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## THE MIDYEAR MEETING

The first midyear meeting of the American Electric Railway Association was held only three years ago and at that time the idea was considered very much of an experiment. It was thought questionable whether railway men would take the trouble to leave their properties at the busiest time of the year and spend a day or more at the conference so soon after the autumn meeting. The success of the first convention, however, established the desirability of the plan, and the attendance has constantly increased from year to year. The records for this week's meeting showed a registration up to Friday afternoon of 260 members, and this number was augmented by those who were detained until the final event of the conference, the banquet in the evening. Great regret was expressed at the enforced absence of President Harries, but the proceedings were admirably conducted by Vice-president Black and the deliberations were profitable from every viewpoint. The subjects were such as naturally to attract interest because they are the liveliest of the day and ones which everyone interested in public utilities is considering, and this fact, together with the many committee meetings, attracted a very representative gathering.

## EDUCATION FOR APPRENTICES

The publication of primers on individual topics, as disclosed in the new plans of the educational committees of the American, Engineering and Accountants' Associations, appears to be entirely practicable and should meet with a quick and hearty response. The committees have not abandoned their plans for a correspondence course, but feel that it is necessary to lead up to this by preliminary propaganda. The main feature of work of this kind is to keep the instruction well within the grasp of those who are to be reached. There is always danger of making the instruction too technical and hence discouraging. The committees wisely plan to avoid this and apparently intend

to make every effort to put their instructions into plain every-day terms.

## TRAINING AND HOLDING PLATFORM MEN

The committee on the training of transportation employees certainly has a large task in hand, for one of the most distressing and costly features of electric railway operation is the rapid change in the personnel of the platform men, and this despite the fact that their actual annual earnings often exceed those of "skilled laborers." It is true that the average electric railway employment bureau is a catch-all of jobless men who have been trained in other fields; but this does not explain why they should be so eager to leave the service for positions with a lower net income. This fact was of less account in the early period of the industry, but it is a serious one under the more complex conditions of the present day, when a very appreciable amount, say \$50 to \$100 per individual, is expended to instruct new men in the technique of car operation and accident prevention. Surely there must be some underlying cause for a condition in which an annual desertion of 50 per cent is looked upon as a matter of course. This problem is not to be solved by the laborious gathering of statistics but rather by a study of the fundamental conditions which differentiate car platform employment from other kinds. For instance, there may be something about the present methods of instruction and discipline repellant to men who have been wont to do their daily work with little or no minute supervision. If this is true, more attention should be given toward explaining the operating rules in such a way that the men will not become imbued with the feeling that the rules are arbitrary but will realize that there is a reason for each. This is one important aspect of the problem before the committee, and it is encouraging to note that in trying to solve it the committee will depart from the beaten track by endeavoring to discover the fundamental factors which are common to the situation everywhere.

## MODEL UTILITY LEGISLATION

The report of the department of the National Civic Federation which is preparing a so-called model form of law for the regulation of public utility corporations, presented by Mr. McMillin at the annual meeting this week and published elsewhere in this issue, contains one statement in particular which accords with the views of many thinking people. This is, that the only alternative of reasonable public regulation is public ownership and operation. The quiet, steady growth of this belief in the public mind in the last few years is one of the factors that have made the movement toward regulation irresistible. It is to be noted, however, that the language of the National Civic Federation report is "reasonable public regulation." This implies that it is conceivable that there may be un-

reasonable regulation. There is indeed danger that the public authorities will forget in some cases that what they are regulating is not the operation of public properties but the operation of private properties. The right to regulate the property of other people, without the responsibility or accountability to them for deeds of omission or commission, is one that is conferred so freely by the new type of law that the commissioners must be men of high character to realize that they hold the power and that they escape the direct responsibility of safeguarding the properties. If, with public ownership and operation, the commissioners had their duties enlarged to include that control, they would be required to assume the responsibility as well as to hold the power. Regulation will be at its best if it protects the public and likewise the corporations, and while this end will be attained through the choice of commissioners and their decisions rather than by the words in which the new laws are framed, the National Civic Federation should emphasize as clearly as it can, when it promulgates its "model" law, that its action is designed to promote reasonable regulation and not confiscatory regulation.

#### CORPORATIONS AND THE PUBLIC

Mr. Strauss analyzed in a masterly way at the midyear meeting the causes for the condition of unrest which exists in regard to corporations and so-called corporation privileges. As explained by him, the word "privilege" sounds well in a harangue against corporations by the stump speaker and also to the legislator when he wishes to offer an excuse for the imposition of a new tax on corporations. But practically, as shown by Mr. Strauss, the privilege enjoyed by corporations of being corporations is essential to modern life and activity. Industry would come to a standstill if men could not co-operate by this means and thus provide more capital than individuals are able to furnish, and any attempt by a large corporation to do business without a limited liability for its stockholders is impracticable. As for the privilege of a street railway company to use the streets it would not be a street railway if it did not do so. It is refreshing also to read so clear an exposition as that presented by Mr. Strauss of the absurdity of expecting that capital will be encouraged to engage in the development of public utilities if all future investment is to be limited to from 6 per cent to 7 per cent on a physical valuation arbitrarily made and nearly always much less than the amount of money required to develop the property into a going concern. Profit, as the paper points out, begins only when current interest rates leave off.

The device of shares without par value suggests one possible means by which the present confusion which exists in the public mind as regards valuation and the proper remuneration due on the investment might be lessened, but unless there is a radical change in general sentiment about these matters the plan will accomplish little.

Mr. Strauss' paper is a fine educational document on the principles of corporation finance. It is a good antidote for many of the nostrums which are being peddled as panaceas for this serious situation. After all, the only hope for reform is that there shall be a clearer understanding on the part of the public of the reasons for the organization

of companies and the motives which impel investors to develop new enterprises, and Mr. Strauss' paper emphasized the importance of popular education on these topics.

#### THE PROBLEMS OF THE MIDYEAR MEETING

The midyear meeting has settled into its rightful place in the scheme of organization of the American Electric Railway Association as the forum for discussion of the gravest problems confronting the industry. These problems crystallize into the questions of public relation which are treated in the report of the committee dealing with fares and in the comprehensive study of railway finance comprised in the report of the Railroad Securities Commission appointed by President Taft. No matter through what medium the problems are presented to the association for discussion, they affect all the companies because they involve rates of fare and values of property. The discussion on these topics which took place at the meetings yesterday is published in another part of this issue and it should be read with care by those members of the association who were not able to be present to hear it. The discussion on the report of the committee on fares brought out the fact which is clear to those who are of the industry, but is not appreciated by those who are of the traveling public, that the electric railway business is one of the most difficult in the world to manage with success to the companies and with satisfaction to the public.

Mr. Duffy, in his contribution, directed attention to the part played by the low load factor in the present unwholesome condition of the companies. This condition is, unfortunately, an inherent disadvantage of the urban street railway which has not been overcome by any course that the average manager has found himself able to adopt. The many hours of light load and the very few hours of heavy load which the riding habits of the American public impose upon the companies are practical considerations which are not easy to alter. The fact that they have not been altered in the past, however, is no reason why they cannot be altered in the future by a determined campaign and effort. Certainly, when there are so many avenues of discouragement open, the companies are not justified in failing to take active and energetic steps to accomplish some good results by attacking the low load factor which Mr. Duffy pointed out.

Mr. Clark has studied the British municipal tramway conditions for many years, and his interesting contribution on this aspect of the fare situation is supported by a statement of facts which are not only new to the American public but are, in reality, not appreciated by the great body of railway managers in this country. Low rates of fare are not advantageous to the public in the long run if they do not meet all the expenses and reasonable charges assumed in the provision of the service, and this is so without regard to whether the properties are owned municipally or privately. The reference by Mr. Clark to the action of the English authorities in deferring electrical tramway development until the American companies had gone through a long process of experimentation and progress would have been a matter affording pride to the American sense of superiority a few years ago, when advancement

and initiative in the properties, even at high cost, were applauded in this country; now it emphasizes a conservatism in the British attitude which many managers in this country will wish their predecessors here a decade or two ago had adopted in their policies. The progress and improvement which came with American invention was beneficial to the riding public, but it has left capital accounts burdened with an element of cost which, if reasonable and proper accounting practices have been followed, is a justifiable part of the cost of the present properties. There are such radical differences in the rate-making methods of the American and the English companies that it is impossible to measure their revenues by the same standard. The American urban rate is a flat one, with an unmeasured ride per passenger, while the English method proportions the fare according to the distance traveled. When the English lines, under these circumstances, which seem so favorable to American managers, admit unprofitable and unsatisfactory experiences, it is an evidence that the advantages which they enjoy are offset by disadvantages that are serious. The lesson for American managers in this is that even if they experiment with a zone system of fares the outcome will be disastrous unless they make the rates high enough or flexible enough to provide for future contingencies.

Since the lessening of the margin between gross and net is due to the enlargement of operating expenses the paper of Mr. Burleigh on this feature of the problem explains a condition which is written down in the experience of every company. Few companies, however, have compiled the actual percentages of increase so as to display the facts as emphatically as they have been set forth by Mr. Burleigh. Unless increases in total cost can be offset by a greater use of facilities that will keep the unit cost stationary or reduce it they will make it impossible for the companies to show the improvements in results which ought to be realized.

The remarks of the various speakers show that the seriousness of the prevailing situation is realized fully by leaders of the industry and that they do not want to shirk a duty which becomes more pressing as each day passes without a fair settlement of the problems. The real work of the midyear meeting is not behind, but before, the industry.

#### INCREASING SERVICE CAR EFFICIENCY

The prompt delivery of equipment parts and materials to shops and carhouses is an important requirement in the efficient administration of a street railway system covering a large territory, and in this connection an occasional analysis of the service and routing of stock cars will pay well for the time and trouble taken. In the past the shipment of materials from a central storehouse to outlying carhouses has too often been on a spasmodic basis. Greater care in planning such trips with reference to the geographical locations of the carhouses will often indicate savings in time, car mileage, power and platform labor, as in a recent case where a new service car timetable including about forty houses was cut from a week to four and one-half days without interfering with the work of visiting each carhouse from four to five times a month.

When a revised schedule is established care should be taken to post a copy at every storage and operating carhouse well in advance of the time when the stock car will visit it, and information sent to carhouses should include data as to the time that orders should reach the stores department in order to be filled on the following trip, the time the car is scheduled to reach every carhouse on the system and the time it is due back at its starting point. To secure the results successfully under this more efficient management, carhouse foremen must co-operate to the utmost to be ready to receive the car when it reaches their headquarters, and the motorman in charge of the stock car on any division must be qualified and determined to maintain its schedule. If the latter finds, because of light load, that he will be able to reach any carhouse ahead of his schedule, or that on account of a heavy load he will be delayed, the carhouse next in order should be notified by telephone, so that the available time can be utilized to best advantage. Irregularities in the amount of material to be handled will at times upset the most carefully planned schedule, but a more effective use of the telephone, combined with careful studies of what the stock car can be expected to do under normal conditions, will do much to offset the uncertainties which in so many instances are militating against the most efficient handling of this branch of the auxiliary service.

#### REGULATIVE POLICIES IN WISCONSIN

Discussion of the epoch-marking decision of the Railroad Commission of Wisconsin in the Milwaukee fare case was logically the most important feature of the meeting of the Wisconsin Electrical Association which was reported in our issue of Jan. 18, 1913. Without dwelling on the fact that the decision is now in the courts for judicial determination of the rights of the company under its franchise contract with the city of Milwaukee, Mr. Mack brought out the serious conditions which confront companies in the State of Wisconsin generally if the contentions of the commission as to its authority to disregard franchise contract obligations are upheld. These conditions hamper development unless such development follows the lines of financial accounting approved by the State, and this fact was made plain by Mr. Mack. The fear of public utility operators regarding the effect of regulation is twofold. The first question which they ask is whether regulation will be so directed as to destroy or imperil the investment represented by outstanding securities; the second question is whether it will limit the freedom which is conducive to extensions and betterments of existing properties, consolidations of plants and increasing profit arising from improved efficiency and economy in operation.

We think that in the main the operators of established properties would not object to a policy of regulation provided it protected the existing investment and afforded a reasonable return for enterprise and economy in future operation and development. If these fundamental conditions are assured, interference with the service should not reach a serious point. The trouble is that, as the Milwaukee case indicates, these conditions are not only not assured, if the courts agree with the commission, but the investment is

theoretically scaled, the contract with the city is disregarded and the business of transportation in Wisconsin, so far as financial return is concerned, becomes a hazardous and uncertain enterprise. In other words, the past, the present and the future are regulated, and all are regulated by the same measure. These are radical policies and it is to be hoped that regulative laws and commissions generally will deal more equitably with the public utilities. If they do not do so because the fairness of this course appeals to them as a justification of a conservative attitude, they will drive all new capital from the business unless the courts will protect the properties.

#### PRESENT STATUS OF TIMBER PRESERVATION

At the annual convention of the American Wood Preservers' Association, held last week in Chicago, several subjects of general interest to all users of treated timber were discussed. Probably most interest was aroused in the bill now before the ways and means committee of the House of Representatives, known as the "Underwood bill," which assesses a 10 per cent import duty on creosote oil. As only 30 per cent of the total quantity of creosote oil consumed in the United States is produced here, the resulting increase in the price will have an important bearing on the timber-treating industry. Although a sufficient amount of coke-oven and gas-works tar is produced in this country to yield, if distilled, creosote oil in quantities more than enough to take care of our requirements up to the present time, it has not been profitable to manufacture more than one-third of the quantity needed. The reason for this is that the demand for the creosote oil is far in excess of the demand for the other by-products of coal tar, and the installation of a plant for the production of the former is too expensive to produce creosote alone at its present market price.

If the duty is applied it will protect the creosote-oil producer here but will increase the price of the oil to the consumer and restrict the growth of treating plants in this country. In other words, the government will help to defeat its own policy of lumber conservation. The natural increase in the quantity of oil required for timber preservation in the United States has been so rapid that producers have not been able to keep pace with it, and as a result, recently, the price of the oil has gone up. This increase, when added to the proposed import duty, will put the price of oil at a point where some other cheaper preservative must be discovered or there must be a reduction in the quantity of oil used per cubic foot of timber, as the annual track charge at the old price of oil was such as barely to make its use economical with some hard woods.

The discussion also brought out that results far beyond those anticipated were being obtained by steam roads from ties treated with zinc chloride, but this method of preservation does not offer great economies so far as electric roads are concerned, on account of damage from corrosion. A reduction in the quantity of preservative used per cubic foot will probably be the best solution for the present. It was shown that the maximum life has been obtained by both the full-cell and empty-cell processes. It is not a question of whether a tie or timber will last a given length of

time, but whether it will last sufficiently long to equal its mechanical life. There is no need of preserving timber against decay beyond this point. For timber-treating experts to strive for a uniform penetration throughout a stick may be an ideal, but it will not result in practical economy for a railway.

It was generally stated that evaporation of creosote oil took place in proportion to the surface exposed and to a depth of about  $\frac{1}{2}$  in., and that the amount of evaporation has been reduced by the addition of refined tar to the creosote oil which, in the process of treating, coats the exterior surface. As this tar evaporates far more slowly than creosote oil, it produces the desired result. If perfectly sound, seasoned timber is treated and the depth of penetration is such that evaporation does not take place sufficiently fast to remove the beneficial effect of the creosote oil before the timber has failed mechanically, the maximum economical result will be obtained.

It is possible that other preservatives will be discovered which will produce as satisfactory results as creosote oil or zinc chloride. It was suggested in the discussion that a preservative need not necessarily have toxic properties but need only be an antiseptic. In other words, the preservative will be just as successful if, upon impregnating the wood, it creates a medium in which the fungi producing timber decay cannot exist as it would if it were a germicide. Crude oil which will produce the foregoing result is being tested by one steam road with satisfactory service up to this time.

#### HUMAN FALLIBILITY IN RAILWAY OPERATION

All human enterprises have to take into account the weakness and fallibility of the individual, and this is especially true in train operation. An instance in point is the collision on the New York elevated railway system last week, in which one person was killed and several were injured. The day was clear and the working apparatus on the elevated train, so far as the records at present show, was in perfect condition. The operating conditions were no more severe or conducive to an accident than those which have probably occurred a great many times in the past without casualty. The motorman, so far as the evidence shows, was in full possession of his senses. But as the second train approached the one ahead of it, the motorman, according to one of the passengers who was near enough to observe him, was looking out of the side window, so that something diverted his mind, and he heedlessly collided with the train in front.

The situation is not a new one. Steam railroad engineers run by signals set at danger and disregard rules which they have been trained for years to observe. The motormen of surface cars, in periods of abstraction, will run into other vehicles which are using the street or strike pedestrians when the clear space ahead ought to be sufficient to permit the cars to be stopped without difficulty. The term "man failure" is often applied to conditions of this kind, and a year or more ago a number of psychologists met to consider whether any means could be adopted for determining in advance among the many applicants for employment those who would be likely to be liable to failure of this kind.

We have not heard anything recently of the study of this subject from a theoretical standpoint. The corrective generally being applied is that of care in the selection of the men and the maintenance in the corps of employees of a spirit of responsibility for the lives which are dependent upon the carmen's attention to business. By the exercise of this system of personal vigilance it has been possible for some companies to keep the accidents due to "man failure" down to a minimum, and among them there is no more conspicuous example than the elevated railway system in New York upon which the recent accident occurred. In fact, the accident in question was so unusual as to mark it as a rare exception and one which shows what is possible to attain by extreme care in this regard.

A comparison of the number of accidents to passengers on the elevated roads in New York and on the steam railroads is noteworthy. The accident mentioned was the first during the thirty years in which the elevated roads have been in operation in which a man has been killed in a collision and the second in which any one has been killed after having safely boarded a train. Yet the company carries during the year about half as many passengers as are carried upon all of the steam railroads in the country combined. The figure as given by the Interstate Commerce Commission for passengers carried on the steam roads for the year ended June 30, 1910, was 971,683,199 and on the elevated railways of New York during the same period the figure was 456,320,081; yet the number of passengers killed on the steam railroads last year was 318. The average distance of passenger haul on the steam railroads was, of course, very much larger, but the congestion on the cars and at the stations was very much greater on the elevated railways. The figures quoted are, we believe, significant and constitute a remarkable record not only as to the excellence of the transportation conditions existing on the elevated system but also indicating the perfection of the maintenance of the mechanical equipment upon which those in charge of the trains must depend in their control of train movement.

#### A NEW INDUSTRIAL EDUCATION ORGANIZATION

The National Association of Corporation Schools, which was formed in New York Jan. 24, is the result of an attempt to get together for exchange of experience the representatives of corporations which are conducting educational work for the benefit of their employees. More than 200 manufacturing and public service companies are doing this and the interest in the results of these educational experiments is growing.

The organization is to be made up largely of company members, which will bear the expense incident to the gathering and disseminating of information relative to industrial education. There will be a central office in New York City where statistics will be compiled for the benefit of the members under the direction of the executive secretary. It is expected that the data thus made available will be of assistance to companies starting in with educational work and that many companies which have not yet appreciated the advantages of such work will be stimulated to begin it. Information like that which the association will com-

pile has not been available in the past, and it has been only by means of extensive trips of inspection that any idea of what is being done could be obtained. In fact, it was the difficulty experienced by the founders of the association in obtaining such information, together with their surprise at the amount of work now being done, that led them to suggest the organization.

The companies and firms which are back of the new enterprise are of such standing that there should be no doubt of its success. Among these are the Pennsylvania Railroad, the Public Service Corporation of New Jersey, the General Electric Company, the American Locomotive Company, the Westinghouse Air Brake Company, the New York Edison Company, the companies represented in the Doherty Operating Company and many others well known to our readers. All of these have been doing active and successful educational work for some time. The Pennsylvania Railroad has had in operation for a number of years a fully equipped school system by means of which hundreds of boys from the shops and offices have been trained in company time by paid instructors. The educational work of the New York Edison Company has been remarkably satisfactory, more than a thousand students being enrolled in the courses which are conducted by leading teachers and successful business men. A considerable proportion of the increase in the business of this company in recent months has been attributed to the education in practical business methods which the employees have eagerly absorbed. Both the General Electric Company and the Westinghouse Companies have offered special inducements to young men, with the foundation of a good education, to enter their student courses and thereby have built up technical corps which have contributed greatly to their success. The Public Service Corporation has a course which was established comparatively recently, but, according to its officers, is proving very satisfactory.

The manufacturers have been ahead of the public service corporations in adopting these methods, but this will not be true in the future. The electric railway industry is taking part in the movement for better training of employees. Electric railways can profit by the more intelligent and loyal service rendered by men who are mentally alert and observing. These men have had good school advantages and will take an interest in important principles which tend to make them happier and more ambitious. They want more than the technique of their every-day work and will, as a rule, show hearty appreciation of non-patronizing efforts made in their behalf. Of course, it must be made apparent to them that there is personal gain to result from efficient use of the educational privileges, but it may be assumed that any company that will go into this work will be ready to reward satisfactory achievement. A well-known electric railway manager recently said to a class of boys who were undertaking to improve themselves by means of a correspondence course, "As soon as one of you boys is ready to take my place I shall step out." Employers are looking for good "timber" for important positions and are glad to welcome any agency which tends to bring out latent ability. The new association, organized to spread the gospel of industrial education, is a step in the right direction.

# Proceedings at the Midyear Meeting

At the First Session There Was a Discussion of the Report of the Committee on Determining a Proper Basis for Rates and Fares—The Subject for the Second Session Was the Recent Report of the Federal Railroads Securities Commission

The fourth annual midyear conference of the American Electric Railway Association was held at the Engineering Societies Building, New York City, on Friday, Jan. 31, 1913. In the absence of the president, General George H. Harries, of Louisville, Ky., the meeting was called to order by the first vice-president, Charles N. Black, of San Francisco, at 11 o'clock.

Mr. Black announced that the session of the morning would be devoted to a discussion of the report of the committee for determining the proper basis of rates and fares. (This report was published in the *ELECTRIC RAILWAY JOURNAL* for Oct. 10, 1912, and the extensive appendices contributed by Messrs. Duffy, Bradlee and Ford were published in abstract in the *ELECTRIC RAILWAY JOURNAL* for Nov. 30, 1912.) Mr. Black then asked Mr. Ford, chairman of the committee, to present the recommendations of the committee as to the best means for continuing its work.

Mr. Ford presented the following report:

## REPORT OF COMMITTEE

"Your committee on determining the proper basis for rates and fares, after two years' study which it has embodied in two reports already submitted to you, desires to present the following plan for a continuance of this work on a permanent basis. If this is acceptable to you, the committee requests that it be relieved from further consideration of this subject and discharged. We recommend:

"(1) That the association, through its executive committee, appoint a salaried official or establish a department of its present organization—

"(a) to collect statistics and records relating to railway rates, fares and cost of services;

"(b) to co-operate with company members in the solution of these problems, and

"(c) to inform the public.

"(2) That the association appoint a new committee to determine the cost of carrying passengers, which will co-operate with the above department.

"(3) That through this committee and department the association formulate a standard method for making traffic counts and for determining the average length of passenger haul, and that it recommend to its company members that such counts be made at least annually, the results to be available for the use of the association."

This report was presented by Mr. Ford in behalf of the committee, which consisted, in addition to Mr. Ford, of C. S. Sergeant, C. N. Duffy, W. J. Clark, James F. Shaw, E. C. Foster, H. G. Bradlee and R. I. Todd.

Mr. Black then announced that he had received a telegram from General Harries, president of the association, expressing his regret that he was detained from attendance at the meeting by important business engagements. The telegram, which was dated Louisville, Ky., Jan. 30, and addressed to the secretary of the association, follows:

"Until this afternoon I held on to the belief that I might possibly reach New York in time for the dinner to-morrow evening, but that hope is now gone. It is impossible because of the telegraph regulations for me to give proper expression to my feelings. The things I have to say will be held in storage until suitable opportunity presents itself. Will you ask whoever presides over to-morrow's sessions and over the dinner to-morrow night to present my regrets and to say that nothing short of a complicated and highly important business situation could possibly keep me away from our mid-winter conference and the succeeding dinner?"

Let me know who will preside at to-morrow's sessions so that I may send a telegram to him direct.

[Signed]

"GEORGE H. HARRIES."

Mr. Black then asked Mr. Duffy, another member of the committee, to discuss the report. Mr. Duffy presented a communication which is printed on another page of this issue.

H. G. Bradlee, Boston, expressed his pleasure that the executive committee had accepted and approved the recommendations of the committee on rates and fares. He believed the problem was one which was worthy of continued study and that it was fundamental to the entire electric railway industry. He believed that it should be worked out if the electric railways were to continue to carry passengers for a continually increasing distance at an increased cost of operation and investment, and that the proper method was one which would give at least a reasonable amount of flexibility to the question of fares, depending upon the distance which the passengers were carried and the cost of operation in different cities. While the problem had not been solved, he believed that there were enough data now available to enable the association to bring the matter before the public. This could not be done successfully if the matter was presented in a technical way, but it should be put in a popular form so that it could be readily understood. The public should learn to understand that a 5-cent fare, regardless of distance and regardless of increasing operating costs, was in no sense a reasonable proposition.

Mr. Black then called upon W. J. Clark, New York, who discussed the subject of British tramway conditions especially as regards the rates of fare. Mr. Clark's discussion is published in abstract elsewhere in this issue of the *ELECTRIC RAILWAY JOURNAL*.

The chairman expressed the thanks of the association for the clear presentation of British conditions by Mr. Clark, and E. C. Foster, Manchester, N. H., suggested that the paper be printed in pamphlet form and be distributed among the member companies.

William R. Alberger, Oakland, Cal., said that he believed that the longest hauls for a nickel were in Oakland. On some lines the haul is 25 miles for 5 cents. On one line it is 18 miles for 5 cents. Of these distances, 3 miles is by ferryboat. Nevertheless the public believes that the rates should be reduced. The company had recently had a case before the Public Service Commission of California where there was a haul of 16½ miles for 20 cents over an inter-urban line. Eight-tenths of a mile of this was through the city of Oakland. The rest of the distance was divided into three 5-cent zones, yet the public wants the fare reduced to 15 cents. Upon an average, 690 passengers per day are carried from the town 16 miles distant over this line. The case is still before the commission. Through the help of the association, his company had prepared a strong argument against any reduction. The trainmen receive high wages, but there is a large proportion of men who have been in service for a long time. Of the 900 motormen and conductors, 27 per cent have been in the service ten years or longer.

Charles D. Joslyn, attorney Detroit United Railway, advocated that the facts and features presented by the committee should be brought before the public in a popular way so that they should be understood and so that the public would realize the cost of producing transportation.

A. K. Baylor, New York, described some of the condi-

tions which led up to municipal ownership and operation of street railways in Great Britain. A knowledge of these, he said, was necessary to understand the reasons for the adoption of certain practices in that country. The first horse car line was introduced in England by George F. Train in the early seventies, and a bill passed Parliament soon after authorizing the construction of such lines. That act had a purchase clause which provided that the municipalities might take over the properties after twenty-one years at the value then placed upon them. The result was that many of the horse car lines became subject to purchase by the municipalities between 1891 and 1895. One of the first upon which this option occurred was in the city of Birmingham, which has recently established an electric lighting department under the control of the municipality. Joseph Chamberlain was then Mayor of the City. The lighting plant was a very small undertaking, in a very densely populated and very wealthy district, and it showed a great success. Just at that time the idea of municipal control was taken up throughout the country and was greatly agitated. Coincident with this was the expiration of the franchises in other English cities and also the tremendous development of electric traction in the United States. This brought about an agitation for the acquisition of the tramways by the municipalities. One factor only was needed to complete the chain of circumstances in favor of municipal control, and that was found in the decision given on the first purchase which took place, a section of the North Metropolitan Tramways of London, which was taken over by the London authorities. Under the arbitration which was held to determine that first purchase under the act Sir Frederick Bramwell was referee. It was stipulated in the purchase clause of the tramway act, as stated, that the tramways should be taken over at the end of twenty-one years at the value then placed upon them. This value was determined by Sir Frederick Bramwell to be the scrap value of the old physical assets, old rails and ties, good, bad and indifferent horses, carhouses and what-not. The referee did not take into consideration any other thing whatever. As Mr. Clark had pointed out, in this way the franchise, the good will of the property as a going concern and all other intangible property of the railways came into the hands of the municipal corporations without expense. That was a thing which should be borne in mind in connection with any arguments for municipal operation in this country based on the results secured in England. Another point which should be borne in mind is the existence in England of the penny rate of fare and the zone system. The reason for their existence, the speaker believed, was because the penny happened to be the smaller coin in common use in England. The next larger piece was the three-pence, which is small in diameter than the dime and thinner and so not a very practicable coin. Below the penny is the halfpenny and below that the farthing. Hence the penny as the most common coin of low denomination was adopted as a basis of fare on buses and on tramways for short distances, and when longer rides were available the zone system with several penny fares was adopted. Later, halfpenny stages had been introduced in some places.

One effect of municipal control in England had been to confine the construction of tramways largely within the limits of the city owning the system, and suburban lines had not been developed to the extent which they had in this country.

C. S. Sergeant, Boston, referred to the developments of the electric railway in Boston since the consolidation of the original five or six horse railway lines in 1888. At that time the capital invested was about 2.72 times the gross earnings, and the average distance from the center of the city to the end of the different routes was 4.79 miles. The average number of passengers per half trip was 22.5. Soon after, the company began to install electrical equipment and in 1892, when about half of the system was electrified, the

number of passengers per half trip was twenty-eight. Four years later, when the road was almost entirely electrified, there were twenty-nine and a half passengers per half trip. In 1912, owing to the demand of the service in the meantime, the number had decreased to twenty-five and a half. It seemed to the speaker that these figures were probably typical of many cities, and that in the future there would be even more demand for transfers and more demand for extensions into unprofitable territory. He was heartily in sympathy with the conclusions of the committee and the plan of the executive committee in collecting data on this question and getting it before the public.

J. J. Burleigh, Newark, N. J., then presented a written discussion on the subject. Mr. Burleigh's paper is published elsewhere in this issue.

C. G. Young, New York, gave some experiences of the Shanghai tramway. The company there adopted the zone system, with nine zones and small fares. But the result was not so satisfactory as in Manila, where the uniform 5-cent fare had been adopted. He believed that it was desirable for all companies to have valuations of their properties, but a much better basis for taxation was a percentage of the gross receipts.

R. B. Stearns, vice-president and general manager of the Milwaukee Electric Railway & Light Company, said that the work of the committee continued to be of importance, and each session added more pertinent data. Mr. Stearns read a paper, an abstract of which is published elsewhere in this issue.

Upon the completion of Mr. Stearns' remarks Chairman Black said that the luncheon hour had arrived, but before adjournment some action must be taken on the report of the committee. He had no doubt that the recommendations of the committee would meet with the approval of all. The only question that occurred to the executive committee at its meeting yesterday was in reference to the ways and means of financing the recommendations of the committee, and he would suggest a modification of the report in so far as it applied to this particular point; in other words, that a committee be appointed not only to perform these duties, as outlined in the recommendation of the committee, but to look into the ways and means of establishing such an independent bureau under a salaried official for the association and to report at the annual convention in October.

On motion of C. L. Henry, the report of the committee was accepted and placed on file, and the president of the association was authorized to appoint a new committee, this committee being discharged.

The meeting then adjourned for luncheon.

#### AFTERNOON SESSION

Vice-president Black called the meeting to order at 3 o'clock. He announced that the subject for discussion was the report of the Railroad Securities Commission. Unfortunately Walter L. Fisher, Secretary of the Interior, and B. H. Meyer, member of the Interstate Commerce Commission, had found it impossible to attend, but the discussion would be opened by Bentley W. Warren, general counsel Bay State Street Railway.

#### ADDRESS OF MR. WARREN

After Vice-president C. Loomis Allen had taken the chair, Mr. Warren began the discussion of the subjects mentioned. He said that the report was a most admirable one. It touched the electric railway industry only indirectly, because the problem considered was whether the securities of interstate carriers should be regulated by the federal government. Most of the electric railways, of course, were not interstate carriers. At the same time the tendency of interstate commerce decisions had been such that at almost any time electric railways might find themselves actually drawn within the jurisdiction of the Interstate Commerce Commission. The commission thought it was of doubtful

expediency to have the issue of securities regulated at the present time. Mr. Warren did not think, however, that it was that conclusion which made the report valuable so much as the reasoning which led to it. Thus, in the matter of capital stock, the commission pointed out that there was a great deal of confusion regarding its nature. It was a subject which had been discussed, particularly in the State of New York, where a law which permitted the issue of stock without any fixed value whatever had now been enacted. The report of the commission made very clear the distinction between capital stock and bonds. In doing that it touched upon the question of physical valuation and the value or lack of value of such valuation. As a Massachusetts man he found very interesting the commission's remarks regarding stock watering. The Massachusetts anti-stock watering statutes were quite drastic. They were quite annoying even to an honest man, and to the dishonest man they were even more annoying. One of these laws required the issue of capital stock at the market value of the stock, not to be less than par, however, instead of at the par value of \$100 per share. In commenting upon this feature the commission said:

"The experience of Massachusetts has shown that the attempt to prohibit the issue of stock below its market value has hampered the investment of capital and has distinctly interfered with the development of facilities. If this has been the experience of Massachusetts where capital was abundant, we can hardly expect better results in states where capital is more scarce."

In confirmation, Mr. Warren said that it had been increasingly difficult to obtain capital for transportation companies in Massachusetts since the enactment of the law in 1894. Further, he believed that the same law had been responsible for driving certain industries out of Massachusetts. Thus the American Telephone & Telegraph Company or its predecessor, the Bell Company, was a Massachusetts corporation. It had its origin in that State and received all of its earlier development and much of its financing there. In the course of its development it required very large additions to capital, but at that time there was no general law which enabled a corporation which had more than \$1,000,000 to issue stock without special legislation. The company went to the Legislature to obtain authority to increase its capital stock at par. The bill was vetoed by the then governor and a substitute was passed permitting the capital to be increased but requiring the stock to be issued at its market value. The company struggled along on that provision for two or three years, issued some stock for very high prices and the stockholders grumbled. The difficulty of issuing stock in that way increased, and eventually the American Telephone & Telegraph Company was organized in the State of New York. Then it offered its stock at the rate of two shares for one of the Bell Telephone Company, the price fixed on the latter stock under that law having been about \$200.

Another Massachusetts enterprise was the Boston & Albany Railroad, which, after a severe legislative fight, obtained authority to increase its capital stock at par; that is to say, before the general law was passed, by \$10,000,000. It issued \$5,000,000 at par, and the stockholders were glad to furnish the necessary capital. Then the present law was passed and was made applicable to the Boston & Albany Railroad. The corporation never issued a share of stock after that, and the first thing the Massachusetts public learned was that the directors of the company had arranged to have the New York Central & Hudson River Railroad lease the property. Since then the Boston & Albany Railroad has been a mere appendage of the New York Central.

The Boston & Maine Railroad was another illustration of the same tendency. A few years ago that company wished to increase its capital stock and was required to put the stock out at \$190 a share. He remembered this quite distinctly because as a trustee he took some of it, relying on

the judgment of the railroad commissioners that it was surely worth the \$190 fixed by them. The next time that the railroad wanted to issue the stock the price had dropped to \$165. He took some more of the stock so as to average down the holdings. The next time the price was about \$120 and he took some more to average down again. The last time, which was quite recently, he heard that an order would be issued with the price at par \$100 and the market price \$96. If Massachusetts had recognized the principle that the stockholders be allowed to take their stock at par value the chances were that the Boston & Maine Railroad would have been able to finance itself and to have remained an independent corporation if that was desirable. The reason that the New York, New Haven & Hartford Railroad can continue to expand and develop the Boston & Maine Railroad is that it holds a charter in Connecticut.

Mr. Warren then gave a few results of his experience with the Railroad Commission of Massachusetts in connection with the supervision of securities. In saying that one of the defects inherent to regulation was delay, Mr. Warren did not want it understood that he was opposed to state supervision. On the whole such supervision had been an advantage, and whether it was an advantage or not public sentiment was such that it had to be accepted as a necessary incident in public service business. He thought it possible, however, to so restrain the state statutes that delays would be avoided by making the law very specific as to just what sort of securities could be issued and under what conditions and terms.

Referring to the question of physical valuation, Mr. Warren recalled a case where the commission decided that there was an impairment in the physical assets of a corporation amounting to about 15 per cent of its capitalization. In reaching that decision, which was about ten years ago, the commission refused to consider the item of interest during construction, the organization expenses of about fifteen different corporations which had gone to make up this corporation, and even refused to listen to arguments on the experimentation costs which the company had suffered because it was one of the pioneers in electric traction. A very reasonable allowance for each one of the factors named would have wiped out \$1,250,000 of depreciation.

The purpose for which securities can be issued ought to be specifically stated in any law of this kind. In any business the need of working capital would seem to be axiomatic. Yet for years in Massachusetts the practice in the case of new companies was to let them capitalize the actual physical value of their complete property and to launch them forth as common carriers without enough cash in the treasury to make change the first time that a 5-cent fare was collected. The need of working capital was called to the attention of the commission but in view of its own precedents the commission did not believe that it ought to make a change without some indication of approval by the Legislature. Consequently it was necessary to get the law amended by inserting the words "working capital" into the law before authorization could be obtained. Another feature that gave trouble was the necessity of having the law amended to cover discount on bonds. If his company had \$100,000 to be capitalized the board would give it \$100,000 of bonds with which to meet the requirements, but if the bonds brought only \$95,000 there was a deficit of \$5,000 which could not be paid out of the proceeds.

On the whole Mr. Warren thought that most of the commissions meant to be fair and that the public meant to be fair, but that it was very hard to reach them with the facts. The commissions, for instance, ordinarily have to learn the business when these matters are first brought to them, and by the time they have learned it they are apt to go off the commission either through political changes or for other reasons. Hence, if the laws themselves are not pretty definite, the corporations will not get from the commission the things to which they are entitled.



Upon the conclusion of Mr. Warren's remarks, Frederick Strauss read a paper entitled "Some Mistaken Popular Notions Concerning Public Service Corporations." This paper is published elsewhere in this issue.

## REMARKS OF OSCAR T. CROSBY

Oscar T. Crosby said he wanted Mr. Strauss to know that while he was listening to the latter part of his remarks it made him feel as though a dream of his had come true, namely, that some of the young railway men should turn to the academic side of the business. Railway work carried with it large and most important public relations and political relations. Railway men were of necessity politicians making a living out of public questions. It was for them to turn to the academic side if somebody else who had a great deal of time and a great deal of proper interest and less information than they was engaged on that academic side, determined to have his views prevail.

As to the practical means of doing this, there was first the necessity of self-education. What could the association do? The association could approach the general public through different avenues. One was by appearing through its proper representatives in every legislative body in this country. A second way was to plead general principles before the commissions of this country.

Mr. Crosby said that the courts were not fair in being guided by precedents. They were bound morally, but not by precedents. Where was there a precedent for a kilowatt-hour until the men sitting in the meeting established a kilowatt-hour? Where was there a precedent for carrying a ton of freight over such a vast distance as between San Francisco and New York? There were not any precedents. He was not going to present his views as to what the new rule should be, but he wanted to emphasize the fact that when the early decisions were made twenty-five years ago there was no 6 per cent confiscation rule. Mr. Crosby warned his hearers not to let the legislative bodies and commissions feel that there is any precedent governing the case. The next body to go to was the general public, through the press. The newspaper representatives didn't know what harm they were doing. Railway men should go to them and explain the seriousness of their position and let them know that possibly criminal endeavors to derail trains were due to agitation. The master mechanics and the men owning and conducting these enterprises had to turn to these problems, unless they wanted uninformed citizens of this country to direct the public in the wrong way on important subjects. The next thing to do was to urge railway employees who for the most part were a decent lot of fellows. The association should be made useful in these ways. The physical problems were fairly well worked out. The companies were just entering a field for which no lot of experts was being prepared.

## FINAL DISCUSSION

S. G. McMeen said one of the questions which had to be faced was the plurality of the bodies which were considering regulation and the uninformed condition of the individuals who made up these bodies. One difficulty that impressed him in this respect was the short tenure of office of the commission members, a condition which hindered the thorough education of regulating bodies.

Arthur W. Brady said the report of the railroad securities commission was a great public document which did not relate simply to the actual issuance of securities but covered a general discussion of the principles which must apply inevitably to all regulation of businesses of this character. It was interesting to ask what would be done with valuations after they had been obtained. Within the last sixty days, the Adamson valuation bill had been passed by the House of Representatives and had gone to the Senate, where it was now before the committee on interstate commerce affairs. This bill provided that the property of all

common carriers subject to the jurisdiction of the Interstate Commerce Commission should be valued. The report of this commission, notwithstanding the ability with which the principles therein set forth are stated and the high character of the men back of it, had been absolutely disregarded by Congress as far as the Adamson bill was concerned. Yet the report simply recommended that a valuation of these properties should be made in those cases where the Interstate Commerce Commission may deem it a desirable thing. The Adamson bill would require the spending of an enormous amount of money to value property without regard to whether the valuation was required or not. He did not agree with Mr. Crosby that the field was altogether new and that all precedents must be disregarded. The principles laid down in the report of the Railroad Securities Commission might just as well have been laid down twenty-five years ago. Elemental as these truths were, it was vital to the prosperity of the railway business that railway companies should undertake to impress them upon the public—not only upon the general public but upon the commissions, legislatures, common councils and other bodies of similar nature. If they failed to do what they could to inculcate proper principles, they themselves would be the sufferers.

Professor A. S. Richey then presented a written discussion on the subject. This appears in abstract on another page of this issue.

Charles L. Henry also praised the report of the commission, particularly its exposure of the cries of "No watered stock" and "No sale of bonds for less than face." After all, the fundamental question was: "What is the owner of the property entitled to earn on it?" whether the ownership is vested in one person or in hundreds of persons. No man would contend that the return which he received on his money should be limited to the mere interest to pay beyond the interest charge. The principles in the report under discussion applied just as well within the limits of a state as to interstate carriers. He likened the development of an electric railway to that of a highway which was hewn out of the wilderness, then paved with logs, and then with stone hauled long distances. Who would claim that the correct appraisal of that highway was the present value of the materials of which it was composed?

The meeting then adjourned.

## THE PRESENT TENDENCY OF STREET RAILWAY OPERATING EXPENSES

BY J. J. BURLEIGH, SECOND VICE-PRESIDENT PUBLIC SERVICE CORPORATION OF NEW JERSEY

A paper on "The Present Tendency of Street Railway Operating Expenses" might, with a due regard for accuracy, be so condensed as to set forth the answer to the proposition in the single word "upward." Although such a contribution would possess the doubtful merit of brevity, it would be doing no more than stating a fact that is obvious to most, if not all, of us. It would be citing an effect without giving the causes therefor, proclaiming a result but throwing no light upon the conditions which produced it. My purpose will be to set out briefly some of the figures and factors which will explain and make clear why the operating expenses have been mounting higher and higher during the past years, and my observations will be based upon the actual experiences of the company with which I have the honor to be connected.

One of the chief reasons why operating expenses have been increasing has been the tendency toward longer hauls for a single 5-cent fare, due to additional transfer privileges and the extension of fare zones because of the expansion of municipal limits coupled with franchise obligations to carry passengers from any part to any other part of a

given city or town reached by a company's lines without extra charge. The growing demands of the public for more service and better service, necessitating more costly equipment and heavier power outlays, has also been a factor. Wages of trainmen and other employees have been increased from time to time, which has added materially to the burdens of operating from a financial point of view and the single item of taxes, including franchise, real and personal, as represented in cash outlay has been nearly doubled on a car-mile or car-hour basis within ten years, making this charge alone an exceedingly heavy toll exacted from the company's gross revenue.

In an endeavor to get at the underlying facts let us subdivide the costs of operating and consider the factors which have been responsible for the increases. We will begin with the maintenance of way and structures. Our experience has been that this item accounted for 1.154 cents per car mile in the year 1904, went to 1.189 cents in 1908, to 1.453 cents in 1909, to 1.888 cents in 1910, to 2.926 cents in 1911 and to 2.999 cents in 1912.

The increases are largely due to a higher wage scale for track and line laborers and an advance in the price of materials used for replacements and repairs. Ten years ago laborers could be hired for 15 cents an hour against a rate of 17½ or 19 cents an hour to-day. This shows an increase of 16⅔ per cent, and men who are charged with the supervision of this labor declare unequivocally that there has been a diminution of efficiency equal to 25 if not 30 per cent. In other words, the class of men available for this character of work to-day makes it necessary to hire at least four men for every three employed at similar tasks ten years ago. Nor is the end yet, for there is already ground for the belief that a still higher rate of wages will have to be paid with the coming of spring.

Rails, frogs, switches and mates and all other special work chargeable to operation as replacements have gone up in price, as have fishplates, tie rods, bolts and practically everything else which enters into repairs, from 15 to 25 per cent over the prices of ten years ago, and modern carhouses and concrete roadbeds bring with them certain necessary outlays which must be charged to operating.

Demands in the way of street pavements have grown more exacting and incidentally more costly. Where the relatively inexpensive macadam pavement sufficed formerly it has been superseded, by virtue of franchise obligations, by wood-block or specification granite block which cannot be laid short of approximately four times the cost of macadam. Reduced to a car-mile basis, our experience has shown that street-paving requirements cost 0.172 cent in 1904 and 0.309 cent in 1912, covering a system which includes populous cities, suburban towns and rural communities.

At the same time the cost of bridges has increased, due also to the necessity of providing for the heavier rolling stock, while the rather insignificant item of ties has contributed its share to the general burden of expense. In the past ties were used that cost about 60 cents each, but modern practice dictates the use of creosoted ties at a cost of about \$1 each. As they are placed closer together under the heavier girder rails, more of them are required per mile of track. While figures show that the initial cost is many times greater, on a car-mile basis, than formerly, the changed conditions return a measure of compensation in the form of materially longer life of specially treated ties.

Under the head of transportation reference may be again made to the larger and heavier type of cars now used. More energy is consumed in propelling the heavier vehicle, and the car of to-day must be equipped with air brakes as well as hand brakes, unit switch control so that cars may be operated in units or multiples and devices for preventing or minimizing accidents, such as fenders, platform doors or gates and folding steps, all of which have a tendency to increase the cost of maintenance.

It is in the item of wages for motormen and conductors and the cost of supervision that larger inroads into a company's revenues may be discerned. In the case of the company with which I am most familiar the cost of wages for trainmen has increased nearly 25 per cent on a car-hour basis, from 40 cents per hour in 1904 to 49 cents in 1912, and during the same period the cost of supervision has increased as much, if not more, the actual percentages not being readily obtainable because of a rather radical change in the classification of the account. Under the head of transportation, mention may also be made of the sprinkling of tracks. Where formerly it was deemed sufficient to sprinkle with water many municipalities now insist upon the dust being laid with oil, an operation which has added to operating charges to a measurable degree.

In the item of taxes the street railway company bears its full share of the cost of every public improvement and the governmental outlays of every community in which its property is located besides meeting municipal or state demands in the form of special exactions, or assessments on gross receipts, or in the form of franchise taxes. Higher standards of living and the desire on the part of taxpayers for greater municipal conveniences, better sanitary conditions, more police and fire protection and improved educational facilities all make for increased tax rates and larger tax bills, which must be met from the accumulation of nickels representing rides, so far as the street railway company is concerned. When to all these is added an increasing franchise tax on gross receipts, as has been the situation with which we have been confronted, it is easily understandable that the burden of taxation has been growing no lighter as the years have gone by.

To state the facts concretely let me say that in 1904 the taxes paid by the company the writer represents amounted to 5.12 per cent of the total operating revenue; the cost per car mile was 1.301 cents and the cost per car hour was 11 cents. Growing in volume each year, the corresponding figures for 1912 were 7.12 per cent, 2.226 cents and 19 cents respectively. Here figures are more eloquent and more illuminating than words.

One other source of expense properly chargeable to operating is worthy of consideration. It is one that had its inception in the comparatively recent past and yet has assumed sizable proportions. It concerns the employees and working conditions and may be designated by the word welfare. Distinct from the requirements of a legislative enactment known as an employers' liability and workmen's compensation law, in force in our State, the welfare work of the company with which the writer is connected comprehends sick benefits, life insurance and pensions paid voluntarily by the company without contributions on the part of the employees. Started in 1911, the cost of these beneficial features amounted in the aggregate to \$30,320, or the equivalent of 0.063 cent per car mile, while for the year just ended the outlay had grown to \$37,757, or 0.08 cent per car mile. This was in addition to other minor outlays for the promotion of social functions, dinners, entertainments, smokers, outings and inter-division baseball league of twenty teams, pool tournaments and other games and contests for the benefit of the trainmen and members of their families. The workmen's compensation act above alluded to called for an expenditure, in addition to all of the foregoing, of something like \$27,000 during the first twelve months it was in force.

With these observations, treating as they do of only some of the elements of operating costs and substantiated, I dare say, by the practical experience of every man actively engaged in the industry, it is not difficult to see "The Present Tendency of Street Railway Operating Expenses."

Our problem is to bring the facts home to the public, to the municipa' authorities and to the state legislatures so that they, too, will see and be convinced that there is a limit beyond which the street railway cannot go and still fulfil,

in an efficient manner, the purpose for which it was created; that the burdens cannot be made too heavy without curtailing its sphere of usefulness or retarding its efforts as an upbuilder and developer of the communities it serves.

### DISCUSSION OF REPORT OF RAILROAD SECURITIES COMMISSION

BY PROF. A. S. RICHIEY, WORCESTER POLYTECHNIC INSTITUTE

In this able report the Railroad Securities Commission recommends that the Interstate Commerce Commission shall have power to make a "physical valuation" of transportation utilities as the governing factor in determining the reasonable rate for the service rendered by such utilities. It is unfortunate that in this report the commission did not define what it meant by physical valuation.

Webster defines physical as pertaining to nature, external, and valuation as estimated worth, an appraisal. Applying this definition to "physical valuation," we have "an external appraisal."

If this definition is what this commission had in mind when it wrote this phrase into the report, it is a far reach from the real, true value on which the investment is entitled to a fair return. Physical value thus defined is merely the material and labor cost applied to an inventory of the property being valued, in which only such items and materials are listed as can be seen or known to exist in such property. There is no provision here that includes the intangible values that necessarily form a large part of any active property, such as the cost of pioneering, cost of underwriting, cost of organization and administration, interest, legal expenses, taxes, engineering, contractor's profits, etc., during the construction period, development expenses, changes in the art and other intangible values, all of which are as much a fact of the cost of the finished property as the material and labor cost.

Recent valuations for rate-making purposes have, in a number of instances, been more or less of a political nature and as such made almost wholly with the sole purpose of beating down value to the lowest possible point and that point barely covering the mere physical material and labor cost.

In view of this is it any wonder that this transportation industry, with its millions of dollars of investment, is, as the commission suggests, to a great extent opposed to physical valuation?

With governmental assurance that these valuations, which in many cases will be necessary in the determination of reasonable rates, will be broadly and fairly made without fear or favor and that every item of value of whatever nature, tangible or intangible, will receive its proper amount of value, there is no doubt that this industry will lend willing and earnest aid in helping to clear this now vexed and complex problem of a reasonable rate. In the valuation of a property to determine the investment on which a reasonable return should be made, depreciated or so-called present value has no part or place. The investment is by all moral and legal right entitled to a reasonable return on every dollar that it can be determined has been invested in the property, unless, only, it is shown that the property has been allowed to deteriorate in order to pay excessive dividends.

Even for this condition, the remedy is not in measuring the extent of the depreciation to deduct it from the full investment and say that on such a remainder a reasonable return or rate can be made. The return should still be on the full investment, but before any such return is paid out in dividends it shall be used first to bring the property back to a state of normal efficiency.

To find thus the reproduction value of a property as representing the investment and then depreciate it to find a so-called present value is wholly erroneous, and is nothing

more or less than penalizing its existence as a live, beneficial going concern.

A property that is not in existence but is going to be put in existence will without a question be allowed to earn a reasonable return on every dollar invested.

How absurd is the condition relative to return that exists in some of our appraised properties in that on one part of the property the rate of return is based on a wholly unjust depreciated value, while on the other part, where the investment has been made after such appraisal, the return is on the full value! This means that a part of the property is allowed to earn a return on, say, only 70 per cent of the investment, while this other part is earning on 100 per cent.

In conclusion, it may be stated, and without fear of honest contradiction, that a rate to be reasonable must be adequate enough not only to pay operating and other expenses of every nature necessary in conducting the business and interest on the full investment commensurate with the hazard involved, political, financial or otherwise, but it must also provide for the return of the full investment intact dollar for dollar at the end of such investment period, and in addition to this must enjoy a fair share of the prosperity of the community that such investment has built up and made possible.

### DISCUSSION ON RATES AND FARES

BY R. B. STEARNS, VICE-PRESIDENT AND GENERAL MANAGER  
MILWAUKEE ELECTRIC RAILWAY & LIGHT COMPANY

The work of the committee on determining the proper basis for rates and fares continues to be of importance, and each session adds more pertinent data. Gradually we are arriving at conclusions and fixed or fundamental principles with which every system must eventually be inculcated before it can survive the attacks of politicians and the uninformed public.

Increasing demands for extensions of lines into outlying districts for the one fare, increasing demands for more frequent service, regardless of the adequacy of the present service when measured in load factor or percentage of passengers to seats, and increasing demands for reduction of rate of fare to outlying or second-fare districts, continue to be the burden of the street railway management.

The education of the patrons of the public utilities in the affairs of the companies and an illumination of the details of the cost of service seem necessary and urgent to the end that much of the accompanying resistance from the public may be removed by the elimination of the opposition of the thinking business men to sane, sound, fundamental principles involved in the application of the proper rates and fares.

Study of the terminal and movement method of determining the maximum passenger haul discloses most forcefully the necessity for the adoption of the zone system for zones beyond the congested or central district. A joint action or application of this plan by the street railway interests on the basis of 2 cents per mile zones outside the present central one-fare district will save the street railway business from its worst enemies and preserve the integrity of its securities along sound and equitable lines.

Obviously a central district must be recognized in which the one city fare applies to all alike. The outer limits of such district should be extended from time to time as the density of population within increases and as the load factor likewise increases—the limit of haul (all lines within the central district treated as a whole) being fixed at such distances as will permit of a reasonable return to the investors.

Ways and means or proper methods for collections of fares in such a zone system are a perplexing problem. The proposal that the federal government shall coin a 3-cent

piece applicable to street railway business should be discouraged and prevented as of no value to the industry and only tending to increase the difficulties in effecting uniformly fair rates and practices. A coin of 2 cents will measure the cost of service within a 1-mile zone and can be made to cover the cost, provided the frequency of service or the movement charges are kept in consistent relation to the contribution or demand for service.

As the variation in load factor greatly affects the terminal charges in the cost of service, the determination of the frequency of service during off-peak hours becomes an important factor. Frequency of service during hours of maximum travel, when measured on basis of seats per car and passengers standing by choice, is usually most satisfactory, but is regarded by the critical public as "poor" service or inadequate when cars are interrupted and bunched owing to causes over which the company has no control. Frequency of service during off-peak hours or non-rush periods, measured in the same way, would be regarded probably as wholly inadequate, as the general public has for years become accustomed to an interval between cars which usually approximates three seats per passenger.

### SOME MISTAKEN POPULAR NOTIONS CONCERNING PUBLIC SERVICE CORPORATIONS

BY FREDERICK STRAUSS, J. & W. SELIGMAN & COMPANY,  
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I should like to-day to say a few things that may seem to you elementary, so elementary, in fact, that you may accuse me, as Dr. Holmes did the Katydid, of saying "an undisputed thing in such a solemn way"; but, in spite of their being so elementary, they are frequently lost sight of in discussing corporations, and particularly public-service corporations. We have heard, of late, much heated talk concerning the "special privileges," so called, granted to such corporations. Those indulging in such talk have apparently forgotten the old maxim that "intemperance in talk makes a dreadful havoc in the heart," and one might add also, "a dreadful havoc in the head." The belief seems quite general that such talk concerning public service corporations is an indication of progressiveness on the part of the speaker, when in truth, to paraphrase slightly the words of Arnold, he has only been stanchly and mechanically following stock notions and habits, instead of turning upon them, as he should, a stream of fresh thought derived from knowledge of the best that has been thought and said on the subject.

#### SPECIAL PRIVILEGE

What is meant by the term "special privilege," as applied to public service corporations? First, there is usually named the power granted to them of exercising the right of eminent domain, but a little thought will make it clear that without this right a railroad could not be built at all. The State possesses the power of eminent domain; the people of a State want a railroad built (or transmission lines, pipe lines or what not) and, accordingly, they grant, through the State, to the parties willing to build the line, the right of eminent domain; that is to say, they grant them the right to build the road over the necessary lands regardless of the owner's wish, but requiring the payment of full compensation to the owner. To grant them the right to build without procuring for them the right to run over the necessary lands is only another way of not granting them the right at all. Other so-called "special privileges" to corporations are perpetuity of corporate life, limited liability of stockholders and the right to act by majority vote. Perpetuity of corporate life is no more a privilege than is the right of eminent domain; it is absolutely needed for the public good. If railroads should be run by individuals and copartnerships and were to cease running upon the death of individuals

or the dissolution of copartnerships, a state of confusion would exist which would instantly cause to appear absurd the idea that perpetuity of corporate life was a "special privilege." Again, limited liability of stockholders is only another *sine qua non*, of a railroad's existence. Railroads are rarely built by rich capitalists, although there are occasional exceptions, such, for instance, as the Florida East Coast Railway and the Virginian Railway. Usually the money required is obtained from large and small investors, through the bankers of the country, purveyors of capital rather than themselves contributors. This money could never have been obtained if stockholders were to become liable for the debts of the corporation, sums in most instances many times greater than probably even the richest of them could ever hope to possess. So, again, we see that this so-called "special privilege" is in reality nothing more than a complying with necessary requirements. The railroads of this country, if they are to be built by private capital, could as soon be built without steel and wood as without the limited liability feature of corporate bodies.

To provide that a corporation is to be governed by its officers selected by a board of directors chosen by a majority of the stockholders is only to say that it is to be governed in accordance with reason. If minority stockholders could successfully obstruct the policies of the management pursued in good faith by overriding the rule of the preponderant majority, or if policies could be carried out only by unanimous consent, an unthinkable state of affairs would arise; the corporation could not adequately serve the public. It follows, therefore, that government by majority is something which the public interest requires, and permission to corporations to be so governed is not a "special privilege" at all.

There remains, however, the occasional but not universal element of monopoly. Where it exists, such monopoly is usually one of fact, rather than one due to special monopolistic grant; in other words, the law itself permits competition, but as the public interest is best served by a single, regulated public-service corporation rather than by competitive ones, (experience having shown that such competition is wasteful and generally results in ultimate combination) public sentiment is usually against granting unnecessary franchises. In the case of street railroads, the element of monopoly is one that is being recognized more and more as being for the general good, as through routes and transfers can best be obtained by monopoly. So we see once more that a grant of the use of streets for the purpose of an electric road to a single company is not in order to favor that company but because of public necessity. The inconvenience attendant upon tearing up of streets for gas pipes, electric conduits, etc., likewise results, in sensibly governed cities, in the authorities declining to grant franchises to others than the company in possession. Such grant is rarely or never in the nature of an exclusive grant. The municipality simply declines to grant further franchises to so-called competing, but frequently only raiding concerns.

#### RIGHT TO OCCUPY THE STREETS.

But it is frequently said that the right to occupy the public streets at all is a "special privilege." But how can you have a street railway without its occupying the streets? Is it expected that modern science will produce a streetless street railway? How can you have gas in your houses for cooking and lighting purposes, or current for electric light or power, without the pipes and wires being placed in the streets to conduct the gas and the current from the places where it is produced to the places where it is to be used? Here, again, what is called "special privilege" is nothing more than one of the absolutely necessary conditions to the existence of the public utility that the public insists on having. Another current stock notion, so abraded by continuous circulation as to have reached "the limit of tolerance," is the one that franchises should not be per-

petual but should be only for a limited period, and that a short one. In a number of states franchises are limited to twenty-five years or less. You, of course, know how unwise this is. You know that with an expiring franchise there is no incentive to keep up the property, because if the franchise is not renewed, your property in any event will be worth little, if any, more than its estimated depreciated replacement value, and if it is to be renewed on the basis of a mere interest return on its so-called "physical value less depreciation," that valuation will be very little affected by the property's being in a better or in a worse physical condition. A theoretical valuation takes place in due course to determine what it would cost to reproduce the property if new, and then a deduction for theoretical depreciation based on the time that the material has been in service. That so-called valuation is a guess, necessarily inaccurate, as such of us as have relied on thoroughly competent engineers' estimates in providing money for the construction of public utilities know by sad experience. What incentive, in either event, is there for experimentation, for the application of costly new methods, for the discarding of obsolete or semi-obsolete machinery, when the public is not willing to defray the "cost of progress"?

Of course, you who have spent most of your lives in studying these problems know quite well that the most satisfactory franchise in the public interest, as well as in the interest of the stockholders, is a perpetual one, with rates either regulated intelligently by a non-political public service commission, or, what is much better, regulated by arbitration at regular intervals of time specified in the franchise, such regulation to be based on the value of the service rendered, and not on the basis of "physical value," so-called. Bankers are disinclined to provide capital for public utilities the franchises of which have only ten or fifteen years to run; and, of course, without capital the public utility cannot progress, and the failure to progress retards the growth of the community.

There is nothing novel in what I have just said. I am almost ashamed to have said it—it appears so self-evident. And yet "candidates for political influence and leadership," as well as those holding office and leadership, are, again to quote Arnold, "caressing the self-love of those whose suffrages they desire, knowing quite well . . . that they are using a sort of conventional language, or what we call claptrap, which is essential to the working of representative institutions."

#### CAUSE OF ATTACK AND REMEDY

Those attacking public-service corporations have at all times a ready audience. Why is this so? We know that it is, in part, due to that instinct in us which prefers the sensational to the accurate; the same instinct that makes us experience a profound satisfaction in seeing our own candidate thoroughly beaten in an election if he is to be beaten at all. Such of us as were on the losing side in the late election still feel a kind of comfortable sensation in the thought of the monumental pluralities that overwhelmed our party. Then there is that other human quality that, if only we hear a thing said over and over again, we begin almost to believe and actually do end by believing it. But there is still another reason, and for that reason railroad men and those interested with them in the management of public service corporations are to blame. They understand the subject, or ought to, at least; but, in the face of misstatement and misinformation, they usually adopt either a policy of silence, or else one of apology when no apology is called for. They, too, try to flatter and cajole the public. They are ready to insert expensive advertisements in the newspapers for the purpose of winning over the press, instead of considering to what extent, if at all, public clamor may be justified and, to the extent that it is not justified, educating the public. They bend to the storm rather than face it. Instead of combating some deadly error, such as the theory of so-called "physical valuation," they will

content themselves with attempting to prove "physical value," instead of frankly trying to show to public bodies, commissions, legislatures, etc., the absurdity of such a notion of value.

In other words, they, too, cling to stock notions and habits, instead of turning a stream of fresh thought upon them. They, too, attempt to caress the self-love of the people by using the conventional language of claptrap, forgetting that "the number of those who need to be awakened is far greater than that of those who need comfort."

Because the constitution of the United States says that the commandments, thou shall not kill, thou shall not steal, or, what is the same thing, that a man shall not be deprived of his life or property without due process of law, are as applicable to the majority as to an individual, public service corporations content themselves with opposing confiscatory rates in the courts by attempting to prove "physical value" and then contending for a reasonable return thereon, without at the same time intelligently spreading among the people the idea that mere abstention from confiscation will not suffice to produce capital for extensions, for improvements, for progress in the arts by the discarding of obsolete appliances and methods and for the necessary experimentation by new methods. This fatal heresy of so-called "physical value" has been allowed to go so far that one hears at times the phrase "the constitutional rate"—meaning thereby 5 per cent or 6 per cent or 7 per cent return (according to the legal rate of interest in a particular section of the country) on the estimated cost of reproduction as at the time of the inquiry, less an arbitrary and theoretical deduction for depreciation; as though the constitution said anything at all on the subject, other than that no one shall be deprived of his property without due process of law—not another word on the subject. Another one of our uncombated stock notions is the one that 5 per cent or 6 per cent or 7 per cent return on the "value of the property" is a reasonable profit, when, in reality, profit only begins where current interest rates leave off.

#### SHARES WITHOUT PAR VALUE

The introduction of shares of no par value has been much discussed and earnestly advocated as a substitute for shares that purport to be full paid, when, as a matter of fact, they do not represent actual money paid in. Shares of no par value in such a case no doubt serve a useful purpose. The Railroad Securities Commission reported unanimously in favor of this device, and it would be well if some or all of the forty-seven states, other than New York, were to adopt it. New York is the only state, so far as I know, that has adopted it, but with such limitations and qualifications that its applicability is limited. But in advocating this device we are again in danger of falling into our mechanical way of worshipping machinery, instead of the god of the machine. If the public policy is to be that 6 per cent, or any other interest return, on the money invested or on the estimated cost of reproduction as at the time of the inquiry, less depreciation, or on any of the varieties of "physical value" so-called, is all that a public utility company is to be allowed to earn, then any machinery that is devised to get out profits that will never exist is stationary machinery and it is of no avail, nor would it be of avail to have any other kind of device or machinery, for the trouble lies not in the device or the machinery, but at the root of the matter, since it arises from an unwillingness to permit an adequate profit. We shrink from meeting the real difficulties by the substitution of devices for the purpose of soothing the critics, thus postponing the real solution of the problem.

#### WATERED STOCK

And while on this subject of shares of no par value and the object sought to be attained by their use, we come across another one of our mechanical repetitions, namely, "stock watering." We say that Europe has got along without it; but has it? In the first place, promoters there receive large compensation either directly in full paid

shares, or else in cash, which, in turn, is frequently invested in shares, which, of course, is the same thing as though the shares had been given directly in compensation. Then, again, when shares have once been issued and paid for in full, there does occur, in England, what is called stock splitting and stock duplication, which latter is nothing else than what the balance sheet in England terms "nominal additions to capital," or what we term "water." The stocks of most of the English railroads have undergone this process.

What none of the critics of "watered stock" seem to take into account is that on the continent of Europe the great banks, with their enormous capital and surplus and their fixed deposits, carry new projects until the earnings thereof have reached the desired point, and then the actually full paid shares are sold to investors at a high premium. Thus the promoters and the sustainers of these enterprises during their infancy reap a large profit, and the capital of the banks is free once more for new ventures, but here the banks cannot do this, and the means of private bankers, however great, would be entirely insufficient for the purpose. Of course, no prudent bank or banker here would use deposits for this purpose, banking conditions being entirely different from those abroad, and the imprudent ones that have attempted to do this have usually come to grief. The economic necessity that capital should be set free at the earliest possible moment to do new work is the cause of the issue, in this country, of so-called "watered stock" and of the advocacy of shares "without the dollar mark." This mobility of capital is a national asset. Without it the development of the country would have been retarded.

Capital seeks that form of expression in the way of stock and bond issues that has the greatest market value. In endeavoring to procure capital this principle, which is ever at work, should not be underrated. The investor that is content with a low rate of interest but wants absolute security will take a bond bearing 4 per cent or 5 per cent interest, provided that there is back of his investment a large equity. The investor that desires a somewhat larger return but still is not willing to run a very great risk will buy a preferred stock entitled to 5 per cent, 6 per cent or 7 per cent preferential dividends, provided that there be some equity back of his investment, as evidenced by earnings in excess of the preferred dividend requirements. Finally, there is that class of speculative investor who is willing to take large chances for large profits. The saving that is due to the application of this principle of classification benefits the holder of the equity and belongs to him as a matter of right. The idea that the public is entitled to the saving effected by the mortgaging of stockholders' property or by the granting of preferential dividends to partners in an enterprise is vicious in principle and harmful in effect.

The fact that banks here should not, and that private bankers cannot, carry enterprises during their initial stages of development makes requisite some method of mobilizing capital, and the method of so doing by so-called "stock watering," or by the device of "shares without par value," has, therefore, a legitimate foundation. The fact that the capitalization of surplus earnings into common stock has become so prevalent in this country, while it is not in general use in other countries, is in itself an indication, not of a desire to deceive or to defraud, but of the economic necessity of such a course, growing out of our peculiar banking system and our peculiar trade customs.

When all has been said that can be said against "stock watering," and there are objections to it as well as benefits derived from it, we still have to face the fact that the mere payment in full in cash for stock is no criterion of its value. "It has at best," to quote the words of the Railroad Securities Commission, "only a historical importance, as showing what property was or purported to be worth at the time of the incorporation. It does not show what it is worth . . . ten years later or even one year later."

Another idol of the uninformed reformers is that railways and other public service corporations should sell securities directly to the investor instead of indirectly through bankers. The *Railway Age Gazette*, in speaking of this some time ago, said that a man is not expected to be a chemist just because he has to buy drugs from an apothecary, and that no one complains because a manufacturing chemist does not sell his goods directly to the public, but allows several middlemen's profits to intervene. The general public is not supposed to have all the qualifications of an apothecary, but the intricate science of investment, says the *Gazette*, is assumed to be the common knowledge of the great American people.

#### EDUCATION THE REMEDY

Strange it is that our country is the only one where the experienced judgment of a manager of a public service corporation is, in the public estimation, not considered worthy of respectful and eager attention on subjects relating to his profession! Are not the managers as intelligent, as efficient, as public-spirited, as honest, as the politician, the shipper, or the passenger? Why do the people imagine such a vain thing? Is it not largely because the sensational writers and demagogues rage so furiously that the voice of reason cannot be heard? Is it not because in our country we are unwilling to submit ourselves to intellectual authority—to assume that others know more about their own occupation or profession than we can possibly do? Ask these loose critics to specify a remedy for that about which they are complaining, or even accurately to specify their complaints, and you will find that they have been dealing in generalities merely; that they have been "stanchly and mechanically" following "their stock notions and habits" instead of "right reason." On the other hand, it cannot be denied that the practical men of affairs in our country give but little thought to the theory of their work. The hewers of wood and the carriers of water have been so busy hewing and carrying that they have neglected to study the theory of their craft, leaving the theorists of no practical knowledge or experience to dogmatize on the subjects concerning which they so freely express their opinions unchallenged.

And the same cause that operates to make the great mass of the people that have no intimate knowledge of the operating and financial problems of public service corporations cling to their "stock notions and habits" operates also on us on whom devolves the management of such companies, namely, the failure to turn on these problems a "fresh stream of thought." And by our failure adequately to think out our own problems and to give expression to our thought, and by contenting ourselves, instead, to work them out by practical experience merely, unaided by theory, we fail to make an impression upon the popular fallacies that are believed in so "stanchly and mechanically," for we ourselves, after all, usually only reiterate the conclusions of our own practical experience, instead of attempting at the same time to dissipate the ignorance of the uninformed by intelligent appeal to their reason, just as the theorists reiterate their ideas uncorrected by the results of practical experience.

I can do no better, in concluding, than to quote a few more words from Arnold, who, in speaking of the motto of the Cobden Club of England, namely, "Peace, Retrenchment and Reform," expressed the hope that this motto might mean "Peace to our nonsense, retrenchment of our profligate expenditure of claptrap, and reform of ourselves."

#### DISCUSSION ON RATES AND FARES

BY WILLIAM J. CLARK, MANAGER TRACTION DEPARTMENT  
GENERAL ELECTRIC COMPANY

To determine the exact production costs of any commodity is difficult. The kindred problem of fixing selling prices which will afford a real profit thereon is equally hard to solve. When the former has been accomplished

economic laws require that the latter be rigidly adhered to, or financial disaster awaits the seller.

Our sub-committee is entitled to thanks and congratulations for its able work and what it has pointed out to us on the first two features. Its conclusions can be summed up in the statement of your committee to the effect that "the street railway business, as conducted in this country, is selling goods below cost." Consequently, the problem which confronts us is the finding of ways and means which will permit conformity with the economic principle above stated.

ZONE SYSTEM OF FARES

A previous report of your committee suggests the adoption of the zone system of fares in this country, in place of our present flat-rate fare, on the theory that it would afford a solution for at least a portion of that great problem which confronts us.

I fully concur in the wisdom of this recommendation, but fear that we must go somewhat further before that problem is solved in its entirety, and in some manner provide for the readjustment of fare rates when necessary to conform to changes in the cost of transportation.

My principal reason for coming to this conclusion is through a recent study of British municipal tramway conditions, which reveals the fact that such tramways are also "selling goods below cost," and in all probability their condition in this respect must become worse.

What follows will not only make this fact apparent, but will also show that this unfortunate condition is realized by the management of British municipal tramways.

From the first radical differences have existed between British and American theory and practice on the creation, finance and operation of street railways, particularly since British municipalities have figured so conspicuously in their ownership and operation.

British municipal tramways have been especially favored in every manner which would tend toward low capitalization and small operating charges, as will now be briefly sketched.

BRITISH ADVANTAGE OF AMERICAN DISADVANTAGE

It was officially stated in Glasgow, at the commencement of the British municipal tramway movement in 1896, that its development had been delayed to take full advantage of American experience in electric railway development.

In this connection the following language was used: "The pioneers of the electric overhead system have come through a trying and expensive experience."

Ability to take full advantage of this costly experience, which has legitimately swelled the capital accounts of American street railways, has greatly reduced the capital investment required for British municipal tramways, and has likewise favorably affected their total cost of furnishing transportation, through low fixed charges.

The following fact has had similar favorable effects: Although American street railway companies have frequently paid for development made and properties created by their predecessors far more than these were actually worth, British municipal tramways have paid but little for what similarly preceded the creation of their present properties. Generally what their predecessors had created was legally confiscated or only scrap value paid therefor.

To demonstrate this fact: The parliamentary report of 1912 on tramway and light railways in the United Kingdom shows that the total amount expended by all municipal tramways for "construction or purchase of old lines and works now superseded" has been less than the equivalent of \$31,000,000. A portion of this total is represented by certain expenditures made by the municipalities themselves for work since abandoned. Consequently, British municipalities have paid less than \$30,000,000 for the properties of all the tramway companies which preceded their present tramway systems.

British municipal undertakings have also received many

financial benefits and advantages paid for by local taxation which do not show in their capital accounts.

Undisputed sworn testimony was given before the Royal Commission on London Traffic a few years since to the effect that tens of millions of dollars had been expended by British municipalities for street widenings and similar improvements, made necessary by municipal tramway construction, that had never been charged to the cost of the tramways.

In advocacy of British municipal ownership of tramways and other public utilities, it has been correctly stated that the municipalities have been able to borrow capital at far lower rates than are possible for American public utility companies, but it is not stated in this connection that the ordinary rate of interest at London is far less than in this country.

It is, of course, true that the low rate of interest now paid upon the present capital investment of municipalities in tramway and other public utility undertakings means low fixed charges and thus lessens their full cost of service.

INTEREST RATES HIGHER

But conditions have changed in this regard, and British municipalities cannot longer borrow money at the low rates of the past.

This is best evidenced by the quotations on certain British municipal securities from the official London stock list of

TABLE I.—QUOTATIONS OF BRITISH MUNICIPAL SECURITIES

	Bid.	Asked.
London County Council.....	67	68
Corporation of London.....	73	75
Barnsley Corporation.....	80	82
Barry Urban District Council.....	79	81
Bath Corporation.....	82	84
Batley Corporation.....	81	83
Birkenhead Corporation.....	74	76
Birmingham Corporation.....	67	69
Bradford Corporation.....	82	84
Brighton Corporation.....	67	69
Bristol Corporation.....	80	82
Cambridge Corporation.....	81	83
Cardiff Corporation.....	81	83
Coventry Corporation.....	73	75
Croydon Corporation.....	82	84
Derby Corporation.....	79	81
Eastbourne Corporation.....	80	82
Exeter Corporation.....	70	72
Glasgow Corporation.....	70	72
Edinburgh Corporation.....	76	78
Hull Corporation.....	80	82
Lancaster Corporation.....	79	81
Leeds Corporation.....	79	81
Liverpool Corporation.....	67	69
Manchester Corporation.....	84	85
New Castle upon Tyne Corporation.....	74	76
Portsmouth Corporation.....	72	74
Reading Corporation.....	79	81
Sheffield Corporation.....	68	70
Southampton Corporation.....	74	76
West Ham Corporation.....	77	79
Bristol Corporation.....	70	72
Leicester Corporation.....	67	69
Thames Conservancy Board.....	73	75
Metropolitan Water Board of London.....	75	77
Port of London.....	73	75

Dec. 30, 1912, shown in Table I. The quotations are for one issue in each case.

LOWER WAGES IN UNITED KINGDOM

The lower rates of British wages should naturally reduce the cost of transportation below figures which are possible in the United States without regard to the fact that our American street railways have not been so favorably treated on their capital investment as have British municipal tramways.

True, there has been some slight increase in the rate of British wages within recent years, but that this has not been proportionate to similar increases in America is illustrated by the following quotation from the report of the Glasgow Corporation Tramways in 1911:

"The tramways committee has agreed to recommend that the wages of motormen and conductors, cleaners, sandmen and greasers be increased as from June 1. The scale of wages recommended is as shown in Table II.

"It has also agreed to recommend that the minimum wage of able-bodied laborers in the car works, Pinkston power station, and permanent way be at the rate of 5½d. (11 cents) instead of 5d. (10 cents) per hour."

Taxes paid by British municipal tramways are far less proportionately than the similar item in this country, while their accident costs per car mile are about one-third of end conditions of these tramways.

#### MOTIVE OF BRITISH MUNICIPAL TRAMWAY MOVEMENT

Now as to the real motive which has animated the British municipal tramway movement, which is not generally understood, and also to afford a glimpse of the present conditions of these tramways.

Counselor James H. Rodgers, chairman of the New Castle Corporation Tramway Committee, in a paper read before the British Municipal Tramway Association in September, 1911, states: "We [the municipalities] have had established in almost every district throughout the country parks and recreation grounds art galleries, museums, free

TABLE II.—WAGES RECOMMENDED ON GLASGOW CORPORATION TRAMWAYS  
Motormen and Conductors

	Shillings per Week	Equivalent to
First year:		
First six months.....	24	\$6.00
Second six months.....	25	6.25
Second year:		
Third six months.....	26	6.50
Fourth six months.....	27	6.75
Third year:		
Fifth six months.....	29	7.00
Sixth six months.....	30	7.50
Fourth year:		
Seventh six months.....	31	7.75
Eighth six months.....	32	8.25
Thereafter.....	33	8.75
	Cleaners, Sandmen and Greasers.	
First year:		
First six months.....	23	\$5.75
Second six months.....	24	6.00
Second year:		
Third six months.....	25	6.25
Fourth six months.....	26	6.50
Third year:		
Fifth six months.....	27	6.75
Thereafter.....	28	7.00

libraries, free schools, better lighting and watching, isolation hospitals, better sanitation and many other equally important and necessary improvements.

"The money required for all this generally comes out of the rates [local taxes], which have unfortunately gone up year by year in almost every district throughout the country.

"It is unnecessary to point out how that continuous increase hampers the proper development of a district. Municipal corporations cannot be blamed if, seeing as they did, expenditure going upward in providing those necessary improvements, they turned their attention to see if it were not possible to find some new sources of revenue. This many did, with the result that they secured the monopolies in their respective district, such as gas, water, electric lighting and, last but by no means least, the trams. Whether they have generally turned out satisfactorily from a money-earning standpoint is very questionable.

"The first consideration of a tramway committee ought to be to make its undertaking financially sound by the building up of a sufficient reserve and renewal fund. Its second consideration should be to see that the traveling public is supplied with proper accommodation and facilities. Its third should be to see that good conditions of labor are given to all the workers, and the fourth consideration should be to see that when the first three are complied with the ratepayers [taxpayers] who back its bill and over whose streets it runs its cars should have some returns in the shape of contribution toward the rates [local taxes]."

That securing of profit from operation was the primary object in creating municipal tramway systems is thus frankly admitted.

#### OUTLYING DISTRICTS NOT PROVIDED WITH FACILITIES

This is further shown by stating that the tracks have been constructed principally through densely populated districts which afford a heavy traffic and but little attempt has been made to provide local transportation for outlying districts and suburbs, or in what American street railway men would consider poor territory. In short, they have not lessened their total of net profits by the construction of those long unprofitable lines through sparsely settled

localities which so unfavorably affect the net earnings of nearly every American street railway system.

This particular difference between British and American conditions is understood better by stating that in 1912 the total length of tramway lines in the entire kingdom was but 2637 miles, representing 4297 miles of track, or not far from the extent of similar trackage in New York State or Pennsylvania.

#### COMPENSATION PROPORTIONED TO SERVICE

British municipal tramways have also had the great advantage, from an earning standpoint, of a zone system of fares, so they have been free from that growing burden of furnishing longer rides for a fixed rate of fare, and have thus been compensated proportionately to the service which they render; but, as is apparent, they have not afforded those great advantages to the public at large which have been afforded by American street railways, through the redistribution and expansion of population, with its making of living conditions more sanitary and agreeable and the creation of enormous taxable values, from which municipalities and states have so greatly benefited.

In short, British tramways, although not successful in so doing, have aimed alone at securing net profits, while American street railways have also striven to develop the communities in which they are located.

#### BOTH SELLING BELOW COST

Despite the wide differences in conditions which have been recited, principally through different phases of similar general causes, as already stated, British municipal tramways and American street railways are now in practically the same condition as regards "selling goods below cost."

These important causes are: over-estimating probable net earnings under future conditions, failure to provide properly for obsolescence, considering the life of material as far beyond its actual length, and increases in the cost of labor and material.

British tramway experience has consequently shown that even with their financial advantages of zone system of fares, the fixing of a definite price upon transportation without regard to its cost at different periods must at all times threaten capital investment in local transportation properties and consequently operate against the public readily securing ample transportation facilities.

#### EXPERIENCE OF CROYDON

Illustrative of the inadequate local transportation facilities usually afforded by British municipal tramways, what has been attempted in connection therewith and the actual results secured from their operation, an excellent example exists at Croydon. This city has a population of 168,000 and has an exceedingly well-managed municipal tramway system, consisting of 11.66 miles of line, or 19.1 miles of track, upon which are operated an average of fifty-six motor cars, which in the last fiscal year performed a total service of 2,462,468 car miles and 311,469 car hours.

It is interesting to note in connection with this that the average of platform wages was the equivalent of 4.21 cents per car mile and 34.08 cents per car hour.

The capital investment per mile of track, not including power station and transmission lines, is \$61,858, which represents a capital investment of \$3 for each \$1 of gross income.

A total of 20,849,230 passengers were carried, which averages 8494 per car mile, or 1,090,179 per mile of track. The average receipts per car mile were equivalent to 18.1 cents and the operating expenses were 12.056 cents.

This operating expense per car mile is about 2 cents less than the average on all British municipal tramways and, upon the same basis of computing power costs, would be a trifle less than the expense per car mile at Glasgow, where it is generally considered that the most favorable results have been secured from municipal ownership and operation of tramways in the United Kingdom.



This feature should be remembered when subsequent reference is made to rates of fare.

The geographical location of Croydon as regards London is similar to that of Yonkers to Manhattan. Its tramway system connects with that of the London County Council, and a joint traffic agreement exists between the two systems under which the through fare is at the rate of 1/2d., or 1 cent, per mile.

As will be subsequently stated, the Croydon municipal tramway authorities show that the maximum distance over which a passenger can be transported for the equivalent of a 1-cent fare is fifty-one one-hundredths of a mile.

To compare with this figure, it should be said that in Glasgow the maximum distance over which a passenger is carried for the equivalent of a 1-cent fare is fifty-seven one-hundredths of a mile and the average charge there, per passenger mile, is equal to nine-tenths of a cent.

On eighty-seven British municipal tramways the average fare rate per passenger mile is the equivalent of 1.36 cents.

That such rates of fare are unprofitable seems to be fully demonstrated by the extract from the last annual report of the Croydon Tramways Committee in 1912 shown in Table III.

TABLE III—DISTANCE AT WHICH PASSENGERS PAYING A PENNY FARE CEASE TO BE REMUNERATIVE

Based on accounts for year March 31, 1912

Average length of penny stage, miles.....	2.206
	Equivalent
	Pence. in Cents.
Average fare charged per mile.....	0.490 0.98
Average cost per passenger mile.....	0.897 1.794
Less average charge per mile.....	0.490 0.98
Loss per mile on passengers traveling full distance	0.407 0.814

Equal to a loss of 45.37 per cent of the cost of carrying a passenger one mile, leaving a margin of 54.63 per cent as the remunerative portion, and being equivalent on the average length of penny (2 cents) stage to 1.205 miles.

Commenting on this result, the report continues: "Thus every passenger carried a greater distance than as shown causes a loss which has to be offset by the shorter distance passengers."

OTHER OFFICIAL OPINIONS

For other official opinions on this subject the following further quotations are made from the paper of James H. Rodgers already referred to.

"In Glasgow, or two or three other cities, with their densely crowded streets, a halfpenny fare may be both useful and successful, but that, I think, cannot be said of thinly populated areas. It is this kind of policy, I feel sure, that is the cause of so many of our tramway undertakings being the financial failures they are.

"In no fewer than twelve towns where losses are made each year the committees have granted halfpenny fares; while in six others, where the profits are not sufficient to make proper provision for track renewals, the committees have made the same concession. In only ten places that may be looked upon as financially successful are halfpenny fares allowed. Four of these are in Scotland, which, of course, includes Glasgow, and four are in England, namely, Leeds, Sheffield, London County Council and West Ham, each serving very large populations. The remaining two are Stockport and Warrington, both of which, I feel sure, would have done better if they had never granted the concession at all.

"This goes to prove very clearly, I think, that halfpenny fares ought not to be given, especially by small tramway systems; even the larger ones should be exceedingly careful before granting such facilities."

Regarding the general financial condition of British municipal tramways and its relation to the rates of fare charged, Mr. Rodgers states as follows:

"We ought not to be satisfied with the knowledge that some thirty of the eighty-eight tramways may be financially sound, while the other fifty-eight are either struggling to make ends meet, or are kept going by the assistance of the rates [local taxes].

"I have frequently been amused at these conferences and elsewhere by hearing speakers give figures in bulk to prove that the municipal tramways of this country are a financial success. To lump figures together in this way and use them to prove success or otherwise is simple folly unless all the municipal tramways are run by a large trust or company, and the successful ones make good the losses of the less fortunate. Then, and only then, would such figures be of use in that way."

Mr. Rodgers then gives a list of thirty-four municipal tramways, principally located in large communities, whose last previous annual reports show actual losses from their operation. This he follows with another list of sixteen additional municipal tramways which he states are also not in sound financial condition, and he further refers to eight more whose financial condition is uncertain.

Other members of the British Municipal Tramway Association have expressed themselves at its recent conferences in much the same manner as did Mr. Rodgers.

From what has been stated it must be apparent that, despite the manner in which our British tramway brethren have been favored as regards their capital investment and on the essentials to securing low operating costs, their rates of fare are but little below the average of fares in this country, and their rates are without question unprofitable. So there, as here, necessity exists for finding some means for ready readjustment of transportation charges to conform to changes in operating cost, whenever there is need of such action.

EFFECT OF LOAD FACTOR ON COST OF ELECTRIC RAILWAY PASSENGER SERVICE

BY C. N. DUFFY, VICE-PRESIDENT THE MILWAUKEE ELECTRIC RAILWAY & LIGHT COMPANY

Load factor for the purposes of this discussion is defined as the ratio of the number of passengers to the maximum seating capacity of the cars. It is thus analogous to that definition of load factor sometimes used in central station practice, which expresses the ratio of the average load on the station to its rated capacity.

Conceding that the cost of producing electrical energy or the output of a manufacturing plant is reduced by an

TABLE I—RELATION AND RELATIVE MAGNITUDE OF VARIOUS CLASSES OF COST.

(A) Expenses which exist even though there is no traffic (terminal cost):	Per Cent of Total.
(1) Expenses varying with the miles of track operated.....	2.3
(2) Demand expenses at power plant.....	3.0
(3) Depreciation due to causes other than traffic.....	3.5
	8.8
(B) Expenses proportional to traffic (terminal or movement cost dependent upon load factor):	
(1) Expenses varying with the car miles run.....	7.9
(2) Expenses varying with the car hours run.....	24.3
(3) Output expenses at power plant.....	5.9
(4) Depreciation due to traffic.....	9.5
(5) Return upon investment.....	24.7
	72.3
(C) Expenses proportional to number of passengers (movement cost):	
(1) Expenses varying with the number of passengers carried	6.7
	87.8
Administrative expense burden.....	12.2
Total cost of service, exclusive of any prorating of administrative expense burden.....	100.0
Total cost of service after adding pro rata share of administrative expense burden:	
(A) Expenses which exist even though there is no traffic (terminal cost).....	10.0
(B) Expenses proportional to traffic (terminal or movement cost dependent upon load factor).....	82.4
(C) Expenses proportional to number of passengers (movement cost).....	7.6
Total cost of service, including prorating of administrative expense burden.....	100.0

increase in load factor, the application of cost analysis to electric railway passenger service produces some interesting results.

The method herein shown is that developed by the statistical department of the Railroad Commission of Wisconsin

in the Milwaukee fare cases. It involves the determination of the independent variable factors and the separation of total cost into its various components. It is an amplification of the methods suggested in the report of the committee on determining the proper basis for rates and fares and as such should be of interest to the association at this time.

The total cost of service has been separated under two general groups, viz., terminal and movement cost. "Terminal" costs correspond with what are understood to be "demand" or "fixed" costs, as defined and applied in determining the cost of electric service or in formulating a schedule of electric service rates; similarly "movement" costs correspond to "output" or "variable" costs.

In making this separation it is found that there are three underlying classes of costs, viz.:

(a) Expenses which exist even though there is no traffic.

(b) Expenses proportional to traffic.

(c) Expenses proportional to number of passengers carried.

The relation and relative magnitude of the various classes of costs are shown in the diagram or "cost tree" reproduced in Table I on page 195.

Details of certain elements of expenses in the various groups shown in Table I are given in Table II, published herewith.

TABLE II—DETAILS OF CERTAIN ELEMENTS OF EXPENSES.

- (A) Expenses which exist even though there is no traffic (terminal cost):
- (1) Part of way and structure accounts.
  - (2) Part of power accounts.
  - (3) Depreciation due only to deterioration caused by the ravages of time and the effects of the elements, obsolescence and supersession.
- (B) Expenses proportional to traffic (terminal or movement cost dependent upon load factor):
- (1) Part of way and structure accounts.
  - (2) All equipment accounts.
  - (3) Part of power accounts.
  - (4) Part of operation of cars accounts.
  - (5) Depreciation due only to wear and tear.
  - (6) Return on investment.
- (C) Expenses proportional to number of passengers (movement cost):
- (1) All traffic accounts.
  - (2) Part of operation of cars accounts.
  - (3) Part of undistributed accounts (injuries and damages).
- Administrative expense burden:
- (1) All general and miscellaneous accounts.
  - (2) All of undistributed accounts except injuries and damages.
  - (3) Contingencies (extraordinary).
  - (4) Taxes.

Summarizing these results in formula shape and designating the load factor or number of passengers carried to maximum seating capacity of the cars as  $x$ , we have:

$$\text{terminal cost} = a + (100 - x) b$$

$$\text{movement cost} = c + (x) b$$

or, substituting the percentage relations found in the Wisconsin Railroad Commission's analysis, we have:

terminal cost =  $10 + (100 - x) 82.4$  per cent of the total cost of service;

movement cost =  $7.6 + (x) 82.4$  per cent of the total cost of service.

Assuming, under this cost analysis, that the average rate of fare per passenger was 5 cents, that the maximum average length of passenger haul was 4 miles, that the average loading of cars was 40 per cent of the maximum seating capacity of the cars, the division of the total cost of service shown in Table III would result.

From the analysis herein shown, the following conclusions may be drawn:

(a) That the movement cost approximates 0.5 cent per passenger mile.

(b) That the terminal cost per passenger decreases as the load factor increases.

(c) That for a flat rate of fare of 5 cents per passenger the maximum possible length of haul increases from 1.36 miles at 10 per cent load factor to 4 miles at 40 per cent load factor, and to 8.88 miles at 100 per cent load factor.

(d) That for a given length of haul it is apparent that the cost of "off-peak" service is materially less than the cost of service determined by the capacity of the system.

(e) That the cost of service under a given rate of fare and length of haul could be reduced, were it practicable to increase the load factor by spreading the traffic over a greater number of hours of the day.

(f) That low rates of fare during rush hours cannot be justified.

(g) That the system of cost analysis is applicable to city, suburban or interurban electric railway systems.

(h) That even where operating expenses, including depreciation, contingencies (extraordinary), taxes and invest-

TABLE III—DIVISION OF TOTAL COST OF SERVICE

Per Cent Load Factor Assumed	Per Cent of Total Cost of Service, Including Operating Expenses, Depreciation, Contingencies (Extraordinary), Taxes and Return on Investment		At 5-Cent Fare		Maximum Possible Length of Ride, Miles
	Terminal	Movement	Terminal Cost per Passenger, Cents	Movement Cost per Passenger, Cents	
10	84.16	15.84	4.208	0.792	1.36
20	75.92	24.08	3.796	1.204	2.38
30	67.68	32.32	3.384	1.616	3.18
40	59.44	40.56	2.972	2.028	4.00
50	51.20	48.80	2.560	2.440	4.82
60	42.96	57.04	2.148	2.852	5.62
70	34.72	65.28	1.736	3.264	6.44
80	26.48	73.52	1.324	3.676	7.25
90	18.24	81.76	.912	4.088	8.07
100	10.00	90.00	.500	4.500	8.88

ment charges, are identical, as between two electric railway systems, the reasonable length of haul is dependent upon load factor conditions, which must be reckoned with in determining rates and fares.

## ELECTRIC RAILWAYS OF JAPAN

The twelfth yearbook of the Japanese Ministry of Finance contains the following figures showing the growth of electric railways in that country for 1911 as compared with 1910: The number of companies increased from thirty-four to forty, the paid-in capital from \$47,190,000 to \$80,439,500, the length of lines in operation from 363.6 to 431.5 miles, the length of lines under construction from 180.44 miles to 221.05 miles, the number of passengers from 325,066,000 to 395,666,000 and the net earnings from \$4,059,500 to \$4,493,500. The total number of motor cars operated to the end of the year 1911 was 2459. It is not anticipated that the increase in the mileage of electric railways during the coming years will equal the ratio shown by the past year, as much of the work done in 1911 was stimulated by a pending increase in the tariff on electric-railway supplies. The government has taken up the subject of electrification of steam railroads, and it is proposed to experiment between Tokyo and Yokohama.

## STATIC DUE TO FEATHER DUSTER CAUSE OF FILAMENT BREAKAGE

In a certain Eastern school building complaint was made about the short life of the incandescent lamps furnished, many globes being found with their filaments broken and twisted to the sides of the glass. The lamps themselves, when tested in regular life racks, showed good average performances, so that a service test was finally determined upon for the purpose of studying the lamps under actual working conditions.

In twenty-six days, according to the New York Electrical Testing Laboratories, fifty-six lamps, or 29 per cent of the total, burned out. Thirteen new lamps were then put in one of the fixtures, and after being dusted in the regular manner with a feather duster, current was turned on and four of the lamps immediately burned out. Wiping with a slightly dampened cloth was substituted for the cleaning with the feather duster, and the abnormal breakage at once ceased, indicating that the trouble was caused by the action of static charges of electricity produced by the feathers rubbing on the glass of the lamp.

# Committee Meetings of the Midyear Meeting

Reports Are Published of the Meetings of the Committees of the American Electric Railway Association and Its Affiliated Associations Which Met in New York Jan. 29-31

The practice of holding meetings of different committees of the American Electric Railway Association and its affiliated associations at the time of the midyear meeting is increasing, and this year over forty committees held sessions in New York during the latter part of this week. These sessions began with meetings on Wednesday morning of the committee on the joint use of poles of the American Association and the classification committee of the Accountants' Association. The sessions were continued through the rest of the week, and the meeting of one committee, the equipment committee of the Engineers' Association, was scheduled for Saturday morning, Feb. 1.

An account is published below of meetings of all of the committees which met on Wednesday, Thursday or Friday.

## COMMITTEE ON TRAIN OPERATION FOR CITY SERVICE

The meeting of the division covering city service of the committee on train operation was held on Thursday at 10 a. m. The members of the committee representing the Engineering Association who were present were H. H. Adams, New York, chairman, and H. A. Benedict, Newark, N. J. From the Transportation & Traffic Association, W. H. Sawyer, New York, N. Y., chairman; P. N. Jones, Pittsburgh, Pa., and George Keegan, New York, N. Y., were present. J. W. Brown, Newark, N. J., and A. T. Brown, Brooklyn, N. Y., also attended the meeting at the request of the committee. The matters taken under consideration at this meeting consisted largely in outlining the work of the committee for the ensuing year, and the effect of train operation upon schedules was discussed at length for the purpose of determining its importance as a matter to be considered in the report. In this discussion Mr. Jones stated that schedules with trailer service differed very little from those which would be maintained on the same runs with single cars, provided experienced crews were employed, and that the difference in speed between trailer operation and that of single cars was practically covered by the difference in rapidity of acceleration.

The arrangement suggested by last year's committee, which involved the operation in a single train of one two-motor equipment and one four-motor equipment, was also discussed, recent experience having demonstrated that such a six-motor arrangement would be desirable under many circumstances. It was the expectation of the committee that data could be obtained to show that but few more stops were made by trains than were made by cars operated singly, and in this connection the general utility of the skip-stop idea as inaugurated in Cleveland was included as a matter for investigation.

Messrs. Adams and Sawyer brought up the questions of the influence of the ability of platform men upon schedule speed as well as the influence of the length of stops in train operation and also called attention to possibility of increased headway producing a decrease in the number of passengers who would otherwise make use of surface cars for short rides.

During the consideration of the matter of maintenance of multiple-unit equipment A. T. Brown stated that a car with multiple-unit control had been operated for several years on the Brooklyn Rapid Transit system and that it had been found to require materially less repairs to the control equipment than were required with the standard types of apparatus. It was, however, the consensus of opinion of the committee that the figures given in the report of last year on the maintenance and power required for multiple-unit equipment should be left standing without revision.

Among the recent developments in design which were

brought up in the meeting, the Boston articulated car received consideration as a substitute for train operation, and the committee decided to include a discussion of that type in its report for this year. It was, however, decided to devote most of the committee's efforts to a consideration of the subject from the transportation standpoint, and it was expected that a very considerable amount of operating data could be obtained by conferring with the management of the electric railways in Newark, Pittsburgh, Cleveland and Boston, and if experiments could be inaugurated, from the New York Railways and the Brooklyn Rapid Transit Company, as well, both of the latter systems having recently ordered a considerable number of new cars capable of being used in train service. The meeting then adjourned subject to the call of the chairmen, it being the plan of the committee to hold another meeting as soon as operating data could be obtained and compiled by the co-chairmen.

## COMMITTEE ON BUILDINGS AND STRUCTURES

The meeting of this committee of the Engineering Association was held on Thursday morning. The committee members in attendance were: R. H. Pinkley, chairman, Milwaukee, Wis.; C. L. Crabbs, Brooklyn, N. Y.; W. B. Ingham, Newark, N. J., and H. G. Salisbury, Toronto, Ont., in place of W. J. Harvie, New York, N. Y., resigned. This committee had three subjects on its program as follows:

(a) General specifications and form of contract for railway structures (continued); (b) review of methods of car-house construction (continued), and (c) fire protection rules. This last matter is a subject now about to be considered by the National Fire Protection Association.

As to subject "a" it was decided to limit this to a presentation of general contract and specification clauses, including the bond, but leaving out any clauses covering specific parts of building construction. The committee will try to get this matter into shape for submission to the committee on standards, or for adoption as recommended practice, as the convention may determine. Subject "b" will be chiefly in the nature of a review of the most typical examples of car-house practice. Subject "c" will include a discussion of the organization and drilling of fire-fighting gangs and the prevention of conditions which cause fires. An endeavor will be made to have this subject ready for presentation to this year's committee on standards.

George Weston was appointed vice-chairman, after which the following sub-committees were named: Subject "a"—George Weston, Chicago, Ill.; W. B. Ingham, Newark, N. J., and H. A. Fiske, New York, N. Y.; subject "b"—D. G. Knight, Newark, N. J.; H. G. Salisbury, Toronto, Ont., and L. C. Datz, New Orleans, La.; subject "c"—C. L. Crabbs, Brooklyn, N. Y., and W. T. Dougan, New York.

## COMMITTEE ON PASSENGER TRAFFIC

The committee on passenger traffic of the Transportation & Traffic Association met on Thursday at 10 a. m., present at the meeting being F. G. Buffe, chairman, Peoria, Ill.; J. E. Gibson, Kansas City, Mo.; J. L. Adams, Upper Darby, Pa.; S. W. Greenland, Fort Wayne, Ind., and W. S. Whitney, Springfield, Ohio. At the meeting the subjects assigned by the executive committee of the Transportation & Traffic Association were divided among the members of the committee so that they could prepare lists of questions to be presented to the member companies. To Mr. Buffe was assigned the development of a plan for placing in the association headquarters copies of the advertising literature of the member companies. In addition, he will handle the following subjects: methods of advising the public of timetable changes; proper advertising when new features are

introduced; and parks and winter traffic. Mr. Gibson was requested to devote further study to the subject of factory closing hours with a view to possible extension of peak hours, and also to the question of permitting passengers to ride in front vestibules of closed cars. The subject of special car tariffs and basis for rates, namely, fares, car miles and car hours, was assigned jointly to Messrs. Gibson and Whitney.

The general subject of industrial development both with regard to location of industries and of colonization was assigned to Messrs. Adams and Greenland, the former member being assigned to consider the subject of the use of motor buses. Three subjects, namely, the consideration of the value of reduced fares for round trips, the standardization of forms and sizes for tickets, and the consideration of a basis for making cash, single-trip and round-trip rates on interurban lines, were assigned together to Mr. Greenland. In view of the fact that two of the subjects assigned to the committee were of general importance, namely, the matter of free transportation for employees and others and an investigation of the best method for collecting and registering cash fares on interurban lines, they were not assigned to any individual member of the committee. These two subjects are to be taken under consideration by the committee as a whole.

#### COMMITTEE ON ELECTROLYSIS

The committee on electrolysis of the American Association met with the committee on the same subject of the Engineering Association Thursday morning. Those present representing the American Association were Calvert Townley (chairman), New York, N. Y., and E. J. Blair, representing B. I. Budd, Chicago, and of the Engineering Association, A. S. Richey, Worcester, Mass.; Martin Schreiber, Newark, N. J., and E. B. Katte, New York, N. Y. The committee decided to ask authority to invite the representatives of the steam railroad interests to discuss electrolysis with it and also permission from the executive committee to accept an offer, which will probably be tendered to the committee, to meet with a similar committee to be appointed by the American Institute of Electrical Engineers.

#### COMMITTEE ON RELATIONS WITH SECTIONAL ASSOCIATIONS

A meeting of this committee was held Thursday morning. Those present were C. L. Henry (chairman), Indianapolis, Ind.; L. C. Bradley, Houston, Tex.; H. C. Page, Worcester, Mass.; Thomas Lees, president New England Street Railway Club; H. A. Faulkner, secretary New England Street Railway Club; R. P. Stevens, Allentown, Pa.; E. C. Faber, Chicago, Ill., and W. J. Harvie, New York.

Mr. Stevens spoke about the initial meeting of the committee at Denver in 1909 and urged the value of closer relations between the American Association and the various sectional associations. In the discussion which followed of the ways in which the sectional and national associations could co-operate, Mr. Stevens suggested the desirability of publicity on important railway questions of the day through lecturers who would present at Y. M. C. A. and other meetings the real situation in regard to railway corporations. He believed that arrangements for such speakers might be made through the American Association so that they could be engaged as might seem necessary by the sectional associations or individual companies.

Mr. Henry spoke about the efforts now being made on the Pacific Coast to organize an electric railway association which should be affiliated with the American Association. He referred to the circular letter suggesting such an organization recently issued by F. W. Hild, Portland, Ore., and said that the committee of the American Association had promised to be represented at the organization meeting of this association to be held some time in March and to suggest means by which the affiliation between the two associations could be made to be of mutual benefit.

A discussion of various plans for relations between the

sectional associations and the national association followed and it was decided to take the question up further with the sectional associations to learn which plan would be most satisfactory to them.

#### EXECUTIVE COMMITTEE OF THE CLAIMS ASSOCIATION

The executive committee of the Claims Association met in New York at 2 p. m. on Wednesday, Jan. 20. Owing to the non-arrival of President Avant the meeting adjourned until Thursday morning at 10 a. m. Those present at the meeting were C. A. Avant, Birmingham, Ala.; W. F. Weh, Cleveland, Ohio; George Carson, Seattle, Wash.; B. B. Davis, Columbus, Ohio; E. P. Walsh, St. Louis, Mo.; R. E. McDougall, Rochester, N. Y.; P. C. Nickel, New York; J. S. Kubu, Utica, N. Y., proxy for W. Tichenor, and H. K. Bennett, Fitchburg, Mass., proxy for C. G. Rice.

The question of a permanent representative of the Claims Association at the headquarters of the American Electric Railway Association was referred to the president for a discussion of the feasibility of the plan with the executive committee of the parent organization.

The question of a permanent Index Bureau at headquarters was also referred to the president for similar action so that the American Electric Railway Association, through its secretary, could get the opinions of the general managers of the member companies as to the feasibility of such a scheme.

Mr. Bennett moved that a committee for uniform forms and records be appointed to report to the next convention, and President Avant appointed H. K. Bennett, P. C. Nickel and J. J. Reynolds to this committee.

The report of the subjects committee was received and the following subjects were adopted for consideration in a series of papers which were to be in the hands of the president not later than May 30: the prevention of accidents, the value of safety committees and motor vehicles. The committee assigned H. V. Drown and J. H. Handlon to write papers on the first subject and P. C. Nickel and O'Dell to discuss it. Mr. Carson was assigned to prepare a paper on the second subject, and Messrs. McDougall and Bennett were assigned to its discussion. M. B. Bracken, St. Louis, was assigned to prepare a paper on the third subject, and the discussion on this is to be prepared by James R. Pratt, of Baltimore, and H. R. Hoshorn, of Philadelphia.

Mr. McDougall was requested to compile the ordinances now in force in large cities regarding vehicles on the street and to report to the next convention. H. K. Bennett, who was president during the year 1911-1912, was then presented with a gold badge similar to those given to other past-presidents, and on motion the meeting was adjourned.

#### CONSOLIDATED COMMITTEE ON RULES

The meeting of this committee of the Transportation & Traffic Association was held on Thursday and Friday. The following members were present: F. A. Boutelle, chairman, Tacoma, Wash.; L. H. Palmer, New York; Edward Dana, Boston, Mass., and B. J. Jones, Cincinnati, Ohio. The subjects assigned to this committee follow:

- (a) Harmonizing the codes of city and interurban rules.
- (b) Investigation of the extent to which these codes have been adopted.
- (c) Study of rules of prepayment car operation, considering in this connection the necessary rules for near-side and center-entrance cars; also multiple-unit and trailer operation and the use of fare boxes.
- (d) Development of a set of rules covering block signal operation. This subject to be also considered with the members of the joint committee on block signals for electric railways.

(e) Conference with American Railway Association. With regard to this the executive committee has appointed the following committee to represent this association at the conference to be held with a committee of the American Railway Association: George H. Harries, president

American Electric Railway Association; Dana Stevens, president Transportation & Traffic Association; J. N. Shanahan, past-president Transportation & Traffic Association; F. A. Boutelle, chairman committee on rules; W. R. W. Griffin, vice-chairman committee on rules; J. K. Choate, vice-president and general manager Morris County Traction Company, Morristown, N. J.

After a general discussion of the assigned topics action was taken as follows: subjects "a" and "b" to be handled by the committee as a whole; subject "c," L. H. Palmer, New York; Edward Dana, Boston, Mass., and George Kuemmerlein, Jr., Milwaukee, Wis., and subject "d," F. A. Boutelle, Tacoma, Wash.; L. H. Palmer, New York; B. J. Jones, Cincinnati, Ohio; W. R. W. Griffin, East Liverpool, Ohio, and W. H. Collins, Gloversville, N. Y.

#### COMMITTEE ON INTERURBAN TRAIN OPERATION

There were present at this meeting E. C. Faber (chairman), Wheaton, Ill.; C. N. Wilcoxon, Michigan City, Ind., and J. B. Stewart, Jr., Allentown, Pa. The work of this division of the committee on train operation, owing to the fact that it is a completely new committee working in a new field, consisted in a general discussion of the report of the committee for 1912. At the conclusion of this discussion it was decided to prepare an information blank which would be sent out to all railways which were operating trains. The information to be requested will include comparative costs and will be arranged to show the advantages of train operation where physical conditions make it possible. The committee prepared a skeleton form to make a basis for the work of the coming year and to form an outline for the committee report. The matters which will be considered by the committee will be as follows:

General conditions.

Schedule adherence and flexibility for meeting extreme traffic conditions. Accidents. Construction costs.

Schedule and platform expense.

Comparison of operating costs as affected by number of units per train, as one car, two cars, three or more cars. Effect on substations and power supply.

Maintenance of equipment. Brakes, couplers and pilots.

Communicating signals between cars. Recommendations.

It was decided that the chairman would make such assignments of these various subjects to the members of the committee as might seem desirable, and that reports from each member would be made at the next meeting of the committee.

#### COMMITTEE ON FARES AND TRANSFERS

This committee of the Transportation & Traffic Association met on Thursday morning. The following members were present to discuss the following subjects as assigned by the executive committee of the association: F. T. Wood (chairman), New York; J. V. Sullivan, Chicago, Ill.; F. L. Hubbard, Toronto, Ont.; G. K. Jeffries, Indianapolis, Ind., and W. B. Thomas, East Liverpool, Ohio: (a) Investigation of the matter of fare boxes; (b) metal vs. paper tickets, considering in this connection the matter of liability of counterfeiting; (c) methods of accounting for the transportation of free passengers; (d) desirability of advertising on transfers; (e) economy in company printing; (f) use of transfer-issuing devices on prepayment cars; (g) methods by which lap-over zone fares may be simplified; (h) prevailing methods of registration and accounting of fares on both city and interurban lines, with the various blanks and forms used, and (i) desirable methods of checking transfers.

The subjects will be studied by the committee as a whole with the exception of caluses "g" and "h," which were assigned to a sub-committee consisting of J. V. Sullivan (chairman), Chicago, Ill.; G. K. Jeffries, Indianapolis, Ind., and W. B. Thomas, East Liverpool, Ohio. The committee will ask brief questions to get a general idea of the prevailing situation. It recognizes the fact that local conditions must govern in each case and therefore it will not

attempt to draw any conclusions. The committee is planning to present the standard practices of various companies throughout the country with an explanation in each case to account for the methods employed.

#### COMMITTEE ON UNITED STATES MAIL

The members in attendance at the meeting of this committee were T. H. Tutwiler (chairman), Memphis, Tenn.; H. A. Nicholl, Anderson, Ind.; A. R. Piper, Brooklyn; J. K. Choate, Morristown, N. J. After discussion it was decided to report to the executive committee that while no tangible result had followed from the efforts of the present committee, owing to the lack of necessary data which had not been forwarded by the members of the association with the completeness desired, it was believed by the committee that substantial progress would be made in its work at a very early date, as a special hearing was to be held on the question by the committee in Washington early in February.

#### COMMITTEE ON EDUCATION

At the meeting of the committee on education a number of practical plans were discussed and provision was made for actually beginning the work of this committee. In the first place, its functions were defined as follows: (a) to keep the membership posted on educational matters; (b) to formulate suggestions as to the application of the fundamental principles to railway work; (c) to inaugurate instruction courses, and (d) to co-ordinate the work of the committees of the affiliated associations.

The committee plans to utilize *Aera* as a means of communication between the members and itself. A series of educational primers, dealing with the fundamental principles involved in the work of shop apprentices, will be printed in that paper and afterwards issued in leaflet form. The first of these will point out the common faults of apprentices and will show how these can be overcome by simple means. The importance of the appreciation of the value of materials and labor will be emphasized so that employees will be encouraged to economize in the use of both.

The second publication will deal with actual costs of materials and labor of interest to shop men and will go into considerable detail. This publication will be prepared by some member of the Accountants' Association, and its purpose will be to impress upon the shop men in simple terms the actual cost of detail parts of the equipment on which they are working. The third primer will consist of problems of simple but very practical nature intended to give practice in the computation of bills of material and costs of the common things about a shop or power house. This is the limit of what the committee has blocked out for the present, and upon the response met with depend the lines to be followed later.

As stated, it is also proposed to reprint these primers in pamphlet form for distribution to men and boys who are not members of the association but are in the employ of member companies. Foremen will be requested to apply for such numbers of these reprints as can be conveniently used, and for numbers after the first a nominal charge will probably be made. Foremen and superintendents will be requested to urge the study of the primers and to assemble the apprentices and other employees from time to time to discuss the points brought out. It is not the plan of the committee that this work should place any financial burden on the companies, but that the necessary expenses shall be borne by the recipients of the pamphlets.

#### COMMITTEE ON CONSTRUCTION OF SCHEDULES AND TIME-TABLES

The meeting of the committee on construction of schedules and timetables was held on Jan. 30. At the meeting were present J. E. Duffy (chairman), Utica, N. Y.; E. J. Dickson, Springfield, Mass.; T. F. Grover, Terre Haute, Ind.; C. E. Morgan, Jackson, Mich. The committee at this meeting formulated a data sheet to be sent out to the member companies, in order to get a general expression of

opinion on questions brought before the committee, and also prepared an outline of the work for the coming year. This will consist in carrying out further the work of last year as covered in the committee's report on checking short trips, mileage, etc., and will include consideration of the methods used in keeping the time of trainmen, arranging for a standardization of detention report forms, and preparing recommendations as to what should be shown upon timetables.

The work for the year will include securing information in relation to the use of the near-side stop with special regard to its influence upon the maintenance of schedules and the reduction of accidents, and an investigation of the general practice which is followed in using distinctive colors for different routes either by the painting of cars, by the use of colored lenses or lights, or by the use of special forms of destination signs or route numbers, will be carried out.

A request will be made on the data sheet sent to the member companies for suggestions as to desirable topics for investigation by the committee.

#### COMMITTEE ON TRAINING OF TRANSPORTATION EMPLOYEES

The meeting of this committee of the Transportation & Traffic Association was held on Thursday and Friday. The committee members present were: C. B. Wells, chairman, Denver, Col.; C. E. Learned, vice-chairman, Boston, Mass.; Bruce Cameron, St. Louis, Mo.; J. T. Crabbs, Brooklyn, N. Y., and E. E. Strong, Syracuse, N. Y. The committee discussed the following subjects which had been duly assigned to it: (a) Further study of the question of discipline—disciplinary methods; (b) methods of dealing with employees; (c) development of the cost of training men and the results of changes in the personnel, with particular relation to accidents; (d) safety movements and the prevention of accidents; (e) methods of co-operation with the claim department; (f) periodical examination of trainmen, and (g) bonding of trainmen, both conductors and motormen.

As the result of this discussion it was the judgment of the committee that, instead of continuing the statistical and analytical reports of previous years, a broad study should be made of the underlying causes productive of deficiencies in operation as related to the personnel. The report, therefore, will be a study of cause and effect, an endeavor being made to enunciate principles which will prevent rather than cure temporarily the operating troubles due to human inefficiency.

#### COMMITTEE ON COMPANY MEMBERSHIP

This committee met Thursday morning. Those present were Richard McCulloch (chairman), St. Louis; F. W. Brooks, Detroit, Mich.; J. K. Choate, Morristown, N. J., and L. D. Mathes, Montgomery, Ala. The committee decided to follow the general practice established by previous committees and make an especial appeal to the small companies to join the association. It was believed that the small companies derive relatively much more benefit from the association than the large companies because as a rule they have not the same number of experts in different branches of work in their employ, and by membership with the association they secure the results of studies made by these various experts. The campaign for membership will begin promptly.

#### MEETING OF COMMITTEE ON JOINT USE OF POLES

The meeting of this committee was held Wednesday afternoon. Those present representing the electric railway interests were W. J. Harvie (chairman), New York; A. S. Richey, Worcester, Mass.; W. S. Twining, New York, and C. L. Henry, Indianapolis, Ind. The lighting and telephone interests were represented by Farley Osgood, Newark, N. J.; F. B. H. Paine, Buffalo, N. Y.; W. T. Oviatt, Providence, R. I.; F. L. Rhodes, New York, and H. S. Warren, New York.

#### COMMITTEE ON STANDARD CLASSIFICATION OF ACCOUNTS

This committee began its sessions on Jan. 29. The following were present: H. L. Wilson, Boston, Mass., chairman; W. F. Ham, Washington, D. C.; W. B. Brockway, New York, N. Y.; W. H. Forse, Jr., Anderson, Ind., and the following representatives of the Interstate Commerce Commission; C. A. Lutz, chief of the division of accounts; J. F. Brizzie, examiner, and A. H. Morrow, chief of the electric railway section of the division of statistics. The committee considered a tentative general balance sheet, classification of additions and betterments and statement of income and profit and loss account, prepared by the Interstate Commerce Commission. The commission desires to establish these accounts for electric railways under its jurisdiction beginning on July 1. Before the accounts are finally adopted, however, the tentative classifications will be sent to electric railways of the country.

#### COMMITTEE ON EDUCATION OF THE ACCOUNTANTS' ASSOCIATION

At its meeting this committee decided to work in active conjunction with the committee on education of the American Association and plans made with this object in view will be carried out. The meeting was attended by F. J. Pryor, Jr., Philadelphia, Pa., the chairman; F. B. Lasher, New York, N. Y.; J. H. Neal, Boston, Mass., and W. H. Forse, Jr., Anderson, Ind.

#### JOINT COMMITTEE ON ENGINEERING ACCOUNTING

The committee outlined detailed plans for taking up the work assigned to it by the executive committee. Those present representing the Accountants' Association were: F. B. Lasher, New York, N. Y., co-chairman; M. W. Glover Mobile, Ala., and J. M. Joel, Utica, N. Y. Representing the Engineering Association there were J. H. Hanna, Washington, D. C., co-chairman; H. H. Adams, New York, N. Y.; E. O. Ackerman, Columbus, Ohio, and John Sibbald, Gloversville, N. Y.

#### COMMITTEE ON INTERLINE ACCOUNTING

In outlining its work for the year, this committee considered the report of the committee on this subject which was made at the 1911 convention. Since the 1911 report was presented some changes have been made in the blank forms used in interline accounting, and the report to be prepared for the 1913 convention will include such changes in order to make the recommended forms standard. The meeting of the committee was attended by L. T. Hixson, Indianapolis, Ind., the chairman, and E. L. Schmock, Wiloughby, Ohio.

#### COMMITTEE FOR THE STUDY OF THE BEST METHODS OF COLLECTING AND ACCOUNTING FOR VARIABLE RATES OF FARE

At the meeting of this committee there were present M. R. Boylan, of Newark, N. J., the chairman, and C. H. Allen, Boston, Mass. A number of replies have been received to a circular letter sent to foreign companies with a request for information, and the data which have been secured are being tabulated. The committee is working on its report.

#### JOINT COMMITTEE ON LIFE OF RAILWAY PHYSICAL PROPERTY

On behalf of the Accountants' Association the following were present: Robert N. Wallis, Fitchburg, Mass., co-chairman; A. R. Patterson, Boston, Mass., and H. E. Weeks, Davenport, Ia. The Engineering Association was represented by Martin Schreiber, Newark, N. J.; R. B. Rifenberick, Detroit, Mich., and Edwin Gruhl, Milwaukee, Wis. The committee considered a modification of the classification of physical property which was contained in the 1912 report. Copies of this will be sent to member companies. Mr. Rifenberick and Mr. Patterson were appointed a sub-committee to prepare a letter of explanation, which is to be sent to member companies with the modification of the classification of physical property.

## COMMITTEE ON PUBLIC RELATIONS

This committee met Thursday afternoon with the following attendance: Thomas N. McCarter, chairman, Newark, N. J.; Oscar T. Crosby, Wilmington, Del.; James H. McGraw, New York; William H. Heulings, Philadelphia. Various matters concerning the relation between the public and the companies were considered. A joint meeting was proposed between this committee and the corresponding committee of the National Electric Light Association.

## COMMITTEE ON WELFARE OF EMPLOYEES

This committee met Thursday morning. Those present were J. J. Burlcigh, chairman, Newark, N. J.; D. F. Sherman, Providence, R. I., and C. S. Crick, New York. The committee decided that each member should prepare for the annual meeting a tentative report which would present his ideas as to the features which should be represented in welfare work. These reports will be mailed to the other members of the committee, and from them it is expected to embody a final report on welfare work which will be of interest to the association and embody the ideas of the different members.

## COMMITTEE ON FEDERAL RELATIONS

This committee met Thursday afternoon. Those present were Arthur W. Brady, chairman, Anderson, Ind.; Frank R. Ford, New York, N. Y.; F. W. Brooks, Detroit, Mich.; L. S. Cass, Waterloo, Ia.; Richard McCulloch, St. Louis, Mo.; L. S. Storrs, New Haven, Conn., and J. N. Shannahan, Hampton, Pa. Albert E. Lange, Toledo, was also present during the session. The committee discussed different bills affecting common carriers now before Congress and other proposed legislation, including the Adamson bill calling for the physical value of railroads, the bill covering hours of service now in the House, proposed legislation in regard to steel cars, etc.

## COMMITTEE ON COMPANY SECTIONS

This committee met Thursday afternoon and C. N. Duffy, chairman, Milwaukee, Wis.; P. N. Jones, Pittsburgh, Pa., and Martin Schreiber, Newark, N. J., were present. The committee discussed the work accomplished by the company sections already formed and decided to push the movement.

## JOINT COMMITTEE ON EXPRESS AND FREIGHT ACCOUNTING

J. K. Choate, Morristown, N. J., co-chairman, representing the Transportation & Traffic Association, and Walter Shroyer, Anderson, Ind., representing the Accountants' Association, considered the work outlined for the committee during the coming year.

## JOINT COMMITTEE ON STATISTICAL UNIT FOR CAR OPERATION

The committee, following its 1912 report, is making a careful investigation of the advantages and disadvantages of each of the units in common use. This investigation is being conducted as a basis for the 1913 report, although the committee is not yet prepared to say that there are any better units for electric railway practice than the car mile and car hour. The Accountants' Association was represented at the meeting by C. H. Lahr, Akron, Ohio, co-chairman, and C. S. Mitchell, Pittsburgh, Pa. The Transportation & Traffic Association was represented by C. B. Buchanan, Richmond, Va., co-chairman; Nathan H. Daniels, Jr., Boston, Mass.; J. A. Emery, New York, N. Y., and W. J. Harvie, New York, N. Y.

## COMMITTEE TO DEVELOP UNIFORM DEFINITIONS

This committee, continuing its work of the preceding year, discussed various terms in use in the transportation department and proper definitions thereof. A list of terms to be defined by the committee for its report at the 1913 convention was compiled and a number of tentative definitions were considered. As so many of the terms in use in the transportation departments of the various companies are confined to one or a few localities, the committee decided to select for definition a number of terms which are in common use. Those who attended the meeting were W. C. Callaghan, Rochester, N. Y.; T. C. Cherry, Annap-

olis, Md.; L. C. Bradley, Galveston, Tex., and Frederic Nicholas, Chicago, Ill.

## COMMITTEE ON INSURANCE

The committee on insurance met Thursday morning and afternoon. Those present were H. J. Davies, (chairman), Cleveland, Ohio; S. L. Tone, Pittsburgh, Pa., and A. H. Ford, Birmingham, Ala. H. N. Staats, the association insurance expert, also met with the committee. Mr. Davies spoke about a joint meeting which representatives of the committee had held with representatives of the Central Traction & Lighting Bureau of the old-line insurance companies at which the classification of power houses, the placing of underwriters' labels on cars and other property, some of the rules of the bureau and of the National Fire Protection Association and other subjects were discussed. It was decided to hold another joint meeting in Cleveland in April, to be attended by all of the members of the insurance committee, by the members of the Central Bureau and by other representatives of the insurance companies from the East as well as from the West. Cleveland was selected for the place of the meeting because of its central location. Mr. Staats presented a written report of his work as insurance expert with a list of traction companies which had retained him and a statement of the income and expenses.

The question of recommending that the wiring of all cars be inspected by the underwriters' bureau and that they bear the bureau's labels was then discussed. The committee also considered suggestions as to cutting current out of car-yards and carhouses at night, removing controller handles, tying down car trolleys, etc. The assignments for the coming year were as follows:

E. J. Cook will consider the bonding of tracks in carhouses and the hazards of fire in carhouses from electrical causes and will confer with representatives of the Engineering Association, insurance engineers and others interested. Mr. Ford will work with the insurance expert on insurance forms. Mr. Tone will study, in connection with the insurance expert, the reports in the possession of the association and such other information as may be available on the statistics of fires in electric railway properties and their causes. Mr. Healy, will prepare a report with the insurance expert on the subject of the valuation of the railway properties and the best methods of adjusting fire losses. The secretary of the association will be requested to send out the usual data sheets of the committee and urge all companies to furnish all information required.

## MEETING OF EXECUTIVE COMMITTEE

The meeting of the executive committee of the American Electric Railway Association was held Thursday afternoon. The president, Gen. George H. Harries, was unable to be present owing to business engagements. The first vice-president, Charles N. Black, presided at the meeting. There were also present C. Loomis Allen, second vice-president; Charles L. Henry, third vice-president; John A. Beeler, fourth vice-president; J. H. Neal, representing the Accountants' Association; Martin Schreiber, representing the Engineering Association; C. A. Avant, representing the Claims Association, and Dana Stevens, representing the Transportation & Traffic Association; also H. C. Donecker, secretary and treasurer, and the following past-presidents: Charles S. Sergeant, Herbert H. Vreeland, W. Caryl Ely, Arthur W. Brady and Thomas N. McCarter.

The first business was the report of progress submitted by the secretary. This showed the active net company membership Jan. 30, 1913, as 398 members and the individual members as 2733. The estimated receipts of the year were \$56,850, and the estimated expenditure \$53,425.

The report further showed that the annual proceedings of 1912, including reports of the affiliated associations printed in five volumes, totaled 2873 pages, involving the printing and binding of 16,000 volumes. The report recom-

mended that a separate year book be printed, containing the lists of members of the associations, the constitution and by-laws, etc., such matter to be omitted from the reports of the proceedings, and in this way it was estimated that an expenditure of \$1,000 annually would be saved. This change was authorized by the executive committee.

Attention was also called to the fact that sets of the annual reports were sent to the member companies, according to the membership fees paid by the companies, and in some cases as many as fifteen sets were being sent to such companies. It was agreed by the committee that hereafter no member company was to receive more than five sets of the annual reports except on special request, the companies to receive from one set to five sets according to the grade of membership held.

The next business considered was the place and time for holding the 1913 convention. W. T. Dabney, representing the Chamber of Commerce of the city of Richmond, Va., extended an invitation from that body, the Virginia Railway & Power Company and the Governor of Virginia to hold the 1913 meeting of the convention of the association in that city. There was some discussion as to whether the meeting of the association should be held a little earlier, or a little later, than the time usually selected. Chairman Black appointed a committee consisting of Messrs. Allen, Henry and Donecker to meet with a committee of the Manufacturers' Association to take up the question of the time and place of the 1913 convention, with power to decide on the place and date.

Mr. Avant presented the request on behalf of the Claims Association that a man in charge of the affairs of that association, particularly with reference to the information bureau, should be installed at the headquarters of the association and a bureau instituted to take the place of the Hooper-Homes Information Bureau. It was decided to defer action on this matter until the next meeting of the committee and in the meantime to continue the service of the Hooper-Homes Information Bureau.

The location of the midyear meeting was considered, and it was decided to continue the present place for this meeting, New York City.

There was considerable discussion on the question of holding the 1915 convention of the association at San Francisco. It was the opinion of the members of the committee that, since it was desirable that the meeting should at some time be held in San Francisco, no better time could be selected for holding the meeting in that city than during the Panama-Pacific International Exposition, to be held in 1915. No action was taken.

Frank R. Ford, chairman of the committee on determining proper basis for rates and fares, then presented the report of that committee. The report of the committee was received and the committee was discharged. It was decided to appoint a new committee whose duty it will be to suggest ways and means for carrying out the recommendations of the previous committee.

The design of the gold medal to be given for the best paper read before a company section and also the design of the charter for company sections were then approved.

Charles L. Henry then presented the report of the committee to consider relations with sectional associations. This report is mentioned below. On motion, the committee was continued with the request that it study the situation further and formulate some definite recommendations to be submitted to the next meeting of the committee.

C. Loomis Allen, chairman of the *Aera* advisory committee, reported that the Manufacturers' Association had been invited to participate in defraying the expenses of a publicity campaign through *Aera*. By invitation he had appeared at a meeting of that association, at which that matter was discussed, and the members stated that they would endeavor to raise the money. Upon motion, \$5,000 was appropriated to cover the editorial work in connection with *Aera* for

the coming year, it being understood that such portion only of that amount would be expended as was necessary.

In connection with the formation of the proposed Pacific Coast Sectional Association the committee expressed itself as highly pleased that the companies on the Pacific Coast should be so much interested in the work and welfare of the association as to organize this branch.

Henry J. Davies presented the report of the committee on insurance, accompanied by a report of Henry N. Staats, the insurance expert. The report showed that fifty-one companies were availing themselves of the services of the insurance expert.

H. H. Norris, chairman of the committee on education, presented the report of that committee, containing the recommendations mentioned later. The executive committee appropriated \$250 to enable the work of the committee on education to be carried on until the October convention.

T. H. Tutwiler, chairman of the committee on compensation for carrying United States mail, then presented the report of that committee. The report was accepted.

The following appropriations were then made for the affiliated associations: Accountants', \$1,250; Engineering, \$4,000; Claims, \$1,250; Transportation & Traffic, \$2,250.

The report of the special committee to consider the matter of electrolysis, Calvert Townley chairman, was presented by the secretary. The report contained the recommendations mentioned below. The report was accepted and approved.

Eleven member companies and approximately 1000 new individual members were then elected.

Calvert Townley, acting as chairman of the committee on subjects, suggested that the following be considered at the 1913 annual convention: (1) valuations, (2) the relation between carriers and the development of the territory they serve, (3) the relief of congestion in cities by subways and viaducts, (4) publicity. The report of the committee was accepted and approved. The meeting then adjourned.

#### COMMITTEE ON POWER GENERATION

The meeting of the committee on power generation was held on Friday at 10 a. m. B. F. Wood, chairman, Altoona, Pa.; L. P. Crecelius, Cleveland, Ohio; W. H. Sawyer, New York; William Roberts, Akron, Ohio; J. W. Welsh, Pittsburgh, Pa., and G. C. Hall, New York, were present.

Of the subjects assigned to the committee by the executive committee of the Engineering Association, that of peak loads was given to Messrs. Wood and Crecelius for consideration. This subject, it was decided, will also include the consideration of purchased power. The subject of boiler settings and furnace design was assigned to Messrs. Crecelius and Knox with instructions to prepare papers of special reference to the influence of baffling and to the different general types of stokers.

The subject of suggested arrangements of automatic relays and apparatus for protection in power plants from shutdowns was assigned to Messrs. Sawyer, Welsh and Hall. Part of this subject has already been covered by Mr. Welsh, who read a paper giving special attention to the use of reactance in generator or circuits in order to protect against damage from heavy short-circuit currents which might occur on the line.

To Mr. Roberts was assigned the consideration of the application of the distant-control principle to all important valves in the power plant with reference to concentration of control in some points in the plant remote from the possibilities of damage.

After the discussion of the various phases of the different subjects assigned to the members of the committee it was decided to hold another meeting in Chicago on April 28 at the Auditorium Annex, at 9.30 a. m., each member of the committee being prepared at that time to submit his portion of the general report.



## COMMITTEE ON STANDARDS

The committee on standards met on Friday morning at 9 o'clock. There were present P. D. Windsor, Boston, chairman; F. B. H. Paine, Buffalo, N. Y.; G. W. Palmer, Boston, Mass.; C. H. Clark, Cleveland, Ohio; J. H. Hanna, Washington, D. C.; H. H. Adams, New York; F. R. Phillips, Pittsburgh, Pa.; R. H. Pinkley, Milwaukee, Wis., and J. M. Larned, Pittsburgh, Pa. Martin Schreiber, president of the Engineering Association, and H. C. Donecker, secretary, were also in attendance.

The meeting opened with a report by Secretary Donecker regarding his investigation into the methods of procedure in the adoption of standards by other technical associations, and in addition Mr. Donecker spoke regarding the proposed method of compiling the standards of the association and presenting them before the individual members in a loose-leaf binder. After a general discussion Mr. Adams moved for the appointment of a sub-committee of three for the purpose of compiling the various standards and recommended practices of the association, this committee to arrange for the preparation of a suitable form of binder, including the arrangement of an index for it. This committee is to work with the secretary in preparing a report for submission by letter ballot to the member companies. The motion was carried.

The copper wire table which was approved at the last convention and submitted for final adoption by the standards committee was approved as a standard for the association. It was, however, decided to request the committee on power distribution to extend the table to include the various sizes of cables up to 2,000,000 circ. mils, this extension to be placed in the hands of the secretary for printing at the earliest possible date. The specifications for overhead crossings of electric light and power transmission lines were then taken under consideration. These specifications had been approved at the last convention, but final adoption was dependent upon concurrent action by other technical societies affected. In this connection Mr. Palmer spoke of the possibility of harmonizing the portions of the specifications which conflict with those of other societies, and it was finally decided to adopt the specifications as recommended practice in the form approved by the convention.

The specifications for galvanizing iron and steel which, as a part of the specifications for standard line material, were approved at the last convention were adopted as standard after an extended discussion upon the propriety of approving the individual specifications for galvanizing as a standard when they had been practically included in the specifications for high-tension overhead crossings which stood as recommended practice only. It was the consensus of opinion of the committee, however, in the interpretation of the terms "standard" and "recommended practice," that the term "standard" should be freely used for matters of technical importance and should be subject to change with the developments which might arise at a later date.

With regard to the report of the committee on signals, it was decided to approve as standard the three items approved at the last convention, namely, the use of three fundamental indications for signaling, stop, proceed and caution; the recommendation that where semaphore signals are installed the upper left-hand quadrant is to be used, and the recommendation that, in three-position signaling, the aspects given in recommendation No. 3 on page 8 of the report of the signal committee be approved.

After the discussion of the revised specifications for heat-treated carbon steel axles, shafts and similar parts, it was decided that no action should be taken at this time by the standards committee. The specifications for cold-rolled steel axles which were approved by the convention as recommended practice were adopted by the committee as recommended practice in accordance with the form

printed in the proceedings, with the inclusion only of the item referring to the limit for sulphur content, this to be not over 0.05 per cent.

The specifications for annealed carbon steel axles, shafts and similar parts were also approved as recommended practice. This approval includes the specification of a limit for the sulphur content of 0.05 per cent and the omission of the requirement that the steel must be cooled in a furnace in the process of annealing, for which requirement is substituted the words "in an approved manner."

In addition to the sub-committee, to be appointed by the chairman to handle the matter of a digest of existing standards and recommended practices already mentioned, it was decided to request the chairman to appoint one or two committees at his discretion to arrange for a new set of rules for the adoption of standards and for arranging for standard forms and style of specifications. Both of these committees, if appointed, will report later to the standards committee.

## COMMITTEE ON HEAVY ELECTRIC TRACTION

This committee of the Engineering Association met on Friday afternoon. The committee members present were E. B. Katte, New York; J. H. Davis, Baltimore, Md.; W. S. Murray, New Haven, Conn.; Hugh Hazleton, New York, and J. M. Rosenbury, Peoria, Ill. This committee had originally been assigned the subjects of electrolysis, overhead clearances and the location of automatic train stops. The subject of electrolysis has been dropped from this program, however, owing to the fact that the executive committee of the association has referred it to a special committee. The subject of overhead clearances was referred to a sub-committee, consisting of Messrs. Katte, Hazleton and Murray, who will confer with similar sub-committees from the American Railway Association and the American Railway Engineering Association. The second sub-committee, consisting of Messrs. Hill, Davis and Bosenbury, was appointed to confer with representatives of the two organizations named upon the location of automatic train stops.

## EXECUTIVE COMMITTEE OF THE TRANSPORTATION &amp; TRAFFIC ASSOCIATION

A meeting of the executive committee of the Transportation & Traffic Association held on Jan. 31 was attended by Dana Stevens, Cincinnati, Ohio; Henry C. Page, Worcester, Mass.; Robert I. Todd, Indianapolis, Ind.; H. A. Nicholl, Anderson, Ind.; L. C. Bradley, Galveston, Tex., and Matthew C. Brush, Boston, Mass. The committee received reports from various committees of the Transportation & Traffic Association in regard to the work which these committees are to do in preparation for the reports to be presented at the 1913 convention.

## COMMITTEE ON WAY MATTERS

This committee of the Engineering Association met on Thursday and Friday. The committee members present were: J. M. Larned, chairman, Pittsburgh, Pa.; C. H. Clark, Cleveland, Ohio; J. D. Evans, New York; E. H. Berry, Cincinnati, Ohio; R. F. Kelker, Chicago, Ill.; E. P. Roundey, Syracuse, N. Y.; C. W. Gennett, Jr., Chicago, Ill., and H. F. Merker, East St. Louis, Ill. There were also present on invitation of the committee Charles Alden, Pennsylvania Steel Company, Steelton, Pa.; E. B. Entwistle, Lorain Steel Company, Johnstown, Pa.; V. Angerer, William Wharton, Jr., & Company, Philadelphia, Pa. The subjects assigned to the way committee were as follows:

(a) Designs of 7-in. and 9-in. girder grooved and girder guard rails (continued); (b) designs of joint plates for 7-in. and 9-in. rails (continued); (c) proper construction of tracks in paved streets; (d) alloyed steel rails (continued); (e) specifications for spliced bars for girder and high T-rails (continued); (f) investigation of the extent of use of T-rails in streets (continued); (g) pavement for use in connection with girder and T-rails, and (h) rail fastenings for heavy service.

The following sub-committees were appointed: No. 1, proper construction of tracks in paved streets, Messrs. Berry, Merker and Kelker; No. 2, use of T-rails in streets, Messrs. Clark, Kelker and Roundey; No. 3, pavement for use in connection with girder and T-rails, Messrs. Kelker, Roundey and Clark; No. 4, rail fastenings for heavy service, Messrs. Evans and Roundey; No. 5, alloyed steel rails, joint specifications and other subjects to be handled jointly with the American Society for Testing Materials, Messrs. Merker, Gennett and Roundey, and No. 6, rail and joint designs, to consist of the committee of the whole, the chairman to have sections in accordance with rules and dimensions decided upon at the meeting Jan. 30, 1913, drawn up and submit the same to each member of the committee for final approval.

#### BLOCK SIGNAL COMMITTEE

The members present were J. M. Waldron, New York; C. D. Emmons, Fort Wayne, Ind.; Gaylord Thompson, Springfield, Ohio; J. J. Doyle, Baltimore, Md.; B. E. Merwin, Wheaton, Ill., and J. Leisenring, Springfield, Ill. Mr. Waldron was made chairman and Mr. Emmons vice-chairman. All members of the committee were present excepting Messrs. Conn and Morrison. It was decided to hold the next meeting on March 18 at Chicago, because this would permit attendance at the annual exhibit of the National Railway Appliance Association and at the meetings of the American Railway Engineering Association.

In addition to the subjects adopted at the meeting of the 1912 committee held at Buffalo, July 27, 1912, it was decided to take up the subject of clearances and rules, so that the complete program reads as follows: (1) progress report on signaling up to date; (2) bring bibliography on electric railway signaling and allied subjects up to date; (3) collect data regarding rulings of the Interstate Commerce Commission and the various state railway commissions; (4) discuss general subject of standards (for signal indications and aspects); (5) confer with the signal companies and report their findings and recommendations with respect to the proper method of solving the signaling problems presented in the instructions of the executive committees; (6) clearances; (7) rules; (8) to report progress in the development of automatic train stops.

The following sub-committees were then appointed in accordance with the program: Subject 1, Messrs. Waldron and Conn; subject 2, Messrs. Doyle and Morrison; subject 3, Mr. Doyle; subject 4, Messrs. Waldron and Morrison; subject 5, Messrs. Leisenring, Merwin, Emmons and Thompson; subject 6, Messrs. Morrison, Leisenring and Thompson; subject 7, Messrs. Doyle and Waldron; subject 8, Messrs. Waldron and Morrison. The committee has decided to pay particular attention to subject 5 so that a detailed report can be submitted at an early date. Subject 4 was also amended so that, as it now reads, the instructions end at the word "standards," thus giving a broader meaning to that term. The original clause is indicated by the bracketed portion of the foregoing program.

In connection with subject 8, the sub-committee was requested to collect literature on the subject of automatic train stops and present it for the consideration of the committee, so that a decision might be made as to how it could be handled in the 1913 report. Some discussion was held on automatic signals controlled by trolley contactors, and the chairman pointed out that sooner or later the committee should standardize the indications of car-counting trolley contactor signals.

The chairman said that bills had been introduced in Congress to compel all roads within a limited time to equip with automatic train stops. A hearing on the proposed bills will be held Feb. 8. The chairman was instructed by the committee to ask the parent association what its wishes were in connection with the consideration of these bills.

Mr. Leisenring suggested a continuation of the study of the aspects for three-position signaling, pointing out that

the 1912 report showed the same aspect for "stop and proceed" as it would for "proceed under control (prepared to stop short of any obstructions)." These aspects were identical for light signaling. It was suggested that the yellow light on the proceed with caution aspect should be staggered, but no census of opinion was taken because it was a subject which warranted study. Hence it was scheduled for the next meeting of the committee.

#### EXECUTIVE COMMITTEE OF THE ACCOUNTANTS' ASSOCIATION

The executive committee of the Accountants' Association met on Jan. 30 and made plans for the program for the 1913 convention. The meeting was attended by the following: J. H. Neal, Boston, Mass.; M. W. Glover, Mobile, Ala.; F. B. Lasher, New York, N. Y.; M. R. Boylan, Newark, N. J.; G. W. Kalweit, Milwaukee, Wis.; George G. Whitney, Washington, D. C., and Thomas P. Kilfoyle, Cleveland, Ohio.

A definite decision was made in regard to several subjects which will be taken up in papers to be presented at the 1913 convention. Mr. Kalweit will prepare a paper dealing with the subject of transfers. Mr. Lasher will read a paper discussing the relations between the accounting and other departments of the railway. A. R. Patterson, of Stone & Webster, Boston, Mass., will read a paper discussing the question of whether the accounting department is productive or non-productive.

In accordance with the action of the association at the last convention a new committee to take up the subject of overhead charges was appointed. It consists of P. S. Young, Newark, N. J.; A. L. Linn, Jr., New York, N. Y., and B. E. Bramble, Champaign, Ill.

The resignations of C. E. Thompson, Chicago, Ill., and H. M. Grafton, Baltimore, Md., as members of the joint committee on engineering accounting were filled by the selection of M. W. Glover, Mobile Ala., and J. A. McGowan, Indianapolis, Ind.

J. C. Collins, Rochester, N. Y., resigned as co-chairman of the joint committee on express and freight accounting. Walter Shroyer, of Anderson, Ind., was appointed co-chairman of this committee, and H. F. Read, Boston, Mass., was made a member of the committee.

#### COMMITTEE ON EXPRESS AND FREIGHT TRAFFIC

The committee on express and freight traffic of the Transportation & Traffic Association met on Thursday afternoon, F. D. Norviel, chairman, Anderson, Ind., and A. R. Piper, Brooklyn, N. Y., being present. The work of the committee consisted in preparing a form for a list of questions to be submitted to the member companies, requesting information in which the following points were included:

The possibility of pick-up and delivery service in connection with express and freight traffic on interurban lines and the possibility of using auto-trucks in connection with this service.

The value of general interchange of business between electric and steam lines.

The possibilities for a uniform scale of rates based on mileage for interurban lines.

The matter of "per diem" charges for equipment when it is used by foreign lines, similar to the arrangement adopted by the American Railway Association.

The value of establishing a standard classification for freight.

The matter of adopting the standard American Railway Association rules for the settlement of freight claims covering loss and damage.

The possibility for increased revenue by establishing another class of freight which would be handled on passenger trains at a slightly higher rate than freight of the ordinary classifications.

The question of the possibilities in adopting standard rates for milk and cream, and for freight left uncalled for beyond the usual allowance of free time.

The adoption of national car demurrage rules.

The relative value of unit waybills and blanket waybills.

The possibilities in the adoption of a uniform exception sheet for interline business.

The possibilities for increased revenue by establishing a joint weight and inspection bureau for interurban lines.

### THE MANUFACTURERS' COMMITTEE DISCUSSES PUBLICITY

The executive committee of the American Electric Railway Manufacturers' Association met at the Engineering Societies Building, New York, on Thursday. The usual routine business was attended to and details with regard to the annual dinner, at which the Manufacturers' Association was to be the host, were perfected.

Much of the attention of the meeting was devoted to a proposal advanced by C. Loomis Allen, who met with the committee. Mr. Allen appeared as chairman of the *Aera* advisory committee of the parent association and spoke on behalf of the work which that committee has before it. He presented a plan for a joint publicity and educational campaign through *Aera* in which the Manufacturers' Association was invited to join. He pointed out the need of such a campaign for the purpose of educating the public into a more comprehensive knowledge and a more fair-minded point of view toward electric railway interests and problems. Emphasis was placed upon the opportunity for accomplishing much good in this direction by fortifying officers and employees of the companies themselves with accurate information and rational ideas so that they may be prepared to meet antagonistic sentiment among their neighbors as issues arise from time to time.

After the fullest discussion of Mr. Allen's proposal a resolution was presented by E. M. Williams and seconded by W. L. Conwell which was to the effect that the Manufacturers' executive committee recognizes the close relations and mutual opportunities and obligations which must exist between the manufacturers and the transportation companies, and that it expresses sympathy with and approval of the suggestion that the manufacturers represented by the association should have an opportunity to contribute money enough to create a fund of \$12,000 which Mr. Allen stated would be necessary to meet the expenses of the work for 1913. The officers of the Manufacturers' Association were instructed by the resolution to present the matter fully to the members of that association with a note of explanation.

Another resolution was offered by B. A. Hegeman, Jr., seconded by D. W. Smith, which was unanimously carried, declaring it to be the sense of the Manufacturers' executive committee that *Aera* should be published without any commercial advertising.

### THE INFLUENCE OF PERSONNEL ON ORGANIZATIONS

At the annual meeting of the Efficiency Society in New York, Jan. 27 and 28, Harrington Emerson presented a paper entitled "The Creation of Organization with Special Reference to Personnel." In it Mr. Emerson called attention to the wide differences both in general ability and in disposition or applicability in certain lines of work which existed between individuals. These differences were emphasized by numerous examples which were taken from many sources.

Investigation, he said, showed that in most industrial plants at least three-quarters of the men were badly placed, which, however, did not in the least mean that the men were undesirable. An intelligent readjustment and re-assignment of positions without discharge could improve the efficiency of a plant from 30 per cent to 40 per cent.

Efficiency tests and analyses, tests of operation, not of

organization, always showed among the day wage earners in the same plant individual variations between 30 per cent and 120 per cent, the extremes of actual test on a whole month's work being 7 per cent and 210 per cent. Operation could gradually, in the course of months and years, eliminate men of low efficiency, and by experiment and test and successive discharges replace them with men of higher efficiency, but it was possible by predetermination of aptitudes to curtail the time very greatly and in the end secure a better personnel.

In determining costs it was usual to add to the wages of the direct workers an hourly rate to take care of all overhead and other indirect charges logically classified under the four heads of power, maintenance, supervision and rent. There had to be included also an hourly rate for the equipment used. He said that 30 cents an hour for wages and 40 cents for all indirect expenses, a total of 70 cents, might be taken as an average machine shop cost.

A man at 100 per cent efficiency doing 3000 hours of normal work would take 3000 hours, costing \$2,100, but a man of 30 per cent efficiency would take 10,000 hours, costing \$7,000, the loss due to inefficiency being \$4,900 on the one man. At 80 per cent efficiency the loss would be \$525 per man.

### NATIONAL ASSOCIATION OF CORPORATION SCHOOLS

In accordance with the program announced in these columns last week the organization meeting of the National Association of Corporation Schools was held in New York on Jan. 24 at the School of Commerce of New York University. There were present representatives of about forty corporations, practically all having corporation schools.

The morning session was devoted to an opening address by Dr. Lee Galloway and to a report on the scope of the work proposed for the first year. This report, presented by E. J. Mehren, managing editor of the *Engineering Record*, outlined the relations of the new association to other societies and movements and presented an analysis of corporation school problems, proposed as the basis for the principal initial work of the organization. This principal work would include the collection of statistics and their division so as to form the material upon which four sub-committees might work. The first sub-committee would consider the general problems connected with corporation school management, while the other three would consider the curricula of salesmanship schools, commercial schools and mechanical and technical schools respectively. No action was taken on the report, other than to refer it to the executive committee.

At the afternoon session the following papers were read: "Results Obtained by the National Cash Register Company from Its Eighteen Years of Educational Work," by William C. Garner; "What the New York Edison Company Is Doing Along Educational Lines and Results Obtained," by F. C. Henderschott. The closing session was a dinner at Delmonico's, at which addresses were delivered by Arthur Williams, C. P. Steinmetz, Chancellor Brown of New York University and E. St. Elmo Lewis.

The following officers were elected: President, Arthur Williams, New York Edison Company; first vice-president, E. St. Elmo Lewis, Burroughs Adding Machine Company; second vice-president, C. P. Steinmetz, General Electric Company; members of the executive committee, A. F. Bardwell, Yale & Towne Manufacturing Company; G. M. Basford, American Locomotive Company; C. R. Dooley, Westinghouse Electric & Manufacturing Company; J. W. L. Hale, Pennsylvania Railroad; F. C. Henderschott, New York Edison Company; W. D. Kelly, Consolidated Gas Company, New York City; Melville Mix, Dodge Manufacturing Company, Mishawaka, Ind.; J. E. Rogers, National Cash Register Company; D. C. Wolff, Curtis Publishing Company.

# The Midyear Banquet

The Concluding Event of the Midyear Convention, the Banquet, Was Held at the Hotel Astor on the Evening of Jan. 31—  
Abstracts of the Speeches Are Published

The Friday night banquet, with its total of about 900 diners, fairly taxed the capacity of the great banquet room of the Hotel Astor. The entertainment committee had provided for an elaborate musical treat, comprising the great organ of the dining hall, a string band and a trio of men singers. The efforts of the latter were nobly reinforced by the diners themselves, who had been furnished with a booklet containing the text of many popular songs, in addition to a sheet upon which songs about the association officers were projected. The menu card was most appropriately decorated with a group showing the evolution of the street car from the horse-drawn vehicle to the step-less type double-decker.

Abstracts follow of the addresses made by the several speakers of the evening, who were introduced by Wm. H. Heulings, Jr., president of the American Electric Railway Manufacturers' Association. Mr. Heulings first noted briefly the marvelous growth of the midyear meeting, as shown by the fact that the number of diners at the banquet had increased from 353 to 900 in four years. The Manufacturers' Association would always stand shoulder to shoulder with the American Electric Railway Association and assist it to the limits of its power in any movement that it would undertake.

#### O. T. CROSBY'S REMARKS

Owing to the unavoidable absence of Charles A. Bookwalter, Mayor of Indianapolis, O. T. Crosby kindly consented to speak on "How Public Utilities Should Be Treated by Municipalities." His theme was the great power that a public body can have over a public utility, and his text lay in the paraphrase of a Chinese proverb that "With grants of power go parasols and white elephants mad with pride." When agents of a public regulating body were brought face to face with the question of exercising their vast power, they must be reminded of the necessity of using moderation and justice. They should have an appreciation of the rights as well as the duties of those over whom they have such vast power. In short, the duty of a public official was to define the rights of all concerned. The corporations should constantly place before every governing body the fact that they are the agents of the public in performing a public duty.

It should be made clear whether a public service corporation has a right to make an indefinite amount of money or only a right to make some specific return. If it be a right only to make some specific return, then let the public authorities say what that specific return should be; where and how it had been expressed and, further, what the conditions surrounding that return should be. Practically every question which arises between the public utility and its master, the public, will eventually be found to turn on that question.

It was possible that in the inebriation of power, public officials might follow the example of Alexander the Great by killing the friend that had carried them over the river. If this inebriation of power was not curbed by conscience, as expressed by a close investigation of the rights of the corporations, it would, like "white elephants mad with pride," lead to the trampling down of the social organization around us. The rights of a corporation could not be invaded without danger to the common welfare any more than the rights of an individual.

On this question the corporations were not acting merely from the standpoint of their own selfish interests, but from the broader standpoint that insistence upon contract rights was important to society in general. It should,

therefore, be urged that the corporations were not getting all that justice and equity demand. Democracy had not finally settled the problem of government without having the dreadful guard of conscience. The corporations should demand perspicacity and definiteness as to their limitations and rights so that the unhealthful power now in the hands of public bodies would be reduced to its proper proportion. When that end was accomplished the "white elephants mad with pride" would calm down because they would no longer have the trampling power left to them.

#### SPEECH OF W. CARYL ELY

W. Caryl Ely spoke on "The New Partnership." In beginning he remarked that he was not much of a hand for new partnerships; he liked the old partnerships well enough. "New partnership" meant an attempt to describe the new relations that were supposed to be instituted between the public service corporations and the public they serve. Partnerships between these two interests were not new, however. Mr. Ely recalled a discussion at a dinner at the time when the public service commissions law was pending in the Legislature of New York and reference was made to the Massachusetts commissions, so that while the idea may be new in a way, it was in fact an old one.

It had always been Mr. Ely's proposition that public service commissions or some governmental body of authority should exist in order that the public might be represented in the equation. Now that the whole country was coming to that position, he felt as if he had been a pioneer in the idea. There could be no partnership unless two parties were represented in it. Everybody knew what the exercise of power wrongfully by a public service corporation would do. But it was generally admitted that there was less exercise of power in that way than ever before, and this must be taken as one of the effects of the partnership or of the "show-down" which was evidenced by the reports of financial operations filed by the companies with the public authorities.

Mr. Ely, in continuing, said that the part that the association and its affiliated organizations played made for the right of the new partnership. He expressed his great gratification at the progress made by the association and the industry. One of the greatest works upon which the association was just entering was publicity. The public should know that for years the companies had been giving the public a "look-in" at the results of operations. Anybody in New York State and anybody in many other states had been able for years to go to the public records and inspect reports of the companies. How many had done this? How many of those who stirred up matters affecting public service corporations had taken the time and trouble to look up the reports of the companies?

Mr. Ely then referred to those who attacked public service corporations, saying that their statements were characterized largely by gross ignorance of the things upon which they talked and wrote. Publicity was necessary until the people knew the situation, and when they knew the situation in regard to public service corporations the American people were not to be feared.

#### REMARKS OF ARTHUR W. BRADY

Arthur W. Brady, president Union Traction Company of Indiana, speaking as the representative of General George H. Harries, president of the association, thanked the Manufacturers' Association for its splendid hospitality. He read a telegram in which General Harries expressed his deep regret at his inability to be present and his confidence in the success which would attend the meetings and the banquet.

Mr. Brady said that unusual success had marked the conference. The questions discussed at the two general sessions on Friday were not questions of importance to the street railway industry alone; they were of equal importance to every form of public-utility industry.

Mr. Brady then discussed the Adamson bill, now before the Senate after having passed the House of Representatives, which would make it mandatory upon the Interstate Commerce Commission to value every mile of steam railroad within its jurisdiction. The need for publicity was illustrated by the fact that this measure had been passed by the House of Representatives despite the opposition to universal valuation. It was not only necessary for the railroads to see that every Congressman was familiar with this report, but that all of his constituents were also educated. Here was an immediate opportunity to exert the policy of publicity advocated by Mr. Ely.

Mr. Brady was followed by Colonel Henry B. Bopce, vice-president Carnegie Steel Company, who spoke on "Requirements Upon Modern Manufacturing."

REMARKS OF H. C. BOPE

The story is familiar of the party visiting a forge plant where in showing not only the power but the ease of manipulation of a large hammer the workman asked for a watch, which was placed upon the block. The hammer was brought down with apparently tremendous force, but so splendid was the control that it merely reached the delicate object with a touch as dainty as that of a lady's finger, and of course no harm was done. The story may be true or not, but it seems to illustrate the first requirement upon the modern manufacturer. Upon the block lies what may be either "big" business or "little," for they are intertwined. The hammer is law. The manipulator—well, you may call him—for he is masculine—executive, legislative or judicial. Is the hammer to be used as a means of enforcing due regard for the law in the operation of business, or is it to be brought down ruthlessly to the destruction of all that lies underneath?

This is the question we are all asking ourselves. But the situation means that the requirement is not only study of the law but its application to the broad principles of business, so that it shall not be contravened. But here the difficulty arises as to the understanding of the law. "When doctors disagree who shall decide?" Certainly no one will say that there is perfect accord as to the meaning and intent of all laws. If framed prior to the arising of conditions which have so changed the methods of modern business, conditions beyond the control of any power to prevent because they arose from natural causes in part created by the people themselves, they sometimes do not fit in. But it is a requirement upon the manufacturer to conform in his production and its disposition to the statute law, and willing as he is to be law-abiding and law-supporting he finds it difficult at times through the fact of inability to obtain a proper interpretation of the law.

Every practical business man knows there has been a revolution in the nature of business and method of transaction within the past fifteen years. The growth of population, increase in wants, the problems arising from the massing of the people in large cities, the necessity of producing in a larger way foodstuffs for greater manufacturing centers, have changed wonderfully manufacturing of every kind. Revolutions do not move backward, even if the minds of statesmen retain somewhat of the attributes of the Bourbons in never forgetting anything and never learning anything. Consequently, in the sale and distribution of materials, the necessity of conforming to statutes and the new conditions of business demands constant watchfulness and a wide knowledge of national and state laws which, at times, militates against obtaining the best results for both buyer and seller.

It is my belief that the old situation of drastic competition can never return and in the interests of economic

welfare ought not to return. And there seems to me an inconsistency on the part of some of our legislators and statesmen in advocating peace measures as between nations and peoples while favoring a state of war between rival manufacturers to the destruction of profits, the lowering of wages and the operation of plants in such a manner as to use up materials without compensating advantages, and the lessening thereby of our natural resources without adequate returns. Better far to conserve these resources by their proper utilization, under conditions of co-operation under government regulation, to obtain the best results alike to all interested.

Another requirement is that of adapting manufacture to demand, and this is by no means easy. In times of depression plants are either altogether or in part out of operation. The closest study does not permit accurate knowledge of just what the demand will be, and either business is lost through inability to manufacture or stocks are accumulated with no certainty as to when disposition can be made. In times of great prosperity, as at present, with population enlarging, demands increasing, the buyers by reason of their number expand more rapidly than the central manufacturer, and he finds himself entirely unable to meet the requirements of his trade. If he increases too largely he has just so much more plant idle in depression periods, just so much more fixed capital not bringing in returns. Expand to some extent he must, but the evolution of business will compel that same central manufacturer to put less of his resources in fixed capital and more in liquid through carrying larger stocks or supplies of raw material readily convertible in any increasing demand. Then the legislator will come along with a bigger tax on inventories and perhaps the last state will be worse than the first, but on that we must take a chance. The next great change in the relation of buyer and seller will be through such contractual obligations as will more nearly balance the operation of the law of supply and demand.

A further requirement on the manufacturer is that of the consideration of quality of the article supplied. This has been a constantly increasing factor for years. And this better quality by no means in every case carries with it a compensatingly higher price. The tendency in all lines of manufacture is toward better quality and lower price. This in part is caused by increased output, the result being obtained by lower unit profit on a larger production, and this larger production will be continuous on the average, due to growth of population and increasing demand.

Another requirement, not a new one, but becoming steadily more important, is the development and maintenance of a first-class organization both in operation and sales. Success carries with it in its train study and imitation on the part of others and the adoption of methods, shown by results to be successful. It means drafts on able men, necessitating constant vigilance that the organization does not become weakened. Competitors do not seek at the bottom but at the top, where the crop is best if less abundant. Organization, method, system means so much these days that the manufacturer dares not suffer loss of prestige, which means loss of business, by the impoverishment of his working forces, either through lack of watchfulness to maintain it, or weakness through absolute loss of men who are valuable elsewhere as well as to himself.

And as a natural sequence of this comes the requirement arising from the demand of the age for a larger humanitarianism in the conduct of business. As a result of this demand employers are insuring the lives of their employees for the benefit not of themselves but their people; they are establishing pension funds for maintenance in old age; they are assuming responsibility for both death and sick benefits and the care of those injured in their service; they are employing all kinds of safety devices for the preserva-

tion of life and limb of their employees; they are installing all sorts of profit-sharing measures; in a smaller but not less important way they are giving supervision to the welfare of their employees in matters of living, personal and home cleanliness, the installation of libraries and other similar institutions for mental growth as well as the cultivation of social happiness, and the promotion of habits leading to better homes and better lives. I can readily understand how such measures can be carried out by large and prosperous institutions, but the burden in proportion must bear heavily on the smaller manufacturer whose income can not readily support such a drain, yet to his credit be it said he is meeting this demand of the age as readily and as cheerfully as his larger and more financially able brother.

These things are not paid for by the workman, but are a direct charge on manufacturing costs, yet these employers are the men, we are told, who are harsh, exacting, grinding the face of labor, depriving the workman of his just share of profit. An eminent senator recently told a body of employers that they were regarded generally as malefactors and criminals, because, forsooth, they had been successful in the use of talents God-given, and many of these same talents were and are employed in the betterment of the conditions of their fellow men.

I am asked to say a word as to the outlook, with some special reference to the great interest represented here to-night and in whose honor we are gathered together. Every right-thinking American believes this great country of ours has, under God, a great destiny to fulfil. We are working out this destiny as best we know how. Our great growth of widely dissimilar elements, which we are fusing into a common citizenship, is aided beyond all expression by the development of the city and interurban railways, whereby with the cheapest transportation on earth and average unequaled facilities the worker is no longer compelled to live near his place of employment but may enjoy suburban or even country life with no detriment to his labor. Vast tracts of land before beyond the reach of the wage earner have been opened up to settlement through your instrumentality. You have been, you are and you will be advance agents of prosperity in aiding the growth of population and removing also the vast aggregations in our cities which make problems of sanitation and protection almost unsolvable.

The next speaker was Frederick W. Whitridge, president Third Avenue Railway Company, New York.

REMARKS OF F. W. WHITRIDGE

Mr. Whitridge said that three things were uppermost in his mind, namely, labor organizations, municipal ownership and regulation. As to labor organizations, he supposed the time had been when they were essential and desirable from all points of view. Even to-day many of the unions were desirable and useful to the country. But the kind of union that he had had to deal with recently was composed of uneducated, unskilled labor. The men were perfectly sincere and honest, but they had been hypnotized by leaders who were paid out of their own pockets. He had found many of the leaders grossly ignorant, financially corrupt and cowardly. As he had said to their faces, they did not have the brains of a canary. The remedy for this evil was publicity, and what might be called the new spirit in connection with relations with employees. The ideal for which the railways should work was that no labor union whatsoever could do as much for their employees as the railways were ready and anxious to do for them themselves. That was the new spirit. In measurable time that new spirit would penetrate the temporarily paralyzed brains of the unfortunate, misled employees. The management must not be mealy-mouthed. Mr. Worldly Wise may say "Is it prudent, is it wise, is it expedient?" but he preferred to follow Martin Luther, who had said, "It is the truth; I cannot do otherwise."

As to municipal ownership in this country, that was only a spectre. No sane man who was familiar with the conditions in this country would advocate it for the United States. In Germany it was a triumphant success, but in the matter of law and its administration every other country in the world could kneel at the feet of Germany. German cities did not elect mayors or engineers. They sought men who had made good records elsewhere and then made ten-year contracts with them. England had a great system of voluntary service of public officials. It had no such thing as a man making money or a living out of public office. When we could have such systems of government, municipal ownership would be conceivable. To have it now in New York City with transportation contracts going into hundreds of millions of dollars would be a repetition of the feasts of Nero.

Referring to regulation, Mr. Whitridge said there was now a general insanity on the subject of having the State regulate everything. Even great corporations, fearful of their own powers, wanted to have the State fix the selling price of their products. If the State fixed the selling price, it would also fix the labor price—and labor had votes. After all, what was the State? Its powers were administered by commissions and those commissions were composed of human beings with human failings. Mr. Whitridge concluded his remarks with a quotation from one of the late Premier Gladstone's letters in which he wrote that he had always been convinced that men could not be regenerated from their woes by the State.

REMARKS OF S. G. M'MEEN

S. G. McMeen, president of the Columbus Railway & Light Company, was the last speaker. It was a great thing, he said, to get together once a year and find out something about the other fellow's troubles. So far as the rate of return was concerned, Mr. McMeen said that it had ceased to trouble railway men in his part of the country, where tickets were sold for 25 cents a yard. But he was going home, strengthened in the sound convictions that were the outgrowth of these gatherings where a large number of people got together to think about the same thing at the same time.

With the diners singing a song in honor of "Billy Boy" Heulings, the banquet came to an end.

## STEEL TIE AND CONCRETE TRACK CONSTRUCTION AT SPRINGFIELD, MO.\*

The tracks of the Springfield Traction Company have been generally rebuilt on the streets which were paved by the city of Springfield, Mo., during the year 1911, and the methods used in carrying out this work were described by A. C. Polk in a paper read before the American Society of Civil Engineers, as abstracted in the *ELECTRIC RAILWAY JOURNAL* for Oct. 19, 1912, page 883. The general features of the construction outlined by Mr. Polk were a 7-in., 70-lb. T-rail section, resting on steel ties laid in longitudinal reinforced concrete beams with a 5-in. concrete mat for the paving foundation. The rail tread was set  $\frac{1}{4}$  in. above the street paving and the paving between rails was started from a point  $\frac{1}{2}$  in. below the tread, with a concrete filler or special nose brick to form the flange groove, and from there extended between rails with a high crown.

In a written discussion on the paper E. E. R. Tratman called attention to the fact that the flangeway groove used at Springfield was a wide rectangular one with a flat bottom, a vertical face and a sharp corner. He raised the question as to whether the vertical face of the groove would stand up under traffic or whether the wheels of vehicles would crush or crack it to an approximately beveled

\*Abstract of discussion of a paper presented Oct. 16, 1912, before the American Society of Civil Engineers, entitled "A Brief Description of a Modern Street Railway Construction," by A. C. Polk, printed in full on pages 1599 to 1605 of the society's proceedings for November, 1912.

outline. The more usual method of forming a groove, he said, was to use nose brick laid as headers, with the top surface next the rail and beveled so as to fit beneath the rail head. Another plan was to use ordinary bricks laid as headers and tilted so that one end fitted under the rail head while the top surface lay approximately in the contour of the crowning of the pavement between the rails. A third plan was to use a rectangular stretcher course of brick under the rail head but projecting beyond it with a higher beveled edge stretcher course level with the paving. In all of these methods the flangeway was of beveled or triangular section rather than rectangular. Mr. Tratman also called attention to the fact that the crown between the rails as shown in the drawings which were submitted appeared to be unduly high, thus making an irregular contour in the cross-section of the street. The fact that the beveling was  $\frac{1}{2}$  in. below the rail head on the inside and  $\frac{1}{4}$  in. below it on the outside caused the rail to form a distinct ridge in the pavement and did not appear to be desirable. The wide spacing of the ties, 5 ft., was liable to cause disintegration or crushing of the concrete immediately beneath the rail, owing to the vibration and slight deflections, in spite of the fact that theoretically the rail had a continuous solid bearing.

Walter C. Howe, in another written discussion of the paper, cited his experience in Oakland, Cal., where the original asphalt street surface adjoining the electric railway tracks was found to fail next to the tracks and to disintegrate gradually outward from the rail. In consequence a type of construction somewhat similar to that described by Mr. Polk was considered, but in view of the expense a compromise was made in which rock ballast 6 in. deep was substituted for the concrete under the ties. However, Mr. Howe admitted the superiority of the concrete base where cost was no object. The compromise type which was adopted at a considerably decreased cost included 141-lb. 9-in. girder rails with steel tie plates, the concrete extending to the bottom of the wooden ties. Underneath the ties 6 in. of crushed stone ballast was laid, and notwithstanding the apparently cheap construction the results had been uniformly satisfactory.

Another written discussion was submitted by Lewis A. Mitchell, superintendent track and roadway Indiana Union Traction Company, who stated that in his experience the concrete beam construction of which that described by Mr. Polk was a type had not been entirely satisfactory. The failures, however, were not necessarily due to the type of construction but rather to excessive loads and loose joints which permitted a slight movement of the rails when a wheel passed over them, the movement starting a hammer blow which eventually broke the beam under the joint. By placing a steel tie directly under the joint and thus supporting it, he said that Mr. Polk had taken a step in advance, as this support would prevent working at the ends of the rails. The writer believed that the life of the joint would be greatly increased if the support under it was increased to the full length of the joint bar or even beyond it. The matter of making a good joint for paved streets was, he said, a matter of the utmost importance. When bolts were used the holes in the web of the rail and in the joint bars should be of the same size as the bolt, and machined bolts should be used, making a driving fit. The ends of the rails should be ground so that they would fit tightly, especially at the ball. The drilling should be such that when the bolts were in place the ends of the rail would fit tightly together. Since specifications for rails allowed for a possible small variation in height at any joint it was necessary that the joints of new track should invariably be ground to an even surface just as soon as possible after the work was completed, and when joints were made up as described it was difficult to find where the joints were after they had been ground.

Mr. Mitchell also stated that the track under his charge

was made up in some cases with concrete under the whole track and in others the track was laid on broken stone ballast with concrete from the bottom up to 2 in. above the top of the ties. Both of these types had been in service one and a half years without requiring any maintenance, the joints being made up as previously described. It was found, however, in some cases that some cupping of the rails had taken place. Mr. Mitchell concluded by saying that joints made up with rivets instead of machined bolts would assure an equally tight fit between the rail and the splice bar.

## COMMUNICATIONS

### T-RAIL PAVEMENT CONSTRUCTION

TOLEDO, OHIO, Jan. 20, 1913.

To the Editors:

I notice the article on page 61 of your issue for Jan. 11 in regard to a new style of paving designed by the Illinois Traction System, but I question the feasibility of this method of paving with brick. With the gravel ballast there is bound to be more or less movement of the rails and ties, which in time will open the joint between the bricks near each rail. This will permit the water to enter the ballast and the subgrade will become badly frozen. When the spring thaw comes or a winter thaw, such as we recently had, it will be found that the first one or two courses of brick next to the rail will heave very badly and be driven out by action of teams when turning out of the tracks.

This has been our experience during the past two weeks, for we have very bad conditions with tracks laid in this manner. To overcome it we are relaying the bricks at right angles to the rail, but we intend to abandon this method of paving entirely and expect to lay brick paving with the filler block in the web of the rail and the rest of the brick at right angles to the rail. We believe that there will be no opposition to this, because with girder rails the general custom is to lay the brick level with the tram of the rail.

This article is not written in a spirit of criticism but simply to show what results are probable.

A. SWARTZ,  
Engineer Maintenance of Way.

### PUBLIC UTILITY BIDS IN TEXAS AND MAINE

A bill creating a State public utilities commission has been introduced into the Texas Legislature by Mr. Dwight L. Lewelling. The measure, which has been patterned largely after the public utilities laws of the State of Wisconsin, provides that the public utilities in Texas shall be placed under the control of a separate commission composed of three persons, to be elected by the Senate and House of Representatives in joint session. The commission is to have adequate powers, and the proposed law provides for appeals from its orders to the courts but forbids the setting aside of any order or suspension thereof by injunction pending the decision of the court. One of the most important features of the proposed law is the placing of every franchise within the State under the public service commission and so altering or amending any franchise as to make it in effect an indeterminate one.

State Senator I. G. Hersey, of Houlton, Aroostook County, Maine, has presented a bill before the Maine Legislature to establish a utility commission formulated on the plan of the Rhode Island act. The commission proposed would comprise three members, appointed by the Governor, who could also remove his appointees at pleasure. All franchises granted to public utilities by towns or cities would be placed under the commission's control, and corporations would be permitted to appeal to the commission from orders of municipalities.

# Meeting of the National Civic Federation

Reports Are Presented by the Departments on Regulation of Interstate and Municipal Utilities, on Workmen's Compensation and on Industrial Mediation

The annual meeting of the National Civic Federation was held at the Hotel Astor, New York, on Jan. 28 and 29. Among the subjects considered which are of particular interest to public utility corporations were the regulation of public utilities, workmen's compensation laws, amendments to the Erdman railway conciliation act and a proposed model state mediation act.

The report of the department on regulation of interstate and municipal utilities was presented by Emerson McMillin, the chairman, and an abstract thereof is published in this issue.

August Belmont, chairman of the department on workmen's compensation, was unable on account of sickness to present his report in person. An abstract of the report is published in this issue.

At the session at which amendments to the Erdman act were considered a number of men actively interested in the subject took part in the discussion. Marcus M. Marks, chairman of the industrial mediation department of the federation, opened the discussion. An abstract of his paper is published in this issue. Other speakers were Samuel Gompers, president of the American Federation of Labor; William C. Rogers, chief mediator New York State Board of Arbitration; Oscar S. Straus and W. G. Lee, president of the Brotherhood of Railroad Trainmen.

## REPORT OF THE DEPARTMENT ON REGULATION OF INTERSTATE AND MUNICIPAL UTILITIES

PRESENTED BY EMERSON M'MILLIN, CHAIRMAN

The department on regulation of interstate and municipal utilities of the National Civic Federation was organized in the summer of 1911. Regarded from the standpoint of the National Civic Federation, it is an outgrowth of the municipal ownership investigation of 1906 and 1907, which is one of the most notable achievements of the federation. In that investigation a large commission was created for the purpose of studying in this country and abroad the results of municipal ownership and of determining the advisability of extending the activities of municipal governments in this country to the ownership and operation of gas, electric, water, street railway, telephone and other so-called public service utilities.

In an able and exhaustive report, approved by the federation, the commission advised that municipal ownership and operation were not desirable if effective public regulation of such enterprises were obtainable. Generally speaking, the object of creating the department of regulation of interstate and municipal utilities was to determine what kind of regulation was desirable in the interests of the public and of the utilities themselves and what kind of regulation would make inexpedient and inadvisable a resort to public ownership and operation.

The principle of public regulation of quasi-public undertakings is firmly established in this country. Massachusetts led the way about a half century ago, with a state commission for the regulation of railroads. The Massachusetts Board of Gas and Electric Light Commissioners antedates the Interstate Commerce Commission and is now almost thirty years old. Congress established a commission to regulate interstate railroads in 1887. Forty-two of the forty-eight states of the Union to-day have commissions of one kind or another exercising central supervision over railroads or local public utilities or both. Many cities, grown impatient with the delay of the state in establishing

regulating bodies, have attempted, usually under limited and incomplete authority, to establish municipal commissions to regulate the relations between public service companies and their patrons.

The old idea that the purveyor of transportation, gas, water, electricity and other public services under modern conditions was engaged in a private business, subject to the same rules of bargain and sale as the dry-goods merchant, the butcher or the manufacturer, no longer prevails. Much may be said, perhaps, in behalf of unrestrained activity in such fields as these in the early days of the development of a country such as ours, but, whatever may have been that condition in the past, to conduct these enterprises to-day on the basis on which private business is conducted is in conflict with public sentiment.

Whatever may be the views of any individual regarding the desirability of having the state regulate the conduct of public utility enterprises, all must agree that the signs of the times point clearly in one of two directions—either to public ownership and operation or to public regulation of private ownership and operation. Competition, relied upon in the earlier days to protect supposed public interests, has failed completely. Competition in a public service business is war, and General Sherman's description of war applies as well to the public service industry as to the battlefield. The furnishing of a transportation, gas, water, electric, telephone or other public service is, and should be, naturally a monopoly. Unregulated monopoly in any field of endeavor is abhorrent to Anglo-Saxon people. While regulation of public utilities must be based on full recognition of the monopolistic character of the business, it is also true that recognition of monopoly invites public regulation or public ownership and operation. The department believes not only that public regulation is preferable to public ownership and operation, but that public ownership and operation may be deferred only by reasonable public regulation.

The temper of the times will demand measures to protect public interests against the cupidity of the public utility companies. An equal necessity exists for measures to protect the utility companies against spasmodic, hasty and inconsiderate demands of clamorous parties. Managers of public utility enterprises are foremost among those who believe that anything less than complete regulation is as dangerous to the public utilities as it is to the public at large. Public utility managers have been blamed, sometimes justly perhaps, for extortionate and discriminatory rates and inadequate and unreasonable service, but too little has been said about the influence of politics and of politicians in the relations between public utilities and their patrons. The state owes it to its quasi-public agencies performing the transportation, gas, water, electric, telephone and other public services no less than to the public itself to free public utilities from the baneful influence of local politics. The state must see to it that the common law rule of reasonableness and non-discrimination is applied fully and in all respects fairly to these industries.

### SAMPLE BILL TO EXPRESS A WORKING PLAN

The department on regulation of interstate and municipal utilities was established to evolve, if possible, a working plan, adaptable in the main to every part of the country, whereby public utilities may be regulated by the state wisely and in the interests alike of the public and of themselves. The efforts of the department have been directed to the drafting of a sample bill. The bill, which is now nearing completion, will be available as a sample for use in all states in the country which have not as yet legislated



on the subject and in other states which are proposing to revise existing legislation. Among the states in which public utility regulation is an important legislative issue are Massachusetts, Pennsylvania, Ohio, Michigan, Indiana, Illinois, Minnesota, Missouri, Texas, Idaho and Colorado. Legislation in the District of Columbia has been agitated for some time. The work of this department is particularly opportune, and it is expected that legislative bodies will find the work of assistance to them in creating laws for the protection of the public.

The subjects which are being dealt with in the bill, and the treatment given them, are too numerous and too intricate to be described in so brief a report as this must necessarily be. Many difficult points are involved in the drafting of a statute for the creation of a commission to exercise state-wide jurisdiction over public utilities of all kinds and the declaration of the duties and powers of such commission with respect to franchises, stocks and bonds, intercorporate relations of public utilities, rates, service, accounts and reports. If the department succeeds in impressing the country with the desirability of establishing efficient, able, high-minded and conscientious commissions, with ample facilities and powers to regulate the relations of public utilities with their patrons and the public, it will have accomplished a worthy purpose.

Preliminary to a final draft of the sample bill, pamphlets containing subdivisions of the bill were printed and mailed to those believed to be most interested and well qualified to make suggestions. In the preparation of those subdivisions or sections the provisions were almost wholly culled from existing statutes.

Much of this material was objectionable to the department, but was incorporated in the preliminary publications to call attention to the particular subject mentioned and to direct particularly the attention of those who believed the work the department was doing was necessary to the character of legislation that may be looked for when enacted by men unfamiliar with the question at issue and without facilities for acquiring necessary information. Of the material entering into the final revised sections, every topic, paragraph, line and word has been or will be carefully weighed by members of sub-committees and of the executive council. Almost invariably the matter passed upon receives unanimous approval.

The department has prepared a work of monumental importance in its compilation and analysis of existing statutory enactments. This work was undertaken as a foundation for the bill. In magnitude it has far surpassed the early expectations of the department. The federal laws and the laws of all the states relating to the regulation of railroads and other public utilities by commissions have been compiled and analyzed. The statutes of the several jurisdictions have been dismembered and the various sections have been classified under upward of three hundred topics. The several parts of the compilation and analysis have been printed for the use of the department and have been distributed widely to public utilities, commissions and friends of the department who have been interested in its work. This material will be gathered together into a single volume of upward of 1200 pages, which will contain elaborate cross-references, scope notes, subject and section indices and other explanatory and analytical matter. The department has received many compliments on this work from persons familiar with the subject who have had an opportunity to examine the several parts and to acquaint themselves with the manner in which the compilation and analysis has been prepared. Plans have been suggested and are under consideration whereby the compilation and analysis of laws may be revised after the 1913 Legislatures have concluded their sessions.

The department has had an extended investigation made of certain phases of the regulation of public utilities in England. Dr. Robert H. Whitten, known particularly for

his recent work on the valuation of public utilities, spent some four months in England as an investigator for the department, and his report, covering about 200 pages, will be regarded, we think, as a valuable contribution to the subject of regulation of utilities.

During the course of the year investigators of the department have visited in person the railroad and public service commissions of practically all of the states east of the Rocky Mountains, excepting those of the Southern States. All of the commissions have been urged to co-operate with the department in the preparation of the compilation and analysis of laws and in the drafting of the bill, and much of the success of the enterprise is due to the assistance afforded by commissions.

#### ORGANIZATION OF THE WORK

The department retained as its director of investigation Dr. John H. Gray, of the University of Minnesota. Dr. Gray assisted in the municipal ownership investigation and in the preparation of the report of the commission of the federation of 1907. He has been assisted by a permanent staff of six men. Prof. Bruce Wyman, of the Harvard University Law School, has been identified with the investigation throughout as its counsel, and all of the work of compiling the statutes was done under his direction by a staff recruited for that purpose at Cambridge.

In conducting its activities the department has maintained a complete organization independently of the National Civic Federation. Separate offices have been maintained, which have housed a staff of investigators and clerical and other assistants numbering fourteen.

Under an arrangement with the federation, the department has had the benefit of the services of a member of the permanent staff of the federation throughout the year in the solicitation of funds. The department welcomes this opportunity to express its appreciation of the interest and desire to co-operate evidenced from the start by the officers and employees of the National Civic Federation.

The financing of the work of the department was undertaken by the department itself. The total cost of the investigation to date has been about \$55,000. Of this large amount about \$40,000 has been raised by voluntary subscription. The undertaking could not have rounded out to a successful conclusion had it not been for the diligent effort and untiring zeal of the chairman of the ways and means committee, Col. Franklin Q. Brown; the treasurer, F. C. Walcott, and the members of the committee. The list of contributors exceeds 100 in number and is representative of practically all of the larger interests in the public utility field, excepting the steam railroads. All who have been approached for subscriptions have considered the matter in a spirit of fairness and desire to co-operate in a useful work which has been particularly gratifying to the department.

Under the plan of organization adopted for the department, the chairman of the department is also chairman of the executive council or board of directors. It gives him pleasure to have this opportunity to give public utterance to the appreciation he has for the manner in which the members of the executive council have performed their difficult and sometimes arduous duties. Seven sub-committees, to which have been assigned particular parts of the proposed bill, are represented in the executive council by their chairmen, and on these chairmen has fallen a large part of the burden of the investigation. [Names of the members of these sub-committees were published in the *ELECTRIC RAILWAY JOURNAL* of Dec. 14, 1912.—Eds.]

The department has benefited largely from the experience and advice of a large, unorganized staff of public utility and commission experts, who have responded gratuitously to the calls of the department for comments and criticisms on the various parts of the sample bill and of the compilation and analysis. Many busy men have devoted much time and thoughtful consideration to the printed matter which has

been sent to them for their criticism. The department has attempted in every way possible to interest actively in the work on which it has been engaged all men who by their training and experience are particularly qualified to assist in so important a task as drafting a sample bill. Many of this voluntary staff have been enrolled in one or more of the sub-committees, but fully as much suggestive and critical material has been received from men entirely outside of the formal organization of the department as from those inside. It should be a matter of gratification to the National Civic Federation that this department has succeeded in interesting vitally in an undertaking sponsored by the federation so large a number of individuals in all parts of the country.

Mention should be made of the spirit of fairness with which all who have commented on the proposed sections of the bill have approached the subject. With suggestions, both written and oral, running into the hundreds, it is probably fair to say that no partisan expression has been received by the department at any stage. This is profound evidence of the mutuality of interest that exists in this undertaking, so far as the public and the corporations are concerned.

Arrangements will be made for the widespread distribution of the sample bill in the various parts of the country where public utility legislation is pending. The investigation has already consumed more time than was originally allotted to it and is fast approaching the period where its greatest usefulness will not be realized unless the bill is forthcoming in the immediate future. It is confidently expected that the department will be able to report this bill to the National Civic Federation within a few days.

#### GOVERNMENT MEDIATION IN RAILROAD LABOR DISPUTES

BY SETH LOW, PRESIDENT NATIONAL CIVIC FEDERATION

The philosophy of socialism is radically different from the philosophy of the American Federation of Labor, because socialism distinctly seeks to overthrow the institution of private property, so far as that relates to the control of the agencies of production and distribution, including land. As distinguished from the American Federation of Labor, therefore, I call the socialist party a destructive party and not a constructive party, because its whole emphasis at the present time is placed upon the destructive work of substituting state ownership for private ownership of the agencies for production and distribution.

The methods of the Industrial Workers of the World are frankly revolutionary, as their aim is revolutionary, and when this is understood it is easy to understand also the measures which they support.

So far, in America, the great body of the American Federation of Labor and of the great railway brotherhoods are distinctly non-socialistic. The unceasing effort of the socialists in America, and of the Industrial Workers of the World, is to change all this. If the employers of America wish to strengthen the forces in the labor world that are not seeking a revolution, they can do so by working with the trade unionists to bring about constantly improving conditions for their employees. If the employers are blind, however, or indifferent, the employers of America may easily drive the great conservative body of labor unionists into the arms of the extremists. The socialists and the Industrial Workers of the World are preaching everywhere a class struggle and proclaiming from the housetops that the workman and his employer have no interests whatever in common. All honor to those American workingmen who, in the face of such persuasion and denunciation, decline to accept the doctrine of a class struggle, as if the citizenship of the United States either is or should be broken up into classes. It is easy to bring about a class struggle in countries where well-defined classes have always

existed. It ought to be, and it is, hard to do it in a country like this, which recognizes no classes in its citizenship.

In the recent arbitration in this country between the railroads and the Brotherhood of Locomotive Engineers, the representatives of the public on that arbitration board formulated the proposition that there should be an Interstate Wages Commission to regulate wages, precisely as there is an Interstate Commerce Commission to regulate railroad charges. The logic of the proposal is undeniable. Its practicability is a different matter. Arbitration that is compulsory is highly useful, because when it is voluntary both parties agree to abide by the results; but compulsory arbitration is impossible, because not the community itself can compel men to work unless they are willing to work. If the problems of modern transportation cannot be solved without repeatedly exposing civilized countries to such dangers as that from which England emerged two years ago, during its railroad strike, by the narrowest margin, it may come to this, or something like this, for I am perfectly persuaded that the rights of society as a whole are paramount to the rights of any group of citizens, no matter how large and no matter how essential are their services. I allude to this only in order to emphasize the obligation resting on both employers and employees to carry on their controversies in such a manner and in such a spirit as will make these great calamities infrequent and as will reduce to a minimum the suffering that is inseparable from industrial war. The great aim, in my judgment, should be so to inform public opinion on the merits of any pending controversy that public opinion may be able to enforce prompt and just settlements.

In the pending controversy between the railroads and the firemen both sides are willing to arbitrate all their differences, but the firemen demand that the arbitration shall be carried on as contemplated by the Erdman act, so that witnesses may be sworn and perjury punished if it shall take place, while the railroads stand for an arbitration such as was held, by agreement, with the engineers. In this controversy I think the firemen are clearly right. I think the American people are not only willing that railroad employees should be paid good wages, I think the people are desirous that such wages should be paid. I also believe that the people are entirely willing that higher freight rates and higher passenger rates should be allowed by the Interstate Commerce Commission, if necessary to allow good wages to be paid to railroad employees. The trouble is that up to this time the railroads have not been able to convince either the Interstate Commerce Commission or the public that they are not able to pay such wages without an increase in freight rates and passenger rates. When the railroads can make that demonstration I expect to see higher freight rates and higher passenger rates allowed. In this matter it may easily be that the railroads are handicapped by the popular suspicion, aroused by old-time practices now largely abandoned, because no longer sustained by public sentiment, if they ever were. Unhappily, railroading is still so complicated with financiering that railroad management shares in the popular distrust which has been aroused as to the fairness, in the large sense, of many financial methods and many financial deeds. These public impressions, unhappily, cannot be quickly or easily eliminated from the situation. The railroad managers themselves, however, can help very much to dissipate them.

I commented a year ago upon the McNamara trials and convictions. It is not necessary to repeat what I said then. All resort to violence to prevent non-union labor from earning its living and to destroy property on which non-union labor has been employed is a crime only less heinous than murder, for when you take from a man his means of support you really take his life. The methods of this particular union of the American Federation of Labor, therefore, so far as the records now show, were in effect a resort to anarchy and were absolutely inconsistent with the philos-

ophy, with the ideals and with the practice of the American Federation of Labor as a whole. No body of men in the country is so much interested in denouncing these methods as the organized trade unionists of the United States, for these methods were a betrayal of all that the American Federation of Labor stands for.

At Indianapolis labor union men have been tried and convicted for the transportation of dynamite contrary to law. At Lawrence, Mass., the president of the American Woolen Company and others are under indictment for planting dynamite illegally in places where, if found, it would help to discredit the good name of laboring men. Enough mischief has been done already at Lawrence without adding to the harm already done the infinite mischief of allowing laboring men to believe that there is one law for the labor union man who transports dynamite illegally and another law for the president of the American Woolen Company if he acts illegally. I have not the slightest intention of assuming that this gentleman is guilty of the charge on which he has been indicted. What I am striving to urge is the importance of his prompt trial under this indictment, unless the mischief that began with the Lawrence strike is to spread all over the United States like a pestilence.

Reference to the work of the department on regulation of interstate and municipal utilities leads me to say a few words on some of the business questions which are commanding public attention at the present time. Many here can remember when it was considered just as legitimate and just as necessary that there should be competition between gas companies as in commercial business. In the matter of gas this meant more tearing up of the streets, often parallel lines of pipe in the same street, larger capitalization than was necessary, and poorer rather than better service. In the matter of telephone service competition means that every subscriber must have two or more telephone instruments on his desk. By almost common consent it is now agreed that in the matter of public utilities there must be monopoly. The accepted alternative, therefore, is to have public ownership and operation or private ownership and operation under government regulation. The work of this department of the National Civic Federation takes it for granted that the practical question at the moment in the United States, all over the country, is how to regulate to the best advantage privately owned companies which are carrying on these public utilities. Beyond all doubt public opinion at the present time has definitely reached this stage, and if public control is successful, public opinion is likely to remain indefinitely in this stage. If public regulation breaks down, however, all of these public services are likely to be carried on everywhere some day by public officials on behalf of the public.

During the last two decades there has been a tremendous swing toward the concentration of control into single corporations in some, not to say in many, of the great industries of the country. The impressive fact is that this swing toward concentration of control has taken place in the very teeth of the law of Congress popularly known as "the Sherman anti-trust law." It is certainly true that since the most recent decisions of the Supreme Court of the United States in the interpretation of this law the tendency to new concentration has received a serious check. On the other hand, the law did not suffice to prevent the great concentration already entered into, and the law is only now attempting to restore, after the concentration has taken place, as nearly as possible the situation which existed before this concentration was begun. This is a process full of difficulty, which has been well described as the "attempt to unscramble an egg," and, unhappily, it involves costly consequences to multitudes of stockholders, who innocently supposed that what was done under the nominal authority of some state in the Union, and done without being chal-

lenged by the federal authorities at the time, was something in which they might reasonably take part. Such a situation reveals vividly the condition of governmental chaos which has prevailed in this country because of the attempt to control the corporation that does interstate business by the state that incorporates it while giving the control of the business that it does to the Congress of the United States. It is not a question whether the states or the Union can control interstate business to greater advantage. The thing that experience unequivocally condemns is the attempt to control the agent by one government and the thing that the agent does by another.

In my judgment, the United States must control the corporations which do interstate business on a large scale, either through the grant of a federal license for state-created corporations doing interstate business or by substituting national incorporation for state incorporation in such cases.

It appears to be clear that as to private business, as well as in the matter of public utilities, one may follow either one of two plans. You may preserve competition or you may permit monopoly. In any given business if you wish to preserve competition you must destroy monopoly. In other words, you cannot have competition and monopoly at the same time. You may, however, in certain cases have a monopoly regulated by law, if that be desirable, and yet keep competition in every other business. If, then, it is the desire of the American people to prevent monopoly in any line of private business, no matter what, there should be a law which will cause a loss of property to anyone taking part in the monopoly. This business of breaking up combinations and leaving the property, as far as possible, in the ownership of the same stockholders is merely playing with the situation.

Personally, I favor the appointment of an Interstate Trade Commission which shall have the oversight of large interstate business, very much as the Interstate Commerce Commission is charged with the duty of regulating interstate railroads; except that I would not give, at the outset, any authority to the Interstate Trade Commission to fix prices. I should hope that, with good judgment on the part of such a commission, the evil day when that might be attempted might be postponed indefinitely. Although I believe that the proposed Interstate Trade Commission should have nothing to do with prices, I believe that the same method of procedure that is followed by the Interstate Commerce Commission with respect to railways would enable the commission to apply any general rule embodied in the law to the particular detail complained of in any controversy. The Supreme Court seems to me to have decided that "all restraint of competition is not necessarily restraint of trade." If that proposition is a permissible interpretation of the Sherman anti-trust act as it stands, such an Interstate Trade Commission, if it received a mandate from Congress to enforce this law, would decide in every particular case brought before it whether the proposed combination or agreement really restrained or could restrain competition sufficiently to deserve condemnation under the Sherman anti-trust law.

I read many years ago—I think it was in the "Reminiscences" of Hugh McCulloch—this statement: "that it would have been no use to invent the railroad one hundred years before it was invented, because one hundred years before it would have been impossible to command money enough to build a railroad." The moral of this quotation is that at the present time world business is done upon a large scale and world business cannot be done by agencies too small to carry it on. Therefore, if the United States is to bear its part honorably in the world commerce, outside of this country, our business men must be permitted to compete upon terms that make competition possible. This is an added reason, in my judgment, why such a development as I have

last described of the Sherman anti-trust law is greatly to be desired. It would enable the country, I believe, to command its share of the commerce of the world, while absolutely protecting the country from commercial monopoly at home.

### INDUSTRIAL MEDIATION LAWS

BY MARCUS E. MARKS, CHAIRMAN INDUSTRIAL MEDIATION DEPARTMENT

One of the greatest economic problems of our day is the wise and peaceful adjustment of wage conditions to harmonize with the growing cost of living and the higher standards of life which popular education has properly encouraged among the working people. Discontent is bound to be general when the employed find the purchasing power of their wages inadequate to meet legitimate needs.

Our country has been very backward in the provision of machinery adapted to prevent conflict during the process of adjustment of changing conditions. Both workmen and employers are now at a loss where to turn for advice and assistance when restlessness assumes acute manifestations. Strikes often occur because the workmen know of no better way to attempt to secure justice.

Recognizing this situation, a new department of the National Civic Federation has been organized to stimulate new and forward the development of our present industrial mediation laws, both federal and state.

This new department has been subdivided to consider three different subjects:

- (1) The Erdman act.
- (2) A model state mediation act.
- (3) An improvement in the relation between government employees (federal, state and city) and the respective governments.

The Erdman act was devised to bring about mediation and voluntary arbitration between our interstate railroads and their employees. As it has stood the experimental test well, and as it has been the means of preventing many strikes, without a single case of failure, we may now take courage to consider not only an increase in the number of conciliators as recommended but a further extension of the scope of the act. At present it affects only train operatives; it does not apply to workers in the railroad shops nor maintenance-of-way workers, and does not include clerks, telephone and telegraph operators.

It may be well to consider an amendment of the Erdman act so as to embrace these classes under its provisions.

The Erdman act might also at a future day be extended to embrace river, lake and coastwise transportation, express business and the telegraph and telephone lines having interstate connections. Since the plan has been found practicable it would seem wise to spread its benefits as far as possible without weakening its existing service.

In order to make the New York act a model for uniform state adoption, a few amendments are suggested:

First, there are certain occasions when a special board could serve better than the standing Board of Mediation. On such occasions it is proposed that the Governor may be appealed to by the Commissioner of Labor to appoint a special board of three or more persons.

It is suggested that the State mediator act as counsel during the proceedings, in order to give the new board the benefit of the experience and machinery of the State officials.

Further, there are occasions when a labor difficulty extends beyond the borders of a single state and yet does not fall under the head of interstate commerce.

It is suggested that, in the new bill, the mediator of one state be authorized to co-operate officially with the mediators of other states affected.

The salaries of the state mediators are at present entirely too low to compensate men of the character and

experience required to deal successfully with the important problems of the industrial world. Under the model bill, a substantial addition to salaries should be provided.

In the State of Massachusetts a bill has been prepared by the committee of industrial relations of the Boston Chamber of Commerce, which provides for investigation and publicity in all labor disputes. In case of dispute between public service corporations and their employees no strike is permitted during the investigation. In private business, while the investigation and the publicity are also made compulsory, there is no penalty provided for strikes during the period of investigation.

The strike and the lock-out are crude, barbaric and wasteful; they prove nothing of value and settle nothing permanently; they show only which side is the stronger or has the greater power of resistance, not which side is right. After the conflict, angry passions rankle in the breasts of the defeated; the fire is but temporarily smothered. On the other hand, the settlement of differences in an enlightened manner, by investigation and mediation, and, when voluntarily agreed, by arbitration, brings out the facts and establishes justice. This is the only true and final settlement of any differences between men.

### WORKMEN'S COMPENSATION LAWS

BY AUGUST BELMONT, CHAIRMAN DEPARTMENT ON COMPENSATION FOR INDUSTRIAL ACCIDENTS AND THEIR PREVENTION

The National Civic Federation has reason to congratulate itself upon the headway made toward securing the substitution of workmen's compensation for employers' liability laws. It has been pushing its educational propaganda on this subject since December, 1908, preceding the appointment of the first state commission—that of New York, which had for its purpose a study of the subject of employers' liability and work accidents. Since that time, other state commissions have come into existence and have reported with recommendations, in some instances the legislation having been enacted and in others the states having failed to act affirmatively. In some, new workmen's compensation commissions are now at work, while in several, such as Louisiana and Texas, commissions have been authorized, and in others the department of labor is taking the active part in preparing legislation and securing its introduction in the state legislatures. In seventeen states no action whatever has been taken, which leaves a wide field for our educational endeavors. In fifteen states workmen's compensation acts have been enacted, some elective and two providing for state insurance, all being in the experimental stage. Some are operating very satisfactorily, as, for example, in Michigan, where 90 per cent of the employers have elected to work under the act, and it has resulted in materially aiding our accident prevention work by stimulating employers to safeguard all dangerous places. We are watching with especial interest the state insurance plans of Ohio and Washington, which actuarial experts claim will not stand the test of time.

The Congressional commission, after exhaustive research and public hearings, adopted the underlying principles of the federation's model workmen's compensation act for its bill designed to provide an exclusive remedy and compensation for accidental injuries to railroad employees.

The federation is earnestly working for the adoption of that federal act, which has passed the Senate and is pending before the House judiciary committee, believing, if it is enacted into law and declared constitutional by the United States Supreme Court, that state legislation along the same line will be stimulated.

In Germany, as in this country, employers' liability laws preceded the movement for workmen's compensation, which, in its best form, represents a direct tax upon the industry. Germany had evils under the common law, which granted

no compensation in the frequent cases where persons were killed or wounded, either by chance or through their own imprudence.

We in the Civic Federation are following the English system, where the adoption of the principle of workmen's compensation, succeeding again employers' liability laws, did not come until a much later date than in Germany—namely, in 1897. All other civilized countries to-day have adopted the principle of workmen's compensation. It has been said that, theoretically, it is unsound to require the employer to pay for industrial accidents when he is not at fault, but the old employers' liability system under which fault must be proved by the employee has been found in practical experience not to work satisfactorily. The states in this country having workmen's compensation acts of some character are: Arizona, California, Illinois, Kansas, Maryland, Massachusetts, Michigan, Nevada, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Washington and Wisconsin.

While fifteen states have made a start toward securing just workmen's compensation laws, with forty-eight stars in our national emblem, the balance sheet indicates the pitiful fact that in the majority of our states the wage earners injured in industry are left still to the tender mercies of charity and to litigation through long-delayed damage suits. We, therefore, have remaining a social problem for earnest consideration.

Also unsolved still is the question as to how constitutionally there may be put upon the statute books compulsory workmen's compensation laws automatically bringing relief to all injured workmen and their dependents.

Thirty-eight states this year have legislative sessions and are looking toward the possibility of the enactment of the federal bill previously mentioned. Only two states—California and Ohio—have amended their constitutions to permit the passage of compulsory workmen's compensation laws.

In the meantime, the federation is circulating, as a temporary expedient, an elective workmen's compensation act, prepared especially for introduction in New York State, which represents the conclusions of proper committees in the federation's New York State council and national workmen's compensation department, after frequent conferences at which there were present employers, labor representatives and experts who have made a special study of the subject, and which has been indorsed by the national executive committee. It has been drafted in the light of experience and under conditions as they seem to obtain in various states, as far as this general question of compensation has gone. To those interested in framing elective legislation in other states, this draft is recommended as a useful guide. We have taken the schedule of rates as determined upon by the Pennsylvania commission, with some points from the federal bill, and we have adopted the plan satisfactorily put in operation in Michigan, for permitting a choice on the part of the employer between four plans for the payment of compensation, and, if insurance be made compulsory, that all forms allowed should be subject to equally strict state regulations without discrimination in favor of any one or more of the forms.

At the several conferences mentioned, both public and informal, representing all concerned, it has been unanimously agreed that there are three things essential to the interests of the workman:

(1) That the right to compensation and the amount of it for particular injuries or deaths be so definite as to leave as little room as possible for controversy or difference of opinion as to the injured workman's right to and amount of compensation.

(2) That the workman or his family be so protected in the making of their settlements after injury that advantage cannot be taken of them or an unjust or delayed settlement forced upon them.

(3) That the workman and his dependents be secured against the insolvency of the employer or other contingency, so that the payment of his compensation will be sure and certain.

Much must be said for the splendid work of some of the commissions, notably the one in the State of Pennsylvania, which has just issued a comprehensive report showing a careful study of the question, and the Connecticut commission, which has formulated a bill to be introduced in the Legislature at this session and which should have the earnest support of all. In Colorado, Delaware, Iowa, Minnesota, Missouri, Nebraska, North Dakota, Oregon and West Virginia commissions also are at work and have called upon us for assistance. California is preparing to introduce a compulsory act which is being formulated by its Industrial Accident Board. Wisconsin has its board, which is doing excellent work in educating employers in the matter of accident prevention, an effort being furthered also by the Board of Awards particularly of the State of Washington, and also of the State of Ohio.

Some of the greatest accident prevention work on the part of our states is being done by Illinois, Wisconsin and the State of Washington. In the two latter remarkable safety bulletins are being circulated throughout the states, to interest employers and workmen in accident prevention, there being instructions upon safeguarding devices, and in general how to prevent accidents.

Our model safety act committee, while believing that we have an excellent draft outline of a model safety law, has undertaken to secure suggestions to aid in developing and perfecting it.

We are co-operating with the American Bar Association and the Uniform State Law Commissioners in attempting to perfect our compulsory model workmen's compensation act, and we shall keep abreast of the times, ready to adjust ourselves to changing conditions.

Our earnest effort is to take into account the sentiment of the workmen in connection with having their compensation guaranteed.

State legislative commissions which have been at work are learning of the difficulties still in the way of passing a compulsory workmen's compensation act, except in California and Ohio, where recent amendment to the constitution will permit such legislation. Pennsylvania will undertake to amend its constitution and New York has already started in that direction.

It is the preference of the National Civic Federation that, if possible, at some time compulsory workmen's compensation acts should be put on the statute books of the various states, believing that a law exclusive in its remedy and providing for automatic compensation of injured wage earners through the compulsory principle would be just, both to employee and employer.

## OPERA AND CAR SERVICE

In a suit brought at New York last January by E. T. Stotesbury, of Philadelphia, to recover money given to Oscar Hammerstein, the noted operatic manager, the latter made an interesting statement which shows how even a luxury like grand opera is dependent upon the local electric railway service. Mr. Hammerstein testified that his Philadelphia opera house had been a profitable venture until the outbreak of the carmen's strike on the Philadelphia Rapid Transit Company. This strike began on Feb. 19, 1910, and was declared off on the following April 17. After the service had been crippled for a few weeks Mr. Hammerstein was obliged to close the opera house, owing to lack of patronage. The substance of his testimony on this point was that those who came to the opera in their own vehicles formed so small a percentage of the total that performances without good street railway transportation for patrons were financially impossible.

**SAFETY WORK IN SEATTLE**

The Puget Sound Traction & Light Company, one of the pioneers in the establishment of safety committees, has adopted a very ingenious method of stimulating interest in the work of safety and in the reduction of accidents on its lines. The idea of a central safety committee was

Detail of Accidents

Day of Month	Bogie	CO	2	20	15		2			69
	Collisions	Detachable and Project Equip.	Step Accidents	Accidents on Cars	-----	Miscellaneous	Daily Total	Cumulative Total	Cumulative Bogie	
1										2
2										4
3										6
4										9
5										11
6										13
7										16

*Electric Ry. Journal*

Form of Table Used for Classifying Accidents on Cars from Jefferson Carhouse, September, 1912

broached about a year ago by the management of the company, and on Jan. 2, 1912, a notice was issued to all employees announcing the appointment of a central safety committee. This notice read as follows:

NOTICE TO EMPLOYEES

“Seattle, Wash, Jan. 2, 1912.

“To All Employees:

“Accidents cost the company money and the public loss and pain and suffering. Our duty both to the public and to the company is to be vigilant in discovering and removing causes of accidents. While the present shows gratifying improvement over the past in the discovery and removal of causes of accidents and the lessening of the expense on account thereof, still by increased vigilance much further improvement can be made along the line of preventing accidents. For that reason it has been decided by our company to organize what are to be known as safety

Mr. W. S. Sallee, superintendent of ways and structures; Mr. G. E. Quinlan, operating superintendent, light and power department; Mr. G. B. Harrington, superintendent of mines; Mr. D. W. Henderson, superintendent of division No. 1; Mr. J. D. Nice, superintendent of division No. 2.

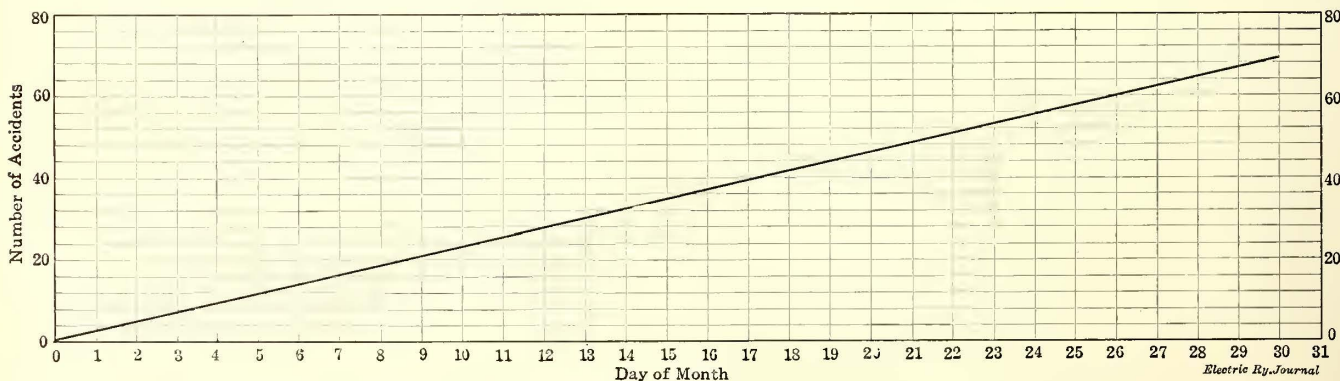
“The other committees it is proposed to organize are to be known as division safety committees, it being intended to organize a division safety committee at all six carhouses, the organization to be started at first at the North Seattle carhouse. It has been decided that this division safety committee shall be composed of the station master as chairman, one man from the substation, one man from the trolley line department, one man from the mechanical department and eight trainmen, making a total of twelve men. The personnel of this division safety committee will be announced at once and notice sent to the members, the selection having already been made.

“The duties of the members of the division safety committee shall be as follows: To keep a continual lookout for anything that might cause or tend to cause accidents and, having discovered same, to report it promptly, on blanks that will be furnished, to the chairman of the division safety committee, whose duty it will be to forward such reports promptly to the chairman of the central safety committee, by whom they shall be at once forwarded to the head of the department concerned for action. When the matter reported has been acted upon, notice of action taken will be sent to the chairman of the division safety committee, who shall advise the member who made the original report of the action taken.

“The idea, as most of our men no doubt know, of men in the ranks reporting defects and causes of accidents is not a new one. It has been done in the past continually and great benefit has been derived therefrom. The organization of these committees is for the purpose of providing a channel through which not only members of the committees but all other employees can present, in a proper and orderly manner, suggestions and recommendations for greater safety and improvement in conditions and methods. The management has not only invited suggestions but has solicited them and is thereby afforded the benefit of ideas and observations of the men who actually do the work in the ranks.

“This, it is felt, will bring the officers of the company and the men closer together, something always very desirable.

“The following are suggestions of matters to be reported by members of the division safety committee: Defective



Graphical Record of Accidents Bogie at Jefferson Carhouse for September, 1912

committees, the organization to consist of two kinds of committees. One which has already been organized is known as the central safety committee.

“The central safety committee is composed of the following: Mr. George Carson, general claim agent, chairman; Mr. A. L. Kempster, superintendent of railways; Mr. G. A. Richardson, superintendent of transportation; Mr. A. D. Campbell, superintendent of rolling stock and shops;

cars, defective track, defective tools or machinery, defective platforms and landings, defective bridges and trestles, defective buildings, overhead defects, obstructions near the track where a passenger is liable to be hit, and all other matters that might tend to cause accidents. Of course, emergency matters and defects requiring immediate attention will continue to be reported as heretofore.

“One of the most important duties that members of the

committee will be called upon to do is to watch the work of new men entering the service, or of the comparatively new men, and when such men are disposed to be negligent in operation, owing to excessive speed or failure to slow down as required by rules when passing cars, or rough handling of cars, either in stopping or starting, or other matters of similar nature, either through ignorance of the rules or other cause, it will be the duty of men on the committee to go to them in a friendly way and tell them about matters in connection with operation in which they are not proficient and matters about which they might be careless. Of course, if the man spoken to did not respond to the advice given him, it would become necessary to report the matter to the proper authority, and if a man should continue to be careless after sufficient warning had been given, it would become necessary to remove him from the service, as none of the men can afford to have a careless man among them.

"It has been decided that the time of service on division committees shall be six months, thus giving opportunity to a large number of men to serve within a year or two.

"It is the belief of the company that the men appointed on these committees will in the future largely recruit the vacancies occurring in higher positions, and also that service on these committees will tend to develop men to fill higher positions.

"It is intended that the division committees shall meet at least once each month, the company paying them for the time consumed in attendance at the meetings, and also that meetings shall be held between the division committees and the central committee at times to be decided upon, for the purpose of discussing matters of interest in the prevention of accidents.

"It is also believed that this organization, in the bringing together of the officers and employees of the company in this intimate way, will result in more friendly and closer relations between them; that conditions will improve and accidents will be greatly reduced, and that we shall secure what everybody desires, namely, greater safety and less accident expense."

The work of this safety committee was briefly described in the report of the committee on safety leagues read before the American Electric Railway Claim Agents' Association at Chicago last month by George Carson, claim agent of the company and chairman of the committee. This report was published on page 809 of the *ELECTRIC RAILWAY JOURNAL* for Oct. 11, 1912.

One of the plans followed by the committee is to compile records of accidents on the lines operating from each carhouse and establish a "bogie" for future months. To determine the bogie in the first place the safety committee took the records of accidents for each carhouse for the preceding five months and selected the month which was most free from accidents. The accidents were then classified in the following divisions:

- (1) Collisions; collisions between cars, collisions with vehicles, collisions with persons and animals.
- (2) Derailments; split switches and other derailments, defective car, slot or track.
- (3) Step accidents; boarding or alighting from moving cars, boarding or alighting from stationary cars.
- (4) Accidents on cars; passengers injured on cars from motion of cars, ejections, disputes, clothing damage.
- (5) Miscellaneous; not covered in other classifications.

Each division was then urged to keep its accidents down to bogie.

At first the plan was admittedly an experiment, but it was found at the end of the first month that the different carhouses finished very near their bogie lines. The same bogie was then continued for another month, and at the end of that time all of the carhouses had finished slightly below the standard set. The committee then established new bogie lines, having for their bases the better records

made during the previous month. This plan has been continued. The records obtained for each month are posted in the carhouses in both numerical and graphical form. Both forms are shown in the accompanying illustrations. The records for each carhouse are kept by the station master, and if there should be any error in tabulation the trainmen are sure to notice it and to bring it to the attention of the station master. The adoption of the bogie for the different lines is in the hands of a sub-committee of the safety committee, consisting of the division superintendent, a member from the claim department and a member of the safety committee.

The company is considering the possibility of awarding a trophy to the carhouse making the best showing during a specified time. This has not been definitely decided.

## KEEPING TRACK OF FEEDERS

BY G. H. M'KELWAY, ENGINEER OF DISTRIBUTION, BROOKLYN RAPID TRANSIT SYSTEM

The drawing of maps showing the routes and locations of all feeders leaving the power station, with data as to their size, taps, etc., is not part of the work of the engineering force of the small railway, if there should be such a force, because there the number of the wires is so small that anyone can easily learn and remember all about them.

But as the original single line grows into a system of lines the matter grows in importance. Not only are there more feeders to remember, but the men working on them

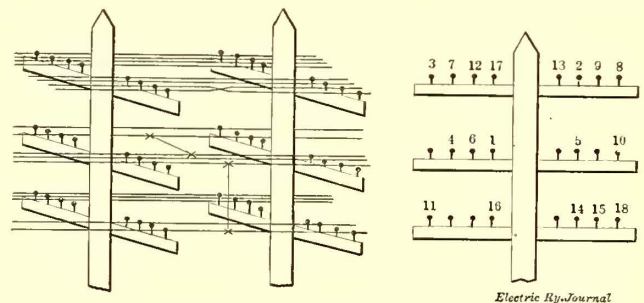


Fig. 1—Method of Recording Overhead Wires

are not able to become so familiar with them as on the little line, and the men of one division will have very little or no first-hand knowledge of the wiring on another portion of the system. With the larger systems taking in one or more cities where underground as well as overhead construction will be needed, the subdivision of the work will become even greater, as different gangs will be employed on the two classes of work. While on these large systems the linemen may never have to work in any sections but their own, yet there is often a great advantage in being able to call a neighboring crew to the assistance of one with more work in its section than it can handle alone and, at any rate, the engineers need all of the information possible in regard to the wiring layout on all portions of the system. Therefore more or less elaborate and efficient methods for keeping track of the data are often introduced.

In keeping track of the feeders themselves, there are two general methods. One is by drawing sections of the line at all places where the layout changes and representing on a map the pole or conduit line by a single line. In the other a line is drawn on the map for each wire, and these lines are placed in relation to each other to show the location of the wires or cables on the arms or in the conduits.

The four illustrations give an idea of how the different classes of records may be kept. In Fig. 1 the map is merely a succession of drawings of pole heads either connected by the wires or with the numbers of the feeders placed at the pins instead of a drawing showing the connections between the poles.

In Fig. 2 a similar plan to be used with underground cables is shown. Here a section of the ducts is given, and the number of each cable is placed in its proper duct. In order that there may be no confusion as to whether the section shown is on one side of the manhole in question or on the other, the bottom line of the ducts is extended out at the sides. Therefore the person looking at the section will

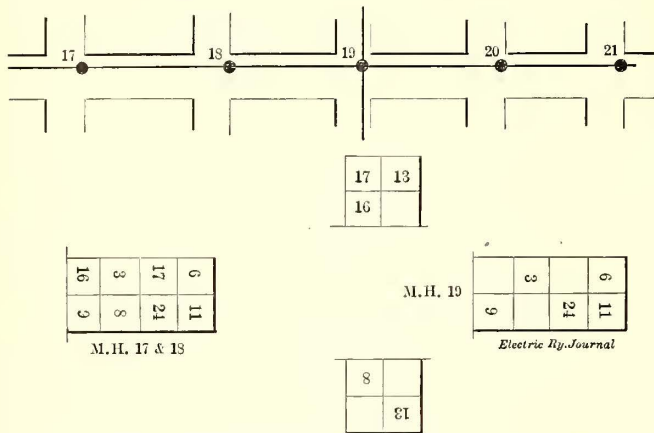


Fig. 2—Method of Recording Underground Cables

always easily know which is the bottom. Such sections need only be made for those holes in which the cable layout changes, and in that case the number of the manhole is placed beside the section.

Fig. 3 and Fig. 4 give the same layouts as Fig. 1 and Fig. 2, but here the wires are shown as lines and their spacing gives their location upon the poles or in the ducts. The methods for the overhead and underground cables are not exactly the same, for in the first instance a sort of bird's-eye view is taken of the wires and those on the lower arms are placed outside of the upper, although the two sides of the pole are kept separate. When the cables in the ducts are shown, each layer is given separately, but no attempt is made to show on which side of the center line the cables are placed except as this can be seen by their positions in the layers.

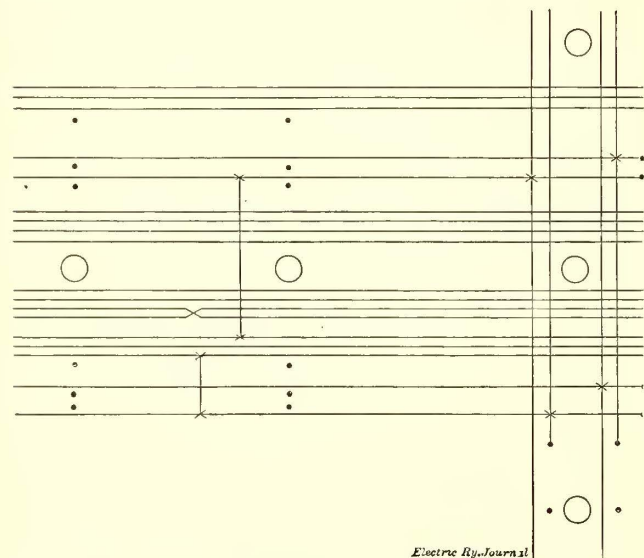


Fig. 3—Diagrammatic Scheme for Layout Shown in Fig 1

In order to understand the relationship between the feeders and the lines fed by them it is well, in the case of direct-current feeders connecting with the trolley wires, to show the trolley wires with the section insulators and insulated crossings on the same map as the feeders. Where the maps are drawn on tracing cloth so that a number of persons can be supplied with blueprints of them, it is well to draw the trolley wire in red or use a dotted line for it, so

that in either case it can be distinguished from the feeders, and to show the insulated crossings and circuit breakers at their proper locations. A common symbol for an insulated crossing is a cross with the ends of the arms enlarged, while a diamond is often used to represent a circuit breaker.

If only two sizes of wire are used, it is easy to differentiate between them by using a heavy line for one size and a light one for the other. There is danger of mistake, however, if this plan should be tried with more than two sizes, and in such a case it will be found to be best to mark the size of the wire where it can be easily seen.

There is also another way of keeping track of the wires by giving each pin on each arm, or each duct, a number and

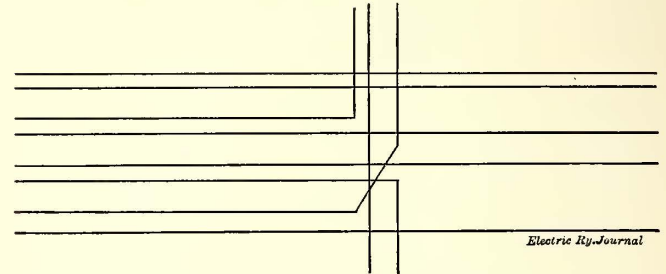


Fig. 4—Diagrammatic Scheme for Layout Shown in Fig. 2

then making out tables for different portions of the line. These tables should have two columns, one for the name or number of the feeder and the other for the number of the pin or duct which it occupies. This plan, however, is only to be recommended in special cases such as at power stations or similar locations which can be accurately described. Even there it has no advantage over the others, and for general work is much inferior to them.

It will be found that the system of lines is best adapted to overhead feeders, while the use of the sections will be found preferable with underground cables. While the ordinary blueprint is often very much of a puzzle to the man with no technical education or shop experience, yet the feeder prints described above are so simple that any man of ordinary intelligence will have very little difficulty with them after they have once been explained to him.

### MEXICAN HYDROELECTRIC DEVELOPMENT

Work on the hydroelectric system of the Mexican Northern Power Company on the Conchos River, about 17 miles from Santa Rosalia, Mexico, which was held up for a time owing to the activities of the rebels in that section of the country, is again under way, and it is expected that the project will be finished about July 1, 1913. The Mexican Northern Power Company is a Canadian concern, with its principal office in Montreal, and, in addition to furnishing energy to a subsidiary company, the Mexican Securities Corporation, Ltd., of Halifax, Nova Scotia, it will build transmission lines to Chihuahua, Parral, Jiminez and other cities, besides carrying on a central-station business in each of those cities on its own account. The dam now nearing completion at La Quouila is stated to be one of the largest masonry structures in the world. Its height will be 261 ft. and its width at the crest 19 ft., the width of the bottom being 200 ft. The reservoir it will create will have a storage capacity of about 28,000,000,000 cu. m, which will flood an area of 58 sq. miles. Besides this main dam a subsidiary dam 2610 ft. long and 108 ft. high is being built about half a mile from the main dam.

The hydroelectric station, it is stated, will have a rating of more than 100,000 hp. The company has also in contemplation the irrigation of 200,000 acres of land in the valley of the Conchos River. Messrs. S. Pearson & Son of London, Eng., are the contractors for the enterprise. Mr. P. L. Bloston is the general superintendent, and Mr. William B. Buller is chief engineer of the work.



## CO-OPERATIVE BUYING FOR THE EMPLOYEES OF THE INTERBOROUGH RAPID TRANSIT COMPANY AND NEW YORK RAILWAYS COMPANY

The managements of the Interborough Rapid Transit Company and New York Railways Company, having come to the conclusion that a great deal of benefit would accrue to their employees if the latter made use of their combined purchasing power, are taking active steps toward the organization of a co-operative depot for the purpose of procuring foodstuffs at cost to employees.

The first announcement of this plan was made by T. P. Shonts, president of each company, at the recent ball of the New York Railways Association, and his outline of the plan was very favorably received by the employees at that time.

However, in order to determine positively the sentiment of the men, a bulletin was issued on Jan. 24, by Frank Hedley, vice-president and general manager, explaining the plan and giving an outline of what the companies proposed to do in order to establish it. This bulletin is published below:

"The officers of this company have for some time past carefully reviewed and considered the purchasing power of the wages of this company's employees for procuring the necessary supplies such as meats, groceries, vegetables, etc., and to determine how much these commodities, if furnished to our employees for the actual cost, would reduce the present high cost of living.

"We have determined that a sure way of reducing the cost of living is for the company to procure for its employees and their families the eatable stuffs necessary, and this at the actual cost to the company.

"In order that the company may get a direct expression from the men regarding the operation of stores of this character upon the properties of the company, each employee is requested to vote 'yes' or 'no.' The company does not desire to open the store if the employees do not want it, but, if enough of the employees do feel that they would like to see the experiment tried, the company will be glad to undertake it. A vote of all the employees will be taken at the various carhouses of the company on Jan. 30, 1913, between the hours of 8 a. m. and 6 p. m., and each employee, upon presentation of his pass or identification card, will be entitled to cast one ballot either for or against the proposed plan. No names will be signed to the ballots, and each man may feel free to express his own views with the knowledge that no one can tell how he voted.

"Each employee should fully understand that he is absolutely free to patronize the store or not to patronize it."

On January 30 a vote of all the employees of each company was taken, each man being provided with an employee's ballot in the form shown herewith. On the ballot

### NEW YORK RAILWAYS COMPANY

#### EMPLOYEE'S BALLOT

Do you desire that this company open a store for the purpose of procuring for its employees at actual cost, meats, groceries and vegetables, in accordance with Notice No. 24, dated Jan. 24, 1913?

Answer \_\_\_\_\_

(Please answer "Yes" or "No.")

To further aid the company in deciding this matter, please state whether you have any person or persons directly dependent upon you so that it would be for your interest to take advantage of this opportunity of procuring provisions cheaply.

Answer \_\_\_\_\_

(Please answer "Yes" or "No.")

were submitted two questions, one regarding the desirability of the plan and one regarding the family of the voter, so that the company could distinguish between the votes of married men or those who had others dependent upon them and the votes of single men and that proper weight might be given to the wishes of the former class. The vote was taken on January 30 on account of the fact that this was the regular company pay day, when practi-

cally all of the employees reported at the various offices of the company.

The result of the vote was overwhelmingly in favor of the plan, and in consequence the officials will proceed at once to modify the carhouse of the New York Railways Company at Fiftieth Street and Eighth Avenue so that part of it can be utilized for the co-operative store, which will naturally have to be extensively equipped with refrigerators, counters, storerooms and the like. This location was selected on account of its central position on the lines of the Interborough Rapid Transit Company and New York Railways Company, and if the demand for supplies at this point warrants the extension of the system, other depots will be located as soon as possible at each one of the various carhouses or shops of the companies near where large numbers of the employees have their homes.

It is planned to carry in these depots all classes of foodstuffs which are not of an extremely perishable character. Staple groceries, meats and the less perishable vegetables, such as potatoes, turnips, carrots, etc., which do not spoil quickly will be carried in several different grades and at several different prices so that the employees will have an opportunity for a wide choice. Canned goods will also be carried to some extent, depending largely upon the demand for them.

All purchases are to be made through the purchasing departments of the companies. On account of the very thorough organization of these departments they will be in position to obtain for the distributing depot the best prices in the market, and this fact, together with the advantage that supplies for a large number of persons will be regularly purchased, will manifestly effect very material savings. Approximately 20,000 employees will be in position to take advantage of this opportunity, 7,000 of them being on the line of the New York Railways Company and 13,000 on the elevated and subway lines of New York. No profit of any kind is to be charged by the company, and in fact not even overhead charges are to be entered against the new department. The direct labor of handling material in each depot will, of course, be charged against the new department in its books, but no further charges will be entered aside from the exact cost of the materials purchased.

Purchases will be made at present in the open market from wholesale dealers, and, in fact, wherever possible they will be made direct from the producer, thus absolutely eliminating the profits of the middleman.

All sales will be made on a cash basis, as the employees are paid in cash every week. No accounts of any kind will be carried in order to reduce the system to the most simple possible basis. No delivery system will be inaugurated and the employees or their representatives will be required to call for goods in person. While this arrangement will undoubtedly limit the patronage at the depot which will first be installed, at Fiftieth Street, it is not expected to affect the patronage when the system of depots is extended to include all the various points around which the employees' homes are grouped.

It is planned at present to permit any member of the family of any employee to make use of the depot, although the plan by which this is to be worked out without opening the way for imposition on the part of the general public has not yet been decided on. The companies are not intending to go into the grocery business in any sense of the word, nor do they intend to come into competition in any way with the existing stores in regular trade, with the possibility of destroying such businesses. The companies do feel, on the other hand, that a very material reduction in the cost of living can be made for their employees by the simple process of organizing their enormous buying power, and this plan is to be carried out in the manner just described.

## CONCLUDING SESSIONS OF WOOD PRESERVERS' ASSOCIATION

An account was published in the last issue of this paper of the meeting on the morning of Jan. 22 of the American Wood Preservers' Association. The Wednesday forenoon session of the association was confined largely to subjects of interest to operators of timber-treating plants. The first paper on the program was that by R. S. Belcher, Atchison, Topeka & Santa Fé Railroad, Somerville, Tex., entitled "Some Experimental Treatments with Reference to the Effect of Initial Air Pressure on Penetration of Creosote." In the discussion which followed it was shown that penetration was better with initial air pressure than without it. It was also brought out that the pressure must vary with the timber, some kinds of wood requiring greater pressure than others to obtain the same quality of penetration.

The next paper on the program was that by Dr. Hermann von Schrenk on "The Requirements for Successful Timber Treatment." This paper was published in abstract last week. In the discussion which followed J. H. Waterman, superintendent timber preservation Chicago, Burlington & Quincy Railroad, Galesburg, Ill., emphasized the importance of treating only sound timber and that which had been properly prepared for treatment. He said that it was important that the timber should be in proper condition before treatment if the maximum results were to be obtained. He stated that the success of the industry depends upon the quality of the treated timber and the length of service it will give. The members of the association discussed briefly the advisability of drafting a resolution urging the members to refuse to treat timber which had not been properly seasoned or prepared for treatment and decided to refer the question to the resolutions committee.

The paper by David Allerton on "The Preliminary Treatment of Timber to Insure a More Even and Satisfactory Impregnation with Creosote" was the next on the program. This paper dealt largely with treating-plant conditions and the discussion was brief. A paper by George W. Saums on "The Treatment and Care of Floors" was also read and briefly discussed.

Following the reading of J. H. Waterman's paper on "Preservation of Lumber for Car Construction," published in abstract last week, the discussion was along the lines of the methods to employ to secure the best result. It was urged that the empty cell process be used instead of the full cell as the treated timber would be in better condition to handle. The question then arose as to the determination of the life of the timber to be used—whether it depended on decay or mechanical wear. If the latter was the more detrimental, it was deemed wise to use zinc chloride wherever possible when it would give sufficient life in service to last during the mechanical life of the timber.

Another paper on the program for the Wednesday morning session was on "Sap in Relation to Properties of Wood," by S. J. Record, assistant in the School of Forestry at Yale. In summing up his paper he showed that winter-cut timber was better than summer-cut, not because the sap was down but because the winter-cut timber seasoned more slowly and as a result did not check so badly. He also said that winter-cut timber would withstand decay longer than summer-cut, because the fungi were not so active at that time and the condition of the sap was such as to prevent their growth.

The last two papers were those by L. B. Moses, manager tie and timber department of the Kettle River Company, St. Louis, on "The Mutual Interests of Railroads and Commercial Companies in the Work of the Association," and by W. F. Goltra, president of the W. F. Goltra Tie Company, Cleveland, Ohio, on "The History of Wood Preservation."

Wednesday afternoon's session included subjects cover-

ing the preparation and handling of ties, timber, piling and poles at the treating plants. The first paper was that by W. W. Eldridge, piece-work inspector Chicago, Burlington & Quincy Railroad, Aurora, Ill., entitled "The Piece-Work or Unit System of Handling Ties and Timbers." He described how the piece-work system had been worked out on his road and the results he had obtained from its use. His experience indicated that the piece-work system was much cheaper and more efficient than the day-rate basis.

F. M. Bond, in charge of wood preservation at the Forest Products Laboratory, Madison, Wis., presented the next paper, entitled "Some Tests to Determine the Effect Upon Absorption and Penetration of Mixing Tar with Creosote." Because of the length of time required to make each test and the fact that insufficient time had been allotted to prepare the data, the results obtained were not conclusive. The purpose of the paper, however, was to start discussion so that the method and results obtained up to this time could be criticised and the future tests benefit as a result.

C. P. Winslow, engineer wood preservation Forest Products Laboratory, Madison, Wis., read his paper, entitled "The Transmission of Air Pressure in Cross Ties." The tests included ties made from red oak, soft maple, hemlock and Douglas fir. Ties were procured from steam roads and were selected with a view to obtaining ties showing the minimum amount of seasoning checks. As the title would indicate, the purpose of the tests was to determine how quickly the maximum vacuum or pressure could be created in the interior of a tie as in the tank. The relative merits of the wood used as determined by the tests were as follows: red oak, soft maple, hemlock and Douglas fir. The Douglas fir fell considerably below the other three in both the pressure and vacuum tests, while the red oak practically equaled the tank pressure and vacuum in all tests. The results obtained, in the author's opinion, were not conclusive but indicated to a limited extent what might be expected from an exhaustive study of this subject. In summing up he said that the tests indicated that the time required to get the maximum result inside the timber varied inversely as the pressure, and that the time required to permeate certain wood could be greatly reduced if the pressure was increased.

As the time was growing short, the discussions on the next papers in order were brief. These papers were as follows: "Adzing and Boring Ties and the Cost of Installing Plants of This Kind," by J. A. Lounsbury, vice-president Greenlee Brothers & Company, Chicago; "Natural and Artificial Seasoning of Douglas Fir for Treatment," by F. D. Beal, St. Helen's Creosoting Company, Portland, Ore.; "The Treatment of Douglas Fir with Creosote," by G. A. Coleman, Coleman Creosoting Works, Seattle, Wash.; "Efficient Handling of Ties and Materials at Treating Plants and Efficient Handling of Ties for Seasoning," by A. M. Smith, superintendent Ayer & Lord Tie Company, Argenta, Ark., and "Preparing Timber for Treatment in the Gulf States," by R. L. Allardyce, superintendent International Creosoting & Construction Company, Texarkana, Tex.

The sessions of the association held Thursday, Jan. 23, were spent in discussing the merits of wood block paving as well as the methods of manufacture. The program included the following papers: "How Nearly Does the Modern Yellow Pine Block Pavement Approach the Ideal Pavement and What Improvement Can We Suggest?" by H. L. Collier, engineer Yellow Pine Manufacturers' Association, St. Louis, Mo.; "Timber for Creosoted Block Paving," by H. E. Davis, promoter Creosoted Wood Paving Block Association, Chicago, and "Laying Wood Block Pavement," by H. S. Loud, chief engineer United States Wood Preserving Company, New York. J. E. Rhodes, secretary-manager of the National Lumber Manufacturers' Association, and George K. Smith, secretary Yellow Pine Manufac-

urers' Association, gave brief talks concerning the relation of the lumber industry to the Wood Preservers' Association and urged co-operation between all in the interests of the whole industry.

At the business session held Thursday afternoon resolutions were adopted protesting against the placing of creosote on the 10 per cent import duty list. Upon motion it was decided to send a copy of these resolutions to every Congressman, and it was urged that each member take up the question personally with the Congressman for his district. A committee was also appointed to wait on the ways and means committee of the House of Representatives for the purpose of offering personal protest. Resolutions were adopted approving the existing plan of controlling forest reserve and urging a continuation of federal control. The association also passed a resolution indorsing the methods employed by the United States Forest Service and another resolution complimenting the American Forestry Association on its work pertaining to conservation.

Probably one of the most important actions taken by the association at this session was one protesting vigorously against specifications requiring the treatment of timber which is not sound or properly seasoned or where a preservative of first quality or the proper amount of impregnation is not called for.

Up to this time the work of the association has been handled by individuals, the members being requested by the program committee to discuss certain subjects at the annual convention. This method has not been entirely satisfactory, and it was decided at this convention that a committee should be appointed to report its recommendations as to a standard committee organization. The committee's report recommended an organization similar to the American Railway Engineering Association and advised the appointing of five standing committees. These recommendations were briefly discussed and adopted.

As a token of appreciation of the work done for the association, Howard F. Weiss, director Forest Products Laboratory, Madison, Wis., and C. W. Berry, superintendent treating plant Union Pacific Railroad, Laramie, Wyo., one of the organizers of the association, were elected to honorary membership. At the conclusion of this session it was decided that the next annual meeting would be held at New Orleans, and the following officers were elected for the ensuing year: A. E. Larkin, manager Republic Creosoting Company, Minneapolis, Minn., president; J. H. Waterman, superintendent timber preservation Chicago, Burlington & Quincy Railroad, Galesburg, Ill., first vice-president; E. B. Fulks, chemist American Creosoting Company, Chicago, second vice-president; G. E. Rex, manager treating plant Atchison, Topeka & Santa Fé Railway, Topeka, Kan., third vice-president, and F. J. Angier, superintendent timber preservation Baltimore & Ohio Railroad, Baltimore, Md., secretary and treasurer.

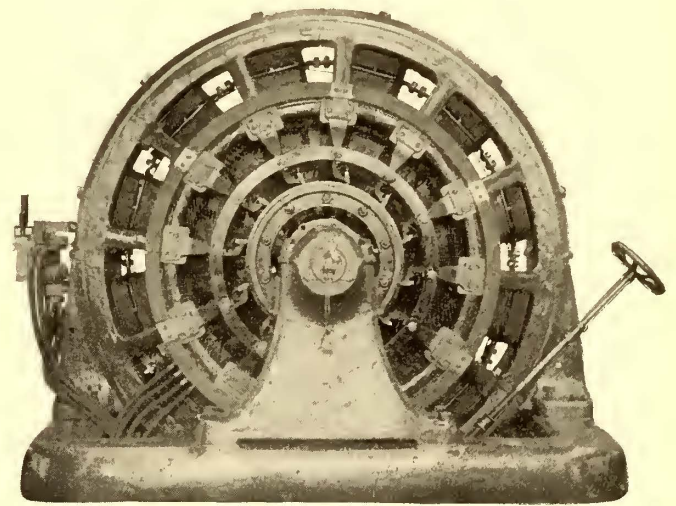
## TWELVE-POLE, 1,000 KW, SIXTY-CYCLE ROTARY CONVERTERS

The Housatonic Power Company operates at its substation No. 1 at Waterbury, Conn., two 1000-kw, sixty-cycle rotary converters of non-commutating-pole design, which are especially notable for the small number of poles for their capacity and frequency. Compared with previous designs, the number of poles has been reduced from twenty to twelve and the speed raised from 360 r.p.m. to 600 r.p.m. These machines have now been in service for about one year, and so far they are reported to be showing excellent commutation and efficiency on the fluctuating loads common to electric railway service.

These 1000-kw rotary converters are six-phase machines and operate in parallel with four 500-kw sixty-cycle, six-phase converters previously installed in the same station,

all of the apparatus being of General Electric Company manufacture. They supply power for the traction system of the Connecticut Company in Waterbury. Three-phase current of a potential of 33,000 volts is received from the main power station of the Housatonic Power Company and transformed by six 350-kva oil-cooled transformers to 430 volts. The rotaries are started from the a. c. side only and deliver direct current at 600 volts. The transformers have two 2½ per cent full capacity taps below 33,000 volts and two 2½ per cent full capacity taps above 33,000 volts in the primary and one-third and two-thirds voltage starting taps in the secondary. They are designed with 15 per cent inherent reactance. The rotaries are compound-wound and are built for standard carrying capacities of 150 per cent load for two hours or 200 per cent load momentarily.

The brushes employed on the collector rings are of the "Metite" type, recently brought out by the General Electric Company, and are made by combining fine copper and graphite with suitable binders. They look like solid



D. C. End of 1000-kw Rotary Converter

copper, are self-lubricating and are designed to eliminate all cutting of the collector rings and the frequent cleaning which is necessary with the copper-leaf brush.

The side of the frame carries a four-pole, double-throw field break-up switch for the shunt field. This opens up the field in several places to reduce the strain on the insulation caused by the high potential induced in the fields during a. c. starting and also provides a means of obtaining the proper polarity. The normal operating position of the switch is up. The down position is used for reversing the polarity of the machine when it comes up wrong from a. c. starting. A single-pole, single-throw equalizer switch and a double-pole, single-throw negative switch are also mounted on the magnet frame.

As previously stated, these six-phase diametrically connected machines are started from the a. c. side only. Alternating current is applied direct to the armature winding at a reduced voltage obtained from the one-third and two-thirds voltage taps on the low-tension side of the transformers. After the machines have reached synchronous speed, the right polarity has been obtained and the fields have been excited on the first starting tap, two-thirds and then normal voltage is applied.

Electric railway companies should not forget that they are obliged by federal law to file returns of their financial operations with the commissioner of internal revenue on or before March 1. Corporations which have not received blanks can obtain them by application to the collector of internal revenue of their district.

## LONDON LETTER

*(From Our Regular Correspondent)*

St. Paul's Cathedral is once more very much in evidence in circles interested in the development of tramways in London. A few years ago it was proposed to construct a large sewer in the vicinity of St. Paul's, but the newspapers succeeded in having the route of this sewer diverted. It was successfully contended that the subsoil might easily be drained by the construction of underground work in the vicinity and the foundations of the cathedral be thus endangered. The same complaints are now being made about the construction of a tramway across the new St. Paul's Bridge and an underground subway close to the eastern walls of the cathedral. Sir Francis Fox has presented a report to the Dean and Chapter in which he declares that the construction of a subway in the vicinity of the cathedral would be fatal to the safety of the structure. In the meantime the parliamentary committee of the London County Council has deferred coming to a decision as to this subway, and it is stated that the whole question of danger to St. Paul's arising from vibration is to be privately inquired into by the Home Office, as the present heavy motor omnibuses and other heavy mechanically propelled vehicles also contribute to this danger.

It has been decided by the London County Council to replace two of the 5000-hp reciprocating engines in the tramway power house at Greenwich with two turbines of 11,000 hp each. The two new turbines and their accessories will cost £128,000. It is only six and a half years since the reciprocating engines were installed. The Glasgow Corporation has already installed several turbines of as large sizes as were available at the time of ordering, and the Corporation there now has under consideration plans to install two additional turbines of 7500-kw capacity. Howden & Company, Glasgow, have already supplied the Manchester Corporation with turbines of 6000 kw and 7500 kw respectively, and are building for the same client an exhaust steam turbine of 5000 kw, said to be the largest turbine of this kind built in the United Kingdom. The same makers are also building a 15,000-kw turbine for the Manchester Corporation.

The London County Council is making serious efforts to meet the keen and growing competition of the motor omnibuses by reducing fares and extending the system of return tickets which was recently introduced. For journeys for which the ordinary fare is 2d. or more the return fare is 1d. less as compared with the cost of a single ticket each way. For the forty weeks of the financial year to Jan. 1 the decrease in tramway receipts totaled £82,820 on an aggregate of £1,664,410. While the receipts of the tramways steadily decline, those of the underground railways and the buses continue to increase. New routes are continually being opened by the motor buses, and these vehicles, numbering about 4000, are now running on practically every highway in London.

The tramways department of the Liverpool Corporation has begun public trials with new types of electric cars. The new cars, of which there are two types, were designed by C. W. Mallins, the general manager. The aim has been to avoid the delay which occurs at present owing to the fact that passengers entering and leaving the cars have to use the same platform, the same entrance and exit to and from the lower level and the same staircase for the upper floor. In the new cars a double staircase has been adopted. In one case, also, there are two gateways, and in the other three, so that the passengers who are leaving are separated from those who desire to enter. On the small car the platforms and doors are in the usual place, at either end, but the platforms have been made longer. On the larger bogie-truck cars the platform is placed in the center, is entered from the left side only and is divided into three parts, by barriers and gates which are controlled by the conductor. There are three gateways opening on to the street, and passengers entering by the middle one have a clear passage to either half of the lower deck or upstairs by the stairway which is reserved for them. Passengers leave the car on either side of this entrance and have a clear passage whether from upstairs or down. The tramways department has also been running lately a motor

bus which, for Liverpool, at any rate, is of a new type. Motor buses have been running for some years between Liverpool and Woolton, but the old type, run by petrol alone, was not satisfactory. They are now being replaced by electric-petrol buses of 40 hp, in which the internal-combustion engine drives a dynamo which supplies current to the motors.

In connection with the proposed absorption of the City & South London Railway by the London Electric Railways, both companies have deposited bills in Parliament asking for power to carry out the project and for permission to carry out the construction work necessary to establish a physical connection between the two systems. The London Electric Railways desires power to construct about 1¼ miles of new tube railway to connect the present terminus of the City & South London line at Euston with the Hampstead branch and the Highgate branch of the Charing Cross, Euston & Hampstead Railway near the point of junction of these branches at Camden Town. The company also proposes to increase its capital to provide funds to cover the cost of the extension. On the other hand, the City & South London Railway is applying for power to enlarge the tunnels throughout the whole length of its line from Euston to Clapham, a distance of 7½ miles. As the carrying out of the work may possibly necessitate temporary suspensions of traffic or the temporary closing of stations, the company seeks to be absolved in that event from liability. It is also applying for authority to issue additional stock to provide funds to carry out this work. The company will also ask for permission to sell its existing rolling stock, which will be out of date on the reconstructed line, and to apply the proceeds to the purchase of new rolling stock and the re-equipment of its railway and shops.

The Great Northern, Piccadilly & Brompton Railway is experimenting with a new type of car by which it hopes to load and unload passengers with less delay than at present. For some weeks the company has been experimenting with systems of center doorways. Three types have been tried, of which the most successful has been a double swing door. In addition to the end doors there are doors in the center of each side of the cars, and in place of sliding open as is the case on the Metropolitan and the District Railways, which also use cars with center doors, the doors of the new cars of the Great Northern, Piccadilly & Brompton Railway open inward. The doors are under the control of the conductor from his platform, and there is no danger of the train starting while passengers are in the act of boarding or alighting, as each doorway is connected with electric lights on the conductor's platform and in the driver's cab, which flash according to whether the doors are bolted or unbolted. In the event of the Piccadilly tube adopting the system for the cars of its trains, the Bakerloo and the Hampstead & Highgate lines would probably adopt similar cars.

The Metropolitan Underground Railway has been celebrating its jubilee. This railway was opened in January, 1863, with 3½ miles of line extending from Bishop's Road to Farringdon Street. Fifty years ago 134 trains passed through the Baker Street station of this railway each weekday, whereas to-day the number is officially given as 1436.

The annual report of Arthur Ellis, manager of the Cardiff Corporation Tramways, is particularly interesting this year in view of the fact that the Corporation intends to promote a bill in Parliament to take other areas within its boundaries. Mr. Ellis suggests that powers be sought to deal with possible extensions of the tramway system, so that it will be unnecessary to promote a special bill in Parliament for this purpose later on. He favors obtaining power to run trolley omnibuses or petrol electric buses in the outlying sections. He maintains that the self-contained vehicle would be useful to ascertain what traffic would be obtained from any particular district before permanently installing a trolley omnibus system or a tramway. After being satisfied that there was sufficient traffic to warrant the necessary expenditure, the self-contained vehicle could be moved to some other district with the same object. On the general question of traction, Mr. Ellis maintains that practical experience during the past two or three years has shown that the trolley omnibus has great advantages.

A. C. S.

# News of Electric Railways

## Final Hearings on New York Subway Contract Forms

Final hearings on the forms of contracts for the proposed New York subways under the dual system of rapid transit were held by the Public Service Commission for the First District during the week ended Jan. 25, 1913. The commission is now considering various amendments to the contracts proposed at these hearings, and after adopting or rejecting such amendments will put the contracts in final form and transmit them to the Board of Estimate and Apportionment for approval. These contracts are to be made with the Interborough Rapid Transit Company and the New York Municipal Railway Corporation (Brooklyn Rapid Transit) for the operation by those companies of the new system and for a contribution by each company toward the cost of construction. The new system will represent an outlay by the city of New York and the companies in excess of \$300,000,000 and will provide the city with a rapid transit system containing 630 miles of single track road, as against 296 miles of existing lines.

The Public Service Commission for the First District has called for bids, to be opened on Feb. 7 at noon, for the construction of Section No. 3 of the Woodside, Astoria and Corona rapid transit railroad. This section embraces what is known as the Corona branch, running from the Queens end of the Queensboro Bridge along Queens Boulevard, Greenpoint Avenue and Roosevelt Avenue to Sycamore Avenue, Corona. This road will be a two-track and three-track elevated railroad, owned by the city of New York and operated jointly by the Interborough Rapid Transit and the Brooklyn Rapid Transit companies. In that portion running through Queens Boulevard, which the city intends to make a wide and handsome thoroughfare, the structure will be of reinforced concrete of ornamental design. It is estimated that the road can be built within eighteen months. Bids for the construction of Section No. 2, the branch from the Queensboro Bridge to Ditmars Avenue, Astoria, also an elevated railroad, will be opened on Jan. 28. This branch also will be owned by the city and operated jointly by the companies previously mentioned.

## Peter Witt and W. R. Hopkins Discuss Cleveland's Problem

Peter Witt, street railway commissioner of Cleveland, and W. R. Hopkins, president of the Cleveland Underground Rapid Transit Company, discussed the subject "The Street Transportation Problem in Cleveland" before the members of the City Club at the Hollenden Hotel, Cleveland, on Jan. 25. Mr. Hopkins said that subways will take care of the long hauls and leave the short hauls to the surface cars. In this way the company which operates the surface cars will be able to do so at a fare of 3 cents. Work on the subway lines in Cleveland will be begun at the earliest possible moment. The company which he represents would be willing to take over the suburban business from the Cleveland Railway if that was thought advisable, but he doubted whether East Cleveland would be willing to give up the surface lines even for the advantages of rapid transit. Hope had been given up of operating rapid transit cars over the Nickel Plate line west when it was decided to build a high-level bridge.

Mr. Witt asserted that 3-cent fares have come to stay. The company has a surplus, he said, instead of deficits. He referred to the accident and one or two other special funds that have been accumulated by careful operation and management. He has all along insisted that these should be turned over to make up deficits in other funds. Mr. Witt said the city made a mistake in transfer arrangements. The charge for a transfer should have been 3 cents. Mr. Witt said that the public was responsible for the overcrowding of cars. He asserted that people will board a crowded car instead of waiting for the one following which may be almost empty. He also said that the two-car trains operated on Euclid Avenue and East Ninth Street are not used as they should be because passengers still insist upon going to the Public Square to board cars. Many people walk several blocks to reach the square, because it has long been

a terminal for most of the lines, and they believe they can secure seats there more easily than at any other point. He said that 1200 cars are needed instead of 900 cars, but that crowding could not be avoided with 2000 cars unless the people would co-operate with the management of the company. Mr. Witt defended his stop-elimination plan.

As a test the cars on the Fifty-fifth Street line of the Cleveland (Ohio) Railway will be operated as pay-as-you-leave cars after Feb. 1. No extensive changes in the cars will be made for the test. The conductor will have his station at the rear of the car and the fare box will be so located that free passage for the passengers may be obtained. Passengers will enter the cars by the front door and will pass out at the rear. The front doors are to be operated by the motormen and they will be responsible for passengers as far as that opening is concerned and will be expected to see that no passengers leave the car that way and escape the payment of fares.

## Proposed Terminal Improvements in Newark

Thomas N. McCarter, president of the Public Service Corporation, has outlined plans for a terminal for the Public Service Railway near Broad and Market Streets, Newark, N. J., and for other improvements involving an expenditure of about \$4,000,000. The proposed terminal building will front on Park Place and extend back to Pine Street, with outlets to North Canal Street and to Canal and East Park Streets. The structure will eventually be eight stories high and will contain a three-level system of entrance and exit for the cars of the Public Service Railway. The scheme contemplates direct communication between the terminal and the surface car lines from both east and west. On the east an elevated structure is to be erected, extending from Mulberry Street. On the west the communication will be by means of a subway that will have an outlet on property of the company fronting in Washington Street between Warren Street and the Morris Canal. The various extensions and the accompanying rerouting of certain lines and parts of lines will make necessary a re-adjustment of transfer privileges and this phase of the problem is being worked out so that the whole local street railway system in Newark will be as comprehensive and as great an accommodation to the traveling public as it reasonably can be made. The plan for the terminal has been worked out without reference to the use of the Morris Canal and is entirely independent thereof. Should the canal be abandoned and its roadbed become available for transportation, it will be entirely practicable, because of its proximity to the terminal, to use it in conjunction therewith. Nor does anything connected with the plan militate against the construction of subways on Broad and Market Streets, whenever the same shall become necessary. The terminal subway will cross Broad Street practically on the same level as the canal. A Broad Street subway would have to pass under this level, whether the canal be continued as a waterway or used for transportation purposes. A subway on Market Street would seek this same level.

## Statement from Company in Regard to Extensions in Akron

Will Christy, vice-president of the Northern Ohio Traction & Light Company, Akron, Ohio, has addressed a letter, in part as follows, to F. W. Rockwell, Mayor of Akron, in regard to the differences between the city and the company over the matter of extensions:

"No opportunity has been given to the company to explain in detail its reasons for declining to accept the ultimatum presented to it by the city. There are always two sides to all questions, and in refusing to build the extensions demanded by the city you must be conscious of the fact that the company must have some powerful reasons for making such a refusal, especially as it ought to be, and is more vitally interested in the growth of the city, as that means the growth of its traffic, than any other corporation, and all that the company asks is that it be permitted to

present to any fair-minded committee its side of the question.

"The company has nothing to conceal; its reports are published every month, and it stands ready to deal with any body of men who are willing to treat it fairly and analyze its reports bearing upon its receipts and expenditures in Akron, and I am confident that such an analysis will show that the company, if it built the extensions asked for, could not get back even a fair rate of interest in twelve years, while the depreciation in the tracks would practically wipe out the investment in them.

"You are certainly conversant with the condition existing on East Market Street, where less than twelve years ago we put down new tracks and new pavement and are now compelled again to put down new tracks and new pavement at a cost of nearly \$200,000, the expenditure of which will not add to our receipts. The company is not opposing your movement for city-owned extensions, but as a citizen I beg to warn you that you are going into a new and untried field which will fill your city offices with real estate speculators or their friends who will have allotments to sell.

"I also beg to say that no company could for many years earn operating expenses on some of the extensions talked of by you. The belt line extensions suggested by me are of immediate and far greater importance to the traveling public, in my judgment, than those you contemplate building, as your extensions to a great extent will go into outlying territory where a few people have purchased cheap lots which they are holding for a rise, and the extensions would only cause the opening up by land speculators of new allotments still further out, and thus continue the present over-speculation in lots. The speculators would then demand that the city continue to make further extensions to exploit their schemes at public expense."

The Mayor has replied to the letter from Mr. Christy. He agrees with some of the points which Mr. Christy made, disagrees with him on others and asserts that the city stands ready to reopen negotiations at any time the company is prepared to present a definite statement in regard to what it is willing to do. The Mayor, however, reiterates his opposition to an extension of the franchise. The Council has passed a resolution to retain Peter Witt, street railway commissioner of Cleveland, to act as an expert and to report to the Council on the situation which now confronts the city.

### Statistics of Canadian Electric Railways

The statistics of electric railways in the Dominion of Canada for the year ended June 30, 1912, are made available through the report of J. L. Payne, comptroller of statistics, to A. W. Campbell, deputy minister of railways and canals for the Dominion. Mr. Payne explained that the statistics presented are incomplete, owing to failure on the part of the Montreal Tramways and the St. John Electric Company to report. Hence the figures in the tables below include the statistics of these roads for the year ended June 30, 1911, and of other roads for the year ended June 30, 1912. In every respect operations of the year show growth in all departments and a general extension of street railway interests.

The total track mileage for 1912, measured as single track, is 1723 miles, an increase of 136 miles. The capital liability amounted to \$122,841,946, divided as follows: stock, \$70,829,118; funded debt, \$52,012,823. The statistics of earnings follow:

Car earnings:	
Passengers .....	\$22,007,750
Freight .....	1,025,371
Mail and express .....	78,818
Other car earnings .....	67,022
<b>Total car earnings .....</b>	<b>\$23,178,693</b>
Miscellaneous earnings:	
Advertising .....	\$71,226
Rent of land and buildings .....	21,228
Rent of tracks .....	13,836
Rent of equipment .....	56,239
Sale of power .....	37,083
Other miscellaneous earnings .....	120,671
<b>Total miscellaneous earnings .....</b>	<b>\$320,287</b>
<b>Gross earnings from operation .....</b>	<b>23,499,250</b>

This is an increase of \$3,142,298.00 as compared with 1911. An interesting feature of this operating report, as compared

with that of the previous ten years, is the steady rise of earnings from freight. In 1901 the total from this source was \$95,082. In 1904 there had been an increase to \$182,143, and in 1906 one to \$288,105. In 1912 the earnings from freight reached \$1,025,372, showing the extent to which that aspect of public service had grown in twelve years. Figures for the preceding years are not published in this connection because they are contained in an article contributed by Mr. Payne, comptroller of statistics for the Dominion of Canada, to this paper on page 42 in the issue of Feb. 10, 1912.

Following is the combined operating report for the fiscal year:

Earnings and income:	
Gross earnings from operation .....	\$23,499,250.31
Operating expenses .....	14,266,674.63
<b>Net earnings .....</b>	<b>\$9,232,575.68</b>
Miscellaneous income .....	1,617,017.78
<b>Gross income .....</b>	<b>\$10,849,593.46</b>
Deductions from income:	
Taxes .....	\$1,581,802.81
Interest funded debt .....	1,570,202.02
Interest floating debt .....	193,068.26
Other deductions .....	188,582.57
<b>Undistributed .....</b>	<b>\$3,533,655.66</b>
<b>Undistributed .....</b>	<b>1,378,906.56</b>
<b>Total net income .....</b>	<b>4,912,562.22</b>
<b>Total net income .....</b>	<b>\$5,937,562.24</b>

The undistributed amount in this table relates to the British Columbia Electric Railway, which operates a lighting and power plant in addition to an electric railway. A separation is not made in the report of that company of items which would establish the real net income of the electric railway department by itself. The report adds:

"If the undistributed income had been added to net income, as was done in preceding years, the amount of the latter for 1912 would have been \$7,315,937.80, as compared with \$6,592,535.30 in 1911. It would not, however, be strictly correct to do that, since it represents a total from which proper deductions had not been made. The definitely known net income is the sum given in the statement, although it is probably below the actual amount."

The amount of dividends and bonuses paid during the year was \$4,229,005. These payments were equal to 5.9 per cent on the total stock issue.

Following was the distribution of operating expenses in 1912, with a comparison for 1911:

	1911.	1912.
Maintenance of way and structures .....	\$920,874.93	\$1,228,972.10
Maintenance of equipment .....	1,758,289.10	1,859,939.21
Operations of power plant .....	2,001,543.00	2,535,576.10
Operation of cars .....	5,768,085.10	6,770,560.47
General .....	1,610,098.62	1,871,626.75
<b>Total .....</b>	<b>\$12,096,134.22</b>	<b>\$14,266,674.63</b>

During the year 488,865,682 passengers were carried exclusive of 125,453,320 transfers, showing an increase of 62,568,890 as compared with 1911. The carrying of these passengers involved a car mileage of 80,402,089. Freight, mail, and express business had a car mileage of 1,667,975. There was an increase of 8,867,961 in passenger car mileage and of 583,297 in freight car mileage over 1911. The number of tons of freight hauled was 1,435,525, as compared with 1,228,362 in 1911.

The number of cars owned at the end of the fiscal year by the different companies was 4478. The number of employees in the service was 14,760, as compared with 13,671 in 1911. The total of salaries and wages for the year was \$9,261,370.26, as against \$8,559,215.04 in 1911.

### Conference of Governors of New England

The Governors of the New England States, with the exception of Governor Haines of Maine, who was detained at home by illness, discussed the railroad situation in New England at a conference at Boston, Mass., on Jan. 25, 1913. They agreed to the appointment of an unpaid commission to be made up of two citizens of each State, which shall make inquiry into the entire subject of railroad development and operation in New England. This is the resolution which was passed at the conference:

"Voted, That the Governor of each New England State be requested to appoint two citizens of his State as members of a New England railroad conference, to consider

and report on the best modes of developing and operating the New England railroad system; the members of said conference to serve without compensation, but their necessary expenses to be paid by the State appointing them."

The Governors mapped out the work of the New England railroad conference as follows:

"The New England railroad conference will consider and report upon the general subject and in particular:

"1. The establishment of a permanent conference composed of the heads of the State commissions having supervision over railroads.

"2. The question of creating State directors in the management of the railroad system, and the general question of the participation of the public in the ownership and operation of transportation facilities, and the form of such participation.

"3. The consideration of means whereby the projected Grand Trunk extensions may be completed.

"4. Means of providing through transportation by way of Boston, and the consideration of the best means of accomplishing this, whether by tunnels or belt lines, or both.

"5. The project of electrifying the terminals, and providing adequate electric traction throughout crowded urban and suburban districts.

"6. A reasonable plan of interchangeable mileage, to be applied over the entire New England railroad system.

"7. A plan of uniform legislation providing for the unification of the corporate entity which manages the railroads in a manner which will make the legal fact of unification correspond with the actual control now exercised. This will involve a consideration of the whole question of whether the Boston & Maine shall remain a part of the New Haven system or can better serve New England as a separate system; the question of the elimination of the Boston Railroad holding company and the question to what extent, so far as the federal laws and the fixed policy of the several States permit, the railroads shall own and operate steamship and electric railway lines.

"8. In connection with such unification a plan to coordinate and unify all lines and services.

"9. The reduction of all leases of lines to absolute ownership.

"10. The consideration of means to make the railroad corporation amenable in its entirety to public control, in the manner of a domestic corporation doing business in each State.

"11. The consideration of uniform charters to the railroad corporation in each of the States in which it operates lines, with uniform reservations of power of control by the State."

#### Electrification of Chicago, Milwaukee & Puget Sound Railroad

While nothing definite has been decided in relation to the engineering details of the electrification of the main line of the Chicago, Milwaukee & Puget Sound Railroad between Harlowton, Mont., and Avery, Idaho, it is said to be not unlikely that 2400-volt direct-current motors will be used on the electric locomotives, energy being supplied to them by means of an overhead system. As previously stated, electricity will be purchased by the railroad from the Montana Power Company, Butte, which will generate it, normally, at hydroelectric plants. These generating stations are, or will be, located at Great Falls, on the Missouri River; at three sites on the same river near Helena, at a site on the Madison River, in the Rocky Mountains, and at Thompson Falls, on Clark's Fork. With a diversity of sources and excellent reservoir possibilities in some of the mountain sites, continuity of operation is anticipated.

The energy will be transmitted at 100,000 volts or thereabout and transformed to a lower voltage for distribution, and also probably changed to direct current, as mentioned. The electric zone of the railroad embraces 439 miles of single track with 11 or 12 miles of sidings. It includes that portion of the railroad extending from the plateau of eastern Montana over the passes through the main ranges of the Rocky Mountains. The railroad is excellently built, but in some cases grades of 2 per cent are encountered. The electric locomotives will haul both freight and passenger traffic.

The electrification will be carried out under the direct supervision of C. A. Goodnow, vice-president.

**New Line Opened in New York.**—The Manhattan & Queens Traction Corporation placed in operation on Jan. 29, 1913, the portion of its line from Fifty-ninth Street and Second Avenue, New York, at the Manhattan end of the Queensboro Bridge, across the bridge, to Winfield, Long Island.

**Fines Imposed in Heating Cases in Detroit.**—Judge Connolly, at Detroit, Mich., recently assessed a fine of \$100 on each of four counts against the Detroit United Railway on the charge of operating cold and unsanitary cars. Sanitary Engineer Williamson testified that it would be impossible to maintain the temperature above 45 deg. Fahr. in the side-door cars, some of which are still in operation.

**Offer to Operate Toronto Civic Line.**—Works Commissioner Harris of Toronto, Ont., has reported that the Toronto Railway is prepared to operate the St. Clair Avenue civic car line if paid 20 cents per car mile. This is the same rate the city pays for the operation of the Queen Street East line. By a vote of three to two the Board of Public Works has decided not to operate the cars of the Gerard Street civic line on Sundays until the Legislature has passed an act legalizing such operation.

**Electrification of London & Port Stanley Railway.**—The London (Ont.) City Council at its inaugural meeting named only one anti-electrification alderman on the board of the London & Port Stanley Railway, which consists of eight men. Seven of those whose names were on the electrification slate in the recent municipal elections were elected to the Council. Alderman Moore, upon whose motion the Council accepted the board as named by him, declared that the seven who were pledged to submit the question of the electrification of the line to the people were entitled to positions in direct charge of the line.

**Mayor Recommends Compulsory Electrification of Buffalo Terminals.**—Mayor Louis P. Fuhrmann, of Buffalo, N. Y., has recommended the passage by the City Council of ordinances to compel the railroads which operate into Buffalo to electrify their terminals and to exclude coal-burning locomotives from the city. The Mayor said recently: "I fixed the area of electrification between Fillmore Avenue and Ontario Street so that it would include all the railroads and still permit of coal-burning engines in the freight yards. There are reasons why it would be impracticable to attempt the use of electric locomotives for switching purposes in these yards."

**Home Rule of Public Utilities Recommended in Seattle.**—A. L. Valentine, superintendent of public utilities of Seattle, Wash., in his annual report to Mayor Cotterill, declares that general ordinances regulating public utility construction, maintenance and operation have met with continued reverses during the past year, and for this reason it is necessary that the power of control over these public utility companies be taken from the Public Service Commission either through the Legislature or by initiative petition. He suggests that the Mayor urge the City Council to send representatives to Olympia at the next session of the State Legislature to aid in securing home rule.

**Indeterminate Grant Suggested in Cincinnati.**—At a meeting of city officials and representatives of the Cincinnati Traction Company at the City Hall, Cincinnati, on Jan. 27, it was suggested that the company surrender its fifty-year franchise and accept an indeterminate grant, with all its property rights safeguarded and guaranteed. W. Kelsey Schoepf, president of the company, agreed to make the proposal a basis in working out the details of a plan at future conferences. The proposition made at the meeting provides for the purchase of the property by the city, if that is deemed desirable. The city was represented by Mayor Hunt, John W. Peck, Public Service Director Price, City Solicitor Bettman and Councilman Heilker, while W. Kelsey Schoepf, president, and Walter A. Draper, secretary, represented the company. R. W. Harris, who prepared the re-routing plan, and William Cooper Proctor were also present.

**Permanent Injunction Against Enforcement of Universal Transfer Ordinance in Chicago.**—The city ordinance de-

manding universal transfers on the elevated railroads in Chicago was held to be invalid by Judge J. A. Baldwin, of the Circuit Court. A temporary injunction was granted against the enforcement of the ordinance in July, 1912, and the action of the court makes this injunction permanent. The court holds that the city has no statutory right to fix rates for steam and elevated roads. The opinion also held that the Legislature never delegated to the city the power to regulate rates of steam and elevated roads. This decision also affects the city's efforts to compel a readjustment of suburban railroad rates. Mayor Harrison has stated publicly that the city would take steps to appeal from the decision. In explanation of the court's decision it might be said that the elevated railways of Chicago were organized under the railroad act of the State and not under the street railway act.

**Key Route Improvements.**—The Key Route plans to construct a large railway terminal at Oakland, Cal. It is proposed to construct a six-track pier from the shore line of Oakland to the Key Route mole, a distance of  $3\frac{1}{2}$  miles, at an approximate expense of \$2,000,000. This means the trebling of the present rail facilities over tidewater. The new pier is being constructed primarily with a view to accommodating the Oakland & Antioch Railroad, which has made a traffic agreement with the Key Route System. The officers of the Key Route, convinced that the present mole will be insufficient adequately to handle the traffic which they think is bound to accrue from the Sacramento Valley with the opening of the through line of the Oakland and Antioch, are furthermore preparing an extensive enlargement of the present mole facilities. These plans include a greater train shed and a vast extension of the present trackage facilities of the Key Route involving an additional expenditure of more than \$5,000,000 before the opening of the 1915 exposition.

**Progress in Philadelphia.**—The Philadelphia News Bureau concluded a recent article on the work of the Stotesbury-Mitten management in rehabilitating the Philadelphia Rapid Transit Company as follows: "The company is now on the best of terms with its men. Labor unrest was the greatest direct danger that ever threatened the company. The incorrigible 'soreheads' have been eliminated and the rest have been won over simply by treatment that has been not only fair, but more than fair. Every promise of the new management to the men has been kept ahead of time, and every conductor and motorman, through the operation of the 22 per cent wage fund, has been given a proprietary interest in the company's success. It is doubtful whether there has ever been a more tactful and successful handling of a difficult labor situation than Mr. Mitten's feat in transforming, in less than two years, what was little better than a mob of 7000 dissatisfied, suspicious and mutually hostile men into a compact, harmonious and loyal organization of efficient employees. The benefit accruing to the company from this change can hardly be estimated."

**Result of Operation of Geary Street Municipal Railway.**—The gross receipts of the Geary Street Municipal Railway, San Francisco, Cal., for the first seventeen days' operation of this road amounted to \$10,460, or an average of \$616.47 per day. This amount is not quite sufficient to cover operating expenses and interest on bonds. At present a seven-minute headway is maintained, but this will be reduced to five minutes as soon as additional rolling stock is received. On Feb. 11 an agreement with the United Railroads of San Francisco becomes effective by which transfer privileges will be extended between the municipal line and the United Railroads at Fillmore, Divisadero, Larkin and Kearny Streets. Utility companies having underground structures on Market Street are now engaged in removing them to make way for the extension of the municipal railway on that street. The supervisors contemplate letting the contract for this extension on Feb. 11, and expect the line to be complete within forty-five days of the date of beginning work, which is the time limit specified in the contract. The utilities committee of the Board of Supervisors has received an estimate of the cost to build a cross-town line on Van Ness Avenue from Market to Bay Street. The proposed line will be 2 miles long and include a double track laid in the center parking on a right-of-way 24 ft. in width.

**New Pittsburgh Subway Ordinance.**—Instead of passing the amended subway ordinance which has been before the Council of Pittsburgh, Pa., for some time, the majority which favors the passage of the ordinance had introduced into the Council on Jan. 21, 1913, a new ordinance which includes in its provisions all the changes which have been made from time to time in the original ordinance. The new measure has been referred to the public service and surveys committee, the intention being to have the measure confirmed by that committee without debate and then passed. The original bill has been passed on second reading two or three times, referred back to committee and turned over to the law department for amendment a half dozen times. Simultaneously resolutions were adopted calling upon the different subway companies to demonstrate their financial responsibility, asking them to file their acceptances of the bill and its provisions, the one that accepted to receive the franchise for the construction of the subway. One company presented a new ordinance instead. A. E. Anderson, of the Pittsburgh District Company, handed in a paper which he has since insisted was an acceptance. The Pittsburgh Subway Company filed an acceptance conditional on the passage of the ordinance by a specified time. The majority finally succeeded in having the Pittsburgh Subway Company's name inserted in the ordinance as the grantee of the franchise, and the new ordinance will be put through with the hope that it will prove invulnerable in the courts.

**Installation of Interlocking Plant Ordered.**—The Public Service Commission of the Second District of New York, has ordered the International Railway, Buffalo, N. Y., to install in Union Road in Cheektowaga an interlocking device and plant which shall control and regulate the crossing of its tracks over the tracks of the Lehigh Valley Railroad and the Erie Railroad. The International Railway is required to submit plans to the commission for its approval on or before Feb. 1, 1913, and to construct and place the plant in operation not later than July 1, 1913. The expense of constructing, maintaining and operating is to be borne by the International Railway. After hearings and investigations the commission found an interlocking plant to be necessary at the crossing in question in order to promote the safety and convenience of the traveling public and the employees of the railroads. It developed that the International Railway is bound by a contract with the Lehigh Valley Railroad to install crossing protection upon demand of the chief engineer of the Lehigh Valley Railroad. This demand was made and an interlocker was constructed at an expense of about \$5,000, which cost was paid by the International Railway. After the construction of this plant it was inspected by the electric railroad inspector of the commission, who pronounced it dangerous to operate by reason of the proximity to the tracks of the Erie Railroad. The result was that neither the International Railway nor the Lehigh Valley Railroad has put the interlocker in operation.

## LEGISLATION AFFECTING ELECTRIC RAILWAYS

### COLORADO

Representative Persons has introduced into the House a bill to extend the authority of the Railroad Commission to all public service corporations and to increase the power and scope of the commission.

### INDIANA

The bill introduced into the Senate to prohibit the drinking of intoxicating liquors on railroad and interurban railway cars has been passed. A bill has been introduced into the House to extend the jurisdiction of the Railroad Commission to street railways and interurban railways within town and city limits. A bill has also been introduced into the House to make it unlawful to require motormen to perform any other duties than those immediately incident to the proper operation of their cars. The bill, if passed, would prevent motormen from assisting in handling express and baggage. Another House bill provides that no official or employee of a street railway or an interurban railway shall be eligible to election to the City Council of any city through which the company with which he is connected operates.



A workmen's compensation bill has been introduced in the State Legislature by Representative Hayes, of Jasper County. The measure was drafted by Emory B. Sellers, Monticello, United States district attorney under President Cleveland. The measure defines dangerous trades and provides that the employer must pay the disabled workman 50 per cent of his weekly wage not longer than eight years nor in an amount exceeding \$3,500. If the workman is disabled for life, he is to receive from his employer 50 per cent of his weekly wage for ten years, or in a sum not exceeding \$5,000. Jurisdiction would be vested in an industrial court consisting of a circuit judge, a county clerk and sheriff. Only American laborers or those who have filed naturalization papers would be entitled to protection under the law.

#### KANSAS

After a two hours' debate on Jan. 22 the House by a vote of ninety-five to twenty-four decided in favor of leaving the State Public Utilities Commission appointive by the Governor, as at present, instead of making it elective by the whole people. A bill had been introduced to make the commissioners elective like other state officers. The utilities committee of the House returned a majority report in favor of the bill and a minority report against it. The minority report was adopted.

#### MASSACHUSETTS

Among the bills which have been filed recently are the following of interest to electric railways: A bill requiring the street railways of the State to arrange for eight hours' platform work for all conductors, motormen and trainmen as the basis of a day's work on Sundays; a bill requiring the placing of a cut-out switch at all stations where a third-rail is exposed, so that current may be shut off at any time; a bill giving the Railroad Commission power to require street railways to erect shelters to protect waiting passengers from rain or snow at such places as may be designated by the municipal government and approved by the board; a bill requiring the Boston Elevated Railway to equip all elevated cars with folding platforms, so that it will be impossible for employees or passengers to fall between the cars when passing from one to the other; a bill requiring the installation of iron or steel railings at elevated platforms to prevent persons being crowded off the latter upon the tracks; a bill giving the Railroad Commission power to order street railways to lay temporary tracks around obstructions which will last over one month; a bill requiring third-rails to be guarded so as to protect persons against the danger of accidental contact; a bill giving the Railroad Commission power to order the installation of escalators where stairs over 30 ft. in height have to be used by passengers; a bill requiring the Railroad Commission to fix the standing capacity for passengers of every car used in street railway transportation and to limit the car to the capacity so fixed; a bill to prohibit the use of prepayment cars; a bill for more uniform fares between Dedham and Forest Hills, and a bill requiring the use of street cars seating more than thirty-nine passengers each.

#### NEW YORK

Senator Griffin has introduced a bill to repeal the provisions of the Wagner law of last year permitting the city of New York to go into partnership with a railroad corporation in the construction, operation and equipment of subways. Assemblyman Thomas E. Willmott has introduced a bill to prevent the construction of a crosstown elevated line by the Brooklyn Rapid Transit Company through the Greenpoint section. A bill introduced by Assemblyman Jackson, of Buffalo, provides for regulation of sale of stocks, bonds or other securities. It establishes the office of commissioner of corporations, term five years, to have jurisdiction over investment companies.

#### OHIO

Representative Herbert S. Bigelow has introduced a bill in the House which provides that in the event of the purchase of public utility properties by municipalities only the physical value shall be considered and nothing shall be allowed for franchises.

A bill has been introduced into the Legislature by Representative Mills, of Cuyahoga, which provides for the valuation of the physical property of the public service corporations. The commission is to have blanket power to investi-

gate utilities and make valuations that it may ascertain the reasonableness of rates and charges. The bill fixes the facts to be ascertained as follows: (1) The present value of each parcel of land used by any such utility, by comparison with the values of contiguous and neighboring parcels of land; (2) the added value, if any, by reason of ownership by such utility of one or more of said parcels so that a continuous right of way for transportation is thereby produced; (3) the present reproductive cost of all property, other than land, necessary for the use of such utility; (4) depreciation from present reproductive cost of such other property for age, condition, obsolescence or for any other cause, the amount for each class of depreciation to be specifically set forth; (5) the present net value of such other property to be derived by deducting the sum of the amounts for such depreciations as shall be determined upon from the net reproductive cost.

Senator Green, of Coshocton, has introduced a workmen's compulsory compensation bill. Besides making contribution compulsory, it provides that an employer shall pay the total insurance instead of 90 per cent, as at present. An employer who has five or less employees is exempt from the operation of the law, though he may take advantage of it and thereby exempt himself from prosecution in the courts.

A bill has been drafted under the instructions of the city officials of Cincinnati as a substitute for the measure introduced in the Legislature to revoke the franchise of public utilities companies having franchises for a period greater than twenty-five years. The substitute bill will give cities practical supervision over such companies, with power to order the construction of extensions and improvements. If the orders for extensions are not obeyed the city is to have power to issue bonds for the construction of extensions, the companies to furnish service over them and pay a rental that will cover interest on the bonds and establish a sinking fund that will redeem the bonds within a certain period of time. Provision is also made to pay for the extensions in case the city should purchase the property as a whole. Under the proposed substitute the City Council would have full authority over the routing of cars and other matters relating to operation and the company in Cincinnati would continue to pay the city 6 per cent of its gross receipts annually.

#### PENNSYLVANIA

The bill favored by Governor Tener creating a public utility commission has been introduced in the Legislature. It contains six articles. Articles 1 and 2 describe the public service companies and their duties, Article 3 deals with the powers of the corporations and forbids their creation or consolidation without the commission's approval. Article 4 describes the commission, which is to be made up of five commissioners, to be appointed by the Governor. Article 5 defines the powers of the body and Article 6 describes the practice and procedure before the commission. Appeals from its orders are to be taken to the Common Pleas Court of Dauphin County, subject to further appeal to the Supreme Court.

### PROGRAMS OF ASSOCIATION MEETINGS

#### Illinois Electric Railways Association

The annual meeting of the Illinois Electric Railways Association has been postponed indefinitely. The date for the annual meeting of this association was set for Jan. 31, 1913, but owing to the fact that it conflicted with the mid-year meeting of the American Electric Railway Association in New York, it was deemed advisable to put the meeting off until a later date.

#### Central Electric Railway Association

The annual meeting of the Central Electric Railway Association will be held at the Hotel Washington, Indianapolis, Ind., on Feb. 27 and 28, 1913. The executive committee will meet on the evening of Feb. 26 in the office of the secretary of the association. The annual meeting of the Central Electric Traffic Association will be held in the office of the chairman of the association on Feb. 26, 1913.

# Financial and Corporate

## Stock and Money Markets

January 29, 1913.

Nearly all of the important issues traded in on the New York Stock Exchange sustained some amount of loss to-day, but part of the losses in the leading issues were recovered in the late dealings. Rates in the money market to-day were: Call,  $2\frac{3}{4}$ @3 per cent, with the last loan at 3 per cent; sixty days,  $3\frac{3}{4}$ @3 per cent; ninety days,  $3\frac{3}{4}$ @4 per cent; four months, 4 per cent; five and six months,  $4\frac{1}{4}$ @4 per cent.

In the Philadelphia market utility issues were strong and active to-day despite the heaviness in Steel common and Reading common.

The Chicago market was irregular to-day, change of fractions to about a point being equally divided between gains and losses. Chicago Railways purchase money 4's dropped nearly two points, but other bonds were steady.

In the Boston market trading continued dull and heaviness developed late in the session and was maintained up to the end.

The Baltimore market was fairly active to-day. The demand for traction bonds continued good.

Quotations of traction and manufacturing securities as compared with last week follow:

	Jan. 22	Jan. 29
American Brake Shoe & Foundry (common).....	92	93 $\frac{5}{8}$
American Brake Shoe & Foundry (preferred).....	131	133 $\frac{7}{8}$
American Cities Company (common).....	47 $\frac{1}{2}$	47 $\frac{1}{2}$
American Cities Company (preferred).....	77	*477
American Light & Traction Company (common)....	405	*405
American Light & Traction Company (preferred)...	108	108
American Railways Company.....	40 $\frac{1}{4}$	40 $\frac{1}{2}$
Aurora, Elgin & Chicago Railroad (common).....	44 $\frac{3}{4}$	44
Aurora, Elgin & Chicago Railroad (preferred).....	86 $\frac{3}{4}$	86 $\frac{3}{4}$
Boston Elevated Railway.....	113 $\frac{3}{4}$	113 $\frac{3}{4}$
Boston Suburban Electric Companies (common)....	7 $\frac{1}{2}$	7 $\frac{1}{2}$
Boston Suburban Electric Companies (preferred)...	65	65
Boston & Worcester Electric Companies (common)...	7	7
Boston & Worcester Electric Companies (preferred)...	40	40
Brooklyn Rapid Transit Company.....	89 $\frac{5}{8}$	91
Capital Traction Company, Washington.....	122	121
Chicago City Railway.....	150	150
Chicago Elevated Railways (common).....	30	35
Chicago Elevated Railways (preferred).....	90	91
Chicago Railways, ptcptg., ctf. 1.....	94	96
Chicago Railways, ptcptg., ctf. 2.....	24 $\frac{1}{2}$	24
Chicago Railways, ptcptg., ctf. 3.....	8	7 $\frac{1}{2}$
Chicago Railways, ptcptg., ctf. 4.....	2 $\frac{1}{2}$	3
Cincinnati Street Railway.....	118	118 $\frac{1}{2}$
Cleveland Southwestern & Columbus Ry. (common)...	*5 $\frac{5}{8}$	*5 $\frac{5}{8}$
Cleveland Southwestern & Columbus Ry. (preferred)...	*33	*33
Cleveland Railway.....	104	105
Columbus Railway & Light Company.....	55	59
Columbus Railway (common).....	81 $\frac{3}{4}$	*81 $\frac{3}{4}$
Columbus Railway (preferred).....	83 $\frac{3}{4}$	84 $\frac{1}{2}$
Denver & Northwestern Railway.....	118	118
Detroit United Railway.....	75	80
General Electric Company.....	182 $\frac{1}{2}$	142 $\frac{1}{4}$
Georgia Railway & Electric Company (common)....	123 $\frac{1}{2}$	125
Georgia Railway & Electric Company (preferred)....	83	83
Interborough Metropolitan Company (common)....	17 $\frac{3}{8}$	19
Interborough Metropolitan Company (preferred)....	61	63 $\frac{3}{4}$
International Traction Company (common).....	*38	*38
International Traction Company (preferred).....	*99	*99
Kansas City Railway & Light Company (common)....	18	18 $\frac{3}{8}$
Kansas City Railway & Light Company (preferred)....	40	*40
Lake Shore Electric Railway (common).....	*9	*9
Lake Shore Electric Railway (1st preferred).....	*91	*91
Lake Shore Electric Railway (2d preferred).....	*25 $\frac{1}{2}$	25 $\frac{1}{2}$
Manhattan Railway.....	131 $\frac{1}{4}$	131 $\frac{1}{2}$
Massachusetts Electric Companies (common).....	17	17 $\frac{1}{2}$
Massachusetts Electric Companies (preferred).....	75	76
Milwaukee Electric Railway & Light Co. (preferred)...	*100	*100
Norfolk Railway & Light Company.....	*25	*25
North American Company.....	80	80 $\frac{3}{4}$
Northern Ohio Light & Traction Company (common)...	80	80
Northern Ohio Light & Traction Company (preferred)...	100	100
Philadelphia Company, Pittsburgh (common).....	50	49 $\frac{1}{2}$
Philadelphia Company, Pittsburgh (preferred)....	44	43
Philadelphia Rapid Transit Company.....	27	26 $\frac{3}{4}$
Portland Railway, Light & Power Company.....	68 $\frac{1}{2}$	68 $\frac{1}{2}$
Public Service Corporation.....	116	116
Third Avenue Railway, New York.....	38 $\frac{1}{4}$	38 $\frac{7}{8}$
Toledo Railway & Light Company.....	1 $\frac{1}{2}$	2
Twin City Rapid Transit Co., Minneapolis (common)...	106 $\frac{3}{4}$	106 $\frac{3}{4}$
Union Traction Company of Indiana (common)....	*4 $\frac{1}{2}$	*4 $\frac{1}{2}$
Union Traction Company of Indiana (1st preferred)...	*81	*81
Union Traction Company of Indiana (2d preferred)...	*34	*34
United Rys. & Electric Company (Baltimore).....	23 $\frac{1}{2}$	23 $\frac{1}{2}$
United Rys. Inv. Company (common).....	33	32
United Rys. Inv. Company (preferred).....	60	60
Virginia Railway & Power Company (common)....	51	51 $\frac{3}{4}$
Virginia Railway & Power Company (preferred)....	89	92 $\frac{1}{4}$
Washington Ry. & Electric Company (common)....	85 $\frac{1}{2}$	86
Washington Ry. & Electric Company (preferred)....	90 $\frac{1}{4}$	90
West End Street Railway, Boston (common).....	80 $\frac{1}{2}$	80
West End Street Railway, Boston (preferred)....	97 $\frac{1}{2}$	96 $\frac{3}{4}$
Westinghouse Elec. & Mfg. Company.....	74 $\frac{3}{4}$	74 $\frac{1}{2}$
Westinghouse Elec. & Mfg. Company (1st preferred)...	117 $\frac{1}{2}$	116

\*Last sale.

## Consolidation of Beebe Syndicate Lines Proposed

The Public Service Commission of the Second District of New York has received an application from the Rochester, Syracuse & Eastern Railroad, the Syracuse, Lake Shore & Northern Railroad and the Auburn & Northern Electric Railroad for approval of a joint agreement of consolidation as the Empire United Railways, Inc. The names of the directors of the new corporation are Hendrick S. Holden, James M. Gilbert, William K. Pierce, Edward Joy, Willis A. Holden, Charles M. Warner, Charles A. Lux, Burns Lyman Smith, William Nottingham, Albert E. Nettleton, and Clifford D. Beebe, Syracuse, N. Y.; Fidelio K. Hiscock, North Yakima, Wash.; Edwin D. Metcalf, Auburn, N. Y.; Ferdinand W. Roebbling, Jr., Trenton, N. J., and Cadwell B. Benson, Minetto, N. Y. The officers are: President, Clifford D. Beebe; vice-presidents, Hendrick S. Holden, Cadwell B. Benson, Edwin D. Metcalf; treasurer, Willis A. Holden, and secretary, Charles A. Lux.

The railroads which it is proposed to consolidate are controlled and operated by the so-called Beebe Syndicate. The Rochester, Syracuse & Eastern Railroad runs from Rochester to a point near the western end of Syracuse, where its tracks join the tracks of the Syracuse, Lake Shore & Northern Railroad, which owns and operates an interurban electric railroad extending from Syracuse to Oswego, including the Oswego city system. The Auburn & Northern Electric Railroad runs into Auburn from its connection with the Rochester, Syracuse & Eastern Railroad in Port Byron.

The Rochester, Syracuse & Eastern Railroad has an authorized capital stock of \$8,500,000, of which 25,000 shares are preferred stock and 60,000 shares are common stock. The Syracuse, Lake Shore & Northern Railroad has an authorized capital stock of \$4,000,000, of which 15,000 shares are preferred and 25,000 are common stock. The Auburn & Northern Electric Railroad has an authorized capital stock of \$1,500,000, of which 5,000 shares are preferred and 10,000 shares are common stock, and of which capital stock 2,000 shares of preferred stock and 2,000 shares of common stock only have been issued and are outstanding.

The capital stock of the new corporation is to be \$11,600,000, of which \$2,000,000 will be first preferred stock, \$2,300,000 will be preferred stock and \$7,300,000 will be common stock. The first preferred stock is to be entitled to non-cumulative dividends not exceeding 6 per cent, payable as and when declared by the directors out of the net earnings of the company before any dividends shall be declared or paid upon the preferred or common stock. The preferred stock will be entitled to non-cumulative dividends at not exceeding 6 per cent, payable out of the net earnings of the company remaining after the payment of the dividends upon the first preferred stock before any dividends shall be declared or paid upon the common stock of the company. The manner of converting the capital stock of each of the corporations into the capital stock of the new corporation is as follows: The preferred stock of the Syracuse, Lake Shore & Northern Railroad shall be convertible into first preferred stock of the new company, share for share. The preferred stock of the Rochester, Syracuse & Eastern Railroad shall be convertible into first preferred and preferred stock of the consolidated company. Upon the surrender of any outstanding certificates of the preferred stock of the Rochester, Syracuse & Eastern Railroad there shall be issued to the holders certificates for an amount equal to 11 per cent of the par value of the first preferred stock and certificates for 92 per cent of the par value of the preferred stock of the consolidated company. The common stock of the Rochester, Syracuse & Eastern Railroad shall be convertible into common stock of the consolidated company in an amount equal to 80 per cent of the par value of the common stock of the new company. The preferred and common stock of the Auburn & Northern Electric Railroad shall be convertible into the first preferred stock of the consolidated company upon the surrender of certificates of the preferred stock of the company, share for share of the first preferred stock of the consolidated company and 12 $\frac{1}{2}$  per cent of the new company's stock for common stock of the old company.

The roads are so situated with reference to each other that they can be operated more satisfactorily as one company.

Listings on the New York Stock Exchange in 1912

In an article "Listings on the New York Stock Exchange During 1912," published in its issue of Jan. 25, 1913, the *Commercial and Financial Chronicle* says that, notwithstanding the remarkable development in general trade that gathered strength as the year 1912 advanced, the total amount of bonds listed on the New York Stock Exchange representing new capital, though reaching a larger aggregate than in 1911, was less than in 1910 by more than 20 per cent, or \$120,000,000, and fell about 37 per cent, or \$265,000,000, below the total of 1909. The electric railway bonds, while still in the aggregate quite a little below the amount of the railroad issues, approach much nearer to the total of the latter than ever before, the comparison being between \$177,000,000 and \$209,000,000.

Attention is called to the fact that "electric railway" bonds or stocks nowadays more and more commonly cover not only railway issues but light and power properties as well. Instances cited in this connection from the table are the \$10,000,000 of bonds of the Virginia Railway & Power Company and about \$18,000,000 of bonds of the Portland Railway, Light & Power Company, Portland, Ore., and its constituents. Other large issues of electric railway bonds referred to in the table, in addition to the issues of the Virginia Railway & Power Company and the Portland Railway, Light & Power Company, are the \$22,000,000 of collateral trust 5's of the Chicago City & Connecting Railways, \$10,000,000 of convertible 5's of the Philadelphia Company, \$17,000,000 of first mortgage 4½'s of the New York, Westchester & Boston Railway, \$16,375,000 of refunding 4's and \$32,000,000 of income 5's of the New York Railways and \$15,375,000 of 4's and \$22,500,000 of income 5's of the Third Avenue Railway.

The total of the electric railway stock issues for the year was \$109,405,900, compared with \$141,226,600 for 1911. Among the important electric railway note issues brought out during the year were the following: Brooklyn Rapid Transit Company, \$40,000,000; Dallas Electric Corporation, \$1,000,000; Gary & Interurban Railway, \$350,000; Indianapolis, New Castle & Eastern Traction Company, \$800,000; Interborough-Metropolitan Company, \$2,039,520; Montgomery Light & Traction Company, \$650,000; Montreal Tramways & Power Company, \$5,000,000; Oakland Railways, \$2,500,000; Portland Railway, Light & Power Company, \$5,000,000; Puget Sound Traction, Light & Power Company, \$7,500,000; Republic Railway & Light Company, \$2,000,000; Rochester, Syracuse & Eastern Railroad, \$1,137,114; Savannah Electric Company, \$1,000,000; United Railroads of San Francisco, \$2,350,000; West Virginia Traction & Electric Company, \$1,250,000.

Philadelphia Equipment Securities Company Organized

The Philadelphia Equipment Securities Company organized on Jan. 27, 1913, by electing the following directors: Arthur E. Newbold and Horatio G. Lloyd, of Drexel & Company; George H. Frazier, of Brown Brothers & Company; Edward B. Smith and Thomas Newhall, of Edward B. Smith & Company. The following officers were elected: Arthur E. Newbold, president; Thomas Newhall, vice-president; Gerald Holsman, treasurer; J. Clifford Rosengarten, secretary. The Philadelphia Equipment Securities Company will issue car trust bonds secured by equipment trust certificates created by electric railways and railroads in connection with their purchases of equipment. Before undertaking the purchase of an issue of trust certificates it will require a satisfactory statement of the earnings and resources of the railway, evidence that the purchase of the new cars is warranted, and that the railway is in a position properly to maintain the property. The Securities company will agree with the railway as to specifications for cars, trucks, motors and complete equipment, in order to be sure that the cars are of types suitable for general use and that the design, materials and workmanship are such as will insure long life. The Securities company will supervise the creation of car trust certificates which in amount will equal, say, 75 per cent of the cost of the cars and equipment. It will deposit the car trust certificates with a trust company and will issue its own 5 per cent serial gold bonds secured by the deposit of the certificates.

Dividend Payments of New York State Roads

The records for the Public Service Commission of the Second District of New York show that for the year ended June 30, 1912, the electric railways of the State which are under the jurisdiction of that body paid dividends amounting to \$2,992,834 on common stock and \$586,744 on preferred stock. The companies and the rate of dividends are as follows:

Auburn & Northern Electric Railroad, 3 per cent preferred; Auburn & Syracuse Electric Railroad, 6 per cent preferred; Binghamton Railway, 5 per cent common; Cohoes Railway, 4.5 per cent common; Hornell Traction Company, 4 per cent common; International Railway, 4 per cent common; New York & Stamford Railway, 1.75 per cent common; New York State Railways, 6 per cent common, 5 per cent preferred; Orange County Traction Company, 2½ per cent preferred; Oneida Railway, 3 per cent common; Plattsburg Traction Company, 6 per cent common; Schenectady Railway, 6 per cent common; Syracuse & Suburban Railway, 3.75 per cent common; Syracuse Rapid Transit Railway, 4 per cent common, 6 per cent preferred; Utica & Mohawk Valley Railway, 5 per cent common, 5 per cent preferred; Troy & New England Railway, 4.5 per cent common; United Traction Company, 2 per cent common; Western New York & Pennsylvania Traction Company, 6 per cent preferred.

Application of the Pacific Electric Railway to Issue Bonds

The Pacific Electric Railway, Los Angeles, Cal., has applied to the Railroad Commission of California for authority to issue refunding mortgage fifty-year gold bonds to the amount of \$7,034,000. The application states that the company proposes to apply the proceeds from the sale of the bonds to the following improvements which are already under way:

Extensions and branches.....	\$3,428,518
Additional main tracks .....	43,567
Tunnels, bridges, etc.....	444,609
Real estate .....	39,976
Stations, shops, etc.....	156,788
Light and power plants.....	216,962
Water and water rights .....	940
Rolling stock .....	1,554,911
Additions and betterments .....	699,410

Total .....\$6,585,682

Against this amount the company has already issued bonds to the amount of \$930,348, leaving a balance against which it now desires to issue bonds to the amount of \$5,655,333. The company desires also to issue bonds against new work which has been projected but not yet begun, as follows:

Construction .....	\$530,940
Equipment .....	117,160
Additions and betterments.....	1,076,130

Total .....\$1,724,230

The projected improvements cover the principal lines of the Pacific Electric Railway in southern California. The larger items enumerated in the application are as follows: Improvements to Covina-San Dimas line, \$53,000; Riverside-Colton-San Bernardino line, \$408,000; Glendale-Burbank line, \$53,000; Lankershim extension, \$236,000; Magnolia Avenue line, \$76,000; Pasadena city lines, \$97,000; San Bernardino extension, \$1,424,000; Van Nuys extension, \$42,000; Dominguez town site line, \$46,000; San Pedro-Hermosillo line, \$42,000; Torrance line, \$42,000; Van Nuys extension, \$42,000; Van Nuys-San Fernando line, \$213,000; Van Nuys-Owensmouth, \$215,000; Watts-Homeward line, \$108,000; Santa Ana-Orange line, \$64,000; South Pasadena cut-off, \$159,000; tunnels, bridges, etc., \$441,000; stations, shops, etc., \$156,000; Redlands-San Bernardino line, \$43,000; San Bernardino-Highlands line, \$105,000; Alamos-Bay City line, \$24,000; Covina line, \$34,000; Gardena-Strawberry Park line, \$17,000; Hawthorne-El Segundo line, \$161,000; Pasadena local lines, \$40,000; Santa Ana line, \$76,000; Uplands-San Antonio line, \$25,000; Del Rey-Redondo line, \$87,000; Hermosa Beach line, \$44,000; Redondo Beach line, \$175,000; Whittier-La Habra line, \$105,000.

In addition the application enumerates improvements throughout the entire Pacific Electric system which the company proposes to make from the proceeds of the bonds.

### Chicago Surface and Elevated Railway Merger Proceedings

In compliance with its instructions, the sub-committee of the local transportation committee of the Chicago City Council has recommended a plan of reconciling the real estate valuations as presented by the city and the elevated railways. It was the sense of this committee that the Chicago Real Estate Board should appoint three of its members to review the valuations as presented by both parties interested and make recommendations as to what they consider a fair reconciliation of the two valuations. This recommendation was approved, and in pursuit of the request of the local transportation committee, the Chicago Real Estate Board appointed the following gentlemen to serve on the reconciliation committee: Edward M. Willoughby, Marvin A. Farr and John F. Wallace. In view of the fact that those negotiating the general merger are doing so with a view to referring it to the people at the spring election, the members of the real estate committee were urged to place their recommendation before the local transportation committee as soon as possible.

**Amarillo (Tex.) Street Railway.**—The property of the Amarillo Street Railway has been sold to Henry L. Doherty & Company, New York, N. Y.

**American Railways, Philadelphia, Pa.**—An initial quarterly dividend of  $1\frac{3}{4}$  per cent has been declared on the new preferred stock of the American Railways, payable on Feb. 15, 1913, to holders of record of Jan. 31, 1913.

**Aroostook Valley Railroad, Presque Isle, Me.**—The Quebec Extension Railway is seeking incorporation with a capital stock of \$4,000,000 for the purpose of taking over the Aroostook Valley Railroad.

**British Columbia Electric Railway, Vancouver, B. C.**—The London *Economist* notes in its issue of Jan. 4, 1913, the "issue of £750,000 of  $4\frac{1}{4}$  per cent perpetual consolidated debenture stock at 98, ranking *pari passu* with the existing stock. The total authorized issue is limited to the amount of share capital issued and paid up for the time being. The stock is secured by a first floating charge on the undertaking, subject to £223,600 first mortgage debentures and £104,100 Vancouver power debentures. The company was formed in 1897, and the prospectus gives the net earnings for eight years back, showing a continual rise. Dividends of 8 per cent have been paid on the ordinary capital for the past five years. The issued share capital is £3,600,000 in equal amounts (£1,200,000) of 5 per cent cumulative preference, 5 per cent preferred ordinary and deferred ordinary stock. The stock is well secured on the present basis of earnings, but the comparatively low yield of £4 7s does not allow much scope for appreciation."

**Columbus, Delaware & Marion Railway, Columbus, Ohio.**—Eli M. West, receiver of the Columbus, Delaware & Marion Railway, has applied to the court for permission to issue \$25,000 of receivers' certificates to provide funds to extend the power plant in Marion.

**Columbus Railway & Light Company, Columbus, Ohio.**—An agreement is reported to have been reached which it is believed will result in a settlement of the differences which have existed since the original proposition was made for the reorganization of the Columbus Railway & Light Company. The plan contemplates the elimination of the leasing scheme and the organization of a company to include all of the interests concerned. For the purpose of working out the details of the plan a committee made up of two men selected by each of the interests was chosen as follows: W. C. Willard and F. R. Huntington, representing the Columbus Railway; Adolph Theobald and John Seibert, representing the Columbus Light, Heat & Power Company; George Hardy and Randolph S. Warner, representing the Columbus Traction Company, and C. M. Clark and C. G. McMeen, representing the Columbus Railway & Light Company. The committee elected Mr. Huntington as chairman and Mr. Willard as secretary. The details of the plan have not been made public, but it is said that one of the new conditions is the exchange of the common stock of the Columbus Railway for the common stock of the new company share for share. The stock of the Columbus Railway & Light Company will, it is said, be assessed \$20

a share and exchanged on the basis of six shares of stock of the new company for every ten shares of stock now held.

**Detroit (Mich.) United Railway.**—The Detroit & Port Huron Shore Line Railway, operated by the Detroit United Railway under the name of the Rapid Railway System, has been authorized by the Railroad Commission of Michigan to increase the amount of its outstanding capital stock from \$2,000,000 to \$2,075,000, to reimburse the Detroit United Railway for expenditures made for extensions and improvements.

**Federal Light & Traction Company, New York, N. Y.**—White, Weld & Company, New York, N. Y., are offering for subscription at 98 and accrued interest 6 per cent debentures of the Federal Light & Traction Company, due March 1, 1922, to yield 6.25 per cent. The total authorized issue is \$1,500,000.

**Frederick (Md.) Railroad.**—Announcement has been made by President E. L. Coblenz of plans for the consolidation of the Frederick Railroad, the Hagerstown Railway, the Frederick & Hagerstown Power Company and the Frederick Gas & Electric Company.

**Gary & Interurban Railway, Gary, Ind.**—The Gary & Interurban Railway has been incorporated in Indiana with a capital stock of \$5,000,000, of which \$1,000,000 is preferred and \$4,000,000 is common stock, to consolidate the Gary & Interurban Railway, the Gary Connecting Railways, the Valparaiso & Northern Railway and the Goshen, South Bend & Chicago Railroad. The officers of the new company are: Frank M. Gavit, Whiting, president; Alexander Miller, Chicago, vice-president and general manager.

**Georgia Railway & Power Company, Atlanta, Ga.**—Louis B. Magid has withdrawn the suit for \$2,181,000 against the Georgia Railway & Power Company which he was prosecuting in the federal court and the suit which he brought in the state court to dissolve the company. Attorneys representing Mr. Magid say that an agreement has been reached between Mr. Magid and the officers of the company for an adjustment of the differences out of court. Mr. Magid charged in the suit before the federal court that the Georgia Railway & Power Company did not carry out a contract entered into by him with the Atlanta Power Company previous to the merger.

**Indiana Railways & Light Company, Kokomo, Ind.**—Spencer Trask & Company, New York, N. Y., are offering for subscription at 94 and interest to yield 5.40 per cent a limited amount of first and refunding mortgage sinking fund 5 per cent thirty-year gold bonds of the Indiana Railways & Light Company. The bonds are dated Dec. 10, 1912, are due Jan. 1, 1943, and the total amount now outstanding is \$1,180,000 out of an authorized issue of \$5,000,000. The new company is a consolidation of the Kokomo, Marion & Western Traction Company, the Kokomo, Frankfort & Western Traction Company and the Kokomo Public Utility Company.

**Indianapolis, Columbus & Southern Traction Company, Columbus, Ind.**—John W. Suverkrup and W. B. Treadway have been elected additional directors of the Indianapolis, Columbus & Southern Traction Company, the property of which is leased to the Interstate Public Service Company.

**La Crosse (Wis.) City Railway.**—It is understood that the protective committee of bondholders of the La Crosse Water Power Company has exercised the option which it has had on the property of the La Crosse City Railway and that the plans will now be carried out which have been under way for some time to merge the La Crosse Water Power Company, the La Crosse City Railway and the Winona Railway & Light Company. The incorporation of the Wisconsin Railway, Light & Power Company, Milwaukee, Wis., recently by N. F. Adams, J. B. Black and J. G. Hardgrove is reported as one of the steps in the proposed deal.

**London & Port Stanley Railway, London, Ont.**—The City Council of London, Ont., has referred to its finance committee a motion that the city apply to Parliament for an act which would enable the city to foreclose the mortgage which it holds against the property of the company. The plan of the author of the new measure would then be to have the city purchase the property at the foreclosure sale and bond the railway to provide funds to equip the line with electricity.

**Mississippi Valley Electric Company, Iowa City, Ia.**—The Mississippi Valley Electric Company, which has been formed by J. O. Schulze, president and general manager of the Iowa City Electric Railway, and his associates, is reported to have arranged to take over the property of the Iowa City Electric Railway and the Mankato (Minn.) Electric Traction Company. The Mississippi Valley Electric Company is capitalized at \$1,450,000.

**New England Investment & Security Company, Springfield, Mass.**—Lawrence Minot has resigned as a trustee of the New England Investment & Security Company.

**New Midland Power & Traction Company, Cambridge, Ohio.**—The property of the New Midland Power & Traction Company has been sold to the United Service Company, Scranton, Pa. It is understood that plans are being made by the new owners to build a transmission line to connect Cambridge, Coshocton and New Philadelphia. New officers have been elected for the New Midland Power & Traction Company as follows: F. B. Atherton, Scranton, Pa., president; Philip Barnhard, Scranton, vice-president; George G. Brooks, Scranton, secretary and treasurer. The directors of the company are: F. B. Atherton, Scranton; Philip Barnhard, Scranton; George G. Brooks, Scranton; E. A. Crawford, Coshocton, and C. W. Bedford, Scranton. On Feb. 1, 1910, the United Service Company purchased the light and power plant in New Philadelphia previously operated by the Tuscarawas County Electric Light & Power Company.

**Northwestern Ohio Railway & Power Company, Toledo, Ohio.**—The Northwestern Ohio Railway & Power Company, which purchased and assumed control of the property of the Toledo, Port Clinton & Lakeside Railway in July, 1912, has reorganized as follows: W. S. Barstow, New York, N. Y., president; J. B. Taylor, vice-president; O. Clement Swenson, secretary and treasurer; C. N. Hawley, general freight and passenger agent and auditor; O. R. Sturzinger, superintendent; E. A. Burrill, general manager.

**Parkersburg, Marietta & Interurban Railway, Parkersburg, W. Va.**—John Black, of Sheridan, Black & Company, Baltimore, Md., and his associates are reported to have arranged to purchase the holdings of Reese Blizzard and the late C. H. Shattuck in the Parkersburg, Marietta & Interurban Railway. The deal is said to involve 988 shares of a total of 8000 shares of stock outstanding, the purchase price being \$148,200, or \$150 a share.

**Pottsville (Pa.) Union Traction Company.**—The stockholders of the Pottsville Union Traction Company on Jan. 27, 1913, voted to increase the bonded indebtedness of the company from \$1,250,000 to \$2,250,000 to provide funds for improvements.

**St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo.**—E. W. Clark & Company, Philadelphia, Pa., announce that more than 85 per cent of the \$3,500,000 of common stock of the St. Joseph Railway, Light, Heat & Power Company has been deposited under the offer of \$60 a share made for the stock by Henry L. Doherty & Company, New York, N. Y., and the sale to the latter firm is declared operative. An initial payment of \$10 a share will be made on Feb. 1, 1913. A second payment of \$15 a share will be made on Aug. 1, 1913, and from this payment E. W. Clark & Company will deduct a commission of \$1 a share. A third payment of \$15 a share will be made on Feb. 1, 1914, and the final payment of \$20 a share will be made on Aug. 1, 1914. Deferred payments until Feb. 1, 1914, bear 5 per cent interest and after that date 6 per cent interest, but the purchasers may anticipate any or all payments.

**San José (Cal.) Terminal Railways.**—The Railroad Commission of California has authorized the San José Terminal Railway to issue \$200,000 of bonds for the construction of an electric railway from San José to Alviso, at tidewater. Arrangements have been made with an existing boat line to handle traffic between Alviso and San Francisco.

**Twin City Rapid Transit Company, Minneapolis, Minn.**—The annual meeting of the Twin City Rapid Transit Company was held in New York on Jan. 28, 1913. The principal statements in the report of the company for the year ended Dec. 31, 1912, as presented at the meeting, compare as follows with those contained in the report for the year ended

Dec. 31, 1911: Gross receipts for 1912, \$8,208,967, as against \$7,811,193 for 1911; operating expenses for 1912, \$4,198,001, as against \$3,906,716 for 1911; net revenue for 1912, \$4,010,966, as compared with \$3,904,476 for 1911; dividends for 1912 on preferred and common stock, \$1,416,000, as against \$1,416,000 in 1911; surplus from operation for 1912, \$1,065,735, as against \$1,002,347 for 1911; appropriations for renewals in 1912, \$775,000, as against \$750,000 for 1911; income account surplus, 1912, \$290,735, as against \$252,347 in 1911. The office of general manager of the company held by Horace Lowry has been abolished and Mr. Lowry has been elected first vice-president; John R. Mitchell has been elected second vice-president, and A. M. Robertson has been elected third vice-president. E. W. Decker, president of the Northwestern National Bank, Minneapolis, has been elected a director to succeed the late Judge M. B. Koon.

**Underground Electric Railways, London, Eng.**—The holders of more than 75 per cent in the aggregate of the ordinary, preferred ordinary and deferred ordinary stock of the Central London Railway and of considerably more than 75 per cent of the ordinary stock of the City & South London Railway having agreed to transfer their holdings pursuant to the proposals made recently by the Underground company, the offer has become operative.

**Vicksburg Light & Traction Company, Vicksburg, Miss.**—Elston, Clifford & Company, Chicago, Ill., are offering at par and interest \$200,000 of ten-year debenture gold bonds of the Vicksburg Light & Traction Company.

**Dividends Declared**

American Railways, Philadelphia, Pa., quarterly, 1¼ per cent, preferred.  
 Monongahela Valley Traction Company, Fairmont, W. Va., 2½ per cent, preferred.  
 United Power & Transportation Company, Philadelphia, Pa., \$1.79.

**ELECTRIC RAILWAY MONTHLY EARNINGS**

JACKSONVILLE (FLA.) TRACTION COMPANY.							
Period.			Gross Earnings.	Operating Expenses.	Net Earnings.	Fixed Charges.	Net Surplus
1m.,	Nov.	'12	\$17,214	*\$22,451	\$5,237	\$10,602	\$15,840
1 "	"	'11	45,763	*27,814	17,889	9,196	8,693
12 "	"	'12	565,002	*375,023	189,979	117,420	72,559
12 "	"	'11	571,855	*349,358	222,496	96,414	126,082
JOPLIN & PITTSBURG RAILWAY, PITTSBURG, KAN.							
1m.,	Dec.,	'12	\$49,723	\$27,980	\$21,743	\$12,541	\$9,202
1 "	"	'11	44,311	24,795	19,516	12,922	6,594
12 "	"	'12	533,548	315,927	217,621	152,753	64,868
12 "	"	'11	468,550	274,822	193,728	152,740	40,988
KENTUCKY TRACTION & TERMINAL COMPANY, LEXINGTON, KY.							
1m.,	Nov.,	'12	\$57,649	*\$30,512	\$27,137	\$19,370	\$7,767
1 "	"	'11	50,808	*32,746	18,063	17,127	935
5 "	"	'12	331,096	*184,424	146,672	90,496	56,176
5 "	"	'11	313,155	*187,307	125,848	87,655	38,193
NORTHERN TEXAS ELECTRIC CO., FORT WORTH, TEXAS.							
1m.,	Nov.,	'12	\$169,151	*\$85,063	\$84,088	\$24,662	\$59,426
1 "	"	'11	133,202	*73,348	59,854	21,681	38,174
12 "	"	'12	1,762,985	*928,360	834,625	261,738	572,887
12 "	"	'11	1,607,690	*882,274	725,416	245,384	480,032
PADUCAH TRACTION & LIGHT CO., PADUCAH, KY.							
1m.,	Nov.,	'12	\$25,550	*\$16,934	\$8,617	\$7,306	\$1,311
1 "	"	'11	23,455	*14,384	9,072	7,069	2,003
12 "	"	'12	285,494	*190,848	94,646	86,095	8,551
12 "	"	'11	262,758	*159,255	103,502	80,698	22,804
PENSACOLA (FLA.) ELECTRIC CO.							
1m.,	Nov.	'12	\$24,560	*\$14,219	\$10,341	\$6,377	\$3,964
1 "	"	'11	25,602	*15,162	10,441	5,092	5,349
12 "	"	'12	285,900	*177,224	908,676	76,470	32,206
12 "	"	'11	287,969	*178,756	109,214	59,876	49,338
PUGET SOUND TRACTION LIGHT & POWER CO., EVERETT WASH.							
1m.,	Nov.,	'12	\$710,309	*\$368,174	\$324,134	\$169,277	\$154,858
11 "	"	'12	7,588,206	*4,355,594	3,232,613	1,803,274	1,429,339
SAVANNAH (GA.) ELECTRIC CO.							
1m.,	Nov.,	'12	\$63,440	*\$46,699	\$16,740	\$16,695	\$45
1 "	"	'11	63,331	*47,425	15,906	15,395	511
12 "	"	'12	740,690	*547,841	192,849	193,037	188
12 "	"	'11	688,103	*503,152	184,951	184,030	921
TAMPA (FLA.) ELECTRIC CO.							
1m.,	Nov.,	'12	\$62,146	*\$32,604	\$29,541	\$4,466	\$25,075
1 "	"	'11	60,318	*30,654	29,664	4,484	25,180
12 "	"	'12	753,428	*394,869	358,559	53,515	305,044
12 "	"	'11	672,187	*371,036	301,151	59,288	241,863

\*Includes taxes.

# Traffic and Transportation

## Street Railway Service in Milwaukee

John H. Roemer, chairman of the Railroad Commission of Wisconsin, has written a letter in part as follows to Alderman W. C. Wehe of Milwaukee in regard to the inquiry which the commission is conducting into the question of service furnished by The Milwaukee Electric Railway & Light Company:

"It was my wish that a general order could be entered covering the headway on all the lines in Milwaukee by Sept. 1, 1912. Since then the multiplicity of complaints that have reached the commission has rendered a general order impossible. To increase the headway on certain lines will only increase the congestion and render the service less desirable than at present. The situation is being studied carefully by Mr. Larson and others of our engineering staff. There can be no service that will be reasonably adequate until the franchises which the commission has recommended are granted and the lines built in accordance therewith. About Dec. 1, 1912, the commission recommended to the Council that the following franchises be granted to the company: On Wells Street from Eleventh Street to West Water Street; on Seventh Street from State to Wells Street; on Sixth Street from Wells Street to Grand Avenue; on Twenty-seventh Street from State Street to National Avenue; on Mason Street from Jackson to Marshall Street; on Marshall Street from Mason to Wisconsin Street; on Cass Street from Mason to Wisconsin Street.

"These franchises were recommended after an extended study had been made of requirements of the situation. It is the purpose of the commission to make definite orders for betterment of the street car service, but no great improvement is possible until a system of rerouting can be evolved which will relieve portions of the congested district downtown. You can readily understand that to try to decide upon a system of rerouting before we know what streets the company will be permitted to occupy with its tracks is quite impossible. We have made tentative plans for rerouting, but cannot issue orders, nor can we make these plans public, until we know positively what the Council will condescend to grant in the way of franchises.

"It is not only necessary that franchises be granted but it is equally important that the question of the particular service to which tracks shall be put be excluded from the ordinances granting the franchises and be left entirely to the commission. It is especially necessary that these franchises be free from conditions and restrictions which are of very little benefit to the city but which serve to render it unwise for the company to accept them. When the necessary franchises are granted in the proper form, the commission can compel the company to furnish service throughout the city that will be reasonably satisfactory to all its patrons. In the meantime the commission must necessarily confine regulation to minor details with a view of alleviating the most aggravated conditions.

"In this connection it is the purpose of the commission to issue temporary orders very soon relating to several matters of detail which it is believed will render the service somewhat more satisfactory until general orders of a permanent nature can properly be made. Of course you realize that the average citizen does not, and in the nature of things cannot, appreciate the difficulties that are involved in a complex system of street railway service in a great city. He knows that the service he is receiving is inadequate and should be improved. He also realizes that it is the duty of the railroad commission and the company to improve the service. I will advise you within a few days in regard to what requirements will be made for the present on certain lines which seem to have the poorest service in the city."

**Strike of Linemen in Macon Abandoned.**—The linemen of the Macon Railway & Light Company, Macon, Ga., have abandoned the strike which they brought to force the company to increase their wages. They have agreed to return to work at the old rate of \$3 a day.

**New Mileage Book of the Chicago, South Bend & Northern Indiana Railway.**—The Chicago, South Bend & Northern Indiana Railway, South Bend, Ind., is preparing to place on sale in the near future 600-mile books, which it is proposed to sell at \$8.75, making the rate 1¼ cents per mile.

**Accident at Lockport.**—One man was killed and a score were injured, two probably fatally, in a collision between a passenger train and a freight train on the International Railway at Lockport, N. Y., on Jan. 25, 1913. The freight train was standing on the main line about half a mile south of the company's station when the passenger train of two cars crashed into it.

**Illinois Central Decides to Reduce Round-Trip Rates.**—The Illinois Central Railroad has decided to restore the round-trip fare rates which were in effect before Jan. 1, 1913, but to continue in force the recent increase in single fares. The old rate on round-trip fares is a little less than 1½ cents per mile. The change in the round-trip rates proved very unpopular.

**Question of Service in New York.**—The Board of Aldermen of New York has adopted a resolution "demanding" that the Public Service Commission "issue effective orders" for better service on the surface car lines of the city. The resolution also calls on the commission to furnish the board with a record of service for the past six months and "an explanation of the steps it takes to see that the companies maintain an efficient schedule."

**Detroit Fare Cases to Be Heard in the Fall.**—The United States Supreme Court has consented to a postponement of the "workingmen's ticket case," involving the fare over the lines of the United Railways, Detroit, Mich., from Jan. 27, 1913, until such time as the "5-cent fare case" comes up on the docket in October. The cases will then be consolidated and argued as one. Both cases involve the question of fare over the company's line between Detroit and Fairview.

**Interurban Terminal System of Indianapolis Inspected.**—Charles E. Taylor, Mayor of Little Rock, Ark., J. H. Hollis and George Pardee, Little Rock, visited Indianapolis recently to study the operation of the interurban electric railways which are run into that city and the method of operation of the Indianapolis traction terminal station in the interest of the city of Little Rock, where franchises are pending before the City Council for the operation of interurban lines into the city.

**Collision on New York Elevated Railway.**—In a rear-end collision on Jan. 25, 1913, on the Third Avenue elevated line of the Interborough Rapid Transit Company, New York, N. Y., at Thirty-second Street one person was killed and a score or more were injured. Traffic on both the up-town and the down-town lines of the elevated railway was interrupted for a period of several hours as a consequence and service was also delayed on the Third Avenue Railway, which parallels the elevated railroad.

**Increase in Wages in San Antonio.**—Effective on Feb. 1, 1913, the San Antonio (Tex.) Traction Company increased the wages of its trainmen as follows: First six months, 20 cents an hour; next twelve months, 21 cents an hour; next twelve months, 22 cents an hour; next twelve months, 23 cents an hour; next twelve months, 24 cents an hour; next twelve months, 25 cents an hour; next twelve months, 26 cents an hour. The wages heretofore paid were: First year, 20 cents an hour; second year, 21 cents an hour; third year, 22 cents an hour, etc., up to 25 cents an hour, that being the maximum.

**Maintaining Service in Spite of High Water.**—During the recent floods which have been inundating the lowlands in the valley of the Ohio River and its tributaries many electric railways have been maintaining schedule under difficulties. On the branch of the Fort Wayne & Northern Indiana Traction Company's line between Lafayette, Ind., and the rural districts on the west side of the Wabash River approximately 2000 ft. of track has been entirely under water. At its deepest points the water was 18 in. above the rails. In order to give service over this branch motors were set upon the floor of an old trailer well out of reach of the water and arranged to drive the car from that position.

**Denver Ordinance to Require Heating of Car Vestibules Vetoed.**—Mayor Arnold of Denver, Col., has vetoed the ordinance to require the Denver City Tramway to install heating apparatus in the vestibules of its cars. The veto message to the Council was accompanied by a letter from John A. Beeler, vice-president and general manager of the company. Mr. Beeler explained that it would be physically impossible to comply with the ordinance within the time limit of thirty days. He said that the company was building a stepless car which provides for a system of heating the vestibule as required in the ordinance, and that the company proposes to submit the matter of heating the vestibules to the motormen and to be guided by the opinion of the men as expressed in a vote.

**Increase in Fare up to Patrons.**—The Morris County Traction Company, Morristown, N. J., which operates into Elizabeth over the tracks of the Public Service Railway as far as the station of the Central Railroad of New Jersey, has submitted to its patrons the matter of the fare to be charged by the company in that city. The company is willing to continue the service into the city if the passengers within the city limits will agree to an extra charge of  $2\frac{1}{2}$  cents for the service within the city, or it will operate only to the city line, charging a fare of 5 cents from Union to that point. An effort was made to have the Public Service Railway reduce the charge which it exacts for the operation of the cars of the Morris County Traction Company over its Elizabeth lines, but that company did not feel that it could consistently consent to a reduction.

**Employees Before New York Commission.**—Members of the joint conference board of the Amalgamated Association of Street & Electric Railway Employees of America met with the members of the Public Service Commission for the Second District of New York recently and requested the commission to take up with street and interurban railroads in New York State the installation of certain devices to safeguard employees in operating cars and the public using them. These suggestions included equipping double-truck cars in cities with air brakes, vestibuling rear ends of closed cars, uniform location of sand-box levers, placing sand boxes on all cars, substitution of convertible car with aisle through center for the open cars with running boards, stools for motormen and conductors, block signal systems on interurban lines and uniform headlights. The men said that they deemed it advisable to bring these matters to the attention of the commission at this time so that it might be guided in its investigations of conditions in New York State.

**English Inspection Party.**—A party of eight London bankers, including E. Mackay Edgar, the active head of Sperling & Company, London, Eng., left New York on a special train on Jan. 23, 1913, for a two weeks' tour of the country for the purpose of inspecting various public utilities, some of which have been financed in part by banking houses represented by the visitors. James Mitchell, president of the Alabama Interstate Power Company, who came over from London with the party, W. W. Freeman and F. Darlington, vice-president and consulting engineer respectively of the same company, have also gone with the visitors on the tour. The itinerary includes Montreal, Toronto, Niagara Falls, St. Louis, Joplin, Denver, Keokuk, Nashville, New Orleans and Birmingham. Among the properties to be visited are those of the Utilities Improvement Company, the Cities Service Company, the Mississippi River Power Company, the Consolidated Cities Traction, Light & Power Company, the American Cities Company and the Alabama Interstate Power Company. It is understood that after their return to New York the visitors plan to inspect the public utilities of Mexico and Cuba before leaving for home.

**Decision of Commission in Complaint Against Ohio Road.**—The Public Service Commission of Ohio has rendered a decision in the complaint of the Ralston Steel Car Company and others against the Columbus, New Albany & Johnstown Traction Company, Columbus, Ohio. The commission found that the allegations that the rates of fare were unreasonable were not sufficiently definite to justify any order in this connection and that the complaint that the company refuses to sell tickets in Columbus accord-

ing to law and to receive its own tickets between two points going in either direction was not sustained by the evidence. The commission has, however, ordered the company to renew and put in proper repair all bonds which connect its rails from the corporate limits of Columbus to the eastern terminus of the road, and to provide cross-connecting bonds between its rails at intervals of not more than 1000 ft. throughout the entire length of the road. This work is to be completed within ninety days. The company is also ordered to secure and place in service within four months from the date of the service of the order at least one freight car equipped with motors. The commission has also ordered the Columbus, New Albany & Johnstown Traction Company to overhaul and repair two of its passenger cars.

**Aurora, Elgin & Chicago Freight and Express Folder.**—The Aurora, Elgin & Chicago Railroad, Wheaton, Ill., has issued a booklet to acquaint the shipping public with the fact that the company is handling freight in carload and less than carload lots, as well as express matter. Carload freight is received at the Fifty-second Avenue terminal steam track situated at Fifty-second Avenue and Harrison Street, Chicago. Cars also may be loaded on the various steam tracks and private sidings on any steam road in Chicago. In addition to this information, the folder supplies the shippers with information as to belt-line connections, connecting steam roads, steam tracks and industries served by the electric line. It also states that less than carload shipments will be received at the Fifty-second Avenue freight house in Chicago, as well as at the different stations along the line. The express service on the Aurora, Elgin & Chicago Railroad includes two round trips daily between Aurora and Elgin, and one round trip between Aurora and Yorkville. Wagon pick-up delivery service is maintained at Aurora, Batavia, Geneva, St. Charles and Elgin. Traffic agreements have been made with the Joliet & Southern Traction Company, with connections at Aurora, and the Chicago, Ottawa & Peoria Railroad, with which it connects by way of the Joliet & Southern Traction Company at Joliet. It also has a through traffic agreement with the Chicago, Aurora & De Kalb Railroad, the Elgin & Belvidere Electric Company and the Rockford & Interurban Railway.

**Service in Rochester.**—At a meeting held in the office of Mayor Edgerton of Rochester, N. Y., on Jan. 23, 1913, to consider street railway service in the city there were present the Mayor, E. J. Cook, general manager of the New York State Railways, Rochester Lines; Charles R. Barnes, of the Public Service Commission of the Second District of New York, and the members of the law and the railroad committees of the City Council. Mr. Cook said that the company was expending \$8,000 to maintain a department for the sole purpose of learning wherein the service of the company could be improved. All complaints that were received were investigated carefully. Mr. Barnes said that very complete records were kept by the company of the trend of traffic, and that he had verified with the inspectors of the commission many of the data in the possession of the company. It would not be practicable for the commission to go into every city in which it has jurisdiction and attempt to do the amount of checking that has been done by the Rochester company. Mr. Barnes said that after the rerouting was put into effect in Rochester recently the service was checked to determine whether the relief given was sufficient, and this checking revealed that on every line in the city the service was inadequate owing to the irregularity of the car movement. Mr. Barnes continued: "In regard to the steps taken to determine the cause of this irregularity I will say that Mr. Cook and I have made plans to learn the cause of delay to every car, and as soon as this work is done, which will be in two or three weeks, I shall be able to tell just how much added service is needed and at what time of the day it should be given. So far the investigation has shown that there are three main causes of the delay to the running of cars. The first of these is the operation of the carhouse in State Street. The second cause is congestion due to the interurban cars being routed through the center of the city. The third and most important is the fact that the city has outgrown the single-track lines and every single-track line in the city should be double-tracked."

## Personal Mention

**Mr. H. E. Jackson**, who has been train dispatcher of the Central California Traction Company, San Francisco, Cal., has been appointed trainmaster of the company, a newly created position.

**Mr. A. M. Robertson** was re-elected secretary of the Twin City Rapid Transit Company, Minneapolis, Minn., at the annual meeting in New York on Jan. 28, 1913, and was in addition elected third vice-president of the company.

**Mr. F. A. Miller** has resigned as superintendent of power and equipment of the Central California Traction Company, San Francisco, Cal., to accept a similar position with the Oakland, Antioch & Eastern Railroad, with headquarters at Oakland, Cal.

**Mr. W. E. Rose**, who has been connected with the Richmond, East Shore & Suburban Railway, Richmond, Cal., has been appointed master mechanic of the Central California Traction Company, San Francisco, Cal., in charge of rolling stock, shops and carhouses.

**Mr. E. C. Davis**, who has been connected with the Central California Traction Company, San Francisco, Cal., as a lineman, has been appointed superintendent of power of the company, in charge of all substations, overhead lines and the signal system. Power is rented by the company from the American River Electrical Company.

**Mr. John S. Kennedy** has resigned as secretary of the Public Service Commission of the Second District of New York and will leave the service of the State some time prior to March 1. Mr. Kennedy has been secretary of the commission since its inception and was formerly connected with the Railroad Commission of the State of New York.

**Mr. R. F. Cummins** has resigned as secretary and general manager of the Marion, Bluffton & Eastern Traction Company, Bluffton, Ind. Mr. Cummins has been connected with the company since the road was placed in operation about six years ago. Mr. L. C. Davenport, receiver of the company, will act as general manager for the present.

**Mr. Frank H. Miller**, superintendent of motive power of the Louisville (Ky.) Railway, has been elected president of the Engineers and Architects' Club of Louisville for the coming year, to succeed Mr. Theodor A. Leisen, chief engineer of the Louisville Water Company. Mr. Samuel Riddle, superintendent of transportation of the Louisville Railway, has been elected first vice-president and a director of the organization.

**Mr. George A. Northcott** has been appointed superintendent of the Otsego & Herkimer Railway, Hartwick, N. Y., to succeed Mr. Claude O. Weidman, who has become connected with the Morris County Traction Company, Morristown, N. J. Mr. Northcott was connected with the Detroit (Mich.) United Railway for many years, and for the last six years has been superintendent of the London & Lake Erie Railway & Transportation Company, London, Ont.

**Mr. Horace Lowry**, who has been general manager of the Twin City Rapid Transit Company, Minneapolis, Minn., was elected first vice-president of the company at the annual meeting held in New York on Jan. 28, 1913. Mr. Lowry was appointed general manager of the company on Jan. 1, 1912. He is the only son of the late Thomas Lowry, former president of the company. A portrait and biography of Mr. Horace Lowry were published in the *ELECTRIC RAILWAY JOURNAL* on Jan. 6, 1912.

**Mr. H. H. Geiger** has been appointed superintendent of transportation of the Wilmington & Philadelphia Traction Company, Wilmington, Del., to succeed Mr. William H. Hitchcock, who, as previously noted in the *ELECTRIC RAILWAY JOURNAL*, has become connected with the Trenton & Mercer County Traction Corporation, Trenton, N. J. Mr. Geiger has been connected with the Wilmington & Philadelphia Traction Company for twenty-three years. He started as a driver in the horse car days and about eight years later was made office clerk. He was subsequently appointed chief dispatcher and then served as assistant superintendent and as division superintendent.

**Mr. Alexander Shane**, for the past two years general manager of the Indianapolis, Columbus & Southern Trac-

tion Company, Columbus, Ind., resigned that position recently to become associated with the safety bureau which has been instituted in Chicago to have supervision over the electric railways and other properties controlled by the Middle West Utilities Company, which was organized by Samuel Insull and Martin J. Insull. Mr. Shane has been identified with railway work for forty-five years past, and is particularly well fitted for a position on the safety bureau, which will play an important part in the operation of the Insull properties hereafter. The Indianapolis, Columbus & Southern Traction Company was recently taken over under lease by the Insull interests.

**Mr. N. P. Baker** has been elected treasurer of the International Railway, Buffalo, N. Y. Before becoming connected with the International Railway Mr. Baker served in various capacities with steam railroads. On Jan. 1, 1906, he resigned as superintendent of a division of the Maine Central Railroad to become superintendent of the Niagara Falls division of the International Railway with headquarters at Niagara Falls, N. Y. He continued in this capacity until August, 1906, when he was appointed assistant general manager of the company. On Jan. 15, 1910, he was elected treasurer of the International Railway and on April 15, 1911, was appointed superintendent of the Niagara Falls, the Buffalo & Lockport and the Olcott divisions. On Jan. 1, 1913, he was again elected treasurer of the International Railway.

**Mr. Joseph K. Choate**, general manager of the Morris County Traction Company, Morristown, N. J., has also been elected vice-president of the company. Mr. Choate was formerly general manager of the Otsego & Herkimer Railroad. He was born on Aug. 22, 1854, in Salem, Mass., and was graduated from the University of Colorado. He began his career as a civil engineer and entered railway work in 1881 with the Pennsylvania Railroad as supervisor of track on the New York division. Subsequently he served with the Erie Railroad, the Erie & Wyoming Valley Railroad, the Union Pacific Railroad and the Nevada Central Railroad. In 1900 he engaged in independent consulting engineering work. In this connection he acted as consulting engineer to the Otsego & Herkimer Railroad and in 1907 was made general manager of the company.

**Mr. Frank F. Fowle** has resigned from the McGraw Publishing Company as one of the editors of the *Electrical World* and will resume his electrical engineering practice with offices in New York. Mr. Fowle was graduated from the Massachusetts Institute of Technology, electrical engineering course, in 1899. He was connected with the engineering department of the American Telephone & Telegraph Company in New York from 1899 to 1903 and with the railway department of the same company in New York from 1903 to 1906. From 1906 to 1908 he was with the operating department of the American Telephone & Telegraph Company as manager of the Chicago territory of the long-distance system with headquarters in Chicago. From 1908 to 1912 he was in business in Chicago as a consulting electrical engineer. Upon the retirement of Mr. W. D. Weaver as editor of the *Electrical World* on May 1, 1912, Mr. Fowle became one of the joint editors in charge.

**Mr. J. N. Bidwell**, whose appointment to the signal department of the engineering staff which jointly serves the Railroad Commission of Wisconsin and the Wisconsin Tax Commission, to succeed Mr. M. H. Hovey was noted in the *ELECTRIC RAILWAY JOURNAL* of Dec. 20, 1912, was born at Buffalo, N. Y., and was educated in the schools of that city. His early experience included work on the construction of the dam in the Merrimac River at Concord, N. H.; service with the New York Central & Hudson River Railroad and with the International Traction Company, Buffalo, N. Y. He entered signal work as a draftsman for the General Railway Signal Company in February, 1906, and subsequently filled the positions of office engineer for the Illinois Central Railroad, draftsman for the Rock Island Lines and construction foreman for the American Railway Signal Company. He was appointed assistant in the signal department of the engineering staff of the Wisconsin commissions in May, 1910.

**Mr. A. D. Furlong**, whose election as vice-president and appointment as general manager of the Springfield Consolidated Railway, Springfield Gas Light Company and



Springfield Light, Heat & Power Company, Springfield, Ill., were noted in the *ELECTRIC RAILWAY JOURNAL* of Jan. 11, 1913, entered the service of the Hodenpyl, Hardy & Company syndicate in the summer of 1906 as a collector in the gas and electric light department of the Pontiac (Mich.) Light Company. Later he filled the position of stenographer to the local manager of the Pontiac Light Company. Subsequently he held the positions of bookkeeper and chief clerk and secretary and general manager of the same company. On Feb. 1, 1912, he left the employ of the Pontiac Light Company to assume the position of general superintendent with the Springfield properties. He succeeds Mr. A. A. Anderson, resigned, as vice-president and general manager of the Springfield Gas Light Company, the Springfield Consolidated Railway and the Springfield Light, Heat & Power Company.

Mr. Chester P. Wilson, vice-president of the Interstate Public Service Company, which is a subsidiary of the Middle West Utilities Company and operates the property of the Indianapolis, Columbus & Southern Traction Company under lease, will take over the duties of general manager of the latter company, succeeding Mr. Alexander Shane, who, as noted elsewhere in this column, has become associated with the safety bureau which will have supervision over the electric railways and other properties controlled by the Middle West Utilities Company. Mr. Wilson was formerly general manager of the Rockford & Interurban Railway, Rockford, Ill., which is controlled by the Union Railway, Gas & Electric Company, and has been connected with the Des Moines (Ia.) City Railway and Inter Urban Railway, Des Moines; the Lackawanna & Wyoming Valley Railroad, Scranton, Pa.; The Milwaukee Electric Railway & Light Company, Milwaukee, Wis.; Sioux City (Ia.) Railway and the Camps Bay, Cape Town & Sea Point Tramway, Cape Town, South Africa.

Mr. H. D. Walbridge, who has been elected president of the Harrisburg (Pa.) Railways, which has taken over the property of the Central Pennsylvania Traction Company, Harrisburg, Pa., is a member of the firm of H. D. Walbridge & Company, New York, N. Y., bankers. Mr. Walbridge has long been connected with public service corporations. He has been president and director of the Jackson (Mich.) Gas Company, Kalamazoo (Mich.) Gas Company, Pontiac (Mich.) Light Company, Saginaw (Mich.) City Gas Company, Saginaw Valley Traction Company, Saginaw, Mich.; Bay City Traction & Electric Company, Bay City, Mich.; Springfield (Ill.) Consolidated Railway, Evansville Gas & Electric Light Company, Evansville, Ind.; Peoria Gas & Electric Company, Peoria, Ill., and Williamsport (Pa.) Gas Company, and has been vice-president and director of the Bay City (Mich.) Gas Company, director of the Saginaw-Bay City Railway & Light Company, Saginaw, Mich.; Springfield Railway & Light Company, Springfield, Ill., and a number of other electric railway and light properties.

Mr. A. R. Whaley has been elected vice-president of the New York, New Haven & Hartford Railroad, in charge of transportation. He succeeds Mr. H. J. Horn, who is to become operating vice-president of the Boston & Maine Railroad. Mr. Whaley is at present manager of the Grand Central Terminal, New York, and general superintendent of the electric division of the New York Central & Hudson River Railroad. He was born in Rhode Island. In 1877 he became a freight brakeman on the Providence & Worcester Railroad. He served as baggageman, conductor, station master, assistant train master and general yard master, and upon the road's consolidation with the New Haven system in 1891 he was put in charge of train crews, with headquarters in Providence. In 1898 he was made general agent of the terminals at Providence and in 1899 was promoted to the superintendency of what had then become the Worcester Division. Afterward Mr. Whaley became superintendent of the New York Division of the New York, New Haven & Hartford Railroad in charge of the operation of that road from New York to New Haven. In 1907 he assumed his present position, and took charge not only of the operation of the Grand Central Terminal and the electrified zone of the New York Central & Hudson River Railroad, but of the detail involved in the reconstruction of the terminal.

## Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (\*) indicates a project not previously reported.

### RECENT INCORPORATIONS

\***Yarmouth Light & Power Company, Ltd., Yarmouth, N. S.**—Incorporated in Nova Scotia to take over the property of the Yarmouth Street Railway, Ltd., and the Yarmouth Electric Company. Officers: Willard M. Kelley, president; Edgar K. Spinney, vice-president; John T. Murphy, W. H. Covert, Blakc G. Burrill and C. C. Richards. John T. Murphy, Halifax, is managing director.

\***Poland Street Railway, Youngstown, Ohio.**—Incorporated in Ohio to build an electric railway between Poland and Youngstown. Capital stock, \$1,000. Incorporators: George E. Rose, E. Mason Wick, John T. Harrington, U. C. Deford and J. W. Blackburn.

\* **Dominion Traction & Lighting Company, Ltd., Toronto, Ont.**—Incorporated in Ontario with a capital stock of \$12,500,000. Headquarters, Toronto.

**Wisconsin Railway, Light & Power Company, Milwaukee, Wis.**—Incorporated in Wisconsin presumably to take over the properties of the La Crosse City Railway, the Winona Railway & Light Company and the La Crosse Water Power Company. Incorporators: N. F. Adams, J. B. Black and J. G. Hardgrove, all of Milwaukee, Wis.

### FRANCHISES

\***Martinez, Cal.**—Frederick E. Brooks has asked the Council for franchises to build two lines. One projected line is to run from Martinez to Bay Point, and the other would enter Walnut Creek, pass through Danville, thence run south and east to Haywards and thence to Livermore.

**Orange, Cal.**—The Pacific Electric Company, Los Angeles, has received a franchise from the Council in Orange for a line in that place.

**Richmond, Cal.**—The San Francisco-Oakland Terminal Railways has received a franchise from the Council over Ashland Avenue in Richmond.

**San José, Cal.**—The San José Railways has asked the Council for a franchise in San José on West Santa Clara Street.

**Hastings, Fla.**—The Palatka-Hastings Interurban Railway, Palatka, has asked the Council for a franchise in Hastings. This 10-mile line will connect Palatka and Hastings. C. A. Dupont, president. [E. R. J., Jan. 25, '13.]

**Jacksonville, Fla.**—The Jacksonville Traction Company has asked the Council for a franchise to extend several of its lines in Jacksonville.

**Pocatello, Idaho.**—L. R. Martineau and J. B. Browning, Salt Lake City, have received a franchise from the Council to build a line in Pocatello. The franchise asked of the Pocatello Council by Lyman Fargo and W. S. Kasiska was not granted. Power is to be developed on the Portneuf River at Lawa Hot Springs. [E. R. J., Dec. 28, '12.]

**Laporte, Ind.**—The Northern Indiana Railway, South Bend, Ind., has asked the Council for a franchise in Laporte. The plan is to build a belt line to pass through the subway, catering largely to the north and west portions of Laporte. Arrangements have been made for the removal of the company's tracks from the old to the new Madison Street and the new city roadbed has been constructed.

**East Liverpool, Ohio.**—The Tri-State Railway & Electric Company has asked the Council for a franchise to double-track the Newell Street line and build a loop in East Liverpool.

**Ottawa, Ont.**—The Ottawa & Morrisburg Electric Railway has received permission to enter the city of Ottawa. The company will begin construction in the spring on its line between Ottawa and Morrisburg, via Leitrim, South Gloucester, Ormond and Winchester. J. G. Kilt, president. [E. R. J., Jan. 4, '13.]

**Ottawa, Ont.**—The Ottawa Electric Railway has received permission to extend its lines in Ottawa South. About 3 miles of track will be built.

**Sherman, Tex.**—T. F. Mackmiller, representing the Gainesville, Whiteboro & Sherman Railway, Dallas, has received a franchise from the Council in Sherman. This line will connect Gainesville, Whitesboro and Sherman.

**Eau Claire, Wis.**—The Chippewa Valley Railway, Light & Power Company has received a franchise from the Council on Madison Street to a point on the Chippewa Road and north on Starr Avenue to Omaha Street in Eau Claire.

#### TRACK AND ROADWAY

**Montgomery Light & Traction Company, Montgomery, Ala.**—An extension will soon be built by this company to the site of the new Capital City Country Club on the Woodley Road in Montgomery.

**Burlingame, Cal.**—Work has been begun on the 3-mile interurban railway from Easton station in Easton to the foothills overlooking the north Crystal Springs. Edison-Beach storage battery cars will be operated. It is expected to extend this line later in Easton and Burlingame. Ansel M. Easton, Burlingame, is interested. [E. R. J., Oct. 12, '12.]

**Pacific Electric Railway, Los Angeles, Cal.**—It is announced that this company has made arrangements for the extension of the present Riverside-Arlington line to Corona, a distance of 9 miles. Property owners have agreed to arrange for the necessary right-of-way and terminal facilities, both in Corona and Arlington, and as soon as the deeds can be prepared construction will be begun. The company has placed in operation its new Mendocino Avenue line in Pasadena from the present Lake Avenue terminus to the Altadena Country Club and ending at the Country Club Park near Eaton's Canyon.

**Southern Pacific Company, San Francisco, Cal.**—Work will be begun this spring on a 4-mile branch of this company's line from Dominguez Junction to Torrance.

**Tidewater & Southern Railroad, Stockton, Cal.**—Grading has been begun by this company on Ninth Street in Modesto for the extension from N Street along Ninth Street to the Tuolumne River. Work has been begun to close the gap in the line at Modesto, and in time the connection with the Central California Traction Company's Tracks at Pilgrim and Taylor will be made. The company has further plans touching its route through Stockton.

**Bridgeport & Danbury Electric Railway, Bridgeport, Conn.**—The Public Utilities Commission has granted this company a certificate that it had complied with charter requirements which called for the completion of 25 per cent of the construction of the railway at the close of last December. The line is completed as far as Long Hill but has not yet been placed in operation. Arrangements have been made to secure power from the Bridgeport power house for the operation of the lower part of the line. Work on the construction of the line from Long Hill to Danbury will be begun in the spring. [E. R. J., Dec. 21, '12.]

**Connecticut Company, New Haven, Conn.**—This company has begun laying its tracks in Bridge Street across the new concrete bridge over the Naugatuck River, to connect with those on the west side in Ansonia.

**St. John's Electric Company, St. Augustine, Fla.**—Preliminary work will be begun at once by this company on the extension of the South Beach line.

**Kankakee & Urbana Traction Company, Urbana, Ill.**—This company has placed in operation its line between Urbana and Rantoul. It has arranged to rent power from the Illinois Traction System.

**Indianapolis Traction & Terminal Company, Indianapolis, Ind.**—Permission has been received by this company from the Board of Public Works to build new tracks over Oriental Street in Indianapolis. Rails will be ordered at once.

**Tri-City Railway & Light Company, Davenport, Ia.**—This company will be asked to consider plans for extensions of its lines in Davenport prepared by the city.

**Union Traction Company, Independence, Kan.**—An interurban line from Bartlesville to Kansas City is projected by this company. Work will be begun within a short time in extending the line southward to Bartlesville. It will extend from Independence through Caney and Dewey. The right-of-way has been obtained as far as Caney, and engineers are now at work on the lines from Caney southward.

An extension is to be built to Bartlesville. Next year the line will be built southward to Ochelata, Ramona and Tulsa, Okla. The company is to build an extension from its northern terminus to Kansas City in 1914, according to announcement.

**Arkansas Valley Interurban Railway, Wichita, Kan.**—Plans are being made by this company to build a 2-mile line from Newton to Bethel College.

**Louisville (Ky.) Railway.**—This company has commenced the construction of the proposed line in Louisville extending from Twenty-sixth and Slevin Streets, the present western terminus of the Main Street line, to Thirtieth and Alford Avenues, in Youngstown.

**Louisiana Traction & Power Company, Lafayette, La.**—A committee of citizens from Grand Coteau and Sunset has presented plans to this company to extend its lines through Grand Coteau and Sunset.

**\*Shreveport, La.**—A. K. Clingman, Keithville, and associates plan to build an electric railway to connect Homer, Minden and Shreveport. The plan is to take over the Clingman and Kinnbrew enterprise, which failed for lack of funds, and the 20 miles of roadbed graded for it.

**\*Brandon, Man.**—The Manitoba government will be petitioned by the city for a charter to build and operate a number of electric railways radiating from Brandon.

**Bay State Street Railway, Boston, Mass.**—This company is asked to consider plans to extend its County Street line in Boston as far east as Horton. The citizens of West Centralville will again ask the company for an extension across Aiken Street bridge and along Aiken Street.

**Boston & Western Electric Railway, Boston, Mass.**—This company has asked the committee on street railways for permission to use the right-of-way of the Central Massachusetts Railroad at Weston Centre and Cherry Brook in Weston and at Tower Hill in Wayland. The route of this line will be between Boston, Waltham, Wayland, Weston, Sudbury and Maynard. [E. R. J., Aug. 31, '12.]

**United Light & Railways Company, Grand Rapids, Mich.**—This company has completed plans for improvements on its various subsidiary properties in 1913, and something over \$500,000 will be spent on the new work, in addition to the regular appropriations for maintenance. Included in the new work will be a 4-mile extension of the railway lines at Cedar Rapids.

**Saginaw-Bay City Railway, Saginaw, Mich.**—Among the improvements planned by this company during the year will be the construction of new track on Washington Avenue in Saginaw from Holland Avenue south to the Père Marquette tracks. This stretch of street is to be repaved, and while this work is in progress the old rails will be taken up and replaced with 100-lb. rails.

**Minneapolis (Minn.) Street Railway.**—Plans are being made by this company to extend its Cedar Avenue line, its Monroe Street line and its Western Avenue line in Minneapolis. A new line is being contemplated from Lake Harriet loop at Forty-third Street on Upton Avenue to Fiftieth Street in Minneapolis.

**Minneapolis & Northern Suburban Railway, Minneapolis, Minn.**—This company's 18-mile line between Minneapolis and Anoka has been completed by the J. F. O'Neill Company, Minneapolis, and will soon be placed in operation. The company has contracted to deliver 5000 cars of material for the construction of the Coon Creek dam, and work will be begun at once to build a 1½-mile spur from the Dunn property to the dam site.

**Laurel Light & Railway Company, Ellisville, Miss.**—This company is under contract with Ellisville to complete the Laurel-Ellisville Interurban connecting the two cities by the first of October. Cross-ties for the line are now being cut and the clearing of the right of way has been completed to Tallahala Creek. [E. R. J., Jan. 18, '13.]

**\*Jackson, Miss.**—Application will shortly be made by Indiana capitalists for a franchise and right-of-way for an interurban electric railway which they plan to build between Jackson and Canton. The Board of Supervisors of Madison County has granted a franchise and right-of-way to the promoters, but no action has yet been taken by the City Council of Canton. D. Lott is interested.

**Kansas City, Clay County & St. Joseph Railway, Kansas City, Mo.**—This company placed in operation on Jan. 21 the Excelsior Springs division of its line between Excelsior Springs and Kansas City.

**Butte (Mont.) Electric Railway.**—Orders have been placed by this company for material to build an extension in the southwestern section of Butte.

**Cincinnati (Ohio) Traction Company.**—This company has placed in operation two new lines in Cincinnati.

**Rapid Transit Interurban Company, Tecumseh, Okla.**—Surveys have been made by this company from Tecumseh to Sulphur and plans are being made to extend this line to Oklahoma City.

**Humber Valley Railway, Toronto, Ont.**—This company has filed plans with the Ontario Legislature for approval of its plans to build a double-track electric railway through the Humber Valley from Lambton to the mouth of the Humber River and along the shore to Sunnyside. This line will be built by Home Smith and the Toronto Land Corporation.

**Portland, Eugene & Eastern Electric Railway, Portland, Ore.**—Orders have been placed by this company for 127-lb. girder rails to be used for the double tracks on Fourth Street and on Jefferson Street in Portland.

**Memphis (Tenn.) Street Railway.**—This company will soon begin the construction of two extensions in Memphis, one from the Central Avenue line along Barksdale Street to Cooper Street and the other from the Florida Street line on Trigg Avenue to Livermore Street and thence South to Riverside Park.

\***Temple, Tex.**—Plans are being considered by E. P. Turner and associates to build an electric railway between Temple and Marlin. Several surveys of this line have been made, and it is stated that the plan is to make this a link in an interurban line between Dallas and Austin, following no particular railroad.

\***Waco, Mooreville & Temple Interurban Railway, Waco, Tex.**—Application for a charter will soon be made by this company to build a 35-mile line to connect Robinson, Bell Falls and Blevins. Information can be obtained from the Business Men's Club at Waco.

**Washington Electric Railway, Vancouver, Wash.**—This company has filed a \$10,000,000 mortgage to secure a twenty-five-year 6 per cent bond issue, of which \$2,000,000 will be used for immediate construction of the line which will connect Vancouver and Tacoma, via Chehalis, Centralia and Olympia. The Equitable Trust Company, New York, is trustee. [E. R. J., Jan. 18, '13.]

**Ohio Valley Electric Railway, Huntington, W. Va.**—The proposal made by this company specifies that the right-of-way from Ashland to Russell shall be secured by Ashland business men and that the city of Ashland shall give the company a ten-year street-lighting contract upon the present terms for this service, as well as a twenty-year franchise to enter Ashland with its power lines.

**Wheeling (W. Va.) Traction Company.**—Engineers are going over the proposed extension of this company's line from Barton to St. Clairsville and from St. Clairsville to Neffs, Ohio. The company has been asked to consider plans to extend its line through Maynard, Jug Run, Crescent and Provident, Ohio.

**Chippewa Valley Railway, Light & Power Company, Eau Claire, Wis.**—This company has laid out an extensive program of improvements on its properties in and near Eau Claire for the present year. The building of an interurban line between Eau Claire and Altoona, a railway extension to the North Side factory district and the building of a loop in the downtown district to be used by the Chippewa-Eau Claire interurban cars so as to relieve congestion on the main business street are projected.

#### SHOPS AND BUILDINGS

**Northern Electric Company, Chico, Cal.**—Plans are being made by this company to begin work on a new freight depot in Oroville. A passenger station will be constructed later by the company in Oroville.

**Pacific Electric Railway, Los Angeles, Cal.**—This company plans to build a passenger station on North Main Street, in Santa Ana.

**Indianapolis Traction & Terminal Company, Indianapolis, Ind.**—This company has received permission from the Board of Public Works for the construction of a new carhouse and tracks on Oriental Street in Indianapolis in the near future. The cost is estimated to be about \$300,000.

**Tri-City Railway & Light Company, Davenport, Ia.**—This company has been asked to consider plans to build a new depot on Market Square in Davenport.

**Louisville & Interurban Railway, Louisville, Ky.**—This company has begun the construction and equipment of its new depot at Second Street and Main Street in Shelbyville.

**Minneapolis & Northern Suburban Railway, Minneapolis, Minn.**—This company plans to build a new passenger station at Anoka.

**Public Service Railway, Newark, N. J.**—The carhouses of this company's Bergen Street line in Newark were destroyed by fire on Jan. 24. The loss is estimated to be about \$100,000. The company has outlined plans for a new terminal near Broad and Market Streets, Newark. The proposed terminal building will front on Park Place and extend back to Pine Street with outlets to North Canal Street and to Canal and East Park Streets. The structure will eventually be eight stories high and will contain a three-level system of entrance and exit for the cars of the company. The scheme contemplates direct communication between the terminal and the surface car lines from both east and west. On the east an elevated structure is to be erected, extending from Mulberry Street. On the west the communication will be by means of a subway that will have an outlet on property of the company fronting in Washington Street between Warren Street and the Morris Canal.

**Piedmont & Northern Railway, Charlotte, N. C.**—This company plans to build a new carhouse at Greenville. The structure will be 66 ft. x 200 ft., one story and of brick and steel construction.

**Portland, Eugene & Eastern Railway, Portland, Ore.**—It is reported that this company plans to build a passenger depot in Albany. Plans are being prepared by this company to build new repair shops in East Portland in the near future.

**Rhode Island Company, Providence, R. I.**—Plans are being considered by this company to build a waiting station on Exchange Place, in Providence.

**Southern Traction Company, Dallas, Tex.**—Land has been purchased by this company for a station site at Hillsboro and for an extension to the Waco terminal.

**Salt Lake & Utah Railroad, Salt Lake City, Utah.**—Plans are being considered by this company to build a new interurban terminal station between Main Street and West Temple Street in Salt Lake City. W. C. Orem, Newhouse Building, Salt Lake City, general manager.

#### POWER HOUSES AND SUBSTATIONS

**Fresno, Hanford & Summit Lake Interurban Railway, Fresno, Cal.**—Plans are being made by this company to build its new power plant between Lone Star and Fowler, about 8 miles from Fresno. The power will be generated by steam turbines and the output will be about 3000 hp. The cost of the plant will be about \$100,000.

**Pacific Gas & Electric Company, San Francisco, Cal.**—This company has placed an order with the Westinghouse Electric & Manufacturing Company for two 400-kw, 125-volt d.c., 600-hp, 2200-volt, three-phase, 60-cycle, 495 r.p.m. induction motor-generator exciter sets for its power house.

**Alton, Granite & St. Louis Traction Company, Alton, Mo.**—Plans for a new power house at Alton have been adopted by this company.

**Tidewater Power Company, Wilmington, N. C.**—This company has placed an order with the Westinghouse Electric & Manufacturing Company for one 500-kw, 600-volt d.c., two-phase, 60-cycle rotary converter and two 275-kva, 10,000-volt, single-phase, 60-cycle I.O.S.C. three-phase to two-phase Scott connected transformers and switchboards.

**Cleveland (Ohio) Railway.**—This company has placed in operation its new Harvard substation in Cleveland to supply the electric lines east of the Ohio River with additional power. Power is being purchased from the Cleveland Electric Illuminating Company.

# Manufactures and Supplies

## ROLLING STOCK

Dallas (Tex.) Consolidated Railway has ordered through Stone & Webster, Boston, Mass., a double-truck work car.

Southern Iowa Traction Company, Centreville, Ia., will, it is reported, install electric storage battery cars on its line from Alvia to Centreville.

Public Service Railway, Newark, N. J., lost thirteen cars and two snow plows in a fire which destroyed the Bergen Street line carhouse of the company on Jan. 25, 1913.

American Railways Company, Philadelphia, Pa., has ordered from the St. Louis Car Company ten city cars for the Joliet (Ill.) lines and nine suburban and eight city cars for the Huntington (W. Va.) lines.

Southern Traction Company, Dallas, Tex., has issued specifications through J. F. Strickland Company, Dallas, for twenty-two passenger cars and is asking that all proposals be submitted by Feb. 5. The cars are to be approximately 53 ft. long and arranged to seat fifty-six passengers. They will be equipped with GE-225 four motor equipment and Westinghouse AMM. air-brake equipment.

## TRADE NOTES

Joseph Dixon Crucible Company, Jersey City, N. J., is mailing to the trade its new catalog which briefly describes and illustrates the numerous Dixon products, including graphite, crucibles, paint, lubricants, pencils, etc.

Union Switch & Signal Company, Swissvale, Pa., has appointed W. W. Talbert its sales engineer in the central district, with headquarters at Chicago, to succeed W. M. Vandersluis. J. F. Talbert has been appointed superintendent of construction for the central district, to succeed W. W. Talbert.

J. S. & W. S. Kuhn, Pittsburgh, Pa., investment bankers, announce the election of the following officers: James S. Kuhn, chairman of the board of directors; L. L. McClelland, president; W. S. Kuhn, vice-president; W. G. Audenried, Jr., vice-president; A. B. McCaughey, vice-president; H. C. Ward, secretary; James K. Duff, treasurer.

Kellogg Switchboard & Supply Company, Chicago, Ill., has authorized an increase in its capital stock from \$1,000,000 to \$2,000,000. The directors have ordered the distribution of a stock dividend of 25 per cent, payable in the ratio of one share for each four held as of Jan. 28. The remainder of the \$750,000 of the new stock will be held in the treasury for future needs.

R. C. Hour and C. W. Davson, both of whom are directors in the Warner International & Overseas Engineering Company, Ltd., London, Eng., are making an extended trip through this country for the purpose of introducing the Warner non-parallel axle truck on the steam railroads of the United States. This device as applied to single-truck cars is well known in the electric railway field, and as it has recently been adapted for use with bogie trucks, its reduction of tractive effort, its elimination of side blows damaging alike to truck and roadbed, and its ability to follow rough track without any tendency to climb the rail, make it exceedingly advantageous for use under the heaviest classes of rolling stock.

Indianapolis Brass Company, Indianapolis, Ind., is operated on a profit-sharing plan. All of the employees share in the net profits of the company in proportion to the amount each man has earned during the year. On Jan. 18 this company gave its thirty-four employees approximately \$1,000. The amount each received ranged from \$16 to \$62. Accompanying each check covering this additional amount was a letter which read as follows: "This money is not a gift or a bonus. It represents something which you have earned and which is not counted in your wages or salary. By making your work count for economy in time and material and efficiency in labor, you have cut the corners and made a profit for the business. Another year is now up to you at this time."

Nachod Signal Company, Philadelphia, Pa., announces repeat orders for automatic signals from the following companies: Lehigh Valley Transit Company, six signals for the Philadelphia-Allentown high-speed division entering Phila-

delphia, via Norristown; the Wheeling (W. Va.) Traction Company, sixteen signals, making forty-six Nachod signals on this road; New York State Railways, third repeat order for two signals at Rochester, N. Y.; American Railways Company for the Roanoke Railway & Electric Company, Roanoke, Va., nineteen signals for the Salem-Vinton division, making forty in all; Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, eighteen signals, making in all seventy-six on this road. The following orders were also placed for Nachod signals: New Jersey & Pennsylvania Traction Company, Trenton, N. J.; fourteen signals to equip its Trenton-Princeton division; Hudson Valley Railway, Glens Falls, N. Y.; Transit Supply Company, Minneapolis, Minn.; Southwest Missouri Railroad, Webb City, Mo. (type HD for double track); Parkersburg, Marietta & Interurban Railway, Parkersburg, W. Va.; Texas Traction Company, Dallas, Tex.; East St. Louis & Suburban Railway, East St. Louis, Ill.; Easton (Pa.) Transit Company; Wilkes-Barre & Hazleton Railway, Hazleton, Pa.; Gray's Harbor Railway & Light Company, Aberdeen, Wash.; Muskegon Traction & Lighting Company, Muskegon, Mich.; Galesburg & Kewanee Electric Railway, Kewanee, Ill.; Alabama City, Gadsden & Attalla Railway, Gadsden, Ala.; International Railways, Buffalo, N. Y.; Southern Wisconsin Railway, Madison, Wis.; Pittsburgh Construction & Supply Company, Washington, D. C., fourteen signals. Signals have been sent to France for E. H. Cadiot et Cie. and G. S. Albanese, and to Spain for the Tranvia de Cadiz, San Fernando y Caracas; also to the Christchurch Tramway Board, New Zealand. Trolley contactors for operating various devices were sold to the Utica & Mohawk Valley Railway, Utica, N. Y.; the Virginia Railway & Power Company, Richmond, Va., and the Philadelphia (Pa.) Rapid Transit Company.

## ADVERTISING LITERATURE

Brookfield Glass Company, New York, N. Y., has issued a booklet which illustrates its various types and sizes of Brookfield insulators.

Sprague Electric Works of General Electric Company, New York, N. Y., has issued Catalog No. 117, which gives a brief outline of the principal Sprague Electric products, including generators, switchboards, motors, exhaust fan outfits, hoists and electric fans.

The J. G. Brill Company, Philadelphia, Pa., prints in the January issue of *Brill Magazine* an illustrated biography of Edward G. Connette, president of the International Railway, Buffalo, N. Y. Among the feature articles are the following: "Conditions Which Govern the Type of Car for City Service, Buffalo, N. Y.," "Novel Prepayment Cars for Muskogee, Okla.," "Interesting Prepayment Cars for Michigan United Traction Company," "Incline Cars for Bahia, Brazil," "Prepayment Cars for Springfield, Ill.," "Interurban Passenger and Baggage Cars for Illinois Railway," "Combination Baggage and Freight Car for Toledo & Western Railroad," "Suburban Cars for Nazareth, Pa.," "Closed Cars for New Jersey Shore Resorts."

## NEW PUBLICATION

Drawings from Proceedings Verein Deutscher Ingenieure. Berlin, 1913. Paper bound. Price to teachers and students of technical schools, 29 cents; to members of the Verein, 44 cents; to others, 58 cents.

This leading organization of German engineers has recently undertaken the publication in binder form of drawings known as "Tafelblätter." These are simply groups of drawings on particular topics as taken from the proceedings of the association. The sheets are printed on one side only and are of whatever size may be necessary to make the illustrations perfectly legible. The first folder contains sheets Nos. 1 to 8, relating to different kinds of rolling stock and equipment, such as steam car passenger construction in the United States and the gasoline-electric construction of the Prussian State Railroads. The second folder contains sheets Nos. 9 to 16, relating to cranes, pneumatic-tube transportation, pumps, etc. Some of these sheets should prove of value even to those who do not get the text which accompanied their original publication.