that thereafter the company would do no paving except upon court order.

Another angle of the situation that conceivably might prove more serious is restiveness of the smaller municipalities surrounding Pittsburgh over the same paving question. Franchises in most of these boroughs contain paving provisions similar to those in the city franchises. Some of them are beginning to protest at the company's failure to co-operate in street improvements, and they are not parties to the receivership. North Braddock has served notice upon the receivers that unless repairs upon streets and tracks are started by Aug. 12, the tracks within that borough will be torn up.

Rhode Island Men Reject Arbitration

Authority for the receivers of the Rhode Island Company, Providence, R. I., to arbitrate their controversy with the union, on condition that the strikers resume work, was provided in a decree entered late on the afternoon of July 30 in the Superior Court at Providence by Judge Doran. The order did not specify when the car men should return to work, but read "that when" they return and accept one of two plans outlined in the decree, the receivers shall submit to arbitration three questions: How much the wages shall be, the date for that wage to take effect and what working conditions shall be.

The arbitrators, who would be either the utilities commissioners acting as individuals, or citizens of the State chosen by both sides with the third member and chairman chosen by the Governor, would determine what is proper evidence to be considered and decide the questions in dispute. The decision of the majority would be deemed an award which, in any case, would be subject to court approval.

On July 31 the union rejected the plan for arbitration under the conditions laid down by Judge Doran. Officers of the union stated that they would make known the decision of the men in a statement to be issued at noon on Aug. 1.

According to a statement made on July 31 by the chairman of the Public Utilities Commission, that board may take the first step in securing to the receivers the power to operate the road. If the terms of Justice Doran's decree are not accepted by the men, and the receivers can find no other remedy, the commission will summon the receivers to see if at least partial operation may be begun.

News Notes

Demand Goes to War Board.—The demand of the employees of the Cleveland & Eastern Traction Company, Cleveland, Ohio, have been submitted to the Federal War Labor Board for settlement.

New Board for New Orleans.—The Supreme Court having ousted from office the Board of Public Utilities created by the Legislature of Louisiana, the Commission Council of New Orleans proposes to form another board composed of the Mayor, the Commissioner of Public Property and the Commissioner of Public Utilities.

City Names Arbitrator on Dividend Matter.—W. E. Davis, city light commissioner, was selected by Council on July 17 as its arbitrator in the matter of an increase in the dividend of 1 per cent, asked by the Cleveland (Ohio) Railway. J. J. Stanley, president of the company, stated that the company's representative will be selected within a short time.

Cincinnati Will Ask for Loop Bids.—The Cincinnati (Ohio) Rapid Transit Commission has decided to open bids on Aug. 27, for the first section of the rapid transit loop. Plans and specifications will be completed as soon as possible. The first section lies between Walnut and Charles Streets. The cost of construction has been estimated at approximately \$543,000.

Report on Grand Rapids Company.—A report on the condition of the Grand Rapids (Mich.) Railway made by the Brownell Engineering Company at the request of the City Commission of Grand Rapids, Mich., holds that the city would be justified in paying \$4,500,000 for the company's property. An additional expenditure of \$1,500,000 would be needed to establish adequate service.

More Time for Everett Elevated Extension.—The Public Service Commission of Massachusetts has issued a finding authorizing the Boston Elevated Railway to defer the construction of a permanent elevated and surface line terminal at Everett until July 21, 1920. The company showed that it could not obtain capital for the completion of this work at present on reasonable terms.

Men Return, Pending Board Findings.—The Ottawa (Ont.) Electric Railway has resumed full service owing to the decision of its men, who have been on strike for two weeks, to return to work pending the findings of the board of conciliation which is considering their demands. The company, while agreeing to take back men in most cases, reserves the right to refuse re-employment to those whom it considers undesirable.

New England Street Railway Club Holds Outing.—Nearly 200 members and guests of the New England Street Railway Club attended the annual outing of the organization on July 24 at Fort Phoenix Park, Fairhaven, Mass. Elton S. Wilde, general manager Union Street Railway, New Bedford, was master of ceremonies. The program included visits to the Union company's new generating station and to its car-houses and shops in New Bedford, and a shore dinner and sports at the Fort Phoenix Casino.

Examiner to Hear Boston & Worcester Dispute.—Employees of the Boston & Worcester Street Railway, Boston, Mass., have voted to refer their disagreement with the company regarding back pay under the War Labor Board's award of last winter to Examiner Charlton Ogburn of the board for adjudication. It is claimed that about \$50,000 in back pay has accumulated since November, 1918.

All Berlin Tied Up.—As a consequence of the strike of street car and other transit workers, Berlin, Germany, has been without transit facilities for several days. Most of the residents of the city remained at home, unable to reach their places of business. Armed troops are reported to be patrolling the streets and there is said to have been some disorder. Car lines in several other German cities are likewise tied up.

Milwaukee Electrification Progressing.—Seattle officials of the Chicago, Milwaukee & St. Paul Railway state that operation of the Milwaukee electric line between Othello and Beverly will be begun in a short time, but that the road will not be able to use electricity as a motive power between Beverly and Seattle and Tacoma before November. The delay is occasioned by the slow delivery of electric locomotives and equipment for the sub-station.

Tacoma Men Oppose Change.—It was reported that trainmen of the Tacoma Railway & Power Company, Tacoma, Wash., planned to call a general strike if the company insists upon entering into a new contract with the men on Aug. 1, the date of expiration of the present agreement. It was said the men were willing to continue the present contract, but that the company was proposing changes that would effect a reduction in wages. The men will not concur in such an agreement, they affirm.

Claims of Carmen Disallowed.—Claims against the Spokane & Inland Empire Railroad, Spokane, Wash., involving more than \$1,000,000, were denied by a decision filed in the Federal Court of the State of Washington on July 11. The company is now in the hands of a receiver. The most important of the claims disallowed was that of the railway employees for more than \$20,000 in back pay, inasmuch as they recently refused to go on a strike against the company in sympathy with the electrical workers.

Champaign Strike Unchanged.—The strike of the union conductors and motormen of the Urbana & Champaign Railway, Gas & Electric Company, Champaign, Ill., remains unchanged. The union men refuse to work longer than nine hours while the members of the brotherhood are willing to work longer. The members of the brotherhood are at their posts, as well as a number of non-union men. There is no disorder. Cars are being operated on a twenty-minute schedule, which is about half the headway under normal conditions.

Disorder in Oklahoma Strike.—The strike of motormen and conductors of the Oklahoma Union Railway, which operates an interurban line between Tulsa and Sapulpa and local lines in these two cities, grows more serious, after a period of quiet during which it was thought the strike was settled. Cars in Sapulpa and on the company's lines in Tulsa have again been stopped, although some of the interurban cars are being operated, but under difficulties on account of attacks by strikers. Pending settlement of the strike, arrangements have been made with the Frisco Railroad for the operation of gasoline motors cars over the line between Tulsa and Sapulpa to care for the traffic.

Omaha Men Present Demands.—A committee representing the employees union of the Omaha & Council Bluffs Street Railway, Omaha, Neb., has presented revised demands for a closed shop, an increase in wages, changed working conditions, promotion by seniority without regard to previous strikes, and relief funds and vacations. The proposed agreement provides for the discharge of any employee who does not become a member of the union within thirty days. Time and a half pay for time over ten hours work is demanded in the compensation clause. The scale of wages is fixed at 65 cents an hour for the first three months of continuous service, 70 cents for the next nine months, and 75 cents after one year. The present wage scale is from 41 to 45 cents an hour.

Short Strike in Macon.—The trainmen in the employ of the Macon Railway & Light Company, Macon, Ga., were on strike from 4:30 a. m., on July 15 until 5 p. m., on July 16. During that time negotiations were under way which were concluded with recognition of the union by the company, the granting of a ten-hour day and an agreement calling for the payment of a wage scale ranging from 36 cents to 40 cents an hour. The previous wage scale was 23 cents to 28 cents an hour. One of the issues which precipitated the strike was the discharge of certain employees. The cases of these men will be taken up and handled by the union with the superintendent of the railway. The company has been charging a 6-cent fare. It is stated unofficially that an increase may now be sought in the hope of recouping the company for the burden which the increase in wages has imposed.

Financial and Corporate

Reviews St. Louis Finances

Financial Vice-President of United Railways Shows Need for Co-operation in Rehabilitation

Robert L. Warner, vice-president of the United Railways, St. Louis, Mo., who resigned recently as financial agent of the receiver, issued a statement in which he urged that security holders, the city of St. Louis, the Public Service Commission of Missouri and the employees of the company should be allowed representation on the company's board of directors, when the company is ultimately reorganized.

Mr. Warner does not believe a complete reorganization can be brought about before May 1, 1920. His statement follows in part:

The action of Judge Lamm in granting the order requested by the receiver, enabling him to sell receiver's certificates for the purpose of discharging the debt to the War Finance Corporation, will dispose of this question to the best possible advantage of all interests.

The next maturity of importance will be \$1,900,000 of St. Louis Railroad 4½ per cent bonds, due May 1, 1920. Unless reorganization should take place prior to that date, this maturity will undoubtedly have to be met by way of receiver's certificates. That, however, is a question for the future to determine.

As to reorganization, I do not see the slightest possibility of any such thing taking place between now and next May 1, unless, indeed, it should be occasioned by a premature foreclosure of the general mortgage, which, at such a time as this, would almost necessarily involve the destruction of all equities junior thereto.

It is difficult to believe that the courts would view such a procedure with favor. On the contrary, it seems much more probable that reorganization will be delayed until the Public Service Commission has received from its engineers their report upon the valuation of the property now in progress, and has rendered a final decision upon the same and also has thereafter considered and determined the rate of return which should equitably be allowed upon such valuation, and the methods whereby the same may be secured with justice to all interests.

Reorganization, in order to be effective and permanent, must provide not only an equitable return on the fair value of the existing property as determined by the Public Service Commission, but also—and this is highly important as a matter of public interest—should afford a thoroughly practical means of financing betterments and extensions to the amount of possibly \$2,000,000 or \$3,000,000 per annum.

There should also be developed in connection with reorganization such a plan of administration as will afford to all interests adequate representation in dealing with and settling without destructive controversy such problems as are bound to arise from time to time in connection with the management of the new company.

Experience elsewhere indicates strongly the ultimate adoption of a zone system of fares. The public, however, will not be content with this or any other system of revenues unless the same be accompanied by automatic regulation of rates on a service-at-cost basis. To this end the board of directors of the new corporation should include not only representatives of the security holders, but also representatives of the city of St. Louis, the Public Service Commission and the employees. It is impossible to hurry such a reorganization.

Under these circumstances, I have recently expressed to Mr. Wells the desire to be relieved of active service upon behalf of the receiver as soon as the matter of issuance of receiver's certificates should be sufficiently advanced to warrant this step.

I expect to continue as vice-president of

the corporation and in that capacity to assist the receiver in every possible way as affairs progress in the general direction of reorganization. I certainly shall continue for the present, at any rate, to be a resident of the city of St. Louis, although, no doubt, putting in a good deal of my time elsewhere during the next few months.

Six-Cent Fare Results in Spokane

The June results in Spokane, Wash., for the 6-cent fare, as compiled by H. C. Bender, city superintendent of public utilities, are as follows:

WASHINGTON WATER POWER COMPANY

Paid passengers hauled, 1,250,838.
Increase over three-year average, 4.5 per cent.

Decrease in gain at 6-cent fare over what it would have been at 5 cents, 17.3 per cent.

Street car revenue for June, \$74,909.
Increase over the three-year average, 26.1 per cent.

Revenue gain over what it would have been at 5-cent fare, 2 per cent.

Car-miles covered in June, 291,246.
Decrease in car mileage, 2.7 per cent.

SPOKANE & INLAND EMPIRE TRACTION LINES

Paid passengers hauled, 605,057.
Loss over three-year average, 16.9 per cent.

Decrease in passengers due to 6-cent fare, 11 per cent.

Street car revenue for June, \$36,278.
Increase over three-year average, 1 per cent.

Gain at 6 cents over what it would have been at 5 cents, 4 per cent.

Car-miles covered in June, 150,580.
Decrease over three-year average, 21.2 per cent.

Figures on the third month's operation of the 6-cent street car fare, compiled from the books of the two companies by Mr. Bender, together with his deductions as to the effect of the increased fare, show a continued decline from the number of passengers that would have been hauled at the lower fare with a relatively smaller gain in revenue.

Iowa Interurban Earns \$5,299 a Mile Net

The Inter-Urban Railway, operating lines to Colfax and Perry, Iowa, made a net profit of \$156,891 in 1918, according to a statement just filed with the Iowa State Board of Assessment. This represents a profit of \$2,634 per mile on the 59½ miles of trackage. During the year 1918 the traffic over the interurban's Perry line was entirely abnormal for the reason that this line was the only means of reaching Camp Dodge by rail.

The 3.91 miles of track on the Interurban Railway line between Des Moines and Valley Junction showed the second best net income of all Iowa interurbans. The net earnings for the line were \$19,397, or \$4,960 per mile.

The best paying interurban line in the State, according to the statements filed by the various companies, was the line between Cedar Rapids and Marion, which made a net income of \$5,299 per mile. The Fort Dodge, Des Moines &

Southern Railroad, with 149 miles of track, earned \$81,960, or \$549 per mile.

All interurban lines in the State showed a profit with the exception of the Tama & Toledo Railway (trackage, 2.95 miles) which showed a loss of \$532.

Collateral Ordered Sold

Practical Control of Washington Railway & Electric Company Is Up for Bid

Sale of the 27,500 shares of the common stock of the Washington Railway & Electric Company, held as collateral for the defaulted notes of the Washington Utilities Company, was ordered on July 25 by the protective committee. This large block of stock has practically controlled the Washington electric railway for years, with the proxies that were sent in annually by shareholders.

COMMITTEE HOPES FOR BID

The committee does not know whether there will be a bid for the property or not, but is hopeful that a sale may be effected. Otherwise the committee will buy in the securities and thus alter its position from a creditors' committee of a defunct organization to that of interested shareholders in the Washington Railway & Electric Company, and therefore be much better qualified to appear before the Public Utilities Commission and also to assume positions on the directorate of the company, if such action should seem desirable.

The committee does not expect to be eliminated from the railway situation through the sale of the security and the liquidation of advances, although it is probable that if a bid should be made for the 27,500 shares of common stock around \$50 a share, it would welcome the shifting of the burden to other shoulders.

POSSIBLE MERGER WITH CAPITAL TRACTION

Discussing the probability of a merger with the Capital Traction Company the committee held that the Capital Traction Company might be induced to merge provided a 7-cent fare were granted and an agreement could be reached in the matter of value of shares. This could be much more readily brought about under present conditions than when the stock of the Washington Railway & Electric Company was selling at much higher prices.

As an alternative, it is said, the chances are that the Washington Railway & Electric Company without prospect of relief will seek to abandon some of its lines that are necessary to the passenger traffic of the city; that a default will follow on some of the subsidiary company's mortgages, that the condition of track and equipment will deteriorate and that eventually the federal government may be obliged to come to the rescue and take over the property, when it would at once have to increase fares.

Sacramento Northern Picking Up

The Sacramento (Cal.) Northern Railroad, the reorganized Northern Electric Railway and affiliated companies, for the first six months of operation reported a balance of \$58,411 after all deductions. This amount well bears comparison with the deficits reported by the companies before the reorganization. The total gross railway operating revenue was \$668,957; and total expenses, much higher than normal and including \$120,377 depreciation, amounted to \$520,200.

It was reported at the annual meeting that conditions under which the road had been operating were improving and that a fairly satisfactory year might be expected. The warehouses are this year proving profitable, and the bountiful crops all along the lines of the company indicate an increased revenue from that source.

The income statement for the six months ending Dec. 31 follows:

Operating Income:	
Railway operating revenue....	\$669,957
*Railway operating expense....	520,200
Net revenue operations.....	\$149,757
Auxiliary operations—revenue....	\$12,376
Auxiliary operations—expense..	1,520
Net revenue—auxiliary operations....	10,855
Net operating revenue.....	\$160,612
Taxes assigned to railway operations...	28,550
Operating income.....	\$132,062
Non-operating income.....	17,554
Gross income.....	\$149,616
† Deductions.....	91,205

§ Income balance transferred to profit and loss..... \$58,411

*In railway operating expenses there is included depreciation on way and structures amounting to \$120,377.

† Deductions include \$23,956 for amortization.
§ The income balance transferred to profit and loss \$58,411 was used in amortization of an equal amount of the total of \$160,000 reorganization committee expenses.

Dallas Net Improving

The gross earnings of the Dallas (Tex.) Railway for June increased \$61,332 over June, 1918, but decreased \$4,475 as compared with May, 1919, according to the Supervisor of Public Utilities. The railway operating expenses and appropriations increased \$47,498 over June, 1918, and were \$4,959 less than for May, 1919. The net earnings from railway operations for June, 1919, increased \$13,853 and \$483 respectively over June, 1918, and May, 1919.

The total net earnings for June, 1919, showed an increase of \$15,758 over the corresponding month of last year and an increase of \$990 over the previous month of this year. The total net earnings for June were at the rate of 4.98 per cent (annual basis) on the property value, and for the twenty-one months of operation ended June 30, 1919, 4.23 per cent as compared to the permitted returns of 7 per cent.

The total car-miles operated in June were 605,052, an increase of 42,574 (or 7.6 per cent) over last year. The car-hours were 62,604, an increase of less than one-half of 1 per cent. Thus it will be observed that with practically

the same car-hours operated, the car mileage was increased about 7½ per cent.

This was due to the speeding up of the cars, the miles run per hour in June, 1919, being 9.67 as compared to 9.01 in June, 1918. The passenger revenue was 29.6 cents per car-mile this year and 21.1 cents last year. The total passengers carried were 4,390,171 in June, 1919, and 3,025,555 in June, 1918, showing an increase in traffic of about 45 per cent. This material increase was due largely to the fact that jitneys were still operating in June, 1918. The growth of the city, however, accounts for a part of this increase in traffic.

Protests Increase in St. Louis Valuation

In a plea on behalf of the receiver for the United Railways, St. Louis, Mo., before the Missouri State Board of Equalization and the new State Tax Commission, Morton Jourdan, attorney for the receiver, declared that 10 per cent of the gross receipts of the railway goes to pay taxes of some sort or other and that the company is the largest single taxpayer in the State.

Mr. Jourdan asked the State bodies to refrain from making any increase in the tax assessment of the company's property. A year ago the State placed a valuation of \$22,000,000 on the properties of the United Railways for tax purposes. If the State board this year increases this valuation in the same proportion in which it has increased the assessment on real estate and personal property, the United Railways would be required to pay taxes on a valuation \$4,250,000 higher than that of last year.

The attorney for the railway told the State bodies that things had gone from bad to worse with the property during the last year. The company had not earned enough, he said, to meet its increased obligations. He urged the board to be mindful of the present high valuations of the property and of the financial distress of the company.

St. Louis Results in May

The second monthly report of Rolla Wells, receiver for the United Railways, St. Louis, Mo., filed in the United States District Court, shows that the payroll for May was \$297,772. For the last two weeks of April, the payroll was \$250,063. Mr. Wells explained that the payment of back wages had been made during April and that other indebtedness was incurred then that did not come up in May.

Total receipts during May were \$1,449,343. This income added to the balance on hand, made the receipts aggregate \$2,527,238. The total paid out was \$2,380,039, leaving a balance on hand at the end of the month of \$147,198.

Coupons on the St. Louis Railway bonds, due on May 1, were paid at that time. They totalled \$42,750.

Financial News Notes

Note Extension at New Orleans.—In regard to the \$4,000,000 of one-year 7 per cent notes of the New Orleans Railway & Light Company, New Orleans, La., which fell due on June 1, 1919, it is reported that many have been extended for one year at the same rate of interest.

Sharon Trolley Line Comes to Life.—The section of the former Norwood, Canton & Sharon Street Railway between Sharon Corner and Sharon Heights, Mass., 5 miles in length, was scheduled to resume operation on July 24. Two 6-cent fare zones will be used and deficits will be met from the town budget.

Would Issue Bonds to Pay for Cars.—The Berkshire Street Railway, Pittsfield, Mass., has applied to the Public Service Commission for approval of an issue of \$74,205 of bonds, the proceeds to be applied toward the purchase of seventeen one-man cars costing \$98,940. The remaining \$24,735 of the purchase price will be paid in cash.

Time for Deposit Extended.—The reorganization committee of the Buffalo, Lockport & Rochester Railway, Rochester, N. Y., has given notice that the time for the deposit of first mortgage bonds under the plan of reorganization dated Jan. 20, 1919, have been extended until Sept. 8, 1919. The National Trust Company, Ltd., Toronto, Ont., is the depository.

I. T. S. Issues Authorized.—The Illinois Public Utilities Commission has authorized the Decatur Railway & Light Company, Peoria, Ill., a subsidiary of the Illinois Traction System, to issue promissory notes to the amount of \$40,698. The Quincy (Ill.) Railway, another subsidiary company of the Illinois Traction System, has been authorized to issue promissory notes in the amount of \$104,919.

Pascagoula Company Ordered Sold.—It is reported that the United States Court has ordered the sale of the property of the Pascagoula Street Railway & Power Company, Pascagoula, Miss., and has appointed George P. Money as commissioner to conduct the sale. The appointment of a receiver for this property was noted in the ELECTRIC RAILWAY JOURNAL of April 5.

Offer Reported for St. Louis Control.—A report was current recently in St. Louis, Mo., that an offer had been made to the North American Company for the 186,000 shares of the common stock of the United Railways, St. Louis, that the North American Company holds. This represents a majority of the common stock of the United Railways. It is believed an effort is being

made by some of the holding committees to secure control of the common stock.

Change in Control of Maryland Company.—The Cumberland (Md.) Electric Railway and the plants of the Edison Electric Illuminating Company, together with allied corporations or which George L. Wellington, formerly United States Senator, is head, will, it is stated, be taken over by a New York syndicate. Plans under consideration are said to provide for the linking of near-by towns by electric railway, forming a system including Cumberland, Elkins and Grafton, W. Va.

Wants to Shorten Line.—The Millville (N. J.) Traction Company has applied to the State Board of Public Utilities for permission to abandon a portion of its tracks in South Millville because the City Commission wants the corporation to pay \$30,000 towards paving the streets in that section. The company claims that it has always operated at a loss in that locality, and that it is financially unable to carry out its share of the proposition. The city will oppose the application.

Rehabilitation of Jackson Company.—It is reported from Jackson, Miss., that the attorneys representing the recent purchasers of the property of the Jackson Light & Traction Company (ELECTRIC RAILWAY JOURNAL of July 19) have applied to the Municipal Commission for a renewal of the company's franchise, which was declared forfeited prior to the proceeding in bankruptcy. At present the property is operated under temporary understanding, but the purchasers say that in order to rehabilitate the property it is essential to have a legal franchise.

Reorganization Plan Approved.—It is reported that the minority bondholders of the Sandusky, Norwalk & Mansfield Electric Railway, Norwalk, Ohio, have approved the plan of reorganization submitted by the majority bondholders. Under this agreement the \$757,262 of bonds are to be retired in favor of a \$400,000 stock issue. The plan calls for an assessment of 10 per cent of the face value of the bonds to pay debts and provide working capital. The majority bondholders agree to pay \$40,000 of the assessment.

Tax Matters Under Adjustment.—The Morris County Traction Company, Morristown, N. J., will appeal the decision of the Union County Tax Board in declaring certain rights-of-way taxable. The company claims that the taxing of its gross receipts under a recent law exempted it from the payment of a personal tax and that a right-of-way was personal property. The tax board has already granted the application of the company for exemption from \$34,400 of taxes on poles and tracks in Union County.

Receiver for Miamisburg & Germantown Line.—W. E. Hutton, Cincinnati, has been appointed receiver of the Miamisburg & Germantown Traction Company by Judge Patterson of the Common Pleas Court at Dayton, Ohio. The appointment was made in the foreclosure suit in which Philip C. Swing, as trustee, is plaintiff, and the traction company, the Cleveland Trust Company, the Cincinnati & Dayton Traction Company and the Ohio Electric Railway Company are named as defendants. The trust and traction companies are named as co-defendants because of having an interest in the property.

Youngstown Receipts Not Sufficient.—The report of Street Railway Commissioner W. L. Sause shows the loss during June in operating Youngstown (Ohio) street cars under a 5-cent fare to have been in excess of \$24,000, and the stabilizing fund which governs the fares to have dropped to \$22,887. Under the provisions of the service-at-cost ordinance the fares of the Mahoning & Shenango Railway & Light Company shall increase each month this fund remains below \$50,000. Increased receipts are reported under the 6-cent fare in effect since July 1, and the July report is expected to show a decided improvement over June. A deficit of \$5,000 or \$6,000 during July, however, is expected.

Fares and Valuation at East St. Louis.—The East St. Louis (Ill.) Railway is having a complete physical valuation made of its East St. Louis properties on which it expects to base a petition for a higher rate of fare. The company was authorized in August, 1918, to charge 6 cents for one year and the petition under consideration is for a continuation of the 6-cent rate. The city of East St. Louis, it is said, will offer no objection to the proposed continued higher rate of fare. The valuation which is now being made, together with the findings of the War Labor Board, which now has under consideration a demand for increased wages by the men employed by the company, will form the basis of a petition for a further increase if an increase in wages is granted as is expected. The Public Utilities Commission of Illinois has reserved its decision in the matter of continuing the present 6-cent rate. The company states that the physical valuation will be completed by Sept. 1.

Electric Railway Monthly Earnings

BANGOR RAILWAY & ELECTRIC COMPANY, BANGOR, ME.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$83,381	*\$44,837	\$38,544	\$20,438	\$18,106
1m., May, '18	71,190	*45,993	25,197	19,875	5,322
12m., May, '19	969,607	*627,125	342,482	242,777	99,705
12m., May, '18	902,794	*536,073	366,721	233,238	133,483

CHATTANOOGA RAILWAY & LIGHT COMPANY, CHATTANOOGA, TENN.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$150,150	*\$116,902	\$33,248	\$22,163	\$11,085
1m., May, '18	147,808	*115,601	32,207	22,296	9,911
12m., May, '19	1,860,855	*1,457,790	403,065	269,667	133,398
12m., May, '18	1,531,816	*1,315,437	216,379	356,565	†140,186

CLEVELAND, PAINESVILLE & EASTERN RAILROAD, WILLOUGHBY, OHIO

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$54,063	*\$36,753	\$17,310	\$13,903	\$3,407
1m., May, '18	46,226	*30,617	15,609	11,513	4,096
5m., May, '19	243,521	*171,126	72,395	74,679	†2,284
5m., May, '18	206,022	*140,872	65,150	57,144	8,006

COMMONWEALTH POWER, RAILWAY & LIGHT COMPANY, GRAND RAPIDS, MICH.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$2,055,620	*\$1,318,044	\$737,576	\$556,307	\$181,269
1m., May, '18	1,709,860	*1,125,780	584,080	502,430	81,650
12m., May, '19	23,732,692	*15,622,825	8,109,867	6,307,735	1,802,132
12m., May, '18	20,509,341	*13,520,164	6,989,177	5,569,903	1,419,274

CUMBERLAND COUNTY POWER & LIGHT COMPANY, PORTLAND, ME.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$201,289	*\$154,408	\$46,881	\$55,645	†\$8,764
1m., May, '18	254,438	*183,761	70,677	70,343	334
12m., May, '19	3,060,868	*2,129,766	931,102	783,744	147,358
12m., May, '18	3,107,855	*2,159,311	948,544	843,734	104,810

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

EAST ST. LOUIS & SUBURBAN COMPANY, EAST ST. LOUIS, ILL.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$340,613	*\$271,917	\$68,696	\$69,976	†\$1,286
1m., May, '18	337,079	*240,069	97,010	68,084	28,926
12m., May, '19	4,366,314	*3,479,449	886,865	876,089	60,776
12m., May, '18	3,841,814	*2,766,053	1,075,761	798,300	277,461

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

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$4,019,001	*\$2,591,942	\$1,427,059	\$1,631,677	††\$153,745
1m., May, '18	3,524,432	*2,002,462	1,521,970	1,186,854	†\$77,373
12m., May, '19	39,294,196	*26,823,875	12,470,321	16,624,228	††3,611,573
12m., May, '18	37,208,118	*20,913,024	16,295,094	12,366,041	†4,420,658

LAKE SHORE ELECTRIC RAILWAY, CLEVELAND, OHIO

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$218,574	*\$164,200	\$54,374	\$35,784	\$18,590
1m., May, '18	161,528	*118,466	43,062	36,002	7,060
5m., May, '19	963,769	*744,148	219,621	179,368	40,253
5m., May, '18	772,168	*585,297	186,871	181,005	5,866

NASHVILLE RAILWAY & LIGHT COMPANY, NASHVILLE, TENN.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$264,678	*\$201,161	\$63,517	\$39,297	\$24,220
1m., May, '18	232,266	*149,160	83,106	40,514	42,590
12m., May, '19	3,114,376	*2,206,544	907,832	476,660	431,172
12m., May, '18	2,522,800	*1,617,542	905,258	489,350	5,90,824

PORTLAND RAILWAY, LIGHT & POWER COMPANY, PORTLAND, ORE.

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$711,453	*\$436,493	\$274,960	\$192,549	\$82,411
1m., May, '18	620,294	*369,387	250,907	187,684	63,223
12m., May, '19	8,186,362	*5,493,901	2,692,461	2,259,266	433,195
12m., May, '18	6,676,191	*4,065,109	2,611,082	2,144,652	466,430

REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO

Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., May, '19	\$488,136	*\$362,494	\$125,642	\$114,985	†\$34,095
1m., May, '18	469,516	*341,744	127,772	104,393	†29,189
5m., May, '19	2,534,273	*1,842,155	692,118	569,354	†170,192
5m., May, '18	2,358,742	*1,727,085	631,657	505,749	†168,061

Traffic and Transportation

Rehearing in Transfer Case

New York City Order Abolishing Transfers Goes Into Effect Pending Rehearing

An order signed on July 29 by Public Service Commissioner Lewis Nixon of the First District of New York, granted the application of Corporation Counsel Burr of New York for a rehearing on the 2-cent transfer order made recently on the petition of Job E. Hedges, receiver for the New York Railways, and set Aug. 4 as the time for the rehearing. The order did not stay the authorization of the 2-cent charge, which went into effect on the morning of Aug. 1.

In his application Mr. Burr contended that the commission had no power to permit a charge for transfers, that the proceedings before the commission did not show any need for it, and that in making the order the commission had neglected to insert in it the points at which free transfers would continue to be given.

COMMISSION'S POWER DISPUTED

The Corporation Counsel said that Commissioner Nixon in his memorandum accompanying the issuance of the transfer order "showed a disposition to ignore the power of the commission in case of the disintegration of the system to fix a joint rate order and makes it apparent that the order rendered was under threat or coercion of the United States District Court and to avoid a disintegration of the entire system with the claimed result of permitting separate companies each to charge a 5-cent fare." Mr. Burr continued.

The city calls the attention of the commission to the further proceedings in the Federal Court in respect of the Eighth and Ninth Avenue railroad companies in respect of the alleged co-operation between the Federal Court and this commission with regard to the 2-cent transfer charge ordered; in respect of the return of the Eighth Avenue line to its owners, plus the covert threat in the order for such return that if a stay be obtained on the 2-cent order made herein by the commission, a separate 5-cent charge for this line would be imposed, which threat directly challenges the power of the commission to make a proper joint rate order over the Eighth Avenue line, a power that the commission clearly has both under section 49, subdivision 3 and subdivision 7 of the public service commissions law.

TRANSFER CHANGES ANNOUNCED

Notices were sent out on July 26 by Lindley M. Garrison, receiver of the Brooklyn Rapid Transit Company, showing the points where transfers were to be issued free after the order of Commissioner Nixon permitting a 2-cent charge for transfers on the company's surface lines became effective, on the morning of Aug. 1. The order of the commissioner excepted only points where the giving of free transfers is made compulsory by franchise provisions.

Deputy Public Service Commissioner Glennon announced on July 31 that a hearing would be held on Monday, Aug. 4, on the application of the Brooklyn Rapid Transit Company for permission to abolish all transfers between surface and rapid transit lines.

In Brooklyn there were 1008 free transfer points. Under the regulations of Mr. Garrison these have been reduced to forty-nine. It has been estimated that the revenues of the company will be increased \$1,200,000 a year by the transfer charges.

Line Seniority to Continue in Kansas City

By a majority of 150, trainmen in the employ of the Kansas City (Mo.) Railways in an election held on June 26 decided to continue what is known as line seniority. Only three divisions showed a majority for the carhouse seniority plan. Nearly 1500 men voted.

A thorough campaign was made throughout the system by the advocates of both plans, and meetings were held at which both sides of the issue were openly discussed.

Line seniority has been the practice on the Kansas City Railways for many years. Under its operation, when a man begins work for the company, he goes to the division for which he has expressed a preference and his name is placed on the extra list. When a vacancy occurs on any line of that division he may accept that vacancy. When he once takes a line he remains on that line continuously, and any change he desires to make places him at the foot of the extra list.

It was contended by some men that line seniority frequently worked a hardship, as time very often made important changes in the desirability of certain lines as places to work. Had the carhouse seniority plan been adopted, men could have selected the runs they desired out of the division where they are employed according to their years of service with the company, their runs to continue for a period of six months. At the end of that time the whole matter would again be thrown open and again selections could have been made, always according to years of service. At each six months period a man could change lines so long as the line he desired was operated out of the same division.

Men who opposed this plan did it on the theory that it might force an undesired change, and in the event of a consolidation of divisions might cause some men to lose good runs.

The issue was submitted to a vote of the trainmen as being one for them to settle. Either plan was satisfactory

to the company, its desire in submitting the matter to the men themselves being to let the majority rule. Under the representation plan of the company it is the policy of the company to submit all similar problems to a vote of the men themselves.

Needs Ten-Cent Fare

Pittsburgh Ten-Cent Cash and Seven-and-a-Half Cent Ticket Fare Not Expected to Be Sufficient

Even before the 10-cent cash and 7½-cent ticket fare of the Pittsburgh (Pa.) Railways had been put into effect came a statement by one of the receivers that a straight 10-cent fare is imminent. The new fare went into effect on Friday, Aug. 1. The forecast of a still higher tariff was made last week by Receiver C. A. Fagan in Washington before the commission there investigating the electric railway situation.

Nothing less than a straight 10-cent fare will enable the company to meet its obligations, Mr. Fagan declared. The effect of the publicity the commission's proceedings have given to the difficulties traction companies now face has been apparent in Pittsburgh through the absence of the public protest that might have been expected to follow such a statement.

CITY ENTERS PROTEST

The city of Pittsburgh has entered protest against the tariff that went into effect on Aug. 1, as a matter of course, but little expectation is entertained that the protest will be effective. Hearing on it will be held in Pittsburgh on Aug. 13.

At this hearing will be presented, as was forecast in the ELECTRIC RAILWAY JOURNAL recently, the report of the commission of engineers who have been working more than a year on a physical valuation of the Pittsburgh traction properties. The original plan was to use this valuation as a basis for future fare fixing. If this procedure is carried through, it means resumption, to some degree, of payment of interest and other fixed charges to security holders, who have received no return from investments in Pittsburgh electric railway securities since the receivers began to default payments regularly nearly a year ago.

AWAIT WAR BOARD AWARD

It is expected that the award of the War Labor Board in the wage dispute before that body will also be before the Public Service Commission at the same time. Reports from Washington last week indicated that the award might be expected by Aug. 2. The general expectation is that the men may receive their full demands, which include a maximum wage of 60 cents an hour.

Since the 7½-cent ticket rate went into effect, the Pittsburgh Railways is using metal coins. The coins are sold in fours for 30 cents. It is estimated that they will prove considerably cheaper than the pasteboard tickets heretofore issued.

Zones Ordered in New Jersey

Company and Commission Give Heed to Demand for Low Initial Fare—Test Period Starts Sept. 14

A temporary plan of zone fares for the Public Service Railway for an indefinite trial period was approved by the Board of Public Utility Commissioners of New Jersey on Aug. 1.

CASE STILL OPEN

The proceedings before the commission under the plan for a zone system of fares not having been completed, the board was precluded from adopting any permanent plan at this time. The most pronounced objection of the board to the original zone plan was the imposition of the cost in such a manner as to result in a charge for the first zone mile at a higher rate than for any other zone mile. It is the opinion of the board that the trial of one of the plans proposed by the company on July 29, with such modifications as appeared to be necessary, will be helpful in the final determination of the feasibility of the plan ultimately adopted. The board finds and concludes substantially as follows:

It will permit, subject to the following modifications, a schedule and tariff of rates to take effect Sept. 14, 1919, based on a zone-mile system of fares filed as follows: 3 cents for a ride within a zone-mile in which the passenger boards the car; 2 cents for a ride in each additional zone-mile or part thereof on the same car. The following rates shall not apply to passengers riding only within the limits of the following zone: (a) the zone between Edgewater Ferry and Grantwood Junction, (b) the zone between Edgewater Ferry and Bluff Road, (c) the zone between Harrison and Eagle Rock Avenues and Mountain Avenue and Murray Street on the Eagle Rock line, West Orange. The fare for passengers riding only within the limits of the zones above specified as (a), (b) and (c) respectively, shall be 5 cents. Children under the age of seven years when accompanied by an adult paying fare shall be carried free. School tickets shall be issued at the same rate under the same conditions as now issued.

Where superimposed service is now in operation the same shall be operated as now operated so as to avoid the necessity of riders passing from one car to another. Continuation tickets are to be retained in use where now effective.

The board reserves the right without formal order from time to time to make adjustments as become necessary and to require such adjustments of transfer points and heavy loading points as to make transfer points and heavy loading points coincident with the zone limits. In order to test the operation and in order that the results may be used as evidence in pending hearings the company shall file with the commission prior to Aug. 15 its acceptance of the conditions prescribed by the commission.

COMPLETE REPORTS MUST BE FILED

The company will be required to file with the board for each calendar month, beginning with the month of September, so long as the new rates continue in effect, a statement giving the total amount of wages and salaries paid, classified by character of service and the rate per hour, day or period over which the salary or wage is paid, and a statement of operating revenue and operating expenses arranged in accordance with the standard classification of accounts for such properties.

When the Board of Public Utility Commissioners met in Newark on July 29 to continue the Public Service Rail-

way zone rate case, T. N. McCarter, president of the company, asked for permission to submit new figures based upon the increased wages which went into effect as the result of the National War Labor Board's most recent order, also because of added cost of power due to wage, freight and coal price increases.

Mr. McCarter pointed out that the wage item alone meant an additional outlay of approximately \$1,175,000 while the added power costs would be about \$305,000 more. These extra costs, which could not have been foreseen when the zone report was filed, are substantially all chargeable to "movement" cost and therefore upset the company's calculations for a rate of 5 cents for the initial zone-mile with 1 cent for each mile thereafter and 1 cent for a transfer.

The increase made additional relief necessary and three alternate rates of fare were suggested. If a flat fare were to be continued it would be necessary to make the rate 9 cents with 1 cent for a transfer, but either of two zone plans would produce the required revenue, to wit: the charging of 5 cents for 2 miles with 2 cents for each additional mile and 1 cent for a transfer, or the charging of 3 cents for the first mile and 2 cents for each additional mile with the transfer privilege abolished.

PRESIDENT McCARTER OPPOSED TO NINE-CENT FARE

Mr. McCarter said he deprecated a flat rate of 9 cents because it would drive so much traffic from the railway that the company would not be fulfilling its functions. On the other hand Frank H. Sommer as counsel for the municipalities had produced so much testimony amounting to a demand for a low initial fare that although such a rate was a radical departure from present conditions and quite at variance with what had been his views on the subject for years, Mr. McCarter added that the company would be willing to test it out. It was to be understood that whatever plan was adopted, the present hearing was to be carried on until the question of the valuation of the company's property and the amount it was entitled to earn should be fully determined.

It was pointed out that according to the best estimates that could be made the 9-cent plan would result in the carrying of 242,500,000 passengers a year; the 5-cent and 2-cent plan would mean 317,800,000 passengers a year and the 3-cent and 2-cent plan would attract 331,700,000 passengers. Of the latter approximately 65,400,000 would ride for 3 cents, 86,000,000 for 5 cents and 69,000,000 for 7 cents.

In other words, nearly half of all the riders would pay less than existing

rates and about two-thirds would pay either less or the same as at present. For these reasons the 3-cent and 2-cent plan was favored and the board was urged to sanction its adoption by not later than the middle of September with the idea that its actual operation would give definite information for future guidance and at the same time enable the company to go on.

Six-Cent Fare Extension Granted United Railways

The Public Service Commission of Missouri on July 23 issued an order permitting Rolla Wells, receiver for the United Railways, St. Louis, to continue charging a 6-cent fare until October 31. The extension authorized on May 29 expired on July 28. In his application Mr. Wells stated that the conditions under which the order was originally issued remained unchanged and that the company could not operate on less than a 6-cent fare.

Mr. Wells has appealed to the people of St. Louis for their co-operation in re-establishing the company on a firm financial basis. In commenting on the appeal the St. Louis *Star* says editorially: "The people of St. Louis undoubtedly welcome this invitation to co-operate under conditions that inspire confidence. St. Louis can afford . . . to assume a new attitude of hopefulness and helpfulness in the interest of the future."

Jitney Regulation in Seattle

In a bill introduced in the City Council of Seattle, Wash., recently, and referred to the public safety and the city utilities committees, strict regulation of jitneys and all other motor vehicles engaged in passenger transportation is asked, and also that this duty be assigned to the Superintendent of Public Utilities, who has charge of operating the Seattle Municipal Railway.

In Addition to the license now required for the operation of jitney or other passenger vehicles, the bill requires that certificates be obtained from the Superintendent of Public Utilities. Applications for such certificates must show the route to be followed, the schedule, the rate of fare, which must not exceed 10 cents, and the capacity of the vehicle. The certificate, when issued, will limit such vehicle to the capacity named and prohibit its use on any other route than that designated in the certificate.

After an examination of the applicant for a license the Superintendent of Public Utilities may issue or deny the certificate, and appeals from his decision may be made to the Board of Public Works, and from that body to the City Council. Not more than one change of route will be permissible in each thirty days, and all certificates for operation will expire on the last day of each year in which they are issued.

Constructive Jitney Regulations in Prospect

Kansas City, Mo., is reaching a position on the subject of jitney regulation that promises to help materially in solving the transportation problem for the city. The ordinance resulting from many conferences, introduced in the Council recently, provides for these features:

1. A \$5,000 bond for each vehicle operated.
2. License fees: \$25 up to seven passengers, \$35 up to twelve passengers, and \$50 above twelve passengers.
3. A city jitney license inspector, who shall inspect jitneys once in three months.
4. Definite jitney routes, with a limit to the number of jitneys that may operate over each route. Operators may specify first, second and third choices as to routes, but must operate where the license inspector assigns them.
5. Any operator failing to cover the entire route, or deviating from the route, is liable to loss of his license.

Fifteen routes are specified in the ordinance, the limit of jitneys ranging from 50 to 100 on each route, a possible total of 1100 jitneys. Nearly all the routes follow the lines of the Kansas City Railways, though in few cases reaching the terminals of such lines.

Transportation News Notes

Kansas City Plans Safety Campaign.—Plans for a one-year safety-first campaign are being made by the Kansas City (Mo.) Safety Council. Active work, which will be under the auspices of the local safety council, the Traffic Safety League, and the Chamber of Commerce, will begin on Sept. 1.

Increase in Interurban Rates Allowed.—The Public Utilities Commission of Illinois on July 22 authorized the East St. Louis & Suburban Railway to increase fares between East St. Louis and Belleville to 2 cents per mile. The board refused the company's application for a revised zoning system.

Many Hurt in Head-on Collision.—More than 100 persons were injured, two of them perhaps fatally, when two cars of the Public Service Railway met in a head-on collision near Fort Lee, N. J., on July 27. The accident occurred on a lay-over switch in the single-track line that runs out of Fort Lee.

Six-Cent Fare Protested.—Taxpayers of Wilmington, Del., protested at a hearing before the Board of Public Utilities Commissioners on July 11 against the 6-cent fare charged by the Wilmington & Delaware Traction Company. T. W. Wilson, vice-president of the company, said that disintegration of the traction system would follow return to a 5-cent fare.

Seven-Cent Fare on Still Another Road.—The Galesburg & Kewanee Elec-

tric Railway, Galesburg, Ill., has been authorized by the Public Utilities Commission of Illinois to increase cash fares in Kewanee and Weatherfield from 6 cents to 7 cents. Ticket fares are raised from eighteen for \$1 to four for 25 cents. The rates are to be ineffective after Aug. 1, 1920, unless otherwise ordered.

Enlist Court Aid in Fare Fight.—The San Antonio (Tex.) Public Service Corporation, has brought suit to restrain the city from enforcing an ordinance refusing the petition of the company for the right to increase local fares from 5 cents to 7 cents for adults and from 2½ cents to 3½ cents for children. In support of this plea for an injunction, the company presented figures showing the valuation of its property and recent records of earnings.

Would Remove Tracks Because of High Cost.—A report recently submitted to the city authorities of Santa Ana, Cal., by a committee which has been discussing the transit situation there with the Pacific Electric Railway, states that the company wants to remove the tracks from Main Street, between Fourth and Santa Clara Avenues, because of the excessive cost of paving and replacing the tracks with Trilby rails.

Application for Injunction Withdrawn.—An application for an injunction to restrain the Tulsa (Okla.) Street Railway from extending its lines in North Cheyenne Avenue was withdrawn on July 18. The company has encountered considerable opposition in its plans for expansion, but now it can go on with its construction work. Unrestricted jitney competition has also hindered the company's expansion into outlying parts of the city.

No Return to Free Transfers.—The Public Utilities Commission of Illinois has dismissed the petition of the Village Board of South Elgin to have transfer privileges restored on the line of the Aurora, Elgin & Chicago Railroad in the city of Elgin. The commission held that sufficient cars were being operated between Elgin and South Elgin and that the United States District Court had enjoined the commission from interfering with rates charged by the company.

Road Makes Arrangements for Depot at Columbus.—The Columbus, Delaware & Marion Railway has completed plans to convert the Garden Hotel property on West Gay Street, Columbus, Ohio, into a passenger and freight depot for its own use. General Manager A. F. Van Deines recently requested permission of the City Council to run tracks into the hotel building, and into the yard beside the building. It is probable that these requests will all be granted.

Increase in Freight Service Planned.—In accordance with its recent promise to give better freight facilities and deliveries to Waukegan and other North Shore towns and cities direct from the loop in Chicago, the Chicago, North

Shore & Milwaukee Railroad plans to install a freight depot at the corner of Austin Avenue and Franklin Street, Chicago, from which there will be 5-hour service to Waukegan. The company will make three freight deliveries daily.

Eight-Cent Fare Asked.—The St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., has presented a petition to the Missouri Public Service Commission asking that its first application for a 6-cent fare be consolidated with a second application asking for an 8-cent fare. The company asserts that it cannot make a fair return at the present rate of fare. It is said that the city of St. Joseph will contest the application.

Wants a Seven-Cent Fare.—The Aurora, Elgin & Chicago Railroad, Aurora, Ill., whose petition for a continuation of a 6-cent fare on its Elgin and Aurora lines is now before the Public Utilities Commission of Illinois, will probably apply for a 7-cent fare instead. The company is also applying for an increase in interurban passenger, freight and express rates and for a street car, light and power increase in the city of Elgin. Demands for a 5-cent fare are expected to go by default.

Hastings Still Without Trolley Service.—Hastings, N. Y., whose trolley service was cut off more than three months ago by the Yonkers Railroad under authority of the Public Service Commission for the Second District of New York, continues to ride in jitneys or walk, despite the fact that the city has passed a franchise ordinance acceptable to the company. The franchise was presented to the commission for its approval on July 15, but owing to objections by several Hastingsites no decision has yet been arrived at.

Seven Cents in Jamestown.—The Public Service Commission for the Second District of New York has authorized the Jamestown Street Railway to charge a 7-cent fare in Jamestown and to sell twenty and ten-ride tickets for \$1 and 50 cents respectively. Free transfers are to be given to the Warren & Jamestown line, and transfers issued by the latter company are to be accepted. The company may make the changes on three days' notice. The Jamestown Common Council gave its approval to the commission's order on July 21.

Jitney Regulation in Centralia.—An ordinance has passed its first reading by the City Council of Centralia, Wash., prohibiting jitneys from operating over certain streets in the southern end of the city for more than a fixed number of round trips daily. The ordinance is intended to relieve the North Coast Power Company, operating an electric railway between Centralia and Chehalis, from jitney competition. By not using the streets in question, the jitneys will be forced to use a circuitous route between the two cities. A similar ordinance was passed by Chehalis, which it is understood the jitney drivers union will contest.

Inclined Plane Fare Raised.—Increases in inclined plane fare in Pittsburgh have been announced by two operating corporations, the Pittsburgh Railways and the Seventeenth Street Inclined Plane Company, effective on Aug. 22. The Pittsburgh Railways will raise the cost of a ride on the Castle Shannon and Mount Oliver planes from 5 cents to 7½ cents by ticket and 10 cents cash. These rates include transfer to surface cars. The Castle Shannon plane ten-coupon books, now sold at 25 cents, will be raised to 30 cents. These coupons do not carry the transfer privilege.

Better Service Promised.—H. B. Titcomb, vice-president of the Pacific Electric Railway, Los Angeles, Cal., speaking at a recent meeting called by the Monrovia Chamber of Commerce to protest against the quality of service between Monrovia and Los Angeles, said that the company would do everything it could to give better service although handicapped by lack of equipment. Mr. Titcomb blamed the auto bus and jitney competition for the fact that whereas the population of the territory served by the company had increased 50 per cent in the last six years, gross receipts had shown no gain.

Wants Higher Petroleum Rate.—Contending that it should be allowed to charge the same rates for transporting petroleum and petroleum products as those of the roads under control of the Railroad Administration, the Pacific Electric Railway, Los Angeles, has filed with the Railroad Commission of California an application for authority to make an increase of 4½ cents on each 100 lb. of the freight named. The application asserts that the company has to meet the same high terminal and transportation costs as the steam roads, and that an increase in the rate is necessary if the transportation of petroleum and its products is to be carried on at a profit.

Protests Against Refusal to Allow Increase.—B. J. Denman, president of the Tri-City Railway and the Moline, Rock Island & Eastern Traction Company, has addressed an open letter to the city officials of Rock Island, Moline and East Moline and to the companies' patrons taking issue with the action of the Public Utilities Commission of Illinois in refusing to grant the two companies a fare increase. Mr. Denman pointed out that the commission took no account of the fact that traffic had dropped off owing to cessation of war activities which formerly centered at the Rock Island arsenal and at many factories in the cities served by the companies.

Protests Fare Increase.—The city solicitor of New Castle, Pa., has filed with the Public Service Commission of Pennsylvania a protest against the increase of fare from 6 cents to 7 cents by the Mahoning & Shenango Railway & Light Company. The New Castle & Lowell Railway has filed a joint tariff with the commission, in connection with that of the Mahoning & Shenango

Railway & Light Company. The new rates, effective on Aug. 5, will apply to all stations on the New Castle & Lowell, the Mahoning & Shenango, and the Sharon & New Castle Street Railway. Increases of 1 cent and 2 cents are made in additional fares for transfers issued to passengers boarding cars between Stop 48 and the New Castle terminus.

Would Charge for Transfers.—The Indianapolis (Ind.) Street Railway has filed a petition with the Public Service Commission of Indiana asking for the right to charge 1 cent for a transfer. The company states that this plan is the only feasible way to raise the estimated \$125,000 a year which will be taken from the revenue of the company as a result of the increase in wages of conductors and motormen, which became effective on July 16. The Indianapolis Traction & Terminal Company, which controls the Indianapolis Street Railway, last year petitioned the commission for a 6-cent fare, but this was denied. The commission also abolished the 1-cent reimbursable transfer charge and authorized a straight 5-cent fare.

Reading Traffic on the Increase.—The business boom that has set in among industries of Reading, Pa., and its suburbs has restored a full volume of traffic to the Reading Transit & Light Company. The several large plants of the Reading Iron Company, located in different sections of the city, which had been closed pending adjustment of a controversy as to wages, resumed operations recently. These plants employ several thousand men, and a large number of them are daily patrons of the street cars. Several of the textile mills in the suburbs of Reading are in the process of doubling their capacity and number of employees, and this already has warranted an increase in the special street car service that they require.

Jitneys a Menace, But Not a Substitute.—That the jitney will never replace the electric railway to any large extent is the opinion expressed in a recent full-page illustrated article in the Hartford, Conn., *Daily Courant*. According to the writer Connecticut now has more jitneys than any other State except Texas and New Jersey. "The jitneys," says the article, "can never do the full work of the trolleys and can never furnish service so cheaply as the trolley. Jitneys could never care for all the traffic on the main streets during rush hours. There is reason to believe that the jitney cannot make any money over a long period of time." It is only a question of time, thinks the writer of the article, before the majority of jitneys will go out of business.

Fare Increase Asked for Jacksonville.—An ordinance has been introduced in the City Council of Jacksonville, Fla., amending the charter of the Jacksonville Traction Company to permit of a higher fare charge. Submission of the bill followed the report of the auditors selected by the Council at the company's request to examine its books.

The report showed that the company was operating at a loss and that bankruptcy was imminent unless higher fares were granted, it being brought out that on mere operation of the system, with no allowance for depreciation, etc., the company has carried every passenger at a loss of 0.31 cent. If passed by the Council the fare ordinance will be submitted to the people for their approval at a special city election.

Idaho Company Wants More.—The Caldwell (Idaho) Traction Company has filed an application with the Public Utilities Commission, asking for permission to increase its rates approximately 1 cent a mile for passengers. Under the proposed change no round-trip tickets will be sold and only straight fare will be accepted. The company operates two lines, the total distance covered by both approximately 25 miles. One line runs from Caldwell south to McNeil, and the other from Caldwell to Wilder. The fare from Caldwell to Wilder under the new rate would be 50 cents, while the present charge is only 35 cents. The charge from one end of the line to the other, that is McNeil to Wilder, is now 65 cents, and the proposed fare would increase this amount to 95 cents.

St. Louis Fare Signs Changed.—The United Railways, St. Louis, Mo., has changed the signs in its cars requesting passengers to deposit their own fares in the glass boxes at car entrances, following representations by leaders of the local branch of the carmen's union that the signs were offensive to the men. As first placed the signs requested passengers to deposit fares and added that "under no circumstances must the conductor deposit them." Later this was amended to read "except under unavoidable circumstances." Local union men in support of their attitude pointed to results in Freeport, Ill., where motormen employed by the Illinois Northern Utilities Company drove their cars to the carhouses and went on strike after the company refused to remove like signs posted in the cars a few days before.

Asheville May Not Oppose Fare Increase.—The city authorities of Asheville, N. C., have announced that they will not oppose a fare increase from 5 to 6 cents by the Asheville Power & Light Company, provided an audit of the company's books shows such an increase to be necessary. The company recently filed its application for higher fares with the Corporation Commission of North Carolina. The company has suggested to the Central Labor Union that it would grant its employees a 7 per cent advance in wages on condition that they did not combat the increased fare. Wages were raised 10 per cent last year, and at the same time the company placed the fare at 5 cents straight. In notifying the city of the company's latest application, the commission pointed out that 7-cent fares had been granted in the other principal cities of the State.

Indianapolis City System Spreads Out.—Directors of the new Indianapolis Street Railway have authorized Robert I. Todd, president of the company, to negotiate with Arthur W. Brady, president of the Union Traction Company of Indiana, for the purchase of the Broad Ripple tracks in College Avenue from Fairfield Avenue, the end of the city company's tracks to Forty-sixth Street, in order that the city service may be extended. If the purchase is consummated, city car service to Forty-sixth Street will be established as soon as a loop can be built at the end of the line. An estimate of the value of the property has been given as \$150,000. The Board of Public Works of Indianapolis ordered the College Avenue extension some time ago, but the local company asserted that it could not make arrangements with the Union Traction Company for the use of the tracks. The board then considered the advisability of ordering the company to lay new tracks along the interurban.

New Publications

Developing Executive Ability

By Enoch Burton Gowin. The Ronald Press Company, New York, N. Y. 486 pages.

This book is a reliable common-sense recital of the way the problems of personal development should be solved by men who wish to be successful in the business world. It not only points out opportunities but indicates how these should be seized through the effecting of economies of time, energy and money, through the systematizing of work and through the development of the mental faculties. Numerous exercises, illustrations and test charts serve to bring close home to the reader the inspiring lessons to be derived from the book.

Accounting Theory and Practice

By Roy E. Kester. The Ronald Press Company, New York, N. Y. 795 pages.

This work, a continuation of Mr. Kester's estimable first volume reviewed some time ago in these pages, should be very useful to those who have already mastered the principles of accounting, from whatever source. Mr. Kester treats of every aspect of advanced accounting, the book as a whole being built around the relationship of each account to the balance sheet. More than 100 pages are devoted to the timely subject of depreciation. An appendix contains a wealth of queries and practical problems to strengthen the reader's accounting knowledge. Electric railway accountants can ill afford not to broaden their learning through acquaintanceship with such a work.

Personal Mention

Col. W. G. Dows, president of the Iowa Railway & Light Company, with headquarters at Cedar Rapids, Ia., has announced his retirement from active participation in the business. He will be succeeded as general manager by his son, Sutherland C. Dows, who has recently returned from military service.

Walter Silcox, chief inspector for the Trenton & Mercer County Traction Corporation, Trenton, N. J., has been promoted to the position of dispatcher to succeed James A. Hageman, who was recently made traffic superintendent. Mr. Silcox was formerly in the employ of the Philadelphia Rapid Transit Company.

A. H. Vickers has been appointed local auditor of the Eastern Massachusetts Street Railway at Lawrence, Mass. This is a new office and is created under the arrangement whereby each division of the company looks after its own financial matters instead of having a central auditing department in Boston. Mr. Vickers for the last two years has been in the South doing work of a similar nature for the government.

Gordon Campbell, president and general manager of the York (Pa.) Railways Company, has been appointed vice-president of the Municipal Service Company, Philadelphia, Pa. Mr. Campbell will carry on his new duties while retaining his connection with the York Railways, with which he has been associated since 1908. He was recently re-elected to serve a second term as president of the Pennsylvania Street Railway Association.

Frank S. Easton, hydroelectric engineer with the British Columbia Electric Railway, Vancouver, B. C., has resigned to enter the employ of the Mexican Light & Power Company, with headquarters at Mexico City, Mexico. Mr. Easton will have charge of certain hydraulic and electrical work for the company under the direction of G. R. G. Conway, managing director, who was formerly chief engineer of the British Columbia Electric Railway.

Walter E. Anderson, New York, N. Y., has been selected as assistant auditor of the Kansas City (Mo.) Railways. Mr. Anderson is a graduate of the University of Minnesota, with a degree of B.A., and received the advanced degree of M.A. from Princeton University. After several years' experience as a college instructor, he joined the staff of Niles & Niles, certified public accountants, New York. While with this firm he specialized on public service corporation accounting work.

John P. Witt has resigned as secretary and treasurer of the Lake Shore Electric Railway and assistant secre-

tary and treasurer of the Cleveland, Painesville & Eastern Traction Company, both Everett-Moore properties, to become associated with Roland T. Meachan in the brokerage business at Cleveland, Ohio. Mr. Witt has been interested in traction matters for nineteen years and is well known to the men in this line all over the country. He will specialize in the underwriting of new issues.

Emil G. Schmidt, who will retire as president of the Des Moines (Ia.) City Railway and the Inter-Urban Railway at the expiration of his present contract with the Harris interests, has bought a tract of 16 acres, located on the Chicago & Northwestern Railroad upon which he will erect buildings for the Des Moines Foundry & Machine Company. Mr. Schmidt is head of the new concern and his son, C. W. Schmidt, recently discharged from the navy, will be general manager. A group of buildings is to be put up in the spring. Among the products of the new plant will be some railway equipment.

Henry C. Attwill, attorney-general of Massachusetts, has resigned to accept an appointment as a member of the Massachusetts Public Service Commission, succeeding Joseph B. Eastman, now a member of the Interstate Commerce Commission. Mr. Attwill was born at Lynn, Mass., in 1872. His entire career has been passed in legal work. From 1896 to 1898 he was a member of the House of Representatives, and from 1899 to 1901 a member of the State Senate. He served as district-attorney for the eastern district for six years and has been attorney-general of Massachusetts since 1915.

J. S. M. Wharton, president-elect of the Arkansas Utilities Association, is secretary-treasurer and manager of the Helena Gas & Electric Company, Helena, Ark. Mr. Wharton was graduated from Lehigh University in 1909 and for about three years thereafter was employed in the various departments of the United Gas Improvement Company, Philadelphia. He then became manager of the People's Light, Heat & Power Company, Barre, Vt. Later he resigned that position to become manager of a syndicate of gas properties in North and South Carolina, where he stayed until he went to Helena, Ark., about two years ago.

R. R. Bruster has resigned from the position of associate editor of the ELECTRIC RAILWAY JOURNAL to take up public accounting and educational work in Boston. Mr. Bruster was graduated from New York University in 1912 with the degree of Bachelor of Arts; in 1913 with that of Bachelor of Commercial Science, and in 1914 with that of Master of Commercial Science. Prior to 1913 he was for more than a

year office manager of the New York University School of Commerce, Accounts and Finance, and in 1913 he joined the staff of this paper. His work thereon has been mainly along economic, financial and accounting lines.

George H. Waring, who has recently been appointed vice-president and assistant general manager of the American Public Utilities Company, with headquarters at Grand Rapids, Mich., was formerly general manager of the Utah Gas & Coke Company of Salt Lake City, a subsidiary company. Mr. Waring was for a number of years connected in various capacities with the United Gas Improvement Company, Philadelphia, Pa., filling engineering, operating and executive positions. The last position he held with that company was vice-president and general manager of the Charleston (S. C.) Consolidated Railway & Light Company. In 1917 he resigned to join the American Public Utilities Company as general manager of the Utah Gas & Coke Company.

William D. Ray, formerly vice-president and general manager of the Pennsylvania Utilities Company, Easton, Pa., and for the last two years a major in the Quartermaster Corps, serving as supervising utilities officer in a number of army camps in the South, expects shortly to re-enter the utility business. Major Ray's work in the service included supervision of electric light and power supply, water supply, sewerage disposal, refrigeration, roads, buildings and shops and fire departments at Camps Jackson, Gordon, Johnston, McClellan, Sheridan, Shelby, Forrest, Sevier, Grant, Wadsworth, and Lee. He is at present stationed at Camp Holabird, Md. Before joining the Pennsylvania Utilities Company, Major Ray was vice-president and manager of the Northern Indiana Gas & Electric Company's properties at Hammond, East Chicago, and Whiting, Ind.

Joseph E. Wayne, superintendent of transportation of the York (Pa.) Railways, has been advanced to the position of vice-president in charge of operation. L. C. Mayer continues as vice-president in charge of engineering and construction. Mr. Wayne was born in Philadelphia, Pa. His railway experience was acquired during his connection with large railways in different parts of the country. He served for three years in the repair shops and power house of the Public Service Corporation of New Jersey, resigning to fill a position with the United Railroads, San Francisco, Cal., later becoming superintendent of the Waynesboro, Chambersburg & Greencastle Street Railway. From this company he resigned to take charge of the Edison Electric Light Company, York, Pa., retiring in 1909 to become connected with the York Railways.

M. S. Sloan has been elected president of the Brooklyn (N. Y.) Edison Company following the resignation of Nicholas F. Brady from that position.

Mr. Sloan since the latter part of 1917 has been operating manager of the New York Edison Company. Previous to that he held the position of vice-president and general manager of the New Orleans Railway & Light Company, New Orleans, La. Mr. Sloan is a graduate of the Alabama Polytechnic Institute, and from 1906 until late in 1913 was employed by the Birmingham Railway, Light & Power Company, Birmingham, Ala. During this time he rose from chief engineer to assistant to the president, assuming the latter office in 1910, when he took supervision over all departments. Toward the end of 1913 he resigned at Birmingham to join the executive staff of the New Orleans company, which like the company at Birmingham is affiliated with the American Cities Company.

Carl W. Stocks, for the last two years general passenger agent for the Bay State Street Railway, now the Eastern Massachusetts Street Railway, with headquarters at Boston, Mass., has resigned from that company to join the editorial staff of the *ELECTRIC RAILWAY JOURNAL*. While with the Bay State Street Railway, Mr. Stocks gave special attention to the study of fare systems and fare collection. Prior to his connection with the Bay State Street Railway, Mr. Stocks was for seven years statistician for the American Electric Railway Association. He is an engineer by education, having been graduated from the electrical engineering course at the Worcester (Mass.) Polytechnic Institute in 1907. After graduation Mr. Stocks for two years was an inspector in the overhead line department of the Boston & Northern Street Railway, which later was a constituent part of the Bay State system. His connection with the association began in 1910.

H. L. Beach has been appointed transportation supervisor of the United States Housing Corporation with headquarters in Washington, D. C., reporting to W. A. Mellen, manager of the transportation department. Mr. Beach has had wide experience in dealing with transportation problems gained as a result of many years of association with a number of electric railway corporations. Entering the railway field in 1899 as publicity manager of the Chicago (Ill.) Union Traction Company, he was later appointed assistant general superintendent of the company's north and west side lines, from which position he was advanced to general superintendent of the northern division of what is now known as the Chicago Railways. He resigned in 1912 to become associated with B. J. Arnold in connection with the appraisal of electric railroad properties in Toronto, Can., and Kansas City, Mo. In 1915 he became manager of the Utah Light & Traction Company, Salt Lake City, tendering his resignation two years later. The Salt Lake City *Herald-Republican* said editorially at that time that the public would be satisfied if the service proved as satisfactory as it had been under Mr. Beach.

Obituary

Frederick Sargent, Power-Plant Engineer, Dead

Frederick Sargent, senior member of the firm of Sargent & Lundy, Chicago, Ill., and one of the most prominent consulting engineers in the United States specializing in the design of electric generating stations, died at his home in Glencoe, Ill., on July 26. He had been taken ill on a recent trip to Europe and on his arrival in Chicago was removed to a hospital, but was later taken to his home.

Mr. Sargent was born in Liskeard, Cornwall, England, on Nov. 11, 1859. Coming to the United States about 1880 he found employment in eastern ship-building yards as a designer of steam engines. He then went West as a designer for the Sioux City Engine Company, Sioux City, Ia., later accepting a position with E. P. Allis & Company, engine builders of Milwaukee. In August, 1890, he established himself as an independent electrical and mechanical engineer. The firm of Sargent & Lundy was formed in 1891, Mr. Sargent being the senior partner from its organization to the time of his death. He was one of the first electrical and mechanical engineers who recognized the great part that the steam turbine was destined to play in the development of electric generating stations. He was consulting engineer for many of the important electric light and power companies throughout the country, including the Edison Electric Illuminating Company, Boston; American Gas & Electric Company, New York; Electric Bond & Share Company, New York; the Union Gas & Electric Company, Cincinnati, and the Commonwealth Edison, Chicago, as well as many other smaller organizations.

Of all his achievements, the work which Mr. Sargent did in association with Samuel Insull, president of the Commonwealth Edison Company, is possibly the most noteworthy. He made plans for the machinery layout in the original Edison station in Adams Street in 1889 and later was active in designing the company's modern stations.

William Martin Murphy, Dublin, Ireland, died on June 26. Originally he was a contractor and he built many tramways and railways. He was best known as the chairman and moving spirit of the Dublin United Tramways, an undertaking which has all along been a great success both on the engineering and financial sides. Mr. Murphy smashed a great strike in Dublin early in 1914. His business talent amounted to genius, and at the same time he was a hot politician of the extreme Nationalist side. His death removes one of the most prominent figures in the British tramway field.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Steel and Iron Products Show Advances

Scrap Materials Also Show Higher Prices—Question of Basing Points Being Considered

During the latter part of July there were advances in pig iron prices when ordered in small quantities, and in some silicon steels. No. 2 pig iron per gross ton, Philadelphia, was \$29.60 on July 29 and \$29.10 a week before. The first of July it stood at \$29.00. Basic pig, delivered, eastern Pennsylvania, was \$26.60 on July 29, while a week previously it was \$26.00.

During the last week of July several independent sheet mills advanced black sheets \$2 per ton and galvanized sheets \$4, per ton, and it is stated that these prices may become general among all the independent mills in a short time. Also, prices on wire were advanced \$2 per ton by three companies, while wire nails went up \$5 per ton. It seems probable that the other companies will fall in with these advances.

PRICES FOR SCRAP IRON AND STEEL RESPOND TO INCREASED BUYING

The scrap iron and steel market has also responded to an advance in the last week. Car wheels in Chicago have gone up \$1 to \$25 per gross ton, and in Philadelphia the same amount to \$24. Heavy steel scrap advanced in Pittsburgh 50 cents to \$21.00, while in Chicago it advanced \$1.50 to \$21.00 and in Philadelphia remained unchanged. No. 1 cast in Philadelphia increased 50 cents, while in Chicago it went up \$2 per net ton. No. 1 R.R. wrought in Chicago advanced \$3.50 per net ton.

Buying of iron and steel has increased considerably in the past month, and in order to increase production, several companies have had to start furnaces which had been closed down earlier in the year.

With pig iron advancing in price it is reasonable to expect that an advance in steel products may not be very far off. The upward tendency in iron is expected to be more rapid next month. Consequently it would not be surprising to find rails and track and trolley stock equipment at higher levels this fall.

The question of the practice of having basing points for making rolled steel prices, as well as the question whether Pittsburgh or some other place should be the sole basing point, or whether there should be more than one basing point, are being carefully and clearly investigated. The friendly lawsuit now under way before the Federal Trade Commission, wherein the

Western Association of Rolled Steel Consumers is the complainant and the United States Steel Corporation the respondent, is taking all concerned to the bottom of this bogie of the trade for so many years.

Some Copper and Steel Products Advance

Wire Bases, Except Rubber Covered, and Commutator Parts, Higher—Rigid Conduit Up

Although copper has not only halted in its upward price movement but may be purchased from some sources for just under 23 cents a pound—the maximum being 23.50 cents—certain wire bases have continued their advance. Base copper wire at the mill is up $\frac{1}{2}$ cent to 26 cents, bare base is up 2 cents to 26 to 28 cents a pound and weather-proof is quoted at 26 to 29 cents, an advance of 2 cents. Rubber covered, however, has held at 28 cents base although two or three producers are at 29 and 30 cents.

Controller fingers and segments have advanced, as was anticipated, but at this writing the exact amount is not available. Rail bonds are on 10 per cent discount. Overhead line brass still holds constant.

Brass and copper products, such as sheets, bars and tubes, are higher by 1 cent than they were last week.

Rigid iron conduit has finally responded to an advance threatened for some time, and has gone up 10 per cent. A further advance is expected.

International Trade Conference

Invitations extended by the Chamber of Commerce of the United States to Great Britain, France, Italy and Belgium for a joint Commercial Mission to visit this country in the fall have been accepted according to an announcement from the Washington offices of the Chamber.

The missions are due to reach the United States the latter part of September to participate, at Atlantic City during the week of September 29, in an International Trade Conference. This conference will be attended, according to present plans, by at least a thousand leaders in American business, who in meetings with members of the missions will discuss many phases of international trade relations. At the conclusion of the International Trade Conference the plan is for the missions to tour the country, visiting the chief industrial and commercial centers. The return to Europe will be about Nov. 1.

Buying of Railway Motors Increases

Relief Expected from Federal Commission—Coming Winter Should See Much Better Demand

The market for railway motors, although still below 50 per cent of normal, is somewhat better than it was early in the year. Gradually the feeling of pessimism of the last two years is wearing off and manufacturers are of the opinion that the near future holds big buying of railway motors. It is not expected, however, that any material increase in buying will set in before the fall, but the winter months should see much better business than now exists.

Fare increases in different sections of the country are becoming more numerous, and each instance provides one more potential buying power for new cars and equipments.

The orders for motors have picked up as the year has advanced. Only in isolated instances have orders been placed for large numbers of cars, orders of a hundred cars and better, but there have been many scattered purchases of small numbers of new cars and of motors for rebuilding cars and equipping trailers as motor cars.

HEARINGS IN WASHINGTON MAY INFLUENCE MARKETS FAVORABLY

Of course fare increases may not in themselves be large enough to supply sufficient capital for new equipment, but they provide a great incentive to go ahead with the new work so badly needed by practically every traction company. Electric railways and manufacturers place considerable hope for relief of the traction problem in the commission now sitting in Washington, D. C. It is expected that the public opinion and municipal opinion which that commission may direct will be along lines which shall lead the railways out of the woods.

ORDERS FOR CONTROL EQUIPMENT PICKING UP GRADUALLY

The trend of the market with respect to control equipment follows closely that for motor equipment, but there is some control activity where motor activity is lacking. Several roads have been fortunate enough to be able to change some of their methods of motor control but these have been rather scattered.

Buying for export demand has been a big factor in the railway motor industry this year, and it is expected that this market will increase to a great extent in the near future. The factories in England, it is said, are not

now in a condition to manufacture sufficient quantities of railway motors to supply both her own home market and any amount of Continental demands.

Railway Track Tools Reduced

Wood Handles Shy—Small Hardware Expected to Advance

Manufacturers of picks, mattocks, sledge hammers and crowbars reduced their prices approximately 10 per cent about the middle of June, but since then the prices have held strong. There has been no recent change in the situation as to hatchets. Dealers continue to hold off placing their orders for future delivery and manufacturers are holding prices firm. The supply of wood handles is such that shortages are rapidly developing on account of the ever increasing demand. Jobbers have not been able to accumulate stocks and are out of some standard sizes of handles. From all indications the demand will continue to be heavy. Prices are strong, even with a tendency to advance. Wheelbarrows are holding an almost unprecedented demand. Their prices are steady with no sign of a reduction in sight.

Considering the market on small hardware, factory deliveries on the better quality of wire cutters are much behind and no relief is in sight for several months. Wrenches and hack saws have a good market and deliveries are satisfactory. Prices on all hardware are holding now, but tend upward with a probable rise of about 10 per cent.

Rolling Stock

Eastern Massachusetts to Buy 100 Safety Cars

One hundred safety cars will be immediately purchased by the Eastern Massachusetts Street Railway, as the result of a meeting of the trustees of the company at Boston July 25. It is hoped by the trustees that the economies resulting from these cars will point the way toward their larger use on the system and ultimately toward a reduction in fares. At recent meetings between the company's officials and authorities representing municipalities on the system, the trial of one-man cars on a considerable scale has been urged, and the trustees are prepared to make a thorough test of their fitness on the system.

Nova Scotia Tramway & Power Company, Ltd., Halifax, Can., expects to construct additional cars.

Morgantown-Wheeling Railway, Morgantown, W. Va., announces, through C. S. Bailey, general manager, that it expects to purchase three new cars from the Emergency Fleet Corporation.

Chicago, South Bend & Northern Indiana Railway Company, South Bend, Ind., purchased during July sixteen "Standard" C-50-P trucks for city cars, ten safety cars from the National Safety Car & Equipment Company, and one snow sweeper from the McGuire-Cummings Manufacturing Company.

Interurban Railroad, Gary, Ind., has received two large interurban cars

which it has placed in service between Gary and Valparaiso, Ind. The cars have a center entrance and have a seating capacity of 65 passengers. The cars are replicas of the ones used between Buffalo, N. Y., and Niagara Falls.

Track and Roadway

Sacramento Northern Railroad, San Francisco, Cal.—The Sacramento Northern Railway will place contracts at once for the construction of a 2-mile extension from the Woodland branch to handle the products of the Conway Ranch.

San Francisco Municipal Railway, San Francisco, Cal.—The City Council of San Francisco has passed an ordinance directing the Board of Public Works to receive bids for an extension of the single track in Polk Street.

Davenport, Springfield & Southern Electric Railway, Springfield, Ill.—It is reported that work will be resumed at once on the construction of the proposed line of the Davenport, Springfield & Southern Electric Railway, extending through Greenville, Centralia and Springfield. Engineers for the road have begun the work of surveying the line. Construction work had begun on the road prior to 1914 but was dropped at the outbreak of the war. The contract for the first section of the line has been let to the Kelley Construction Company, Winnipeg, Can. H. R. Campbell, Indianapolis, Ind., is reported interested.

Paducah Traction Company, Paducah, Ky.—A report from the Paducah Trac-

NEW YORK METAL MARKET PRICES

	July 17	July 31
Copper, ingots, cents per lb.....	22.50	22 75 to 23.50
Copper wire base, cents per lb.....	24.50	26.00
Lead, cents per lb.....	5 50	6.00
Nickel, cents per lb.....	40.00	40 00
Spelter, cents per lb.....	8.15 to 8.25	7 90
Tin, cents per lb.....	70.00 to 70.50	70.00 to 71 00
Aluminum, 98 to 99 per cent, cents per lb.....	32.00 to 33.00	32.00 to 33.00

OLD METAL PRICES—NEW YORK

	July 17	July 31
Heavy copper, cents per lb.....	18 00 to 19 00	20 50 to 21 00
Light copper, cents per lb.....	15 00 to 15 50	15 50 to 16 00
Heavy brass, cents per lb.....	10 50 to 11.00	11 00 to 11.50
Zinc, cents per lb.....	5 75 to 6.00	5 25 to 5 50
Yellow brass, cents per lb.....	9.00 to 9.50	9 50 to 9 75
Lead, heavy, cents per lb.....	5 00 to 5 12½	5.50 to 5.62½
Steel car axles, Chicago, per net ton...	\$25 00 to \$26 00	\$28 00 to \$29 00
Old carwheels, Chicago, per gross ton..	\$22 00 to \$22 50	\$26 00 to \$27.00
Steel rails (scrap), Chicago, per gross ton.	\$22 00 to \$22 50	\$25.00 to \$26.00
Steel rails (relaying), Chicago, gross ton.	\$21 00 to \$22 00	\$29 00 to \$30.00
Machine shop turnings, Chicago, net ton	\$8.00 to \$8.50	\$9.50 to \$10.50

ELECTRIC RAILWAY MATERIAL PRICES

	July 17	July 31
Rubber-covered wire base, New York, cents per lb.....	26	28
Weatherproof wire (100 lb. lots), cents per lb., New York.....	28	30
Weatherproof wire (100 lb. lots), cents per lb., Chicago.....	27.75	30.75
T rails (A. S. C. E. standard), per gross ton.....	\$49 00 to \$51 00	49 00 to 51.00
T rails (A. S. C. E. standard), 20 to 500 ton lots, per gross ton.....	\$47 00 to \$49 00	47.00 to 49.00
T rails (A. S. C. E. standard), 500 ton lots, per gross ton.....	\$45.00 to \$47 00	45 00 to 47.00
T rail, high (Shanghai), cents per lb....	3	3
Rails, girder (grooved), cents per lb....	3	3
Wire nails, Pittsburgh, cents per lb....	3.25	3.25
Railroad spikes, drive, Pittsburgh base, cents per lb.....	3.35	3.35
Railroad spikes, screw, Pittsburgh base, cents per lb.....	8	8
Tie plates (flat type), cents per lb.....	2.75	2.75
Tie plates (brace type), cents per lb.....	2.75	2.75
Tie rods, Pittsburgh base, cents per lb.....	7	7
Fish plates, cents per lb.....	3	3
Angle bars, cents per lb.....	3.90	3.90
Rail bolts and nuts, Pittsburgh base, cents per lb.....	4 35	4.35
Steel bars, Pittsburgh, cents per lb....	2 35	2.35
Sheet iron, black (24 gage), Pittsburgh, cents per lb.....	4.20	4.20
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.....	5.25	5.25
Galvanized barbed wire, Pittsburgh, cents per lb.....	4.10	4.10 to 4.20

	July 17	July 31
Galvanized wire, ordinary, Pittsburgh, cents per lb.....	3.70	3 70 to 3.80
Car window glass (single strength), first three brackets, A quality, New York, discount †.....	80%	80%
Car window glass (single strength, first three brackets, B quality), New York, discount.....	80%	80%
Car window glass (double strength, all sizes AA quality), New York discount.....	81%	81%
Waste, wool (according to grade), cents per lb.....	14 to 17	14 to 17
Waste, cotton (100 lb. bale), cents per lb.....	8 to 12½	8 to 12½
Asphalt, hot (150 tons minimum), per ton delivered.....
Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton.....
Asphalt filler, per ton.....	\$30.00	\$30.00
Cement (carload lots), New York, per bbl.....	\$2.90	\$2.90
Cement (carload lots), Chicago, per bbl.....	\$3.05	\$3.05
Cement (carload lots), Seattle, per bbl..	\$3.13	\$3.13
Linseed oil (raw, 5 bbl. lots), New York, per gal.....	\$2.20	\$2 20
Linseed oil (boiled, 5 bbl. lots), New York, per gal.....	\$2.22	\$2 23
White lead (100 lb. keg), New York, cents per lb.....	13	13
Turpentine (bbl. lots), New York, cents per gal.....	1.12½	\$1.35

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

tion Company states that work will be begun at once on the reconstruction of its track.

Nova Scotia Tramways, Halifax, N. S.—Improvements amounting to about \$1,000,000 will be made by the Nova Scotia Tramways to its system. These improvements include the extension of present lines, extensive track renewals, the construction of additional cars and the installation of additional equipment in its power stations.

Cincinnati, Ohio.—The construction of the new rapid transit loop in Cincinnati will be begun Sept. 1, when the Miami and Erie Canal will be drained.

Interurban Railway & Terminal Company, Cincinnati, Ohio.—As a result of the acceptance by the Cleveland bondholders of the Interurban Railway & Terminal company of a plan to arbitrate final details of the purchase of its tracks by the Cincinnati Traction Company, work will be begun immediately on the extension of the North Norwood line to Kennedy Heights.

Toronto, Ont.—Plans will be prepared and bids will soon be asked by the Ontario Railway Board for the construction of a temporary electric railway on Mount Pleasant Road. The estimated cost is \$1,142,294.

Toronto & Eastern Railway, Toronto, Ont.—The Town Council of Bowmansville recently passed a resolution requesting the Hydro-Electric Power Commission to inquire into the cost of acquiring and completing construction of the Toronto & Eastern Railway, between Toronto and Bowmansville. [June 14, '19.]

Portland, Ore.—It is reported that the Public Dock Commission of Portland is considering the construction of an electric railway to connect the municipal terminal at St. Johns and the city railway system. The Portland Railway, Light & Power Company has offered to operate the line on a cost plus 15 per cent basis if the dock commission will build the connecting link. The cost of the connection is estimated at \$25,000.

Coatesville (Pa.) Trolley Company.—A mile of trolley tracks from the Lincoln Highway south to the city line has been ordered taken up at once by the municipal officials. The company, of which Henry S. Rich, of Marietta, is president, has sold considerable stock and it is said that \$30,000 has been expended on the project. Failure to comply with the franchise caused the stand taken by the city. The company had promised to have cars running three months ago. [Dec. 18, '17.]

Pittsburgh (Pa.) Railways.—The United States District Court has authorized the receiver of the Pittsburgh Railways to undertake construction of a short piece of track downtown which will enable crosstown route cars to run on a loop, avoiding the trolley reversing now necessary on each trip. The cost is estimated at \$76,000.

Dallas (Tex.) Railway.—Requisitions of the Dallas Railway covering extensions of four of its street car lines to

be made under the service-at-cost franchise granted the company in 1917, have been approved by the Supervisor of Public Utilities and by the City Commission. The routings for the extensions are: (1) A line to the City Hospital; (2) line to Oakland Cemetery; (3) extension of the Oak Lawn Line out Cedar Springs Road; (4) a line in Oak Cliff extending out Seventh Street from Tyler and Seventh to Edgefield, thence north on Edgefield to King's Highway. Work on these extensions is to begin at once and will be completed this fall.

Fort Worth-Mineral Wells Interurban Company, Fort Worth, Tex.—H. E. Robinson, president of the Fort Worth-Mineral Wells Interurban Company, announces that actual construction on the proposed interurban line between Fort Worth and Mineral Wells will begin early in October. The survey through Northern Parker County is nearly complete and the work gangs will be busy on the right of way by August, he says. The first stretch of the line will be built from Fort Worth to Lake Worth, a distance of about 10 miles, touching the lake shore about the mosque and bathing beach. [May 10, 1919.]

Power Houses, Shops and Buildings

Alabama Power Company, Huntsville, Ala.—Construction of a transmission line between Huntsville and Gadsden, Ala., is under way by the Alabama Power Company to carry energy to Boaz, Albertsville, Gunterville, and Huntsville. Eventually there will be a complete circuit of Birmingham, Tuscaloosa, Gadsden, Talladega, Anniston, Huntsville, Decatur, and intervening towns.

Sacramento Northern Railroad, San Francisco, Cal.—A report from the Sacramento Northern Railroad states that it will place contracts at once for a combination passenger and freight station at Marysville, at an approximate cost of \$34,000. It will also install an automatic 300 kw. rotary converter at Del Paso.

Illinois Traction System, Peoria, Ill.—Plans are being made by the Illinois Traction System for the erection of a transmission line from its Riverton plant to Decatur, which will take care of the company's needs there for two or three years.

Albia Light & Railway Company, Albia, Ia.—This company reports that it expects to purchase some material for inside plant work.

Boston (Mass.) Elevated Railway.—Plans are well under way for the construction of the Arlington Street station of the Boylston Street subway which has been authorized by the trustees of the Boston Elevated Railway. The work will be done by the transit department at an estimated cost of \$400,000. The construction is expected to require a year and a half.

Eastern Massachusetts Street Railway, Boston, Mass.—Fire recently destroyed apparatus in the Quincy power house of the Eastern Massachusetts Street Railway amounting to about \$50,000.

Babylon (N. Y.) Railroad.—Plans, it is reported, are under consideration by the Babylon Railroad for the installation of an electric generating plant. The company now purchases energy to operate its system.

Wallkill Transit Company, Middletown, N. Y.—Plans are being made by the Wallkill Transit Company to close down its electric generating plant and secure energy from the Orange County Public Service Company to operate its system. It is proposed to replace the present equipment of the power house with a synchronous motor generator set. The power plant equipment, it is understood, is for sale. Willard M. Gould, superintendent.

Manhattan Railway, New York, N. Y.—The Manhattan Railway has filed plans for extensions in its one-story machine and mechanical repair shop at Lexington Avenue and Ninety-eighth Street, to cost about \$50,000.

Sand Springs Railway, Tulsa, Okla.—A report from the Sand Springs Railway states that it expects to place contracts within the next six months for the construction of a new general office building.

San Antonio Public Service Company, San Antonio, Tex.—A new steam turbine of about 13,000 hp. capacity will be installed by the San Antonio Public Service Company at its power house on Conception Avenue, at a cost of about \$275,000.

New Advertising Literature

Laclede-Christy, St. Louis, Mo.: Distributed the July issue of Laclede-Christy Bulletin.

National Board of Fire Underwriters, 207 E. Ohio Street, Chicago, Ill.: List of appliances inspected for accident hazard.

Blaw-Knox Company, Pittsburgh, Pa.: Bulletin No. 200 on "Blaw Cables," describing their automatic single-rope product.

Texas Company, New York City: A forty-six-page booklet "Texaco at Home and Abroad" on the marketing of Texaco petroleum throughout the world.

Sanford Riley Stoker Company, Worcester, Mass.: Folder entitled "Full Control" describes the operation and construction of the Riley two-speed gear box.

Nachod Signal Company, Inc., Louisville, Ky.: A folder on "Manual of Instructions for Nachod Headway Recorders" and a folder on the Nachod Headway Recorder.

Packard Electric Company, Warren, Ohio: Bulletin No. 201 on the Packard power transformer. Complete information and data as to the use of the transformer are given.

Trade Notes

J. E. Slimp has been appointed general manager of the Unit Railway Car Company of Boston, Mass.

Youngstown Steel Car Company has let contracts for a new plant at Niles, Ohio, involving \$700,000. The main building will be 200 ft. x 400 ft.

Blaw-Knox Company, Pittsburgh, Pa., announces the appointment of Frank O. Leitzed to the corps of engineer-salesmen in the sheet and tin-mill specialties department.

Cleveland (Ohio) Fare Box Company has been appointed agent of the Arthur power-saving recorder for the states of Ohio, Indiana, Michigan, Illinois, Wisconsin, Kentucky and West Virginia.

Bush Electric Company, formerly the Bush Electric Tool & Manufacturing Works, Redlands, Cal., has moved to 6654 Broadway, Cleveland, Ohio. The reorganized company expects to start production shortly. H. B. Bush is in charge of the factory.

Lapp Insulator Company, Leroy, N. Y., announces the appointment of the H. B. Squires Company, San Francisco, Los Angeles and Seattle, as its exclusive representative for the Pacific Coast, States of Washington, Oregon and California and also for Nevada.

William A. Nugent, who served as a corporal in Company I, 21st Engineers, during the war, has returned from France to resume his duties with the Independent Pneumatic Tool Company as traveling representative. He has been reassigned to his old territory in Indiana.

Canton Culvert & Silo Company, Canton, Ohio, has received the following citation from the Director of Purchase: "The work performed by this company in the fulfillment of its contracts covering engineer material was highly satisfactory and worthy of commendation." The company had on hand government orders, filled and unfilled, for more than \$2,000,000 worth of vestable culverts, shelters, etc., when the armistice was signed.

C. & C. Electric & Manufacturing Company, Garwood, N. J., as announced by William E. Tuttle, Jr., receiver for the company, will be sold at auction at the office of the company on Aug. 4, in three parcels as follows: (1) Land, buildings and building equipment; (2) machinery and machine tools; (3) all patterns, drawings, jigs and dies, special attachments for the manufacture of "C. & C." products, small tools such as gages, drills, reamers, arbors and taps, and patents and good will.

Dubilier Condenser Company, Inc., 217 Centre Street, New York City, announces that it has changed its factory from war to peace production and is now making mica condensers especially for line and machine protection from high-frequency surges and lightning discharges. At present it is experi-

menting with condensers for power-factor correction. This problem has been given serious consideration by its London company, which is now experimenting with a 2-kw. plant at its works, with satisfactory results.

Philip H. Ward, Jr., formerly general manager and secretary in charge of sales and exports of the Chelton Electric Company, announces that he has severed his connections with the former company and has organized the Ward Electric Company, Stock Exchange Building, Philadelphia, Pa. The new corporation will manufacture for domestic and foreign distribution an extensive line of electrical supplies and specialties, including knife, push-button and surface snap switches, flush receptacles, new code and plug fuses, etc.

A. E. Kaiser has been appointed director of production for the Westinghouse Electric & Manufacturing Company. Mr. Kaiser's experience in the works extends over a period of more than twenty-three years. This includes the paint department field and armature machining, winding, assembling, general foreman's office, rate, central production and storekeeping departments. After spending three years in the latter, he was again called to the manager of works' office for one year, from which he was appointed assistant director of production in 1912.

Westinghouse Lamp Company announces that Elliot Reid, formerly advertising manager and more recently assistant to the general manager, became on July 1 sales manager of the company. In that capacity he will be responsible for the commercial activities of the company in both large and miniature classes of lamps in domestic territory. Mr. Reid was advertising manager of the company for six years. He became assistant to the general manager in November of last year. He was born in New York in 1889 and was connected with the Equitable Trust Company for three years.

Page Steel & Wire Company has opened a branch office in Chicago, at 29 South LaSalle Street. This office will handle all Armeo iron products, including Armeo welding rods, twisted pairs, plain and galvanized strand, bond wires, Armeo iron fence and barbed wire and other brands of fence. This company has another new branch office in the Book Building, Detroit. Distribution in Canada is in the hands of Taylor & Arnold, Ltd., Montreal, Toronto, Winnipeg. Local distributors for Armeo iron welding rods are located in all principal industrial centers. The sales of the Armeo iron department are under the supervision of W. T. Kyle, sales manager, at 30 Church Street, New York.

National Tube Company, Pittsburgh, Pa., announces that it has made arrangements with the National Metal Molding Company of Pittsburgh and the American Circular Loom Company of New York to act as its distributor of spellerized mild-steel tubing, made especially for the manufacture of rigid-

steel conduits. These two companies will, as heretofore, finish and market this tubing under the following trade names: National Metal Molding Company, "Sherarduct," sherardized rigid-steel conduit, and "Economy," black-enameled rigid-steel conduit; American Circular Loom Company, "Xduct," galvanized rigid-steel conduit, and "Electroduct," black-enameled rigid-steel conduit. The companies named, it is stated, will probably take the entire output of National conduit pipe.

G. E. Acquires Trumbull Interest.—The General Electric Company made the following statement this week: "The General Electric Company has acquired an interest in the Trumbull Electric Manufacturing Company of Plainville, Conn. The present management of the Trumbull Electric Manufacturing Company still retains a financial interest in the company and will continue in active charge of its manufacturing and selling policy. The Trumbull Electric Manufacturing Company has an enviable reputation, national in its scope, as a large manufacturer of knife switches and safety-first iron-box inclosed switches, as well as a general line of miscellaneous supplies, and the General Electric Company, believing in the great future of the "safety first" movement, feels that an "alliance between these two leading manufacturers of goods designed to promote the safety-first feature in service entrance switches, motor control devices, etc., will give considerable satisfaction, not only to the present customers of the Trumbull company, whose name will remain unchanged, but to the trade in general."

Wheeler Condenser & Engineering Company, Carteret, N. J., announces that at a meeting of the board of directors on July 8, J. J. Brown, formerly vice-president and general manager was elected president, succeeding Charles W. Wheeler, recently deceased. H. S. Brown of 50 Congress Street, Boston, Mass., was elected vice-president. No other changes were made in the officers. H. S. Brown has been associated with the Power Specialty Company, 111 Broadway, New York City, for the past fifteen years, the greater part of the time as New England manager for that company. He is also president of the Brown-Ferries Company, Philadelphia, Pa. The business of the Wheeler company has more than quadrupled during the past ten years under the management of J. J. Brown, and the manufacturing capacity of the plant has been correspondingly increased. One important addition has been the construction of a large tube mill for the manufacture of seamless drawn tubing of brass, copper and special mixture. In this mill the record output of nearly one million pounds of condenser tubing in one month was recently made. This tubing is used not only in Wheeler condensers, evaporators, reboilers, etc., but it is also made in large quantities to customer's specifications for American trade and for exporting.