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FRIDAY, OCTOBER 17, 1913

**PROGRAM FOR TO-DAY**

**CONVENTION MEETINGS**

- 9:30 a.m. Closing Session of Accountants' Association, Accountants' Hall, Second Floor of Convention Pier.  
9:30 a.m. Closing Session of Engineering Association, Engineers' Hall, Convention Pier.

**ENTERTAINMENT**

- 11:00 a.m. Concert by William Fenrich and Orchestra, Lobby, Convention Pier.

**Innovations in the Work of the Standards Committee**

The work of the sub-committee appointed by the committee on standards for the purpose of revising procedure and compiling a manual of approved practices of the Engineering Association will probably be of greater advantage to the member companies than any other which has been lately attempted. For a long time the value of the material handled by the numerous committees of the Engineering Association has been largely obscured by the fact that the information is scattered among the volumes of proceedings for several years back and in addition is subject to confusion with other reports or specifications which have been superseded through the inevitable development of the industry. In consequence, the decision to collect all this material under one cover, at the same time eliminating superseded data and drawings, will be a welcome one. At the present time there are twenty-two standards and eleven recommended practices. Every one of these is of distinct value from the accuracy and sufficiency of technical information included—a condition which has, however, been attained only through a process of trial and elimination, as many of them have been revised from time to time. In addition to these, the manual will include recommendations covering thirty-three miscellaneous methods and practices which represent approved procedure so that the volume when complete will afford a most excellent medium of reference.

To the smaller member companies this innovation will be of even greater importance than to the larger properties. The value increases, in fact, inversely with the size of the railway, for a diminution of operating force naturally involves a reduced opportunity for obtaining the services of specialists such as are available on the largest roads for the many subdivisions of electric railway engineering. In the new manual, however, there will be easily available the recorded opinions of the experts in every line who are called upon by the association in its committee work.

The changes in procedure which are contemplated are no less along lines conducing to efficient and definite action. The letter ballot to member companies—always a clumsy means for determining opinion—has never given thorough satisfaction and has at the same time been a prolific cause of confusion and delay. Its elimination in the new procedure is most logical and places the final responsibility for setting the stamp of approval where it belongs, or upon the shoulders of the executive committee of the American Association. As any proposed standard will still have to pass in a definite routine, after approval at the hands of the standards committee, to the Engineering Association in convention, none of those really interested in the matter is deprived of a hearing. Possibly more authority will rest with the committee on standards than before, but as the size of this body is to be doubled by the appointment of individual members in addition to the chairmen of the various committees, its representative quality will be extended in even greater proportion.

**Training Transportation Employees**

The report of the committee on training of transportation employees marks a wide departure from earlier methods of committee work on this subject. In former years the principal duty assigned to such a committee was diligently to

**Fare Research**

The proposed Bureau of Fare Research is, in its conception, one of the most important acts in the history of the association. It means, in effect, that the association proposes to institute an investigation into the operation of other systems of fares than the flat-rate system on which the urban lines are now generally conducted. There are satisfactory reasons why such an investigation should be undertaken with all the resources of information which the industry can bring to bear upon the subject. The flat-rate system has proved that it is not adequate in all cases to overcome the combined influences of longer hauls and higher wages and costs of materials. Under this system what the railway loses on the excessive long haul of one passenger it must make up on the short ride of another passenger. The fact that electric railways have been developed on the basis of this fare scheme has contributed most successfully to the upbuilding of suburban districts around large cities. The settlement of these districts, remote as they are from the business centers, has been so happy and healthful a part of our national progress that we should regret to see it hampered by the establishment of fares proportioned rigidly on the length of haul. The time has come, however, when the companies find it necessary to analyze more closely their revenue-producing methods. Perhaps some middle ground may be discovered which will solve the problem without pressing too heavily on the country districts that have been built up under the protection of a single fare from congested city centers.

prepare a data sheet of the "yes" and "no" type, send it forth to the members of the association, beg and re-beg for replies, and finally report that a given number of the respondents did one thing and that another given number did just the opposite. A data sheet may be highly valuable where statistical information is the prime purpose, but it must fall short where the more abstract question of managerial policy toward human beings is involved. The question, for instance, of paying a man for platform time only is ethical as well as financial, and therefore should not be decided by the committee on a vote of "for" and "against."

The report of the present committee is based on a general review and is distinguished for these broad conclusions: that the variety of existing practices indicates lack of adherence to any set of fixed principles; that standardization is logical, desirable and necessary; that such standardization can follow only after an agreement upon what constitute fundamental principles and, finally, that with such fundamental principles established each company can determine wherein its practices are at variance with those principles. Although the report of the committee is of almost Spartan brevity, attention may be called to those of its recommendations which are of more than usual interest. Under "Organization Requisites" it mentions the need for "an administrative and directive head to whom may be referred for decision all disputed questions arising within the organization" and recommends "an established atmosphere of definite co-operation between organization units to be fostered and enforced by the directive head." The first of these requisites apparently suggests the installation of a judicial officer whose freedom from operating duties would permit more deliberate and unbiased decisions, while the other requisite might be attained in part by frequent business and social conferences between the representatives of various divisions.

Under "Operating Policy" the committee recommends that as much of that policy as possible be reduced to writing, that regulations be so carefully worded that only one interpretation is possible and that the avenues of promotion be clearly defined to all. The recognition of seniority in the selection of work is also embodied as a part of operating policy. Under "Treatment of Employees" the committee places itself in line with the most advanced thought on welfare work by suggesting the establishment of pensions, sick benefits, accident benefits, medical attendance, hospital service, loan and savings institutions, restaurants, club rooms and supply depots. Some of these features may be impracticable on smaller systems or may require the co-operation of groups of companies, as abroad, but aside from humanitarian reasons they must be seriously considered in view of like steps in other industries. In discussing "Training of Employees" the committee calls for the systematized and uniform instruction of platform students in the lecture room, on the school car and in practical line operation; but it goes still further in suggesting the re-examination of experienced men to keep them abreast of advances in the art, etc., and also the examination of subordinate officers. The only operating detail discussed by the committee is that of paying for breaking-in time. To this it is opposed as fundamentally wrong in principle. The training of employees is costly enough without this burden, yet, no matter how bad the principle may be, most applicants for work will always expect some remuneration during the breaking-in period, and if such a plan will encourage a higher class of men to enter the service it may be the best kind of economy.

#### Fares on Unprofitable Lines

In not a few instances where a petition for reduced fares is brought before a public service commission the question of the profits on specific lines which are an essential but interwoven portion of a complex system comes early to the front. The injustice of requiring the proposed reduction in rates

to be made on segregated routes on which the local management knows it cannot be afforded often cannot be shown without elaborate estimates of the cost of service and the yearly fixed charges and administrative expenses on a particular piece of the system. But where extended calculations are required along these lines the necessity of many assumptions is liable in a good many cases to detract from the force of the company's plea. To determine the precise cost of service for a single line of track in a street railway system or for any one customer or class of consumers in the central station field is a most difficult task. But this does not mean for a moment that instances are not common where the discrepancy between revenue and expenses is so marked that it may be shown at once that no rate reduction can be tolerated, even where some weight is given to the earning power of the system as a whole.

Thus, in a typical instance, the company successfully resisted an invasion of its rates on a particular line because it was able to show to the commission having jurisdiction that the earnings of the line were unequal to meeting the cost of wages on the cars run over it. There was no need of going further. If the aggregate compensation of motormen and conductors had fallen inside the receipts, it might still have been possible to show that the latter were insufficient to pay for the power consumed and to meet the actual repair charges enforced upon the particular cars used on the line. In other words, an attack upon the rates of a line of low traffic density may be overcome in many instances if a company will assemble the known expenses chargeable to that line and compare them with the revenue, without going to the trouble of exhibiting general or overhead costs which must be apportioned and which may not be needed except in close cases to defend the existing tariffs. Some commissioners hold strongly to the idea that no public utility corporation can expect to derive a profit from the operation of every segregated portion of its system, but even where this view is maintained it is not easy for petitioners to secure a rate reduction if the company can show that its bare operating costs cannot, or can only with difficulty, be met by the earnings of the line in question.

#### Advancing the Joint Use of Poles

The report made to the American Electric Railway Association yesterday by the committee on the joint use of poles should prove a long step toward the accomplishment of an end which is surely in the line of progress and economy. It will be recalled that this work had its inception with the report made to the annual meeting of the New York Electric Railway Association in June, 1911, by a committee of which W. J. Harvie was chairman. After numerous conferences with other electrical bodies of the State and following the painstaking preparation of a tentative form of joint agreement, the parties in interest wisely concluded that further study of the subject should be made co-operatively by their several national associations. Upon this the present committee was organized, but the continuity of the work of the New York Association was maintained by retention of Mr. Harvie as chairman of the new committee. The 1913 report is thus a compendium of the harmonized opinions of leading men in the electric railway, power, lighting, telegraph and telephone fields, and as such it may well be considered as an authoritative guide. The economic advantages of reducing the number of pole lines have been set forth often enough, but it should be equally apparent that if the voluntary joint use of poles is delayed much longer its arbitrary use may soon be imposed by public regulating bodies. It is to be hoped, therefore, that the approval of this report by the American Electric Railway Association will be followed by the indorsement of the American Institute of Electrical Engineers and the National Electric Light Association.

## Conventionalities

The exhibits will close officially on Friday afternoon at 2 p. m., as announced at the annual meeting of the Manufacturers' Association on Wednesday. It is earnestly requested that no exhibits be dismantled before that hour.

Good-bye! See you next year!

C. W. Wilkins "failed to tip the waiter so the water tipped the plate." Ask him about it.

Charlie Davis dropped in on us yesterday on his way to Oyster Bay. He brought his "N-gine" with him.

Little Gracie Grayson, the erstwhile Beau Brummell from the "show-me" state, has been very much in evidence among the exhibits.

The general bossissimo of the Illinois Traction System is not at the head of his retinue this year, but M. L. Harry of the Decatur Railway & Light Company is.

It's tough luck the Athletics had to win the World's Championship so quickly. We should have liked to hear Charlie Clark's fog-horn voice again this year.

Tom Elliott, the Doctor Jekyll of the Cincinnati Traction Company and the Mr. Hyde of the Cincinnati Car Company, is pumping his friends for new ideas in car construction.

No; the hedges around the booths where they have such a fine decorative effect are not of a new blonde variety. Jack Frost visited Atlantic City ahead of the convention, that's all.

Some of the young ones on the Boardwalk thought Woodrow of White House fame was here for the week, but upon further investigation found the important personage was none other than Ed Besuden.

Thomas Vaughan, master mechanic of Armour & Company, who fathered many enjoyable parties and excursions at last year's convention, thinks he's a long way from home this year, although he's not complaining.

Edmund LeChevalier Hegeman, an electrical engineer of Iquique, Chili, arrived on Wednesday evening and is looking at the convention through the eyes of his uncle, B. A. Hegeman, Jr., the well-known statesman, diplomat and metal manufacturer.

Bill Sawyer was agreeably surprised yesterday when a number of his friends caught him in the Traymore and presented him with a handsome cane and umbrella set. In acknowledging the gift Bill said in part: "Gentlemen, with regard to the umbrella you certainly have put one over me."

F. R. Coates, president of the Toledo Railway & Light Company, had expected to attend the convention, but at the last moment was detained by important business matters. He is pleasantly represented, however, by his assistant, T. Lee Miller, who has been a decided ornament in the social affairs of the week.

S. S. Stolp and H. L. Garbutt, since they blew into town with two packages of gawp-seed, have been trying to wear out all of Shill's roller-chair pushers on the Boardwalk. Last night they were heard complaining that the scenery here was not so fine as that along the lines of the Chicago Tunnel Company.

By reading the program of entertainments one can see that the Convention Pier is quite a commodious structure, as there is a lobby, a Persian garden and a ballroom. It's almost a shame to tell the unfortunate stay-at-homes that

they're all the same. The committee worked in a lightning change by rearranging the shrubbery.

An ode for clean-up day:

Before you can say "come" and "go"  
And breathe but twice and cry "so so,"  
Each porter, tripping on his toe,  
Will be here with mop and mow.

—From McConnaughy's "Shocks from Shakespeare."

The exhibitors and delegates at this convention have every reason to feel pleased with the splendid work of H. G. McConnaughy, director of exhibits. The exhibit halls were spick and span from the very first day, while the thousand details which had to be settled throughout the week were handled with commendable dispatch and smoothness.

The advance card system for individual members of the several associations has proved a complete success in saving time and avoiding any annoyance to the delegates. In fact the registration and finances have been handled in a way which reflects the greatest credit on the skill, tact and experience of Waldo Berry, chairman of the finance committee, and his faithful aids.

Tom AH Hay cycloned in yesterday in tow of S. G. Memory, of the Delaware, Lackawanna & Western Railroad. Mr. Memory told us quite earnestly that he had never realized how many things were required to keep an up-to-date electric railway going in a manner satisfactory to Phoebe Snow, and that he was astounded at the amazing variety and interest of the exhibits. Mr. Memory says he will never forget them.

There is a larger attendance of representatives of the Canadian roads this year than at any past convention. The country to the north has always been most loyal in its support of the American Association and has taken an active interest in many ways in its support. This year so many are in attendance that headquarters has been established in the office of the general secretary, where Acton Burrows, secretary of the Canadian Electric Railway Association, is maintaining a separate registry for members of that association. He says that between eighty and ninety members of the Canadian association have been in attendance at the convention this week.

Col. J. H. Stedman, our own "contributing editor," presents his farewell batch of brilliancy on another page of this issue. He says in a pencil note on his last piece of copy: "We supply-men call our decorations the 'Red Badge of Courage'" Right! Indeed, the colonel is always right as well as the prince of story-tellers and good fellows, and we are sure that those who have read these daily issues have enjoyed his contributions as sincerely as we have appreciated his assistance. In reply to numerous inquiries and complimentary remarks we wish to say that we hope next year to expand this spiel, so to speak, and have a full page edited complete by the colonel, himself.

When Rabbi Ben Akiba, the noted Celt, uttered that aphorism about the absence of anything new under the sun he must have had the modern efficiency engineer in mind. Apropos of this our Havana correspondent informs us that the "rest factor" was discovered many eons ago by the local cigarmakers. They do not "knock off" in the approved Taylorian fashion but hire a professional reader to amuse them while creating, on a piecework basis, Henry Clays, Romeos, Manual Garcias and other supplymen's specialties. Should this principle be applied to maintenance practice, we may expect to look for a banjo and bones quartet in every carhouse to lighten the monotony of replacing brushes, oiling controller fingers, cleaning windows and performing similar more or less rhythmic duties.

## THE CONCLUSION OF THE ENTERTAINMENTS

With last night's promenade concert and ball there was concluded one of the most genuinely successful series of entertainments ever provided at an A. E. R. A. convention. The last event of the week was indeed quite as enjoyable as any which had gone before, and it is likely to remain long in the memory of those in attendance.

The music commenced shortly after 9 o'clock with an overture from "William Tell," and from that time until the strains of the inevitable final waltz were completed the ballroom was continually filled with dancers. The revival of the use of dance cards was a happy thought of the committee, and these programs, which were artistically designed in conformity with a color scheme of gray with a replica of the association seal, were preserved by many as mementos of the occasion. During the evening the winners of the golf and auction bridge tournaments were announced from the floor.

As the ball represented the last of an extraordinarily entertaining succession of social events arranged by the American Electric Railway Manufacturers' Association, through S. K. Colby, of Baltimore, for the visiting delegates and their guests, it is only fitting that recognition be made of the efforts of the entertainment committee which has had charge of all the details. Much of the work of arrangement involved very great personal sacrifices on the part of the various committeemen, whose reward should include, in addition to a knowledge that the entertainments were in every respect a perfect success, a record of the appreciation felt by all of those who had the good fortune to be in attendance.

Henry G. Pearce, Standard Steel Works Company, Philadelphia, was chairman of the entertainment committee, and upon his shoulders rested the general burden of the whole week's arrangements, the able manner in which these were conducted standing as evidence of his exertions. His fellow-committeemen were divided into various sub-committees which managed the details of the separate features.

Of these sub-committees, that in charge of the auction bridge tournament and card contests for ladies was made up of Henry N. Ransom, Westinghouse Electric & Manufacturing Company, New York, chairman; H. A. Hegeman, United States Metal & Manufacturing Company, New York, and H. H. Helins, Aluminum Company of America, Philadelphia. The difficult task of this committee involved two afternoons of play and the recording of scores from three separate games, yet all errors and confusion were eliminated.

The committee on golf included N. M. Garland, Ohio Brass Company, New York, as chairman, and H. G. Barbee, Maryland Steel Company, Boston, and R. W. Read, Pennsylvania Steel Company, Philadelphia, as members. Of the door committee Allen E. Goodhue, Midvale Steel Company, Philadelphia, was chairman, his work involving many difficult situations as well as very long hours and close attention.

The annual reception of the officers of the affiliated associations, which was held on Monday evening, was in charge of a committee composed of Edward F. Chaffee, O. M. Edwards Company, Syracuse, N. Y., chairman, and S. T. Bole, The J. G. Brill Company, Philadelphia; J. H. Denton, Railway Utility Company, New York; E. L. Folsom, Railway Materials Company, Cleveland, and W. A. Lake, Pantasote Company, New York.

The committee in charge of the promenade concert and ball of last night consisted of W. L. Wright, William Wharton, Jr., & Company, Philadelphia, chairman, and William P. Hunt, Jr., The Buda Company, Chicago; Henry N. Ransom, Westinghouse Electric & Manufacturing Company, New York; Robert W. Read, Pennsylvania Steel Company, Philadelphia, and W. H. Wilkinson, Pressed Steel Car Company, New York, N. Y.

The committee to which special thanks are due for that unique feature of the convention, the night at Steeplechase

Pier, as well as for the excellence of the arrangements made for handling the enormous and enthusiastic crowd of delegates who were in attendance, was headed by W. G. Kaylor, Westinghouse Traction Brake Company, New York. He was assisted by the following list of committeemen: Charles H. Machen, Standard Roller Bearing Company, Philadelphia; Robert Coe, Carnegie Steel Company, Pittsburgh; Alfred Green, Galena-Signal Oil Company, New York, and A. A. Hale, Griffin Wheel Company, Boston.

In view of the thorough success of this year's program not only in the management of details but also in the ingenuity displayed in devising means for the practically continuous entertainment of the delegates, it is to be hoped that many of the present committee may be induced to serve again in future years.

## ALWAYS IN GOOD HUMOR

A COLOSSAL CONGLOMERATION OF CULTURE AND COGNIZANCE  
COLLECTED BY OUR CRUSTACEOUS COADJUTOR

The advantage of crisp new money is that when you put it into your wallet you double it and when you take it out you see it in creases.

A cowboy dropped into a "hash house" in "Lucky Hit" and while eating his corned beef and cabbage spied a little red bottle which he sized up for ketchup but which was tabasco. He soused his beef with it and tucked a liberal piece into his mouth. The hot stuff burned him instantly. He grabbed the hunk he was chewing, hurled it onto the floor and yelled: "There! d—n you, blaze!"

They say one of our good fellows is diverted to the coal trade for a little while. This is for him:

Teacher—"Jimmy, if coal is \$5 a ton and your father gives you \$30, how much coal will you get?"

Jimmy—"I'll get about four tons."

Teacher—"That's wrong, Jimmy."

Jimmy—"Yes, I know it is, but they all do it."

The young lawyer pinned a card on his office door: "Will be back in twenty minutes." When he returned he found another item: "What for?"

With his motor car crippled, a man accosted a Swede farmer in Idaho, asking for a monkey-wrench. "This bane no monkey ranch," says the Swede; "this bane sheep ranch."

"Dad, I had to stay after school to-day and got licked too." "Why, my boy, were you very bad?" "No, dad, but I asked you last night how much is a million of dollars and you said, 'It's a h—l of a lot of money,' and that wasn't the right answer."

### OUR FARE BOX

Where automatic indication

Lies in wait for agitation

To prepay you and record it on the spot,

'Tis no use to hedge or higgie,

The recorder will not wiggle

Unless you drop your nickel in the slot.

And unless there's some omission,

Some conductor's rescue mission,

Or th' inspector or the cashier should get funny,

Or the messenger should swipe it,

Or some clerk or checker flipe\* it,

Then the company perhaps will get the money.

\*Scotch for "turn inside-out."

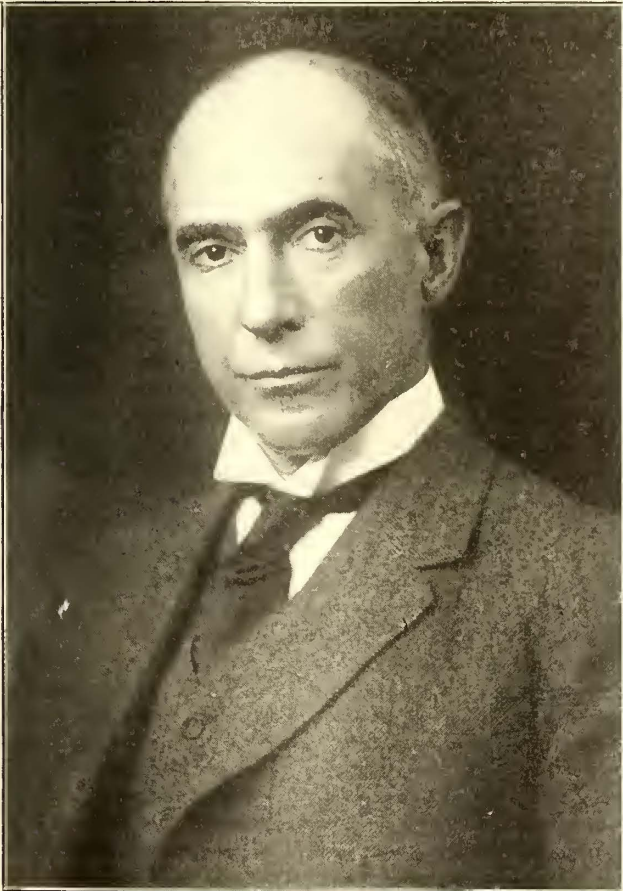
J. H. STEDMAN.

George D. Casgrain decided at the last moment to join the crowd. He made an exceedingly profitable trip from Chicago.

## THE NEW PRESIDENT

Charles N. Black, the newly elected president of the American Electric Railway Association, was born in New York City in 1867. He was educated in his native city and later at Princeton University, from which he was graduated in the class of 1888 with the degree of A. B. At Princeton he was a classmate of Past-president Thomas N. McCarter.

After a two-year graduate course in electrical engineering at the same university Mr. Black received the degree of E. E. He immediately began the following of his profession of electrical engineer by entering the employment of the Brush Electric Company, of Cleveland. With this company he advanced rapidly from one position to another and had become superintendent and general electrician when he resigned to take charge in New Haven, Conn., of a branch factory of the Walker Manufacturing Company, of Cleve-



Charles N. Black, Elected President of the American Electric Railway Association

land. In 1899 he became connected with the Westinghouse Electric & Manufacturing Company, first in Pittsburgh and later in Philadelphia. His next office was with the firm of Ford, Bacon & Davis, of New York, where he remained five years. In 1902, in the interests of Ford, Bacon & Davis, Mr. Black went to Kansas City, Mo., where the reconstruction work in connection with the Metropolitan Street Railway of that city was intrusted to him. This work was finished in September, 1903, but Mr. Black was induced to continue in Kansas City as chief engineer of the company.

Bernard Corrigan was at that time president of the Metropolitan Street Railway. There was no vice-president or general manager, and Mr. Corrigan really performed the duties connected with these offices until, on Jan. 1, 1905, Mr. Black assumed the position of vice-president and general manager of the operating company. At the same time Mr. Black became the vice-president of the Kansas City Railway & Light Company, a holding company controlling the Met-

ropolitan Street Railway, and also vice-president of the Kansas City Electric Light Company, which is controlled by the Kansas City Railway & Light Company.

In September, 1907, Mr. Black accepted the position that he holds at present, the vice-presidency and general managership of the United Railroads of San Francisco, succeeding to the duties of George F. Chapman, who died in May of that year. He is also a director of the United Railroads of San Francisco and of the Sierra & San Francisco Power Company and vice-president of the latter company, which is a successor to the Stanislaus Electric Power Company and the Tnolumne Water Power Company, purchased at a foreclosure sale. It is also affiliated with the United Railways Investment Company. In March, 1912, Mr. Black became president of the Monterey & Pacific Grove Railway, to succeed W. P. Hammond. At the same time he became president of the Coast Valleys Gas & Electric Company, a new company organized to effect the consolidation of several lighting plants furnishing service to Pacific Grove, Monterey, Salinas, King City and other places.

In July, 1912, Mr. Black was elected a member of the firm of Ford, Bacon & Davis. He is also a member of the American Institute of Electrical Engineers. During the year 1909-1910 he was fourth vice-president of the American Electric Railway Association, and since that time has advanced through the third, second and first vice-presidencies to the office to which he is now elected for the coming year.

## CORNELL ELECTRIC RAILWAY DINNER

About twenty-five Cornell men gathered at the Shelburne at Atlantic City for dinner on Thursday, Oct. 17, starting a precedent which they hope will be followed in subsequent meetings. This university is well represented in the electric railway field on both the operating and manufacturing sides. Among the older men present were A. H. Woodward, president International Register Company; R. E. Danforth, general manager Public Service Railway; C. H. Clark, engineer maintenance of way Cleveland Railways Company; W. K. Archbold, Archbold-Brady Company; E. H. Chapin, vice-president National Car Wheel Company; Lee H. Parker, Stone & Webster; H. C. Holloway, Rail Joint Company, and C. W. Gennet, Jr., R. W. Hunt Company.

More recent graduates were E. A. Palmer, of the Public Service Railway; W. K. Page, electrical engineer and master mechanic Western New York & Pennsylvania Traction Company; W. L. Wright, vice-president Wm. Wharton, Jr., Inc.; Wylie Brown, general sales agent Bridgeport Brass Company; H. E. Carver, engineer Public Utilities Commission, New Jersey; L. H. Snyder, Joseph Dixon Crucible Company; A. D. Blake, associate editor *Power*; Dudley Montgomery, vice-president Southern Wisconsin Railway; E. A. Stillman, president Watson-Stillman Company; J. F. Ohmer, Jr., Ohmer Fare Register Company; R. R. Harrison, Watson-Stillman Company; G. N. Brown, electrical engineer New York State Railways, Syracuse-Utica lines; H. S. Johnson, engineer maintenance of way New York State Railways, Utica lines; Thomas Farmer, Jr., vice-president Consolidated Car Heating Company, and J. R. Bolziano, Wm. Wharton, Jr., Inc.

A movement was started looking toward the development of Cornell interest among electric railway men, and a committee was appointed, consisting of R. E. Danforth, T. Farmer, Jr., L. H. Parker, E. A. Stillman and H. H. Norris, to arrange for a gathering in connection with the mid-winter meeting of the association. Nearly fifty Cornell men were present at the Atlantic City convention and took an active part in the proceedings and exhibits. Mr. Farmer was elected a member of the executive committee of the Manufacturers' Associations. All Cornell men who expect to be in New York for the mid-winter meeting of the association are urged to communicate with the committee.

## THURSDAY JOINT SESSION OF THE ENGINEERING AND ACCOUNTANTS' ASSOCIATIONS

President Schreiber of the Engineering Association called the joint session of the Engineering and Accountants' Associations to order at 10.15 o'clock yesterday morning. M. W. Glover, first vice-president of the Accountants' Association, presided as co-chairman.

In the absence of the co-chairman of the joint committee on engineering accounting, H. H. Adams, Chicago Railways Company, presented the report of this committee. An abstract of this report is published elsewhere in this issue.

Following the presentation of the committee report, J. Vipond Davies, chief engineer Hudson & Manhattan Railroad, made an address on the subject of "Engineering Accounting." On motion the thanks of the two associations were given to Mr. Davies for his paper.

In opening the discussion, George W. Kalweit, Milwaukee Electric Railway & Light Company, said that that system followed the practice of adding overhead charges to work done in the shop. The scale of overhead charges took into consideration the question of whether material, labor, machine tools, etc., were furnished. Overhead charges were added to the cost of work done for other departments in the shop.

Charles H. Clark, Cleveland Railway, in speaking of cost accounting in connection with the report, said that all costs in Cleveland were kept by the accounting department. He believed that this was the best practice.

W. G. Nicholson, Omaha & Council Bluffs Street Railway, said that on that system cost accounting was handled by the accounting department.

William McClellan, New York, said he thought that the question was one of men rather than of departments. The necessary thing to do was to get a man who was willing to put sufficient time on the work to keep the accounts straight. He had tried many ways and his last conclusion on a large work was that the matter should be in the hands of the accounting department and also directed in some way by the engineering department. He had found that the average engineer was so intent on accomplishing things in his work that he could not see certain matters and could not digest his reports. A man should have sufficient respect for the needs of the engineer and at the same time despise too much detail accounting so that the result would be what was wanted.

Mr. Adams said that he thought that co-operation between the accounting department and the engineering department would give the best results.

T. B. MacRae, Chicago Elevated Railways, said that he had never found an engineer who was not thoroughly able to understand accounts. He tried in all cases to find out what the engineers wanted and kept the books and data in such shape that he could give them what they let him know in advance they wanted. The paper criticised the accounting department.

A criticism that the accounting department did not give the engineer what he wanted was made readily. If both departments were compiling data there was a double expense. All accounting work should be done by the auditor. The engineer was not paid by the company for accounting work. He was paid to get results. In order to secure results he must co-operate with the accounting department and the accounting department must co-operate with him so as to help him and not arbitrarily keep the books in such a manner as to fail to consider the engineering department needs.

James Adkins, United Railways of St. Louis, said that if the engineering department could ask for information in advance instead of waiting until the job was finished, it would simplify the work of the accountants.

R. B. Stearns, Milwaukee Electric Railway & Light Company, said he thought that the engineers had trouble

in getting data from the accounting department. This was due in part to the inefficient distribution of accounts by engineers. It would be a great advantage if the engineers could anticipate their needs for information. He could see where it was easy for an engineer to go out on the street and by the rule of thumb and the information of the foreman tell what the job cost. He had done that himself many times and had been deceived. The Milwaukee company after exhaustive investigation by a committee of heads of departments formulated a plan some time ago for the separation of overhead charges. The committee had a great deal of difficulty in getting comparable data. Usually the large manufacturers could supply such data.

Mr. Stearns thought that many in the street railway industry were losing sight of the fact that unless the overhead charges were added they did not know what the job cost. He was certain that within a reasonable degree of accuracy the policy that had been adopted in Milwaukee gave a far more intelligent idea of the cost of the job than the old method.

President Schreiber said he thought that Mr. Stearns was right in regard to overhead charges. There was no doubt that many thought they could do the work themselves for a great deal less than the work would cost outside when the fact of the matter was that it cost more in that way. It was certainly true that that was the case in new construction, especially with small articles. Even in the way department the cost of work cars and tools was often omitted and that meant that the final count did not represent what the work actually cost.

P. V. See, Hudson & Manhattan Railroad, said that he had introduced an overhead charge on the Hudson & Manhattan system, although arguments had been presented against this on the ground that it was interdepartmental work and no charges should be added.

Mr. Adams said that the question which interested him was how often the percentage of overhead charge should be changed in order that the accounts might be kept where they ought to be.

P. S. Young, Public Service Corporation of New Jersey, said he thought that the discussion was somewhat confused by the lack of clear distinctions between interdepartmental charges and overhead charges in connection with construction work. In his opinion an effort should be made with construction charges to determine the exact overhead charges and to charge them to each job; in other words, not to take a percentage but to charge a figure, which could be determined at the time the work was done. The so-called overhead charge to be made by one department to another in the conduct of ordinary business was less vital to the company than the charge in connection with construction work. In fact, if too great detail was attempted it might appreciably add to the cost of the work. He heartily indorsed the recommendation of the committee in connection with overhead charges. The recommendation of the committee for some definite rules for the determination of overhead expenditures on construction work was an extremely important matter.

Continuing, Mr. Young said that the discussion on cost accounting during the joint meeting of the Transportation & Traffic and the Accountants' Association on Wednesday showed that the subject was not entirely clear. Cost accounting was an entirely different matter from the general accounting work of the company. It could be made to fit in with the general accounts of the company, and that should be done. He sometimes thought that in some cases the only way to get a proper system of cost accounting was to have the engineering department keep the cost accounts. Unless the possibilities of the matter were presented properly to the engineer he might not think it worth while to analyze his costs sufficiently to arrive at an intelligent result, which could be used in his work.

Notwithstanding that, Mr. Young believed that by co-operation and a thorough understanding of the advantages of cost accounting by the engineer and the accountant, it would be possible for all companies, small or large, to get data which would prove most valuable, not only in protecting the properties against assault, but also in determining the basis of estimates of cost and possibly in determining the question of whether bids submitted for work were reasonable or unreasonable. It would be extremely desirable if the two associations could settle on some standard units of cost in connection with each class of work.

Philip F. Maguire, Public Service Railway of Newark, N. J., said he thought that timekeeping should be under the jurisdiction of the engineering and maintenance of way department but the different accounts and charges should be supervised by the general auditor to a certain extent. To do the accounting separately in the engineering and auditing departments would involve an extra expense. The auditing department could give any information desired. In his company there was no difficulty in getting detailed costs of any job four or five days after the end of the month in which the job was completed.

M. W. Glover, Mobile Light & Railroad Company, said that it seemed to him that the engineering department would not be able to determine the costs. The foreman of a job would not know anything about the cost of material or the overhead charges which might be taken into consideration. If the engineers could not get the information they wanted from the accountants, they should get accountants that would give it.

H. H. Adams said that in the work he was doing he was co-operating with the auditor. They were co-operating to the fullest extent in the consideration of the problem.

Another speaker thought that, generally speaking, the accountant should be expected to furnish all figures, but in some particular cases where the work could be done more economically by another department the accountant should be broad enough to recognize that and agree to it.

Charles H. Clark, Cleveland Railway, said that twenty years ago he was building a railroad in Philadelphia and had a list of questions which it was necessary for him to answer for his company each day. In this list there were the costs of carrying dirt, taking up track, taking up old ties, excavation, laying new track, spiking and bolting, everything being in detail. He showed how many feet of track were laid in one day, how much paving was done, etc. He thought that when information desired by the engineers was not obtained it was because the accountants had not received the details from the engineers. If it was necessary to have the information, daily reports must be made.

A. H. Kayser, San Diego Electric Railway, said it seemed to be a matter that required hearty co-operation from all of the departments.

In closing the discussion, Mr. Adams said he wanted to emphasize the importance of co-operation in the work. He thought that that embodied the basis of a practical solution of the problem.

President Harries of the American Association was then introduced by Mr. Schreiber. He spoke briefly to the delegates and said that it was the teamwork that counted in the association. It was a long pull, a strong pull and pull all together with each one helping the other and all for the industry. Without that spirit the association would not get anywhere. That spirit was more apparent this year than ever before.

Robert N. Wallis, Fitchburg & Leominster Street Railway, co-chairman of the joint committee on the life of railway physical property, then presented the report of that committee. An abstract of this report is published elsewhere.

William McClellan, New York, then spoke on the "Life of Railway Physical Property." He said he regarded the report of the committee as a fine piece of work. When provision

was made for depreciation it meant that it was being figured as a part of the total expense of doing business. The man who set aside too little margin for the slow destruction of apparatus was doing himself an injustice and the day of reckoning would come. The man who charged up too much was doing himself an injustice in the end because he might have a day of reckoning of a different sort. In many towns the companies did not get the earnings to do what the man in charge knew should be done. He sacrificed the life of his present property in the hope that he might land right in the end though it cost him more. The problem was a serious one. The engineers must recognize that it must be cared for in their accounts and they must do the best thing possible under the circumstances. It was necessary to see, first, that all costs were included and, second, that when the day of change arrived there would be something in the depreciation reserve to meet the expenses.

Continuing, Mr. McClellan said that the engineer must consider whether life was left in a piece of apparatus. If there was, and the life was to be destroyed, adequate reasons must be given and so the engineer must study the question of the life of physical apparatus. It was a simple matter to respond to fads and fancies, especially where a neighboring town introduced a fine double-truck car, but that was no reason why it should be introduced in other towns. The engineer should show that if the earnings did not permit expenditures, much as the community would like to have other cars, it was not paying enough to have the improvements.

Mr. McClellan said that one argument that was made was that in a large company where the number of pieces of apparatus was great a law of averages would work and therefore life tables could be compiled for physical property. It was extremely important to remember, however, that the number of companies in which such an average would work was very small.

A vote of thanks was passed to Mr. McClellan for his discussion of the subject.

C. M. Larson, Railroad Commission of Wisconsin, said that that commission had had occasion to try for many years to determine the life of physical property. It had a tentative life table for most of the properties. The engineers in valuing a power plant or piece of apparatus took the life table only as a starting point. They studied the plant or apparatus, the state of the art and the surrounding conditions, and then reached their conclusion. He did not believe in an attempt to build a life table without necessary inspection and study when it was used.

Mr. Young said that it was very important that each company shall follow the recommendation of the committee and study the life of its physical property.

Charles Rufus Harte, Connecticut Company, said it should be remembered that, as pointed out by the committee, the life table was useful only as there was a very large and varied ground to cover. In the appraisals made for almost every purpose the law of averages did not operate. It was necessary to go into detail to ascertain just how a property had been maintained. Life insurance was based on life tables but there were different risks or classes. The larger the insurance of the individual, the more careful the investigation would be. In an appraisal for the purpose of getting a rough estimate of the property life tables could be used, but if the elements of value were to be taken seriously the appraisal must be an appraisal of fact and not what someone thought it would be.

Mr. McClellan said that a court or a commission would ask for the basis of the valuation of the detail.

Mr. Wallis, in closing the discussion, said that he was glad to find such strong support of the position of the committee from a speaker who had had experience from the standpoint of regulation. The engineers went into other and deeper matters, such as appreciation and the effect

of the use of preservatives and the subject afforded opportunity for a wide field of investigation.

The report of the committee on the life of railway physical property was accepted and filed.

This ended the joint session of the Engineering and the Accountants' Associations.

## THURSDAY SESSION OF TRANSPORTATION & TRAFFIC ASSOCIATION

The Thursday morning session of the Transportation & Traffic Association was called to order by President Stevens at 9:45 a. m.

### TRAINING OF TRANSPORTATION EMPLOYEES

The first order of business was the report of the committee on training of transportation employees. This report, which was published in abstract elsewhere in this issue, was read by Bruce Cameron, in the absence of C. B. Wells, chairman of the committee.

E. E. Strong, Rochester, explained why a dissenting comment had been added to the report. The reason was that a final report was not sent by the chairman until such time as it was absolutely necessary to send it to the secretary of the association. It therefore became necessary, on the question of paying learners, either to have no report at all or to handle it in the manner adopted. Mr. Strong then read a letter from the vice-chairman of the committee, C. E. Learned, Boston, who wrote that in the main he heartily agreed to the report as written, though with an exception as to learners' wage. As a matter of argument it was not proper to compare stenographers and bookkeepers with motormen and conductors. The former had opportunity in public or private schools to perfect themselves for given duties and could do so long before reaching the age of twenty-one, while men must of necessity reach that mature age before they are even eligible for railway positions. The absence of apprenticeship opportunity and the minimum age limit gave an entirely different aspect to the subject. As there was no other way open for instruction than the present and as the period necessary to qualify was a short one, it seems only just that the student platform man should receive a nominal wage during the breaking-in period. If it was possible to go into the open market and pick up at random men trained for the service, the question of paying learners would never arise. Location, working conditions, etc., were also important factors. To pay men when learning was of far more importance than that of minimum wage and just the opposite in effect. It tended to keep the new men at ease by the payment of a sum perhaps equal to their cost of living or, at least, their rent, thus encouraging them to give ample and proper time for instruction. The tendency of the minimum wage was to make men lazy, especially so when work fell to them that would net them little or nothing over their guarantee.

After reading this letter Mr. Strong expressed himself as agreeing with Mr. Learned that the paragraph on learners should not be in the accepted report.

C. S. Ching, Boston, also agreed with Mr. Learned. One question which had not been touched upon in any report so far was the necessity of training subordinate officials. They were seldom trained especially for the work and lacked sufficient knowledge of the company's policy both toward employees and public.

Upon motion Mr. Learned's letter was placed on file with the report.

N. W. Bolen, Newark, said that the committee had recognized the importance of training the supervisory officials, but the all-important subject of "personal interest" seemed to have been left out of the list—yet "personal interest" was the yeast that leavened the entire mass. There was much to learn from the principles of scientific management, but a

supervisory force made up of individuals thoroughly imbued with the spirit of personal interest in every platform man under their direction and trained in character study was worth infinitely more than a similar number of the best efficiency experts obtainable. He also took the same standpoint as Mr. Learned on the question of paying learners.

J. K. Choate, New York, did not agree with the exceptions made to the report of the committee, although there were isolated cases which made it necessary to pay the men while learning. When a man became a motorman he ought to go into it as a part of his lifework. It was wrong to adopt a policy which would attract a poorer class of applicants.

C. D. Enmons, South Bend, thought that the men would be likely to learn faster if they were not paid during the instruction period.

Mr. Bolen said that the custom of his company was to give the new men \$10 for their breaking-in time after they had been with the company for one year.

Nelson H. Brown, Buffalo, stated that the International Railway paid a learner \$1 a day, but the total of such payment to each man is deducted from whatever is due to him if he leaves within six months. Extra men receive a minimum of \$1.25 a day when they remain for twelve-hour periods, and all work performed after the twelve hours is paid for at the regular rate. The system has resulted in getting better men. Before it was inaugurated it was impossible to procure enough men to handle the rush-hour traffic.

F. A. Boutelle also took exception to the committee report on paying learners. In the territory where he had been for the last few years (Tacoma) he had found it almost impossible to get a sufficient number of men who had enough money to maintain them during a fifteen-day instruction period.

Referring to the training of subordinate officers, C. H. Coe, Newark, said that when a man on the Public Service Railway was promoted from conductor to inspector, for example, the candidate first had to take the regular motorman's course, with written and oral examinations. The conductors and supervisory force must also report at the school every thirty days to keep up to date on equipment standards and changes in regulations.

George D. Radcliffe, Cleveland, thought it was necessary to consider the personal character of a man more than the result of a formal examination. In selecting men for promotion he picked out those who seemed to be capable. These men were not examined but were put on as extras, possibly a dozen times, after which he could determine whether the candidate was capable of handling the higher job permanently.

E. E. Strong, Rochester, said that he made it a practice to pick a man as instructor first and then promote him to inspector, but sometimes an excellent instructor turned out a poor inspector because he was then on his own responsibility.

Upon motion of Mr. Ching, the report of the committee was adopted with a vote of thanks.

### CONSTRUCTION OF SCHEDULES AND TIMETABLES

The next order of business was the report of the committee on construction of schedules and timetables, which, in the absence of the chairman, John E. Duffy, was presented by Alexander Jackson, superintendent of timetables Public Service Railway. This report is published in abstract elsewhere in this issue. The brief discussion on this report was a cordial indorsement of its various features. Professor A. S. Richey, Worcester, pointed out, however, that the runs in the committee's table could not be carried out under the Massachusetts nine-hours-in-eleven law, which went into effect Jan. 1, 1913. J. V. Sullivan, Chicago, and M. C. Brush, Boston, expressed themselves in favor of the near-side stops on general principles. Upon motion the report of the committee was accepted with a vote of thanks.



## UNIFORM DEFINITIONS

M. C. Brush, chairman of the committee on railroad definitions, referred to the work which this and previous committees on the subject had done to date and said that his committee had found it impossible to cover as many definitions as it desired. He therefore suggested that, instead of reading the present report, the subject be postponed for another year, to be handled, not by the present committee but by a sub-committee to be appointed by the president. Upon motion the report was accepted with a vote of thanks and ordered filed. An abstract of this report will appear in Saturday's issue.

## PASSENGER TRAFFIC

The next order of business was the report of the committee on passenger traffic, which was read in part by J. E. Gibson, chairman. An abstract of this report is presented elsewhere in this issue.

In discussing the report F. D. Norviel, Anderson, referred to special cars. Most of the Indiana lines, he said, had no special car rate any more, although they do furnish special cars. His company had a car rate, which was based upon fifty or more passengers and on which it gave a reduction of a fare and a half for a round trip.

Mr. Norviel also said that he did not know of any traction line in the Central Electric Traffic Association territory that owns and operates bus lines in connection with its interurban service, but he did recall several independent bus lines operated to serve communities not touched by interurban lines. At some points these bus lines are operated in connection with the railway, through tickets being sold good on both the bus and electric lines. In this way the bus lines act as leaders and create traffic which would not otherwise come to the electric railway. On the subject of round-trip fares he stated that it was a problem which interurban lines had never been able to settle as yet. He said, however, that the round-trip fare is an excellent medium for inducing additional passenger traffic. In some instances where the same round trip fares in effect on steam roads have been adopted by electric roads it is necessary to increase the length of trains, making them from five to ten cars in length. As a rule, however, three or four car trains are of sufficient size to handle an excursion business, and it has been found that when trains of this size are run in competition with steam roads they were excellent business getters.

Mr. Norviel next took up the question of excursions and discussed the advisability of electric lines running them as well as the rates of fare to be charged for this last service. It had been his experience that the excursion business did not affect the regular business, but usually the regular passenger traffic for the same day is greater than for days when excursion trains were not operated. In connection with this subject he mentioned some recent excursion trips furnished by the Union Traction Company of Indiana to Niagara Falls, N. Y. Although these offered a rather long trip, they have been very popular. Undoubtedly these excursions have created new traffic and have been an excellent source of additional revenue. In closing, Mr. Norviel said that he believed parks operated in connection with interurban railways were a good thing, and even though the park itself was not a paying proposition the additional passenger traffic gained would more than offset this cost.

D. A. Hegarty, New Orleans, requested additional information on the question of free transportation of mail carriers. It appears that eight companies named in the report were transporting mail carriers free of charge.

In explanation of this J. E. Gibson stated that while only eight companies reported that they were transporting mail carriers free, the majority of companies were doing so under contract with the government.

Mr. Hegarty stated that one of his franchises required that mail carriers be transported free, and upon investigation it was found that they were doing about \$12,000 worth

of riding. This was taken up with the city council, which, after due consideration, eliminated the clause from the franchise. Following this action, the postmaster enjoined the railroad company from putting the clause in operation, and a later decision of the court upheld the action of the city council.

M. W. Glover, secretary and auditor Mobile (Ala.) Light & Railroad Company, stated that he had had some experience similar to Mr. Hegarty's in carrying mail carriers in the past, but upon investigation he found that as a result of serious objection to this practice on the part of the railway companies, the government is paying more for transportation than it did before.

M. C. Brush said that his company had made a contract with the post office department on a basis of six rides per day to letter carriers and furnished them with tickets at a fixed rate of \$5.50 per year, but only one transfer is allowed on each ticket.

J. E. Gibson, in discussing this subject further, stated that his company had recently compiled information concerning the laws of various states on the subject of free transportation. It found that the advent of the public service commission, which replaced the railroad commission, brought with it more stringent restrictions regarding the issuance of free transportation. The laws in all states are practically the same and permitted free transportation to be issued only to uniformed officers, policemen and firemen and members of the public service commission, their inspectors and the railway companies' own employees. In many instances it is now necessary to submit a request to issue charitable tickets to the public service commission. Upon motion the report of the committee was accepted and filed and a vote of thanks was tendered to the committee for its services.

## ADDRESS BY GENERAL HARRIES

President Stevens then introduced President Harries of the American Association, who in addressing the association commented on the quality of the reports submitted this year, saying that they were better than ever before. He also said that he believed that the joint sessions were exceedingly desirable as they gave all of the departments in the industry an opportunity to discuss subjects of mutual interest. They also gave all an excellent opportunity for acquiring information that is worth while. In closing he said: "If we can't get together, if we cannot work harmoniously in solving the problems we have before us, which means to improve in every way, to make more desirable electric railway service—and this is more desirable to accomplish than anything else in the world—if we can't be homogeneous—that is, have our faces in one direction and our elbows touching—what can we expect from the public?"

## SANITATION

President Stevens then introduced Dr. W. T. Rucker, assistant surgeon-general United States Bureau of Public Health, Washington, D. C. Dr. Rucker had very kindly volunteered to address the association on regulations on sanitation as relating to public carriers. Before beginning the reading of his paper Dr. Rucker stated that he desired to take up the question as it affected railway companies locally, but as the United States government did not have local jurisdiction, he was unable to handle the subject in this manner. In an endeavor to collect some of the laws regulating sanitation of carriers locally, however, he found he had an enormous task as there was a great body of law. Some of it appeared to be very just and very good and some of it seemed to be framed with the idea if you don't know what else to do you should kick the railway company. As a result of this endeavor his paper was confined to sanitary regulation of interstate carriers. He suggested, however, that a committee be appointed for the purpose of assembling a digest of the laws on sanitation affecting local railways,

and stated further that the surgeon-general, General Blue, had authorized him to say that if such a committee was appointed he would be very glad to co-operate with it in any way he could. Such a committee would have a magnificent opportunity to standardize what the railroad companies are required to do locally.

At the close of the reading of his paper a special vote of thanks was accorded to Dr. Rucker.

#### RESOLUTIONS

President Stevens then called for the next order of business, which included the report of the resolutions committee. J. N. Shannahan, chairman, read a resolution, and moved its adoption, which referred in the highest terms to the work of H. C. Donecker, the retiring secretary of this association. It also extended the gratitude of the association for the services he had performed for it and offered its best wishes for continued success in his new field. Upon motion, this resolution was adopted unanimously and Mr. Donecker thanked the association for its resolutions of praise and wishes for his future success.

The president next called for the report of the nominating committee, of which Mr. Shannahan was also appointed chairman. The report of this committee put in nomination the following officers, who were unanimously elected to office:

President, D. A. Hegarty, manager New Orleans Railway & Light Company, New Orleans, La.

First vice-president, M. C. Brush, second vice-president Boston Elevated Railway Company, Boston, Mass.

Second vice-president, H. A. Nicholl, general manager Union Traction Company of Indiana, Anderson, Ind.

Third vice-president, L. C. Bradley, assistant district manager Stone & Webster Companies, Texas district, Dallas, Tex.

Secretary and treasurer, E. B. Burritt, American Electric Railway Association.

Executive committee: J. K. Choate, of New York, N. Y., vice-president of J. G. White Management Corporation; Bruce Cameron, superintendent of transportation United Railways Company, St. Louis, Mo.; C. B. Wells, superintendent of transportation Denver City Tramway Company, Denver, Colo.; R. E. Danforth, general manager Public Service Railway Company, Newark, N. J.

Following the election, President Stevens requested Mr. Shannahan to conduct the new president to the chair. President Hegarty then thanked the association for the honor it had bestowed upon him and said that all he could ask of it was the same cordial support it had given his predecessors in office. Upon motion, a vote of thanks was extended to the retiring president, Dana Stevens, who said that he greatly appreciated the co-operation he had had during the past year, particularly the co-operation of the members of various committees. They had done much hard work and were greatly assisted by the other railway members in the work they had accomplished.

M. C. Brush, Boston, the newly elected first vice-president, was then invited to address the association and after a few remarks introduced the new secretary, Mr. Burritt.

Mr. Burritt said that he realized the work carried a very heavy responsibility, but he shouldered it with willingness and had the example before him of Mr. Donecker. In concluding he said he was deeply grateful for the honor of the election.

The meeting then adjourned.

The Manchester (Eng.) Tramways committee has decided to run the all-night service of cars in the city recommended by J. M. McElroy, general manager of the tramways department. The service will be continued until statistics can be compiled to ascertain whether the service should be made permanent.

## THURSDAY SESSION OF THE AMERICAN ASSOCIATION

President Harries called the last session of the American Association to order at 2:30 o'clock yesterday afternoon.

The first business was the report of the committee on company sections. This was presented by the chairman, C. N. Duffy, Milwaukee Electric Railway & Light Company. An abstract of the report is published elsewhere.

In the absence of E. C. Foster, chairman of the committee on gold medal, the report of this committee was read by the secretary. It stated that the medal, which was designed for presentation to the author of the best paper read before a company section during the year, had been awarded to C. N. Duffy.

Arthur M. Harris, of Harris, Forbes & Company, New York, then read a paper on "Electric Railway Securities from the Investor's Standpoint." An abstract of this paper is published elsewhere.

On motion of Charles N. Black, a vote of thanks was given to Mr. Harris for his paper.

Charles L. Henry, Indianapolis & Cincinnati Traction Company, chairman of the committee on constitution and by-laws, presented the report of that committee. An abstract of the report is published elsewhere. The report was received, approved and filed.

Mr. Henry then read the report of the committee on relations with sectional associations, of which he was the chairman. The report was accepted.

The reports of the committees on compensation for carrying United States mail and taxation matters were read by title.

Arthur W. Brady, Union Traction Company of Indiana, chairman of the committee on federal relations, read the report of that committee. An abstract is published elsewhere.

In the absence of W. J. Harvie, Hagerstown, Md., chairman of the committee on joint use of poles, the report of that committee was presented by Mr. Henry. An abstract of the report is published in this issue.

After presenting the report, Mr. Henry said he wanted to say for Mr. Harvie that the work had been very arduous. He was not as vitally interested in the matter as the other members, but had agreed to do what he could with the other members to help work the matter out. It was impossible to get any considerable number of men to agree on a subject of this kind. The ideas that were presented by the different members of the committee were so diverse from each other that it seemed in the beginning like a hopeless undertaking to try to agree, but after two years of work the committee agreed unanimously on the contract and specifications. The members did not do this with the idea that when their findings came before this association and other associations there would not be other and diverse opinions regarding them, and all he wanted to say for the committee was that, while these were its conclusions, the committee did not assume that it had been able in all cases to cover each condition in the exact way in which it should be covered.

In the opinion of Mr. Henry, the question ought to be settled, because it was a very live one in many parts of the country and the joint use of poles was becoming so much more common than in the past that it was important to come to an understanding regarding it. He therefore urged that if the report did not meet with the approval of the association it be amended so as to receive the approval of the association and be adopted in some form.

G. W. Palmer, Jr., Bay State Street Railway, made a detailed criticism of the report of the committee.

J. D. Mortimer, Milwaukee Electric Railway & Light Company, moved that in view of the importance of the subject the report be referred to the committee with instructions that the committee ascertain the sentiment of the association members with respect to the contract and the specifications

in the report at the mid-year convention. This motion was carried.

The report of the committee on cost of passenger transportation service was read by the secretary. An abstract of this report is published elsewhere.

President Harries said that the work which Mr. Mortimer and the committee had undertaken was probably the most important work with which the association had ever had anything to do.

Frank Hedley, Interborough Rapid Transit Company of New York, read a paper on "Present Tendencies of Public Utility Laws and Regulations." An abstract of this paper is published elsewhere in this issue.

C. L. S. Tingley, American Railways Company, then read his paper on the same subject as that assigned to Mr. Hedley.

Richard McCulloch, United Railways of St. Louis, who had the third paper on this subject, said that owing to the late hour and as the paper had already been printed and distributed he would submit it without reading.

William D. Kerr, New York, then read a paper on "A Model Utility Law." An abstract of this paper is published elsewhere.

H. C. Hockin, Mayor of Toronto, extended the association an invitation to hold its 1914 convention in that city. He assured ample hotel accommodations, all the necessary space for exhibits in the buildings at the permanent fair grounds and said that a hearty welcome awaited them.

The report of the committee on nominations was then presented, and the secretary was instructed to cast a ballot for the nominees, as follows: President, Charles N. Black, San Francisco, Cal.; first vice-president, C. Loomis Allen, Syracuse, N. Y.; second vice-president, Charles L. Henry, Indianapolis, Ind.; third vice-president, John A. Beeler, Denver, Colo.; fourth vice-president, L. S. Storrs, New Haven, Conn.

President-elect Black was escorted to the chair and said that it was with a great deal of pleasure that he accepted the honor of the presidency.

Retiring-president Harries renewed the expressions in his annual address and congratulated the new president on having for friends and supporters those who had been so loyal and helpful in every sense during his term of office.

President Black read a telegram from the Boston Chamber of Commerce, extending an invitation to the association to hold its convention next year in Boston.

A letter from W. Caryl Ely, extending greetings to the association, was read.

The secretary then read the report of the committee on resolutions and on motion these were adopted.

The resolutions mentioned those who have died during the year. They expressed thanks to the president, officers and committees for their work, and congratulations to Mr. Doncker and wishes for his future success and prosperity. The resolutions further gave credit to the Manufacturers' Association for the remarkable exhibit which added so materially to the benefits of the association and also extended thanks to the manufacturers for the arrangements made for meeting halls and co-operation in the work. The thanks of the association were also extended to the ELECTRIC RAILWAY JOURNAL and *Electric Traction* as well as the daily papers and the Associated Press for the fair and impartial manner in which the proceedings of the convention were handled by the press of the country.

The committee on recommendations in the president's address made a report suggesting the appointment of a committee on ways and means to devise and report a financial scheme for the support of the organization and especially calling the other suggestions in the president's annual address to the favorable attention of the incoming officers and executive committee for their consideration.

The association then adjourned.

## SPECIAL THURSDAY SESSION OF ENGINEERING ASSOCIATION

A special session of the Engineering Association was held on Thursday at 12:30 o'clock with President Schreiber in the chair.

### WAY MATTERS

The report of the committee on way matters was presented by J. M. Larned, chairman, who said that the committee had held one meeting of three sessions. It had used data collected by previous committees but had been able to close up three important matters. An abstract of its report is published elsewhere in this issue.

The discussion was opened by R. C. Cram, Brooklyn, who pointed out that a dimension in the 9-in. rail, covering the width of the web at its junction with the underside of the tram, might be shown more completely. It was given as  $\frac{1}{2}$  in., but there was considerable latitude as to its location. While in hearty accord with the committee in most recommendations he did not agree as to the thickness of the base of the rail. Steam railroads were increasing the thickness of their rail base and electric railways had even more reason to do so because of electrolytic action. However, he did not think this point was of sufficient importance to delay any longer the adoption of these rails as standard. With regard to the 7-in. grooved girder rail, he noted that the center dimension was lacking in the width of the deeper plate.

After some discussion on the joint plate specification, R. C. Cram referred to the paving data in the report. He said that special nose blocks, no matter of what character, were a delusion and a snare. In a very narrow street with a sufficient amount of team traffic following the rails it would pay any company, other conditions being equal, to use a grooved girder rail in preference to a T-rail. It was essential to gather life tables of different kinds of pavement under specified traffic conditions if a real knowledge of paving was wanted. He also thought that the committee could take up to advantage the use of high-grade steel bolts with bolted joint plates.

Charles H. Clark, Cleveland, said that it was very necessary properly to choose the kind of pavement used against T-rails. The nose-block was the material to use and then teams could not follow the rails.

Mr. Cram said that in New York the streets were so narrow that teamsters had become educated to believe that they had a right to use the track, and independent of the paving used this practice would be followed to a considerable extent.

Mr. Larned explained some of the reasons for the adoption of the dimensions of the standard rail. Some had criticised it as being too thin in the web, but if any company wished to increase the weight of the rail by increasing the web this could be done without making any change in the dimensions. The plan of the committee was to design one rail to meet average conditions rather than to design a series of rails, although this might be done later.

Upon motion of Mr. Harte, the report of the committee was accepted and a vote of thanks tendered to it for its work.

The meeting then adjourned.

## TOTAL REGISTRATION AT CLOSE OF FOURTH DAY

At the close of the fourth day of the convention at the registration booths of the Manufacturers' and railway associations Thursday 245 new names had been added to the list of those registered, which makes a total of 3085. The above additional registrations include twenty-six added to the total of the Manufacturers' Association and 220 to the railway associations. The new names added to the railway association registration undoubtedly include a large number of those who were compelled to remain at home in charge of operation during the first days of the convention while the heads of other departments were in attendance.

REPORT OF THE COMMITTEE ON TAXATION MATTERS\*

C. L. S. TINGLEY, CHAIRMAN

In May a data sheet was sent out through the members of the committee to practically every electric railway in the United States, and to the inquiries in it 259 replies have been received. Fifty-two companies report a tax on gross receipts, six on net receipts, nine on capital stock, three on bonds, 108 on the tangible property, and fifty a tax on the property as a whole. With regard to special taxes, 227 report a paving tax; fifty, car license; twenty-seven, pole license; seven, street sweeping; fifty-five, street sprinkling; thirty, a bridge tax, and forty-one, other forms of special taxation. Two report special franchise taxes and six report no taxation by the municipality or any other burdens.

An effort has also been made to ascertain the percentage of gross receipts paid in taxes of all kinds by electric railway companies in the several states, and it is found that the percentage ranges (ignoring Texas, where state tax alone is recorded) from 2 per cent in West Virginia to 11.11 per cent in Colorado.

Since the last report the United States government has issued Part IV of the Report of the Commissioner of Corporations on Taxation of Corporations, covering the Western Central States—Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Kansas and Missouri. To the letter of transmittal the commissioner observes:

"Taking the Western Central States as a whole, a noteworthy feature of their tax systems is that they depend in the main upon the general property tax and rely to a comparatively small extent upon special taxes from corporations, as compared with states in the three groups already studied. Minnesota is a notable exception, securing two-thirds of its revenue from special corporation taxes. . . . Of corporation taxes in these Western States, those from railroad companies are the most important, although insurance companies contribute largely to such taxes. . . ."

"Minnesota is perhaps the most interesting member of this group. A conspicuous feature of its tax system is the taxation of gross earnings of railroad and other public service corporations. The gross earnings method is here applied more extensively and yields a greater percentage of state revenue than in any other state thus far studied. It is regarded by the state as one of the most satisfactory features of its tax system. . . ."

"Only two of these Western Central States—Minnesota and Kansas—have permanent tax commissions whose members devote their entire time to taxation matters. In the remaining states the tax boards are composed of state officials who usually can devote but a fraction of their time to such duties. . . ."

Before taking up the discussion of the states in detail, the Bureau makes the following comment on the methods pursued by the various taxing bodies:

"It has been found in many states, among them some of the states covered by the present report, that the central official body which values railways for purposes of taxation has no system capable of statement. The officials take into account mileage, double trackage, sidetracks, cars, expenses, indebtedness, market value of shares, and so on, and in some way they combine these various elements and make up an opinion as to the railway's taxable value. Yet, so great is the difficulty of solving such a problem that they cannot explain how they solve it. The difficulty of the problem is perceptible enough, but it is equally clear that a solution—or, at least, an accurate solution—is not facilitated by approaching the problem without any rule. While the officials may have some rule in mind, in many instances they have not yet found a rule which is so satisfactory to them . . ."

\*Abstract of report read before the American Electric Railway Association at Atlantic City, N. J., Oct. 13-17, 1913.

as to be expediently stated as a final test of the fairness of their results. There is no occasion for commenting unfavorably upon the failure to announce a rule not yet fully existent nor upon the delay in finding a rule that is satisfactory. The difficulties of the case are an adequate defense. Yet what is very important is to notice that as yet there is no exact rule, that there must be one some day, and that the rule, when adopted, should be made public. Here is a place where publicity is the best and, indeed, the only guard against inaccuracy, unfairness and suspicion."

In view of the small percentage of replies to the data sheet received and the evident misapprehension under which some of them have been given, it does not seem to the committee to be advisable to tabulate and publish the statistics gathered with respect to municipal taxation. The data, however, are on file in the secretary's office and are available for study by the member companies.

A table in this report gives a very interesting analysis of the state tax of the states so far studied by the bureau and to which reference has been heretofore made in the reports of this committee. This is appended.

PERCENTAGE OF TOTAL STATE TAXES, AS DISTINGUISHED FROM LOCAL TAXES, CONTRIBUTED BY CERTAIN SPECIFIED SOURCES OF TAXATION FOR 1910:

States	Corporation Tax	General Property Tax	Inheritance Tax	Liquor Tax	Miscellaneous Tax Receipts	Total State Taxes
<b>New England Group:</b>						
Maine . . . . .	54	34	6	5	1	100
New Hampshire . . . . .	39	47	9	5	5	100
Vermont . . . . .	82	..	8	5	5	100
Massachusetts . . . . .	41	41	12	6	..	100
Rhode Island . . . . .	46	41	..	8	5	100
Connecticut . . . . .	71	9	9	..	11	100
<b>Middle Atlantic Group:</b>						
New York . . . . .	29	..	23	27	*21	100
New Jersey . . . . .	91	..	8	..	1	100
Pennsylvania . . . . .	71	5	7	7	10	100
Delaware . . . . .	67	..	1	..	32	100
Maryland . . . . .	33	34	8	12	13	100
District of Columbia . . . . .	*16	74	..	8	2	100
<b>Eastern Central Group:</b>						
Ohio . . . . .	*54	25	..	20	1	100
Indiana . . . . .	*19	81	..	..	..	100
Illinois . . . . .	*34	58	6	..	2	100
Michigan . . . . .	45	52	2	..	1	100
Wisconsin . . . . .	71	22	5	..	2	100
<b>Western Central Group:</b>						
Minnesota . . . . .	66	27	6	1	..	100
North Dakota . . . . .	*24	76	..	..	..	100
South Dakota . . . . .	*18	81	..	..	1	100
Iowa . . . . .	*26	62	7	..	5	100
Nebraska . . . . .	*25	74	..	..	1	100
Kansas . . . . .	*31	69	..	..	..	100
Missouri . . . . .	*20	43	6	30	1	100

\*Includes state's share of general property tax collected locally from certain corporations. (See table of financial results under each state.) With the exception of the District of Columbia, as previously noted, it is impossible, practically, to ascertain or estimate from the information available the amount thus received from corporations in the states included in this table.

YESTERDAY AFTERNOON'S DANCING CLASS

A very enjoyable dance, which really was a dancing class instructed by Miss Judson and Mr. Chidsey, who have been giving exhibitions at all of the dances during convention week, was held at the Shelburne yesterday afternoon. Although the students were really post-graduates they found during the lesson that there was much in the art of dancing which could be learned from their expert teachers, and in consequence the afternoon was not only pleasantly but profitably spent.

Among those present were Mr. and Mrs. H. C. McConaughy, Mr. and Mrs. W. L. Wright, Mr. and Mrs. S. K. Colby, Mr. and Mrs. Robert Radford, Mr. and Mrs. William P. Hunt, Jr., John C. Jay, Jr., Mr. and Mrs. M. T. Kirschke, Jr., W. F. Corry, Thomas Blagden, the Misses Hedley and R. W. Read.

The dancing class was an impromptu affair and unfortunately the attendance was limited owing to the short notice. Owing to the success of the affair, however, it is expected that these little gatherings will be made a feature of future conventions.

## REPORT OF THE COMMITTEE ON CONSTRUCTION OF SCHEDULES AND TIMETABLES\*

J. E. DUFFY, CHAIRMAN; C. E. MORGAN, T. F. GROVER, ALEXANDER JACKSON, E. J. DICKSON, J. J. DEMPSEY

It is, of course, an easy matter to obtain statistics on car mileage, short trips, lost trips and time of trainmen where the operation does not vary from normal and where cars make, without delay or interruption, those trips which are called for on the timetable within the time there set forth. Turn-backs and lost trips, however, are of more or less frequent occurrence, and each happening of this sort requires, in order that records may duly set forth actual operation, a statement of the variance from the standard established by the timetable. Investigation shows that in almost every case the trainmen, generally the conductor, are held responsible for making these reports, these being supplemented, of course, by additional reports from inspectors or others who personally observe or are acquainted by the conductor with the facts. The checking of cars passing a given point is carried on by stationmasters or inspectors in many cases, but this method, of course, does not provide information of short trips at points other than those in the vicinity where such observer happens to be placed.

The above relates to city operation, the dispatching system on interurban lines generally taking care of this matter for that class of service. The trainman in city service is either requested to place this information on the back of his trip card or he is provided with a special form of report. There seems to be no accepted standard as to the checking of these reports, some companies requiring the station or depot master to do the work, others the superintendent of transportation, some the managers, and still others having the checking done directly by the auditing department, evidently without intermediate check by the transportation department. Only one company reports the use of a dispatching system whereby each car reports at the conclusion of each half trip to a dispatcher centrally located. This, of course, provides an absolute check.

The committee is not prepared to make a recommendation as to the proper method, but in view of the fact that it is essential that the operating companies know the exact operation of each of their cars, to the end that they may, wherever possible, make the complete trips called for on the timetables and in this way insure to their patrons the full service which the timetables have provided, and as well that the operating companies have accurate information as to the terms of service of their trainmen, it is suggested that the topic be again considered.

### TRAFFIC STATISTICS

Investigation developed the following methods employed by companies to ascertain the service required to take care properly of traffic offered:

- (a) Personal observation by the superintendent, supervisor or inspector in charge of the line.
- (b) Reports by conductors upon printed slips provided them and calling for information as to the number of passengers on the cars at a designated street which is the point of maximum load. These slips are turned in with the day card after completion of work and are subsequently compiled at the carhouse or in the general office of the company.
- (c) Information obtained from the day cards, the plan usually followed by the smaller companies.
- (d) The employment of young men, known as "car timers," stationed at designated points.

The committee does not feel that plan "a" is satisfactory,

for the reason that it does not provide records for future reference. As to plan "b," while a few companies appear to have had some success with it, the committee feels that better results will be obtained by having this work performed by employees other than the trainmen in charge of the car. Undoubtedly, however, on the smaller lines the practice of having conductors provide the information will be found useful. The committee would recommend, however, for these smaller sized companies that a competent motorman, conductor or other transportation employee be properly instructed so that he will be available, when necessary, to obtain proper records and develop these for use as reference or in cases of complaints regarding service.

As to plan "c," tabulations from day cards will always be found more or less helpful, but they do not provide statistics of intermediate conditions, through riding between terminal points, etc. The committee would therefore recommend, particularly for the larger companies, the employment of young men who may be designated as "car timers," "traffic checkers," etc., to obtain, tabulate and compile information concerning operating conditions. One of the larger operating companies has in its employ fifteen young men who are assigned by the transportation department to various points on the lines where record is taken of the number of passengers on each car.

As one of his duties and to determine the adequacy of short line service, the "car timer" should check through cars at the point where short line car turns back, such record to show the car number, the time and the number of passengers, also the number of passengers arriving and leaving on the short line cars. During the time this check is being made, a second "car timer" should be stationed at the point of peak load, and his record should show car number, time and passengers on board. When these records are tabulated in the form of a chart showing the time of arrival of cars and the load on each one the amount of the business between points of check may be seen, as well as the actual conditions at points on the lines where record is taken of the number of line service will also be shown.

### TIMEKEEPING

The methods of keeping time of trainmen vary greatly. Some companies report that they allow the trainmen to pay themselves, others that their time sheets are made up from the report of the dispatcher, while other companies have time sheets made up upon which the men sign for the number of hours made during the day, this being checked up by the dispatcher or by the station foreman against the timetable.

The committee feels that this is a very important question and one that should be standardized, if possible, because of the large expenditure involved in the pay for platform time. We would recommend as the best method the practice of posting sheets for each separate division made out by the station foreman, upon which are shown the number of hours of each individual run, both for motorman and conductor, and extra sheets made out for extra runs, time that crews leave the station to be marked upon these sheets by the timekeeper or station foreman, and time marked up upon the return of crews to the carhouse by same officials. These sheets should then be turned over to the timekeeping department, which should check the same against the timetables, the extra trips being approved by the station foreman and superintendent of transportation or division superintendent. These sheets should also show any allowances made for reporting time or "deadhead" time from station to point of relief and all other allowances made by the companies, these to be approved by some person in authority in the transportation department. Timekeeping should be done by a representative of the auditing department, but the information shown by the methods outlined above should be under the direction of the transportation department, however.

\*Abstract of report read before the American Electric Railway Transportation & Traffic Association, at Atlantic City, N. J., Oct. 13-17, 1913.

## NEAR-SIDE STOPS

The investigation conducted by the committee upon the subject of the near-side stop has developed many interesting facts, chief among which seems to be the growing tendency toward the plan. The tabulation of replies shows practically an equal division in more than 110 operating companies, with the advantage slightly against the far-side operation. It is, of course, understood that there has been more or less legislation on this subject, much of it requiring the institution of the near-side stop, especially in the business or congested sections. However, the inquiry as to whether the plan was required by ordinance or was optional with the companies shows in the majority of cases that the companies have elected of their own accord to institute the near-side plan. In some few instances where ordinances are in effect the companies have noted that the same was enacted at the request of the companies.

The committee made inquiry as to the type of car used, and again an equal division as between the prepayment and ordinary types leads to the conclusion that the type of car has not been a determining factor.

Inquiry was made as to the effect of the near-side operation on the maintenance of schedules, and in almost every case where answer was given and there had been any noticeable results favorable reply has been made; in other words, the near-side operation has enabled the operating companies to maintain their schedules better. One point brought out most forcibly is that of its effect as to accidents, nearly 50 per cent of the companies operating "near-side" claiming that there has been a decrease, in some cases as high as a 50 per cent reduction being named. The companies having experience with it are also a unit in the recommendation of the near-side stop as against the far-side, objections generally being on account of unpaved streets. In a few isolated cases the statement is made that headways have been disturbed by crossing vehicles. The committee endeavored to ascertain the steps taken by companies to advertise properly change in stops and finds that in only a few cases did the new plan become effective without considerable advance notice to the public. Newspaper advertisements—display form—seemed to be the most popular plan, being carried for from five days to two weeks in advance of the date set for the institution of the change. Posters on the dashers and windows of the cars, notices in boxes within the cars and pasteboard cards hung within the cars were some other methods used. One company painted the line poles white to indicate where car would stop, while another company sent cautionary letters to owners of automobiles and wagons.

Summing up the expressed opinions of different railways pro and con, a few of the advantages claimed for the near-side stop are reduction in the number of stops, less interference with schedules, decreased power consumption and decrease in number of accidents. The committee desires heartily to indorse the near-side stop and to recommend its adoption by the members of the association.

## TIMETABLES

The desirability of standardizing all forms of schedules and timetables is obvious. Previous committees have recommended a standard form of interurban working timetables, and the committee desires now to recommend as a standard a form of timetable for city operation in which each car is followed without confusion throughout the entire day or entire length of service, the times of arrival and departure being entered along horizontal lines and the run numbers shown in large figures at each change of the car crews. The members of each crew can there see at a glance what run they relieve and by what run they are relieved. In a line with only two terminals the trips follow in sequence, and the headway can be followed without trouble. It is also possible with companies tabulating individual mileage to show the standard car mileage schedules to be made by each car for the entire day.

The committee concurs in the thought expressed by previous committees that no rules should be shown on interurban or other timetables, for the reason that their inclusion would tend to minimize the importance of other rules not so shown. The committee would recommend, however, the desirability of showing on timetables the speed limits in the different cities and towns, the names of company physicians in the different cities and towns and their addresses and telephone numbers, the location of telephone boxes on the line in question, the designating points where trainmen will report to dispatcher, designating point where trainmen will register their trains in or out.

## TRAFFIC

The committee has collected a comprehensive file of traffic ordinances in force in the various cities of the country, and these are available for the use of member companies on application to the secretary of the association.

A collection of detention and delay reports in use by member companies of the association has also been made by the committee, and these may be inspected at any time by applying to the association headquarters. In the time allowed it has not been possible to develop and recommend a standard form and the committee would therefore suggest that this subject be continued another year.

The results of an inquiry show many practices in the matter of destination signs. A tabulation of replies shows that the number of companies using colored lights or disks is three, perforated and illuminated deck signs, twenty-one; roller cloth signs, fifty-one; numbers or letters, two; sheet-iron reversible signs, four; glass vestibule signs, six; metal dash signs, sixteen, and four-sided deck signs, two. In view of recent developments in the signing of cars, the use of numbers for route designations, etc., your committee feels that this subject should be continued and that special attention be given to it during the coming year.

In conclusion the committee believes that no company, large or small, can afford to be without the service of men, or a man, whose duty shall be the study of traffic and the preparation of schedules that will meet the conditions adequately and economically. It therefore recommends a thorough study of the reports on schedules and timetables for 1910, 1911 and 1912 and the application of the recommendations contained therein.

## FINALS IN GOLF TOURNAMENT YESTERDAY

A large number of post entries were received in yesterday's finals for the golf tournament, bringing the total number of stick wielders up to fifty-two. The large field naturally caused a great deal of excitement over the day's play and the interest was heightened by the fact that the play was exceedingly close, owing to the excellence of the work done by the handicappers.

In the eighteen-hole medal play handicap W. L. Conwell and R. H. Gwaltney were tied for first place in class A with net scores of 83 each, and in class B B. E. Bramble and H. C. Small were tied for first place with scores of 78. F. M. Nellis won the first prize in class C with a net score of 68, and L. F. Braine was runner-up in this class with a net score of 81. The ties for the first prizes in classes A and B were settled by drawing lots last night. The winner of the draw was J. H. Sisson.

In the blind handicap no less than nine men were tied for first place with scores of 84 based on self-selected handicaps. These fortunate players were Frank Hedley, J. H. Sisson, W. O. Wood, L. A. Wilson, N. M. Garland, C. R. Ellicott, W. L. Conwell, G. B. Dobbins and F. E. Donohoe. They also drew lots last night for the single prize which had been offered for this contest.

The prizes for both contests were formally presented at the promenade concert and ball which took place last night.

**REPORT OF THE COMMITTEE ON PASSENGER TRAFFIC\***

J. E. GIBSON, CHAIRMAN; J. L. ADAMS, S. W. GREENLAND, W. S. WHITNEY, J. A. CLEVELAND, E. E. SOULES

The subject of factory closing hours was considered by the 1912 committee and recommended to be continued this year, but since there seems to be very little interest in this matter the committee does not feel that at the present time the subject should be continued. From the replies of fifty-eight companies, it was found that fifty-three companies have made no efforts during the past year toward a possible extension of peak hours by arrangements with factories, mills, etc., for closing at different hours. In Rochester, N. Y., it is stated that the various manufacturing companies are co-operating with the railway company with the best results to both. In Kansas City, Mo., it is stated that perhaps their largest industries are stockyards and packing houses, employing about 35,000 persons, and in this case the rush-hour problem and peak load is somewhat lessened by the fact that these selections are served by from three to six lines where extra cars are put in operation at closing hours. They have conducted a trial, however, with Montgomery, Ward & Company, employing from 2000 to 2500 people, in furnishing cars for employees of that company at the various hours of closing. The company agreed to make the hours of closing 5:50, 5:55 and 6 p. m., dividing the force in practically three equal parts. Later the time was changed to 5:10, 5:15 and 5:20 p. m. Extra service was placed on the lines by the railway company to meet these conditions, and the result was most pleasing to the employees and managements of the companies concerned.

In answer to the question of whether such a plan is feasible or possible, the majority of the companies replied that it is not, and especially as applied to their local conditions. This feeling was stronger among the interurban and smaller companies than with the companies serving populations of 100,000 or more, quite a number of whom thought such a plan would be of benefit, although no efforts had been extended in that direction.

**INDUSTRIAL DEVELOPMENT**

In many localities street railway companies have found it to be of mutual advantage to the manufacturer and to themselves to co-operate with the local board of trade, to the end that the street railway company may have knowledge of contemplated factory sites. In other places, particularly along the Pacific Coast, the managements of interurban lines have purchased tracts of land along their right-of-way. This land is disposed of from time to time for factory sites, seaside residences and amusement and public parks. This policy, in the years to come, will doubtless yield the transportation companies an increased revenue, not only from the advanced valuation of the land but also from increased transportation.

**SPECIAL-CAR TARIFFS**

From the reports of committees in past years there appears to be the greatest diversity in the charges and conditions governing the special or chartered car service. There are two points, however, that appear to be in common on nearly all roads—the use of regular equipment and payment in advance—either one or both of which may be resultant from past unprofitable experience. While there seems to be no uniformity in charge, yet a tendency is noted toward the basis of \$3 to \$5 per hour, after which time the charges vary.

The practice of the Illinois Traction System is given herewith, to show the result of exhaustive investigation of this question by this company. The rates applying via this line are 80 cents per car mile one-way movement, with a mini-

mum of \$15 per car, maximum fifty people, with the same proportional rate in excess of fifty people; 65 cents per car mile on a round trip movement, with a minimum of \$25, with the same restrictions as to the maximum number of people. For a chartered trailer attached to regular train, one-way movement, 75 cents per car mile, minimum \$15; for return movement on regular train, 60 cents per mile, minimum \$25—maximum, fifty people in each case, with proportional rate in excess of the maximum number of people.

**PASSENGERS RIDING IN FRONT VESTIBULES OF CLOSED CARS**

The recommendation of the committee is that passengers should be permitted to ride in the front vestibule of closed cars. The main objections to such a rule are found to be the accident risk and distraction of the motorman's attention. The former has been greatly minimized by the use of steel cars, stronger under-framing and body structure, anti-climbers and the standardization of types and heights of platforms. In connection with this question should be mentioned the difficulty of enforcing at all times the order prohibiting riding on the front platform. In 1909 the Pennsylvania State Railroad Commission drafted a rule against permitting passengers to ride on the front platforms of cars. In the early part of 1910 the Philadelphia Rapid Transit Company stated that during the afternoon rush hour it was impossible to enforce the order without employment of physical force, and it would require the assistance of the police forcibly to remove passengers. In September, 1912, the Chicago City Railway issued a folder stating that on near-side cars passengers were not permitted to remain upon the platform, but from investigations it was found that this rule cannot be or is not adhered to during the rush-hour travel, platforms being filled to capacity during such times.

On the other hand, many companies are realizing the value of the space for passengers, as well as the use of passengers as witnesses to accidents. During 1910 the prepayment cars of the Metropolitan Street Railway Company, New York, and the Third Avenue Railroad, were provided with folding seats on platforms in order to secure as much seating capacity as possible. The latest Pittsburgh cars at that time had no front platform. The new near-side cars in use in Chicago, Buffalo and Philadelphia would tend to show the ancient prejudice against having passengers on the front platform is being overcome. This is also true of the type of cars now being placed in use on the New York Railways, Pittsburgh Railways, Brooklyn Rapid Transit, United Railroads of San Francisco, vestibuleless type in Kansas City, where seating capacity has been increased 10 per cent, and various other companies.

The following figures are given by the claim department of a large urban property in regard to the number of passengers injured while riding in front vestibule of cars in collision accidents during the months of October, November and December, 1912:

Month	No. of Collisions	Passengers Injured
October .....	26	3
November .....	32	2
December .....	32	0
Totals .....	90	5

This same company reports that a very large percentage of witness statements of passengers in front vestibule are favorable to the company, and the information obtained therefrom is most valuable.

**FREE TRANSPORTATION**

It is found that the question of free transportation is governed quite largely either by franchises or state laws, and these have recognized to a large extent local conditions in cities and in states. Information was requested from 217 companies and replies received from nearly all, on all questions. Of the total number of replies, 177 companies issue transportation to all employees, thirty-eight companies issue

\*Abstract of report read before the American Electric Railway Transportation & Traffic Association, at Atlantic City, N. J., Oct. 13-17, 1913.

transportation to a portion of their employees. Free transportation issued by the larger companies is limited in a majority of cases to trainmen, trackmen, officers and operating officials. It appears to be the general policy of the smaller companies to issue transportation of some form to all employees. It seems to be general practice to allow the use of badge or uniform for transportation of trainmen. Other employees are furnished with tickets, card passes, coupon books or limited trip books.

In regard to transportation furnished employees' families, 104 companies report that they supply transportation to families of certain employees, while 106 companies report that they do not issue transportation to families. A large percentage of the companies replying in the affirmative are interurbans. Out of thirty of the largest companies from which information was received, twenty-five do not issue transportation to employees' families; four issue transportation to employees' families, and one company reports issuing transportation to employees' families on interurban lines and no transportation to employees' families on city lines. The general form of this transportation is in trip passes or limited number of coupons, and in a number of cases such transportation is issued only on request.

Out of 217 companies making replies to the question of free transportation to outside parties, sixty companies issue transportation to police, forty-eight to firemen, forty-five to public officials, twenty-eight to employees of other roads, twenty to charity, seventeen to the press, eight to mail carriers, fourteen miscellaneous, and eighteen companies issue no free transportation to non-employees. A decided tendency is noted toward discontinuance of all such free transportation. It seems to be the general custom to allow free transportation of police and firemen, either in full uniform or upon presentation of badge.

Very few companies replied to the question regarding the restrictions of granting free transportation to other than employees, as to whether such regulations are voluntary or otherwise, but from replies received in the majority of cases this matter appears to be regulated by franchises and state laws. There is a decided tendency in many states toward the regulation of issuance of free transportation along with that of rates and service rendered by public utilities. As an appendix to the report of this committee there was submitted a classification of state laws.

#### PARKS

Out of fifty-six companies submitting replies on the subject of park business the committee found the number operating parks at the present time equal to the number which do not, and of the companies now operating one-half feel that the returns do not justify the investment.

#### REDUCED FARES FOR THE ROUND TRIP

In the majority of cases a reduction on the round trip fare is allowed on electric railways. Several years ago the steam roads allowed apparently the same reduction as is now given by most electric lines. The steam roads have, however, recognized the necessity of increased rates of fare and as this is one of the easiest and most profitable means of increasing their earnings, this change was made and it has been proved, so far as they are concerned, that it is not necessary to make this reduction in order to stimulate traffic.

It has been found that the one great objection to the doing away with this reduction is that there would not be any inducement to purchase tickets and, as a result, an additional temptation would be placed in the way of the conductor on account of a greater amount of cash passing through his hands; this is no doubt true, but it has been proved in several cases that a dishonest conductor can manipulate tickets almost as easily as by the straight "knock-down" of cash.

Another interesting feature has been brought out in the investigation of this subject, and that is that there seems to be a general movement on foot among the various member

companies to do away with the reduction on round trip fares. There have been several changes of this kind made within the past few months, and it is reported by these companies that a very material increase in earnings has been shown, the argument having been put forth by these companies that in consideration of the frequent and convenient service furnished by the interurban lines, it is not necessary to give an additional inducement in the way of a reduction of fares.

Most roads, it is found, do not make any reduction in one-way tickets. In other words, most roads are charging the maximum 2 cents per mile cash fare on their cars, making no reduction on their one-way tickets. Reductions are given in most cases for commutation tickets and mileage books. This practice is pretty general, or, indeed, is almost universal where roads charge 2 cents per mile. There are a few roads charging less than 2 cents per mile which do not give any reduction. However, in almost all cases where an excess cash fare is charged over the one-way ticket fare, the tickets sold amount to about 90 per cent of the total one-way fares.

#### APPENDIX

The report of the committee was accompanied by an appendix giving the federal law and the laws of the several states on the subject of reduced fares, passes, etc.

### PRESENT TENDENCY OF PUBLIC UTILITY LAWS AND REGULATIONS \*

BY C. L. S. TINGLEY, SECOND VICE PRESIDENT AMERICAN RAILWAYS COMPANY.

Until 1907 the legislation on this subject was chiefly aimed at the steam carriers and it was only as time went on that other public utilities were brought within the purview of the statutes and the commissions. To-day, however, the commission, under its various titles of railroad commission, public service commission, public utilities commission, or corporation commission, is practically universal throughout the United States.

During the past two years a number of states have passed legislation which may possibly guide us in determining what is the present trend of the public and legislative mind along these lines. Connecticut, for example, has changed its Railroad Commission into a Public Utilities Commission with broad powers. In the little state of Delaware, while there is no commission with general jurisdiction throughout the state, one has been created for the city of Wilmington, the only municipality of any great moment within the State, with wide jurisdiction over utilities therein. Congress on March 4, 1913, passed a broad utilities act for the District of Columbia with large powers of inquisition and supervision, having jurisdiction over account, records, stocks and bonds. Florida has greatly enlarged the powers of her Railroad Commission during the present year. Illinois has abolished its Railroad & Warehouse Commission, during the current year, and substituted therefor a Public Utilities Commission with broad powers.

[Mr. Tingley's paper gave extensive extracts from laws, decisions, articles and addresses bearing on the subject of regulation.—Eds.]

Rules have been issued by the Public Service Commission of West Virginia for the guidance of companies which desire a permit to develop hydroelectric power. The rules are designed to make companies show that they are not seeking the permit for speculative purposes or to monopolize the power of streams. The companies are required to give full information in reference to physical matters incident to construction work and also in regard to their financial resources.

\*Abstract of a paper read before the American Electric Railway Association, Atlantic City, N. J., Oct. 13 to 17, 1913.

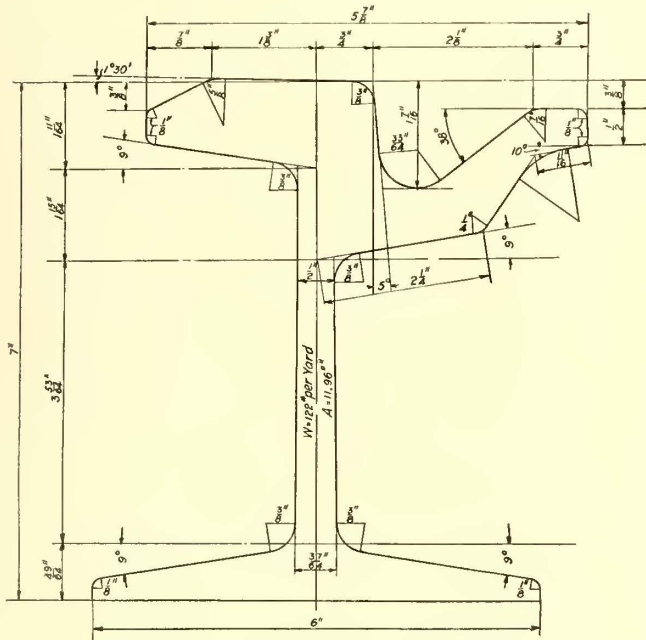


**REPORT OF THE COMMITTEE ON WAY MATTERS\***

J. M. LARNED, CHAIRMAN; C. S. KIMBALL, H. F. MERKER, E. P. ROUNDEY, C. H. CLARK, E. H. BERRY, C. W. GENNETT, JR., R. F. KELKER, JR., J. D. EVANS

It has been the aim of the committee to obtain information regarding modern rail fastenings used on track, where the heaviest types of electric locomotives are operated and where the traffic is fast and frequent. In the New York Central & Hudson River Railroad Company's electric zone 100-lb. rails are used exclusively, the joint plates consisting of 36-in. angle bars with six 7/8-in. bolts 4 3/8 in. long. Two shoulder tie plates are used on every tie, on both tangents and curves, four track spikes being used with every tie plate. The spikes are standard, 5 1/2 in. by 5/8 in., of both the chisel and Goldie types, and the plates are at least 3/8 in. thick

On the New York, New Haven & Hartford Railroad Company's electric zone the rails are 6 in. high and weigh 100 lb. to the yard. The joint fastenings consist of four-hole angle bars 24 in. long with four 7/8-in. standard track bolts,



Section of 7-in. Girder-Grooved Rail

4 3/4 in. long. Two shoulder tie plates are used on every tie, both on tangents and curves, and four 7/8-in. screw spikes are used with each tie plate on curves and two screw spikes on tangents. It was formerly the practice of this road to use rail braces on curves, but at the present time no rail braces are used, the shoulder tie plate serving to take their place.

From the above descriptions it will be seen that these companies are providing against excessive mechanical wear of their ties in the electric zones and have doubled the number of spikes per tie to guard against spreading track, it being generally conceded that the electric locomotive with its lower center of gravity exerts a greater outward pressure on the rails than the steam locomotive.

**SPECIFICATIONS FOR SPLICE BARS**

The committee had several meetings with a committee of the American Society for Testing Materials, but cannot recommend any of these specifications for girder-rail work, as in the matter of tolerance a vertical camber is permitted in the center 1/16 in. high in 24 in., and it is not specified that if there is any variation from the straight line in a

horizontal plane it shall be such as to make the bars engage the rail first at the juncture of the rail ends. The committee believes that the permissible vertical camber should not exceed 1/32 in. in 24 in., high in the center, and that it is essential, if there should be any variation from a straight line in a horizontal plane, that it should be such as to engage the rails first at their ends where the greatest wear takes place and an accurate fit is of prime importance.

The committee, therefore, presents specifications covering two grades of steel for girder rail splice bars, one moderately soft which may be used in the various patented joints now in use, as well as with the softer grades of steel rail, and the other quite hard and more suitable for use with the high-carbon rails which are rapidly coming into such general demand.

**SPECIFICATIONS FOR GIRDER-GROOVED AND GIRDER-GUARD RAILS**

The committee submits new designs for 7-in. and 9-in. girder-grooved and girder-guard rails which differ in some respects from those submitted by the committees of 1911 and 1912. The principal changes in the 9-in. girder-grooved rail included a decrease in weight from 140 lb. per yard to 134 lb. per yard; lowering the under surface of the tram at the fishing surface 3/16 in. and at the same time deepening the groove 1/16 in., thereby increasing the thickness of the tram 1/8 in.; increasing the radius of top fillet at gage side of head from 1/4 in. to 3/8 in. to reduce the flow of metal over the side, and to reduce the wear on the fillet of the wheel flange; decreasing the thickness of the web at the base from 3/4 in. to 5/8 in. principally to effect reduction in weight; decreasing the thickness and width of base principally to effect a reduction in weight, as in any event a rail having a 6 1/2 in. base would require tie plates on wooden ties under heavy service; changing the fishing angle from 10 deg. to 9 deg. to enable the proposed section to fish with certain other sections now being rolled. The 7-in. girder-grooved rail has been designed along the same lines as the 9-in. rail, the width of base not being affected by the depth in respect to wear upon it and upon the structure immediately supporting it.

In the 7-in. and 9-in. girder-guard rails the slope at the guard side of the groove conforms practically to that required for a standard wheel flange with a 6-ft. wheelbase upon a curve of from 40-ft. to 50-ft. radius. The width of the groove has been changed from 1 9/16 in. to 1 11/16 in. There will, therefore, be less widening of groove required upon sharp radius curves. This width will pass an M.C.B. wheel flange with very little alteration, if any, on curves of 125-ft. radius and upward. Guard rails L.S.Co. 441 and P.S.Co. 283 conform very closely with the proposed standard 9-in. guard rail and fish exactly with it, as also with the proposed standard groove rail, and either may acceptably be substituted for the standard, so that mills would not be required to carry in stock standard 9-in. guard rails until such time as the increased use of the straight line rail developed that necessity.

The committee also presented designs for joint plates for 7-in. and 9-in. girder-grooved and girder-guard rail which, however, did not include size or spacing of bolts or their accuracy of fit. These were submitted as recommended practice.

**APPENDICES**

Accompanying the report as Appendices A, B and C were specifications for splice bars for girders and high T-rails, revised specifications for open-hearth steel girder and high T-rails, and a brief discussion on the use of T-rail in paved streets.

**RECOMMENDATIONS OF THE COMMITTEE**

The following were recommended by the committee on way matters for adoption as standard:

- Nine-inch girder-grooved rail.
- Nine-inch girder-guard rail.
- Seven-inch girder-grooved rail.
- Seven-inch girder-guard rail.

\*Abstract of a report read before the American Electric Railway Engineering Association, at Atlantic City, N. J., Oct. 13-17, 1913.

The following were submitted for adoption as recommended practice by the association:

Specification for splice bars.

Revised specification for open-hearth girder and high T-rails.

Design for joint plates for 9-in. girder rails.

Design for joint plates for 7-in. girder.

All of these above recommendations were approved by the committee on standards with the understanding that the new designs and specifications should supersede previous ones adopted as recommended practice of the association.

## REPORT OF THE JOINT COMMITTEE ON ENGINEERING ACCOUNTING\*

BY F. B. LASHER AND J. H. HANNA, CO-CHAIRMEN; J. A. M'GOWAN, H. H. ADAMS, J. M. JOEL, E. O. ACKERMAN, J. C. COLLINS, JOHN SIBBALD, M. W. GLOVER AND GEORGE WESTON

Of the sixteen replies received from the letters sent out three companies made interdepartmental and overhead charges, and they varied in amounts from 10 per cent to 110 per cent.

It appears that the companies deemed it inadvisable to make overhead charges for interdepartmental transactions, and in the opinion of the committee this is a matter which must, in each case, be governed by local conditions and the committee does not feel justified in making any recommendations.

With regard to the matter of covering overhead expenses on construction work done by companies, the committee is of the opinion that some definite means or rules for arriving at such charges should be determined. The matter is, however, under consideration by a special committee of the Accountants' Association.

### COST ACCOUNTING

In connection with a detail system of cost accounting on an electric railway property the following elements are essential:

A detail system of cost accounting must necessarily vary in detail to suit the conditions of the property to which it is applied. There are, however, certain underlying principles which must be recognized in the establishment. The use of any such system of accounting must be common to all properties, and to be of direct practical benefit the system must possess flexibility, accuracy and utility.

Flexibility can be secured only by the closest co-operation between the accounting and engineering departments, and to accomplish this end it is necessary that the classification of work by jobs be such as to serve the necessities and conveniences of the engineering department without placing any unnecessary burden upon the accounting department. The reports should be in such form as to show the essential information at a glance and all unnecessary or immaterial detail should be excluded while the book records showing full detail should be available to the engineering department at all times.

Original records consisting of time cards covering the labor and requisitions on the storekeeper for material should show sufficient detail to serve as the basis for any one of several different classifications. For example, the time card should show enough detail to permit a distribution by accounts as well as job numbers, at the same time serving as the basis for the payroll.

It is better for the sake of uniformity to put all material purchased through a material and supplies account so that all distribution will be handled in the same way.

Under the job order system a number is assigned to each

particular job whether it be special or general in character. A group of numbers may be assigned to those operations which are repeated at frequent intervals and maintained throughout the year as running job orders. All special jobs, such as the overhaul of some particular car or the replacement of some particular piece of special work, can be covered by a job number which will be closed when the work is completed.

To insure accuracy of the accounts all original records should bear the approval of the responsible person directly in charge of the work, countersigned when possible by the head of the department under whose direction the work is being done.

Original forms should be of so simple a nature as to permit so far as possible the making of the original record by the man who actually did the work or the sub-foreman directly in charge.

The system should be so designed that reports may be had by the engineering department at intervals frequent enough to meet its requirements and render possible the cost comparison between estimates and actual performance. It is frequently advisable on jobs where this feature is particularly important to render statements monthly or weekly for brief periods of time until the general trend of costs has been thoroughly analyzed. The value of such a system of cost accounting is inestimable when considered as a basis for estimates of proposed work and may profitably be reduced to unit costs for this purpose.

To call attention again to the matter of co-operation on the part of both the accounting and engineering departments, which must be full and complete on both sides in order to obtain the fullest measure of success and benefit of such a system of detail accounting, the engineering department should advise the accounting department as soon as a particular form of report or summary of detail has served the purpose for which it was intended and authorize its discontinuance at once.

### IS TIMEKEEPING DONE BY THE ENGINEERING OR ACCOUNTING DEPARTMENT?

From the replies received in regard to this question, it is evident that there is a wide diversity of practice. In the majority of cases the timekeeping is done by the department doing the work. There are objections to this practice due to the fact that a complete audit by the accounting department should cover all work in connection with the preparation of pay rolls. It seems to the committee, however, that this would naturally be controlled by expediency and local conditions.

### CONCLUSION

The committee desires to refer to its report of 1912 regarding the subdivision of the maintenance of equipment accounts, and urges the committee on a standard classification of accounts to give its favorable action on the recommendation as outlined therein, at the earliest possible moment.

### MEMORANDUM FURNISHED BY PORTLAND (ORE.) RAILWAY LIGHT & POWER COMPANY

As an appendix to the report the committee included a memorandum received from the Portland (Ore.) Railway, Light & Power Company, which described the practices of that company in the directions covered by the report of the committee.

According to this memorandum, a company doing only about \$2,500,000 worth of construction work a year and with an operating expense of \$700,000 per year could very well handle the work of cost keeping and efficiency records with the following force at an expense of \$950 per month: One cost engineer, one chief clerk, one general timekeeper, two cost clerks, one inventory clerk, two estimate clerks, one follow-up clerk, one special investigation clerk and one office boy.

\*Abstract of a report read before the American Electric Railway Accountants' and Engineering Associations, Atlantic City, N. J., Oct. 13-17, 1913.

## REGULATIONS ON SANITATION AS RELATED TO PUBLIC CARRIERS\*

BY W. C. RUCKER, M. S., M. D., ASSISTANT SURGEON GENERAL  
UNITED STATES PUBLIC HEALTH SERVICE

The relationship between commerce and the spread of communicable disease has long been recognized, and in 1348 the city of Venice established a so-called "Board of Supervisors" which laid down a set of hygienic rules which were afterward adopted by many other European ports for the purpose of protecting themselves against invasion of epidemic disease. These rules were based upon the assumption that in times of pestilence safety lay only in non-intercourse or in commercial intercourse after a period of detention. This period was arbitrarily fixed at forty (quarante) days; hence our word quarantine.

This method did indeed protect many cities, but it was frequently quite as disastrous to commercial interests as an epidemic of the disease itself would have been, and in many cases the cure, from a financial point of view, was quite as bad as the disease itself. The method of control of the spread of disease by non-intercourse remained in practice, however, for many years, and it was not until the investigations of modern science determined the causative factors in epidemic disease and the exact mechanism of their spread that its harshness was abated.

With regard to ships, the application of this knowledge has turned the attention of sanitarians away from the cargo and the ballast, and has focused it upon the living things on board. The idea of dead things as the spreaders of disease is being relegated to the past, and ballast is no longer laboriously dipped in bichloride solutions in the hope of killing the miasmata which were one time believed to be clinging to it. Neither is the cargo fumigated in the rigorous manner of former days with the idea of killing the diseases believed to be lurking in it. Nowadays ships are fumigated to kill rats and mosquitoes and the human cargo is subjected to close scrutiny in order that chronic cholera carriers and other persons afflicted with communicable disease may be excluded.

The control of the spread of disease by trains is much more difficult and complex. The exact role which they play in the carriage of plague-stricken animals is difficult to determine, and it is doubtful if it can ever be definitely known under just what conditions and to what extent railroad trains may carry and distribute rats and mosquitoes. It has been thought that the railroads played a certain part in the spread of plague in California, and it is true that in the single case which occurred in Los Angeles the sufferer probably received the disease from an infected squirrel which was afterward found in the railroad yards. It is conceivable that both rats and ground squirrels, particularly the former, might gain access to freight-laden cars and thus be transported many miles, and in time of plague goods which originate in rodent-free surroundings and which are afterward protected against invasion by rodents and shipped in rodent-free cars may be regarded as harmless agents so far as the dissemination of plague is concerned. This plan was evolved by Surgeon General Rupert Blue, head of the United States Public Health Service, during his memorable work in San Francisco, and for the first time in the history of the world a plague-stricken city was able to continue its trade relations without danger to the outside world.

In the spread of yellow fever the three factors necessary are a patient in the first three days of the disease, the striped-legged mosquito and a non-immune population. This is a disease in the spread of which common

carriers play an enormous role. During the yellow fever epidemic of 1905 the trade relations of the city of New Orleans continued undisturbed, the only precautions taken being the prevention of the shipment of mosquitoes and of persons having the disease—simple, inexpensive, effectual.

Satisfactory as has been the solution of the transportation problems of plague and yellow fever, it must be admitted that the result cannot be viewed with such complacency in the case of smallpox. There is, however, an absolute preventive for the disease, and if anybody prefers the disease to the protection, he certainly should be allowed the privilege.

A class of traveler should be mentioned which in my opinion plays a great and unrecognized role in disease spread. I refer to the undisciplined, careless or malicious vagabond who rides on the trucks. The control of the tramp will one day be recognized as a protection to public health as well as a commercial safeguard.

The common carrier bears a more complex relation to the spread of disease, however, than the mere carriage of diseased men and animals. In the first place, the carriage of diseased persons must be regulated in such a manner that fellow passengers may not be exposed to the disease, and, secondly, in such a way that persons living along the route traveled by the carrier shall take no harm. As an example of the first class may be cited the transportation of lepers. Leprosy is a communicable disease against which the general public has the greatest horror and antipathy, yet a leper was transported from Minnesota to the State of Washington several months ago without exposing a single person to the slightest danger, by the exercise of proper precautions.

The control of the migration of tuberculous persons is not by any means entirely in the hands of the common carrier, and the solution of this problem will not come until the education of the general public develops a sanitary conscience, so that persons who know they have tuberculosis will not wittingly expose other persons to the disease. It has been proposed that the transportation lines plying between the East and West and which annually carry large numbers of tuberculous persons to health resorts run either tuberculosis trains or special tuberculosis cars at stated intervals. This would indeed be a safeguard, but thus far the transportation companies have not deemed this scheme feasible.

The relation which the general government bears to the sanitary regulation of common carriers is the prevention of the interstate spread of disease, and the Secretary of the Treasury has promulgated rules bearing upon the transportation of lepers, the common roller towel, the common drinking cup and the purity of water and ice furnished to passengers in interstate traffic. It would seem at first glance as though the enforcement of these regulations would entail an enormous amount of energy and perseverance. As a matter of fact, the bulk of the common carriers have obeyed them readily. In some instances they have gone much further than the law requires, even to the extent of spending thousands of dollars for the purpose of installing water coolers in which the ice and water do not come in contact. In several instances the railroads have established laboratories for the purpose of making periodic examinations of the ice and water which they use, feeling that the added security which was afforded their passengers in this way was well worth the cost of installation and operation of such a laboratory.

About eighteen months ago Surgeon-General Rupert Blue issued orders that all of his officers traveling on official duty should make a quiet inspection of the common carrier on which they were traveling. The readiness with which suggestions based on these reports have been received and the promptness with which they have been acted

\*Abstract of a paper read before the American Electric Railway Association, at Atlantic City, N. J., Oct. 13-17, 1913.

upon speak well for the spirit of the transportation men of this country.

There is still another problem which remains unsolved, and that is the question of track pollution. The amount of human excrement which is being scattered along the thousands of miles of rights-of-ways in this country is appalling, and almost everyone who has looked into this subject admits the possibilities of the spread of infectious disease in this way. There are several patented devices for the holding of excrement from railway coaches. They do not seem to be in general operation, however, nor is their practicability proved beyond question. This is a matter of great interest to the federal Bureau of Public Health, and it is hoped that the inventive genius of this country will bring forth the mechanical solution of this important problem.

The question of the sanitation of waiting rooms is quite as important as that of vehicles, and it is another place where the general public could and should help. It is believed that the posting of proper notices might assist in this regard.

Finally let it be said that the sanitation of common carriers is, after all, a matter of economic consideration. A healthy people produce, buy, sell and travel, all of which operations mean increased revenue for the common carrier. The common carrier which shows its patrons that it is really interested in their welfare is the one which gets the patronage. The transportation interests of this country are looking at the health movement from a business standpoint, therefore the American common carriers lead the world in sanitary matters.

### REPORT OF THE COMMITTEE ON TRAINING TRANSPORTATION EMPLOYEES\*

C. R. WELLS, CHAIRMAN; C. E. LEARNED, J. T. CRABBS, BRUCE CAMERON, E. E. STRONG, H. A. DAVIS

In part the collective views of the committee on matters which are believed to be involved in a comprehensive treatment of the general subject include the necessity for establishing avenues of promotion from platform men to subordinate offices which are clearly defined and, other things being equal, are adhered to without exception. Working conditions should be permanently established in printed form to cover hours of duty and rest, which are based upon the requirements of local conditions as to service required during the different hours of the day, these to be adjusted to the best possible advantage of the men; maximum length of swing, which should not be excessive and should be definitely fixed and adhered to except under compelling emergency; reporting and clearing time, which should be established on a reasonable basis and time thus consumed paid for at hourly rates, and recognition of seniority in selection of work.

In the treatment of employees it is desirable to establish a system of discipline which provides for a complete history of performance, forming the basis of disciplinary award, equality of treatment, firmness, fairness and justice. It is also desirable to establish between company and employees a policy of welfare work which will provide for pensions, sick benefits, accident benefits, medical attendance, hospital service, loan and savings institutions, restaurants, club rooms and supply depots.

#### TRAINING OF EMPLOYEES

In the selection of platform employees, the physical examination should be sufficiently rigid to insure rejection of those possessing disqualifying defects. The rules covering mental

and moral qualifications should be sufficient to meet the requirements of the position, and by investigation of references, reputation and standing with previous employers should be established. For subordinate officials the selection should be based on written examination, operating record, seniority (other things being equal), and general appearance and deportment.

#### CONCLUSIONS

The committee summarizes its conclusions as follows:

The variety of existing practices, not all of which can approximate correctness, indicates irregularity in adherence to any set of fixed principles. Standardization is logical, desirable and necessary, and this can be accomplished only by first agreeing upon what constitute fundamental principles. Having agreed, introspection will enable each company to determine wherein its practices are at variance with the methods set forth.

Referring briefly to the subject of paying for breaking-in time, it is the sense of your committee that to do so would be fundamentally wrong in principle. In classes of industry where beginners are paid at a low rate, some compensation is received by the employer by reason of the effort expended. During the training period of conductors and motormen the employing company receives absolutely no benefit from their labor. Frequently their presence upon a car becomes a burden and greatly hampers the work of instructing trainmen. This disadvantage is further augmented by the cost of their schooling. As a concrete example in support of our contention, no firm would employ a stenographer or bookkeeper unless the applicant possessed the necessary qualifications, which must previously have been acquired in his own time and at his own expense.

Touching the matter of establishing a minimum rate of pay for extra men, it is the opinion of your committee that owing to the wide variance of practice among railway properties due to locality and general working conditions, no recommendation which would meet the approval of all its members could be made at this time.

### ELECTION OF OFFICERS OF MANUFACTURERS' ASSOCIATION

A meeting of the new executive committee of the Manufacturers' Association was held yesterday morning at the Marlborough-Blenheim to elect officers for the ensuing year. Those in attendance included the five new members of the executive committee elected Wednesday. At the meeting the following were elected:

President, Cornell S. Hawley, Laconia Car Company.

Vice-president in charge of exhibits, E. H. Baker, Galena-Signal Oil Company.

Vice-president in charge of finance, S. K. Colby, Allen & Peck, Inc.

Vice-president in charge of entertainment, Charles R. Ellicott, Westinghouse Traction Brake Company.

Vice-president in charge of relations with the parent association, William L. Conwell, Transportation Utilities Company.

Secretary and treasurer, H. G. McConaughy, Dearborn Chemical Company.

At the same meeting Thomas Finigan, Pierson, Roeding & Company, was appointed chairman of a sub-committee which will be organized in San Francisco to take charge of any arrangements which will have to be made in connection with the meeting of the association in that city in 1915.

A committee was also appointed to draft resolutions to be presented to Past-president William H. Heulings, Jr., expressing the high opinion of the association of the faithful and conscientious services which he rendered during his term of office as president. These resolutions will be suitably engrossed and presented to Mr. Heulings.

\*Abstract of report read before the American Electric Railway Transportation & Traffic Association, at Atlantic City, N. J., Oct. 13-17, 1913.

**REPORT OF THE COMMITTEE ON JOINT USE OF POLES\***

APPENDICES

APPENDIX A—AGREEMENT COVERING THE JOINT USE OF POLES ON RENTAL BASIS

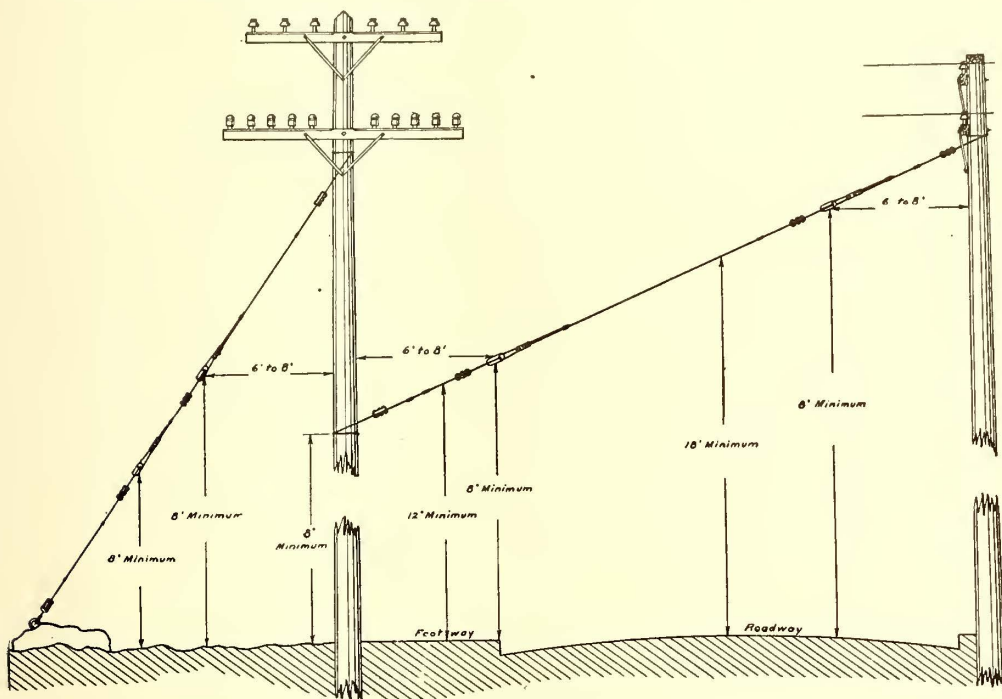
W. J. HARVEY, CHAIRMAN; ALBERT S. RICHEY, FARLEY OSGOOD, CHAS. L. HENRY, PERCY H. THOMAS, W. S. TWINNING, F. B. H. PAINE, N. T. WILCOX, W. T. OVIATT; F. H. BETHEL, CONFEREES

The report consists of two sections, of which one, Appendix A, is an agreement form, dealing with all of the questions which might arise in connection with the joint use of a pole line by two or more companies. In the treatment of the subject of joint ownership so many debatable questions arose that it was thought best to develop a satisfactory agreement, omitting those clauses which have to do exclusively with the matter of divided ownership. The agreement section of the present report, therefore, provided only for joint use on a rental basis.

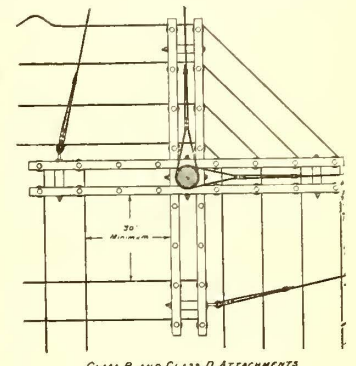
The second section of the report, Appendix B, consists of

For the purpose of this agreement the following terms when used herein shall have the following meanings: Attachments shall be held to include all wires and apparatus or fixtures used on the poles. The Licensor is a party having sole ownership, or collectively the parties having joint ownership, of a pole jointly used with the Licensee, who is any party making joint use of a pole of a Licensor. Transferring is the moving of attachments from one pole to another. Rearranging is the modification or relocation on a pole of attachments thereon to bring them into conformity with the specifications. Transferring and rearranging each includes the expense of the necessary tree cutting or trimming due to the changed position of the attachments, and of obtaining the necessary rights therefor.

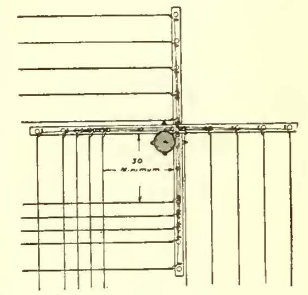
If any Licensee desires to place attachments upon a pole



Guy Attachments



CLASS B AND CLASS D ATTACHMENTS



CLASS C AND CLASS P ATTACHMENTS

Reverse Work

a specification for the use of companies entering into the joint use agreement above mentioned, and includes definite and complete descriptive matter treating of the location of attachments, etc., arranged and indexed in convenient form. Following the descriptive matter are illustrative drawings showing graphically the arrangement called for in the specifications. The specifications are applicable to joint use on either a rental or joint ownership basis. The committee and its conferees gave no small amount of attention to making the agreement and specification such that the joint occupancy of poles would prove not only feasible but advantageous.

The committee recommends that the agreement be adopted as a standard of the American Electric Railway Association, and that the secretary be instructed to advise the National Electric Light Association and the American Institute of Electrical Engineers of the action taken by this association, and that a standing committee be appointed, whose duty it shall be to revise this agreement from time to time as may become necessary, and to which shall be referred all inquiries, criticisms or suggestions, until such time as its services shall be unnecessary.

\*Abstract of a paper read before the American Electric Railway Association, at Atlantic City, N. J., Oct. 13-17, 1913.

which is of sufficient size and strength for the existing attachments thereon but not for such existing attachments and the proposed attachments, then before placing its proposed attachments, the Licensee shall replace the pole with a new one of such size and strength and with such guys, and make such necessary changes in the existing pole line, as the Licensor may deem proper.

If the Licensor at any time desires to place additional attachments upon any pole jointly used with any Licensee which is not of sufficient size or strength, the Licensee shall either replace such pole or remove from such pole sufficient attachments to provide the space required for such additional attachments of the Licensor.

Such new pole or poles erected as provided in this section shall be the property of the Licensor, and the cost and expense of such new pole or poles and the erection thereof and the transferring of attachments incident thereto shall be borne by the Licensor and the Licensee respectively in such proportions as are equitable and fair; or in case of disagreement, adjusted by arbitration.

If the placing of attachments of the Licensee makes it necessary for the Licensor to rearrange its attachments, the Licensee shall bear the cost thereof, except that the Licensor

shall at his own expense rearrange any attachments not in accordance with the specifications. If the placing of such attachments of the Licensee makes it necessary for any occupant of such pole other than a Licensor to rearrange its attachments, the cost thereof shall be borne by such occupant.

The Licensor shall maintain its poles and guys and replace such as become defective without expense to any Licensee thereon.

If the Licensor abandons the use of any jointly used pole the Licensees shall have the option of purchasing such pole, the price and the terms of payment to be fixed by agreement or arbitration, or of removing its or their attachments therefrom.

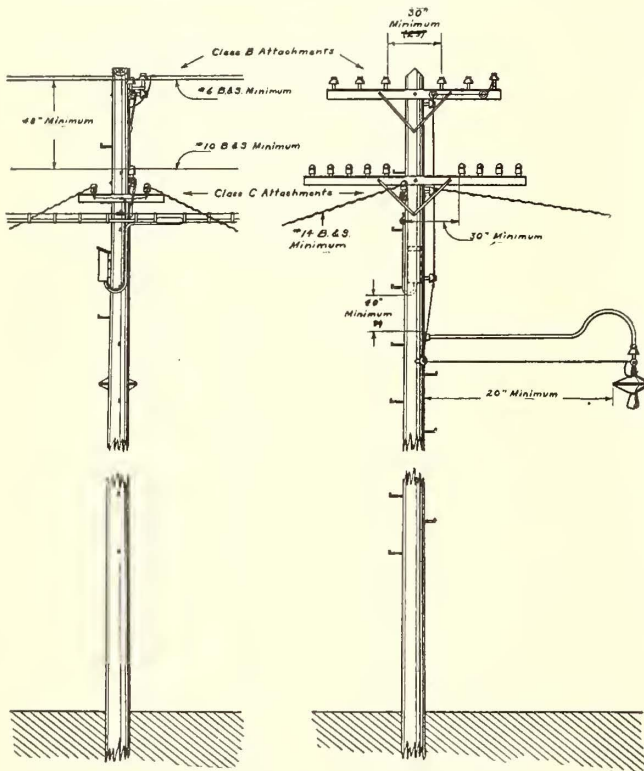
Each Licensee shall pay rental to the Licensor at the agreed rates per annum for its attachments. No rental shall be charged for crossarms or other fixtures to support wires or cables, guys, ground wires, distributing wires, connecting wires, or cables on a pole and connected to wires or cables for which attachment rental is paid on the same pole.

If, by reason of any State, municipal or other public regu-

shall be acted upon and managed by all the parties jointly. If any such claim can be compromised by settlement out of court before or after suit is brought, and one of the parties shall desire to make settlement, said party upon payment to the other party or parties of the sum of money which would be its proportionate share of such settlement, if all parties had agreed thereto, shall be relieved from all liability which may arise thereafter from such claim, and the party or parties to whom such payment is made shall thereupon assume the entire liability for such claim and shall save said party harmless from any loss, cost or charge by reason thereof.

ARBITRATION

Earnest effort shall be made by the parties, or persons designated by them, to settle all controversies, but in case any two or more of the parties to this contract disagree, each of such parties, upon written notice and request from one or more of the others, shall, within ten days, name an arbitrator and the arbitrators thus named shall within ten days name an additional arbitrator or such additional arbitrators as may be necessary to make the entire number an odd num-

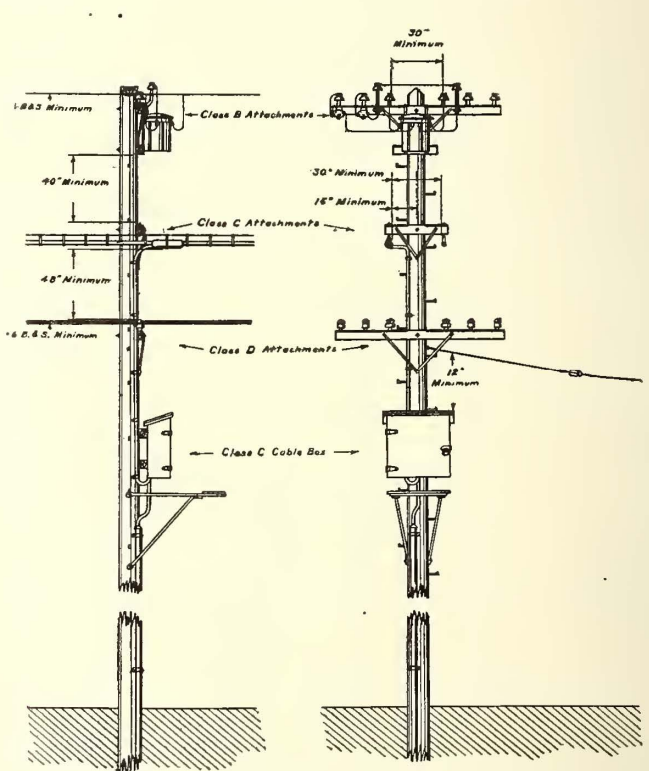


Positions for Class B and Class C Attachments

lation, the joint use of any pole makes necessary the use of any special construction or reconstruction differing in the specifications the cost and expense of installing such special construction or of making such changes shall be borne by the Licensor and the Licensee respectively in such proportions as are equitable and fair, to be agreed upon by them or adjusted by arbitration. Each party shall do the work of placing, maintaining, transferring or rearranging its own attachments.

Each party hereto shall assume the entire liability for damages to its own property and for injuries to its employees or their property and shall have exclusive control of all settlements by compromise, action at law, or otherwise, which may arise from accidents to its employees or their property.

All claims for damages arising from injuries to persons not in the employ of any party hereto or to property not belonging to any of the parties hereto or their employees



Positions for Class B, Class C and Class D Attachments

ber. To the arbitrators thus selected the question in controversy shall be promptly submitted and the decision of a majority of the arbitrators shall be final and conclusive on all. Provided, however, that such finding may be reviewed by any court of competent jurisdiction on proper application by any parties to the arbitration. The expense of such arbitration, including the compensation of the arbitrators, shall be borne equally by the said parties.

APPENDIX B—SPECIFICATION FOR JOINT USE OF WOODEN POLES

Attachments are classified in these specifications by the character and the operating voltage of the circuits as follows:

Class A covers constant potential attachments exceeding 2500 volts when one side is grounded and exceeding 5000 volts when neither side is grounded. Trolley contact wires are excepted from this class.

Class B covers constant potential attachments of less volt-

age than the foregoing and in addition includes constant current series lines. It excludes trolley contact wires.

Class C attachments include telephone, telegraph, district messenger, burglar alarm, fire or police alarm, and similar attachments, except those included in Class P.

Class D attachments include constant potential lines, one side grounded, not exceeding 2500 volts. Trolley contact wires of all voltages are, however, included in this class.

Class P attachments include telephone, telegraph or other signaling attachments, not exceeding 250 volts, used by the owners or operators of Class A, B or D attachments and not available for the use of the public.

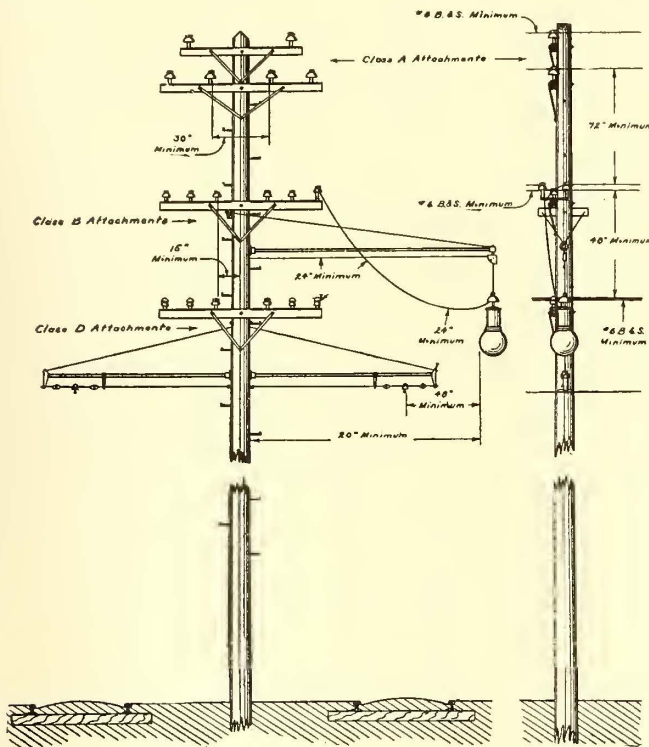
The positions of the different classes on the pole and the minimum sizes of wire are shown in the accompanying illustrations subject to the following limitations:

All single line crossarms shall be attached upon the face of the pole. Line wires shall not be carried on pole brackets but shall be carried on insulators and pins on wooden crossarms.

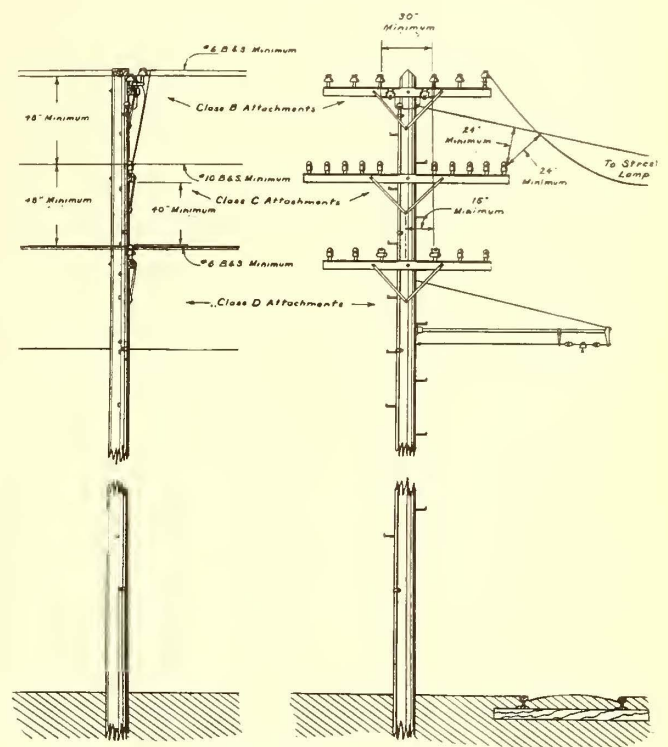
Open wire on insulators shall be carried down the pole taut and fastened upon standard insulators, which shall be supported upon pins or brackets so located and maintained that the conductors will be firmly held at a distance of not less than 5 in. from the surface of the pole.

Ground wires may be of bare wire but shall be inclosed within a conduit of solid insulating material throughout their entire vertical length, except that, within 8 ft. of the ground, iron pipe may be used. Such pipe or conduit shall be securely attached to the pole.

Transformers, signal and cable boxes, switches, cut-outs, and similar apparatus may be installed on the pole at a convenient height for operation, provided they do not interfere with climbing the pole and with the location of attachments. Where apparatus of this character is located upon a pole below other attachments and within a horizontal distance of 20 in. from the center of the pole, it shall be placed upon the face of the pole or crossarm, except that



Positions for Class A, Class B and Class C Attachments



Positions for Class B, Class C and Class D Attachments

Wherever practicable the spacing of line poles shall not exceed 125 ft.

Excepting Class A wires, connections to wires or apparatus upon a pole may be run laterally across the pole provided that the wires crossing the pole shall have standard rubber insulation (or its equivalent) and braided covering, shall be run horizontally along their respective crossarms, and shall, except in the case of Class C or Class P wires, be carried on insulators on pins or brackets on the face of the crossarm and at least 6 in. away from the crossarm. Class C or Class P lateral wires may be attached either to the under side or face of the crossarm.

No Class A wires shall be run through the climbing space. All vertical wires and cables shall be placed upon the semi-circumference of the face of the pole. Vertical wires and cables shall be run behind the crossarms. Poles with vertical wires or cables shall be furnished with pole steps. Conductors shall have an insulation consisting of a standard rubber compound or its equivalent.

For vertical runs of two Class B wires of the same circuit, twin conductor wire or cable shall be employed.

small Class C or Class P distributing terminals may be placed on the back of the pole. Where a transformer comes within a horizontal distance of 20 in. from the center of the pole, and is less than 6 ft. below other attachments, there shall be firmly fastened to the pole, immediately above the transformer but not in contact therewith, a wooden cover, capable of bearing 300 lb., which shall prevent any one from stepping or standing upon the transformer.

No fixture or any of its metal parts shall encircle the pole. These must be restricted either to the face of the pole or to one-half of the pole. Span wires shall be attached by bolts passing through the pole. Every railway span wire and bracket shall be insulated from the railway potential, and, in addition, a strain insulator shall be placed in each span wire on each side of the trolley wire in the suspension wire of every trolley bracket.

Every guy which passes over or under any electric wires other than those carried upon the guyed pole shall, wherever practicable, be so placed and maintained as to provide at all times a clearness of not less than 2 ft. between the guy and such electric wires.

## THE PRESENT TENDENCY OF PUBLIC SERVICE REGULATION\*

BY RICHARD M'CUCCLOCH, VICE-PRESIDENT AND ASSISTANT GENERAL MANAGER UNITED RAILWAYS OF ST. LOUIS

The first state to establish control of public utilities was Massachusetts, which, in 1885, placed its gas and electric light companies under the jurisdiction of the State Gas Commission. Other public utilities in this State were regulated by different commissions until July 1, 1913, when street and interurban electric railways, as well as gas, electric light and water companies, were placed under the jurisdiction of the new Public Utility Commission.

In 1907 New York and Wisconsin placed all of their public utilities under the control of State commissions and gave these commissions what were then considered the widest and most arbitrary powers. Vermont followed in 1908, and Maryland in 1910.

The laws of New York and Wisconsin serving as models, in 1911 public utility commissions were established in New Jersey, New Hampshire, Kansas, Oregon, Ohio, Washington, Nevada, Connecticut and California. Rhode Island followed in 1912.

In 1913 an epidemic of regulation seemed to be prevalent, and during that year public utility commissions were established in Missouri, Indiana, Pennsylvania, Maine, West Virginia, Illinois, Idaho, Montana and Colorado.

At present twenty-four States have public utility commissions, and in this number we do not include those States having railroad and warehouse commissions having jurisdiction only over steam railroads, nor do we include the municipal commissions, some of which have been later replaced by State commissions. Neither do we include corporation commissions exercising some of the functions of public utility commissions. Corporation commissions exist in Oklahoma, Arizona, New Mexico, North Carolina and Virginia.

### MUNICIPAL COMMISSIONS

Municipal commissions have been established at various times in Washington, D. C., Wilmington, Los Angeles, St. Louis, Kansas City, St. Joseph and Denver. The Board of Supervising Engineers in Chicago, appointed to carry out the provisions of the rehabilitation ordinance, exercised some of the functions of a municipal commission. The Public Service Commission of New York, First District, although deriving its powers from the State, is to all intents and purposes a municipal commission, as its jurisdiction extends only over Greater New York.

In this connection it may be stated that where municipal control through a commission already existed municipalities have not welcomed the advent of State commissions.

A municipal commission is too close to the seat of contention to exercise a fair and impartial judgment. It is too apt to be swayed by unreasonable public clamor, newspaper attacks and personal grievances which interfere with the broad view of the situation necessary for a finding based on the rights of the public, while taking into account also the rights of the utility. A municipal commission also, for the lack of something to do, is apt to interfere unnecessarily in the operating details of the business and attempt to become manager instead of regulator.

### ILLINOIS PUBLIC UTILITY LAW

The general tendency of public utility laws is indicated in the Illinois law passed during the spring of this year. As expressed by a writer in the *ELECTRIC RAILWAY JOURNAL*, "It aims to give power to regulate and to surround that power with various protective measures which shall make it easy for the regulators to regulate and hard for the regulated to object to any act which inexperienced commissioners may do."

### CALIFORNIA PUBLIC UTILITY LAW

In the California public utility law it is stipulated that existing powers of control vested in any city or county shall not be disturbed, but the city or county may by majority vote surrender such powers to the State commission. In case any city or county is not satisfied with State control it may by majority vote reinvest itself with control of utilities. In other words, in the State of California, municipal or state control of public utilities is optional with each municipality.

### TENDENCY OF COMMISSIONS IN FINANCIAL MATTERS

With few exceptions, the public utility laws provide for control of capital security issues, providing for the sale of stock at par and authorizing the commission to require bonds to be sold at a discount which is established in each case by the commission. This regulation adds to the difficulty of financing a public utility, as the price may be set too high or so much time may have been consumed in the investigation that the favorable moment for the sale of the securities may have passed.

Stock without nominal or par value, which was strongly recommended by the National Railroad Securities Commission, has not been provided for in any of the public utility laws. New York has a law providing for the issue of stock without nominal or par value, but public utilities are not permitted to take advantage of it, although the law was strongly urged by former Chairman Stevens of the Second District, and was subsequently opposed by the First District Commission.

It is fortunate for the public that the mergers of independent companies into large electric railway systems occurred before commission rule, because under the rulings of present regulating commissions such mergers would become a difficult problem. The large amounts of cash or par value of securities which were expended in purchasing competing street railways or in payment for going concern values may be much in excess of the value of the physical property, and may not make themselves evident in an appraisal.

In order to effect these mergers, or in order to electrify or rehabilitate the properties, large amounts represented either by cash or by capital securities were issued. The par value of the capital obligations usually exceeds the physical value of the property, and in some cases the funded debt is greater than the physical value. These securities have been issued in good faith and have passed into the hands of third parties. As the state laws and the commission rulings would require in the issue of new securities a substantial reduction in the par value of capital obligations, the satisfactory reorganization of companies so situated is practically impossible except through the tedious, expensive and distressing process of receivership.

### VALUATION

There are almost as many theories regarding valuation as there are experts in the valuation business, and the number of these is growing daily. The literature on the subject of valuation, most of which has appeared during the last two years, is stupendously appalling. A bibliography recently compiled by the American Society of Civil Engineers consists of exactly 999 books, theses and articles on valuation. As an instance of the application of theoretical methods, one of the members of an influential commission, in a recent address, states that in his state the valuation of a public utility property is mathematically obtained by two theoretical methods. These two values are then carefully compared, but the final finding of the commission is neither of these values but is the estimate of the commission as to what the property is worth. The question naturally arises, Why should not the commission guess at it in the first place without bothering with the two theories?

Notwithstanding which theory is followed, the final valuation never represents what has gone into the property. Most of the large city properties have been built up piecemeal,

\*Abstract of a paper read before the American Electric Railway Association, Atlantic City, N. J., Oct. 13 to 17, 1913.



under different supervision, during various stages of the art, under operating conditions, and sometimes under opposition. No theory of contingencies takes all this into account. Anyone connected with large enterprises knows the great differences which often exist between the final cost of work and the original estimate of the engineer. Some commissioners have great difficulty in appreciating that engineers' estimates of reproduction cost are only, at the best, more or less intelligent guesses having relatively large probable errors.

The question of valuation is at present in a more or less chaotic condition, with a strong tendency on the part of each new commission or chief engineer to advance some new theory to solve this particular problem.

#### RATES OF RETURN

The wide variation in the rates of return upon the estimated capital invested in public utilities seems to be due to a great extent to the tendency on the part of commissions and public officials to confuse non-confiscatory interest rates as discussed, but not defined, by the United States Supreme Court with reasonable rate of return. In the proper performance of their duties, both to the public and the utilities, regulating commissions should allow a rate of return sufficiently high to induce capital to flow into the business which they are attempting to regulate.

Rates of return varying from 6 to 8 per cent have been allowed, and in some instances commissions have declined to reduce rates where the rate of return was as high as 10 per cent.

Reasonable rates of return should vary with the circumstances of each case, with the location of the utility and with the hazard of the business. The rate should be higher for street railway utilities than for other public utilities of similar magnitude.

#### DEPRECIATION REQUIREMENTS

Some of the state laws require utilities to set aside a depreciation reserve, and it is usually left to the commission to determine what this reserve shall be. The question of a depreciation reserve often arises in hearings before commissions on the reasonableness of rates. This depreciation reserve may be a fund set aside to be used only for a specific purpose, or the commission may take the conservative view and permit the reserve to be invested in property.

#### RATES AND SYSTEMS OF FARE

In some instances, after investigation, the fares have been allowed to remain without change. In one instance the fare was raised, and in the well-known Milwaukee case the fare was ordered reduced. There seems to be a growing desire on the part of regulating commissions to abandon the usual 5-cent zone system of suburban and interurban fares and substitute therefor one proportionate to the distance traveled. The New Jersey, Pennsylvania and Wisconsin commissions have considered this matter. It is anticipated that such a plan would tend to reduce the public clamor for an enlargement of the 5-cent zone, and eliminate many of the discriminations now alleged to exist.

#### EXTENSION OF CITY LIMITS

In several instances where cities have extended their limits, a demand has arisen for the preservation of the city fare as far as the new limits. Where such cases have arisen these concessions have been required. There seems to be a general tendency on the part of commissions to consider lightly, or even set aside, agreements between the railway and the municipality where it is to the interest of the public to have these set aside, but to hold the railway firmly to these agreements where the advantage is the other way.

#### REGULATION OF SERVICE

It is left to the commissioners to determine in each case what is safe, what is adequate, what is just and what is reasonable. What is adequate service is largely a matter of opinion, as no standards for measuring the reasonableness or adequacy of service have been developed. Some regu-

lating commissions, starting out with a desire to obtain a seat for each passenger during rush hours, have concluded that the scheme was not financially possible, and if it were, the passengers would not wait for the seats.

#### DETAILS OF OPERATION

Commissions have spent a great deal of time in determining the proper height of a car step, the manner of designating routes and destinations, the manner and extent of heating and ventilation, the near-side versus the far-side stop, the width and spacing of seats, the relative proportion of seating and standing capacity, types of brakes and fenders and their operation in service, accidents in which passengers and pedestrians are injured, and all the problems of street railway operation and management. Some of the commissions have manifested a disposition to delve into the minutest details of electric railway technique.

#### APPEAL

The tendency to make appeal from the rulings of the commissions more difficult has been noticed. That the commissions resent the interference of the courts is evident from a public address by a member of the New York commission on March 1, 1912, in which he said that the success of governmental regulation depends in large measure upon the attitude of the courts toward the decisions of commissions and the scope of judicial review.

#### QUALIFICATIONS OF COMMISSIONERS

If public utility commissioners are to consider intelligently public utility questions in all their relations, the financial problems of the utility, the needs present and future of the public, the operating details of the companies, and deal fairly and broadly with the public and with the utility, they should command the wisdom of sociologists, economists, financiers, engineers, lawyers, and transportation experts. The previous professions of twenty-five commissioners appointed during the past two years, whose biographies appeared in the technical journals, were as follows: Twelve lawyers, 48 per cent of the total; 6 politicians, 24 per cent; 3 engineers, 12 per cent; 1 locomotive engineer, 4 per cent; 1 hotel proprietor, 4 per cent; 1 publisher, 4 per cent; 1 newspaper man, 4 per cent.

The lawyers and the politicians between them got 72 per cent of the places. Assuming that the lawyers are all learned in the law, and that the politicians are all statesmen and economists, the proportion still looks a little unbalanced. Why the locomotive engineer should have been appointed does not appear, and the only excuse for the hotel proprietor is that he must be considered an expert in rates and service.

It is a fact, however, that as a general rule commissions have been composed of high-class men, and that they are conscientiously struggling with the work before them, but it is also a fact that few of them at the beginning of their terms had any knowledge of the public utility business, and that they are acquiring their training at the expense of the utilities. The period during which this training is acquired is often a trying one for the utilities subject to their control, and their only consolation is the faith that with knowledge comes conservatism. It has been proposed by some of the commissions that the state universities prepare young men for this work, but it would not seem that a young man fresh from a state university without business, engineering or other experience would be a competent adviser on questions requiring for their solution the highest degree of ability and experience.

#### CONCLUSION

Public service regulation has come about in most of the states within the last three years. The conditions of operation without regulation and operation under regulation are quite different. The change has been sudden, and it will require time for the utilities to adapt themselves to the new conditions as well as time for the commissions to digest the immense amount of detail which they must do before they can intelligently pass on the problems presented. Reg-

ulation has been in force too short a time to summarize its results and determine whether it is worth what it is costing, or is accomplishing what it was intended to accomplish. Public service commissions may have been instrumental in putting an end to certain bad financial practices, but their growing disposition to interfere in the details of the business, and their policy of cutting the rate of return to a barely non-confiscatory basis is not encouraging to investors.

Any community is better served by a prosperous utility than by one which is struggling for existence, and it would appear that a far-seeing regulation would be one which would encourage the investment of private capital. The best interests of the public are surely not conserved when conditions of operation are made so onerous and rates of return are cut so low that capital cannot be procured for betterments and extensions to existing properties, to say nothing of capital for the building of new properties.

#### BIBLIOGRAPHY

A bibliography of articles in reference to public service commissions is published as an appendix to the report.

### PRESENT TENDENCY OF PUBLIC UTILITY LAWS AND REGULATIONS\*

BY FRANK HEDLEY, VICE-PRESIDENT AND GENERAL MANAGER IN-TERROROUGH RAPID TRANSIT COMPANY, NEW YORK

"The Present Tendency of Public Utility Regulation" is a live issue and an important concern of the railroad man. To quote the words of the letter notifying the speaker before you: "This matter should prove of great general interest to all members of the association, particularly to those who desire to know the results of the administrative assistance given us by regulating commissions, which all electric railroads can look forward to with a considerable degree of certainty."

I think that contains the meat of the desired tendency of public service commission regulation when it refers to administrative assistance. It is a spirit of co-operation that is supplanting the idea that the railroad is to be slammed into submission by legislative coercion or similar methods. It is beginning to be admitted that the railroad company has a side to present on questions of public service and does not always have to be in the role of a defendant.

I naturally know more of the workings of the public service commission law in the State of New York because of my railroad work being centered in that part of the country. The law became effective in July, 1907; this was at a time when the politicians had used to the limit a plank in their political campaign that practically all the nominees running for office had adopted, namely, that if elected they would take such steps as they found necessary substantially to relieve the congested condition of the cars on all the transportation lines in New York City.

The people of New York City for a long time prior to 1907 had followed the writings in the daily papers and these papers frequently charged the railroad company with running cars solely for the purpose of making money without regard or reasonable consideration for the public convenience.

Immediately after the commissioners were appointed the public and the press were demanding all sorts of radical departures and impossible performances from the operators of the railroads. The speaker spent the greater part of his time during the first three years of the commission, viz., from 1907 to 1910, attending public hearings and testifying before the commissioners. This was good educational work for the commissioners and put some facts before the public that even the radical journals in New York took notice of.

In the rush hours on the subway and elevated systems in New York City the maximum number of cars and trains practicable is run consistent with the primary consideration of safety. Owing to the limited facilities at the command of the railroad, the congestion in the rush hours is excessive. We are at the present time on the subway division working under an order of the Public Service Commission which requires either a seat for every passenger (only possible during non-rush hours), or the maximum number of trains and cars that can be operated safely with the existing facilities. On the elevated division the order is practically the same, but the number of trains per hour during the non-rush period is prescribed by the commission.

We are constantly taking checks of our service both as regards the train schedules and also referring to ticket selling accommodations at the stations. The commission also has its inspectors check these items and at times joint checks are taken to determine the traffic requirements.

The tendency at the present time in constructing entrances and exits for subway stations is that wherever possible the entrances and exits be through a building, thus avoiding the kiosks on the sidewalks which are a feature of the original subway construction. The engineers of the commission, together with the engineers of the railroad company, work in conjunction with the owners of the buildings and a plan is then adopted satisfactory to the city's representatives, the railroad company and the owner.

Another method of increasing transportation facilities has been the erecting of new stations. In the outlying districts the rapid growth of the population accompanying the operation of the new subway lines has made it necessary to build new stations. The commission co-operates with the railroad company in the securing of consents from the abutting property owners. New stations have also been provided in the downtown business district where a shift in the business character of the neighborhood has made necessary the providing of additional accommodations for the public. The same investigation as to the necessity for additional stations has been afforded in these instances also.

The Rapid Transit Commission, which preceded the present Public Service Commission, planned for a maximum traffic in the subway of 400,000 passengers per day. The traffic, however, quickly exceeded all expectations and to-day averages 1,000,000 a day. The railroad company's engineers worked on the problem and, co-operating with the Public Service Commission, devised ways and means to handle the enormous traffic. Various improvements resulted which vastly increased the passenger-carrying capacity. Among these improvements were the lengthening of station platforms, side doors, speed control, etc., which in turn reduced the length of the station stop and reduced the minimum train interval to 1 minute, 48 seconds.

Between 9000 and 10,000 complaints a year are received by the Public Service Commission for the First District. Probably not one-quarter of them are unworthy of investigation. Under the New York law each day's violation of an order of the commission makes a railroad company liable to a fine, the maximum being \$5,000 per day. In practice, however, this drastic action has been little used and the present tendency of the commission is to remedy by conference and mutual investigation. Co-operation between the companies and the commission is on the increase and beneficial results to the public have followed as well as to the transportation companies. In the city of New York the rates of fare have been fixed by legislation and very little work of this nature has come before the commission. One case arose, however. Complaint was made that a 5-cent fare was all the company should demand. After a thorough investigation the Public Service Commission decided in favor of the transportation company because a 10-cent fare was necessary in order to safeguard the rights of the stockholders and investors and in

\*Abstract of an address before the American Electric Railway Association, Atlantic City, N. J., Oct. 13-17, 1913.

order to permit the railroad to remain in a solvent and prosperous condition. In order properly to safeguard the employees of the company it was also much to their interest that the railroad should be secured in its solvency. The decision met with general approval.

The existence of a Public Service Commission with ample power to regulate is a great assistance in defeating demagogic bills introduced in the Legislature for political effect and violently opposed to corporation rights. The recent trend, except in the instance of the "full crew" bill, has been to allow the commission to regulate through its plenary powers and not enact burdensome and ill-advised legislation.

An important work of the commissions has been the preparing and prescribing of a uniform system of accounts. By this prevention of financial juggling, assuring the investor that the earnings will be properly guarded and dividends declared only when all proper charges have been made, the field of railroad securities is made a safe and inviting one with the resultant benefit to both the transportation company and the public.

Ten years ago, because of the agitation against public service corporations, the securities of these companies as an investment were generally discredited. The public attacked the companies because they did not deem the service provided adequate. The companies were unable to secure proper money terms because the attitude of the public made it practically impossible to secure capital in quantities necessary to make needed improvements. The problem of the relations of the city and the public service corporations had to be met and conquered.

The right of a municipality to own its transportation system is fast becoming a recognized function of city government to be faced in all cities. The public is joining in the profits, exercising supervision over construction and operation in a more direct manner than heretofore, and more intimately concerned with the capitalization of the companies. Besides Chicago, Philadelphia and New York City, Toronto, Detroit, San Francisco, Boston, Seattle, London and Paris may be cited as examples of this present-day tendency for a much closer relation of transportation companies and the municipality, and hence the public. On the other hand, the public sees the necessity of protecting the companies in the enjoyment of franchise privileges for a fixed term of years, with terms securing adequate compensation for the outlay of capital. The railroad corporations are recognizing the rights of the people to ownership and control and the right to share in the profits of operation.

The railroad companies for many years have needed some properly constituted authority that could and would protect them against radical and unjust attacks from the public press and the politician.

The Public Service Commissions can, and in a great many cases do, act as arbitrators and settle cases in dispute in a fair and equitable manner, and when this is done a better relation will exist between the railroad companies and the public.

Some day perhaps the commissions created for the purpose of supervising the railroads and other public utilities will be formed without a view to political considerations and wholly with the end in mind of putting the best men in office. When the personnel of commissions of this nature embraces men of practical experience, fairness of mind and education suited to the tasks confronting them (a discharge of duty without consideration for political expediency), then I think we shall have that degree of co-operation and hand to hand work desirable to the railroad man, the public and the people's accredited representatives, the Public Service Commission.

The Metropolitan Railway has taken over the Great Northern & City Railway, an underground line which extends from Finsbury Park to Moorgate, London Eng. The whole system will be overhauled and improved.

## ELECTRIC RAILWAY SECURITIES FROM THE INVESTOR'S STANDPOINT\*

BY A. M. HARRIS HARRIS, FORBES & COMPANY, NEW YORK

We are living in an age of constantly more refined specialization, which tendency has extended to the banking business, resulting in the development of the so-called bond houses. These institutions specialize in investment bonds, loaning funds to meritorious enterprises, taking in payment their mortgage obligations or bonds, which are in turn distributed among investors. Under favorable conditions the sound and stable character of the street railway business cannot be questioned, and it is my purpose to endeavor to place before you some of the safeguards with which, owing to the hazards peculiar to the street railway business, the bond houses must surround issues of street railway bonds to make them attractive to conservative investors.

On a proper basis, I know of no better situation on which to loan money than a street railway serving a large population, and there is no reason why street railway bonds, now, generally speaking, less in favor than other classes of public utility bonds, should not be equally popular with the investing public. But to make them so a distinct change of attitude on the part of municipalities and rate-regulating bodies is in part a condition precedent, as is an increasing disposition on the part of the operators themselves to accede more freely to the requirements of bankers in safeguarding their issues of securities.

You will, of course, appreciate the fact that the bankers who are supplying the "sinews of war" are in a position to dictate the terms upon which capital will be furnished, and looking at the subject in a broad way, such reasonable requirements as the bankers insist upon to make securities not only safe but salable accrue eventually to the benefit of the company by establishing its credit and a good market for its securities.

Unfortunately, the memory of the over-estimates of value indulged in while financing the consolidations of the traction systems in many of our large cities is still green in the minds of investors, creating a prejudice that must be overcome and an insistence upon ample safeguards that must be complied with. It is a well-known fact that the hazards, if you please, of the street railway business are greater than those of practically any other class of public utility. Among these hazards the following are worthy of consideration: (1) rapid depreciation and obsolescence of property; (2) labor troubles; (3) municipal interference; (4) damage suits; (5) economic disadvantage.

The first item is by all means the most vital and important, and fortunately, is the most easily overcome. More emphasis is constantly being laid by public service commissions and other rate-regulating bodies on physical duplication value as a basis for determining fair rates of charge for service. Therefore, the banker must satisfy himself as to the continuing ability of the company to earn, even under the most adverse circumstances, an amount sufficient to take care of the interest on his loan, and this may be accomplished by assuring himself as to the duplication value of the property in question.

Conservative bankers for these reasons limit an original issue of bonds to a figure within the duplication value of the property covered thereby. But what of the future? Looking to the maturity of the bonds twenty, thirty or forty years hence, and the payment of the interest thereon in the interval, it is apparent that it is equally important to insure the preservation of a safe relation of value of property to amount of outstanding bonds throughout the life of the bonds.

What has become of the investment which was represented

\*Abstract of a paper read before the American Electric Railway Association at Atlantic City, N. J., Oct. 13-17, 1913.

by the old cars and equipment that has, in the comparatively short life of the electric railway, either worn out or become obsolete and found its way to the junk pile? The answer is plain. If the day of their obsolescence was not anticipated and provided for through some adequate depreciation reserve, the investment was irretrievably lost, and similar unprovided processes occurring with respect to all of the property used in the operation of an electric road have undoubtedly been a very material factor in causing the long list of receiverships and reorganizations that is to be found in the history of the electric railways of this country.

Depreciation is a subject so comprehensive that it is almost inexhaustible. Numberless monographs have been prepared as to the most scientific method of accurately figuring it, covering the straight line method, the sinking fund method on various rates of interest, the insurance method, decreasing payments toward end of life, per cent of gross earnings basis, per cent of unit output basis, loss of value as determined from loss of efficiency, the mortality method and the 50 per cent method.

I shall not attempt to discuss the technical questions herein involved except to make the brief comment that we have found that around 22 per cent of the gross operating revenues of the average electric railway property comes very close to being the proper amount which shall be set aside from year to year for maintenance and depreciation. This arbitrary percentage of gross checks surprisingly with the amount arrived at by estimating the average life of the various parts of the property and arriving at a depreciation allowance in that manner.

As has been previously stated, the function of depreciation is to preserve the relation between bonds and property, so that if instead of increasing the property the bonds are decreased by a sinking fund the result is accomplished practically as satisfactorily, at least from the standpoint of the bondholder. Of recent years we have been adopting a modified form of sinking fund in those mortgages which do not make a specific provision for depreciation. This modified sinking fund provides that the company shall set aside so much per annum—either a percentage of gross earnings or a percentage of bonds outstanding—such money to be deposited with the trustee and used either (a) to pay for permanent extensions and improvements to the property which might otherwise have been made the basis of the issuance of bonds, or (b) to retire outstanding bonds in the hands of the public. This arrangement, while not quite so satisfactory from the standpoint of the house selling the securities in that it does not insure the sinking fund being in the market for the bonds each year, from the standpoint of the company is infinitely more desirable than a straight sinking fund, as it obviates the possibility of the company being placed in the position of going into the market to buy bonds for the sinking fund at a premium, and at the same time being forced to sell escrow bonds of the same issue at a discount to provide funds for the extension and improvement of its property.

It is customary to limit the issuance of escrow bonds, among other things, by a requirement to the effect that the net earnings of the property must be a certain number of times the interest on all bonds outstanding, together with those proposed to be issued. As supplementary to the foregoing remarks regarding maintenance and depreciation, it is interesting to note that the appropriations for maintenance and depreciation included in operating expenses naturally affect the margin of net earnings over bond interest required by conservative bankers.

Street railways are affected by labor troubles more than the other public utilities. The latest census reports available show that while only 13 per cent of the gross earnings of the electric light and power companies is spent for wages and only 16 per cent is spent by the gas companies, the

electric railways are spending over 30 per cent on this item. You will see that the amount of labor employed in practically every other class of public service is relatively small. Unfortunately, labor difficulties of traction systems in particularly the larger cities usually receive such nation-wide publicity that, aside from the actual effect on the finances of the company, among investors a sentiment is created against it which is extremely difficult to overcome. Street railway companies have been a very prominent mark for unscrupulous politicians and grafting officials demanding an issue, and aside from this, municipalities have themselves not been slow to attack street railway companies on every conceivable pretext. Another unfortunate part of this phase of the situation is the fact that in some cases maturing franchises have made it necessary for companies to go to the council for new franchises, which in many instances in the past, such as in Detroit and Kansas City, has resulted in a long-drawn-out controversy which has discredited the company's securities and made it next to impossible during that time to finance its legitimate requirements. And this, of course, has not increased the general popularity of street railway bonds.

Another hazard peculiar to the street railway business, and a particularly insidious one, is the liability to accident and the ensuing damage claims. According to the United States census report for the year 1907, the electric railways of the country spent over 4 per cent of their total gross earnings for damages and the legal expenses incident thereto.

In talking a short time ago with the president of a large gas company which is charging unusually low rates, and which has even voluntarily reduced the rates from time to time, he said in effect that it has been his experience that reductions in rates within reasonable limits invariably result in much larger consumption of gas per capita and ultimately increased earnings, which with the proportionate reduced cost of manufacture results in greater profits. The same is true, to a certain extent, of the electric and the telephone business, but experience has demonstrated that the number of passengers carried per annum by a street railway system is not affected to any great extent by reduction of fares. Thus it stands at an economic disadvantage in this respect.

While I have been discussing my subject purely from the standpoint of a purchaser of investment bonds, I wish especially to emphasize the fact that to make such bonds attractive to capital there must be an ample margin of earnings over and above the interest thereon. Net earnings of twice the bond interest is the usual requirement of conservative bankers. This means that in order to make its bonds salable the company must be permitted to earn a substantial amount for dividends over and above operating expenses and fixed charges.

Viewing this phase of the situation from another angle, it is essential that there be a substantial equity in the market value of the property over and above the bonds, and to produce this the stock must be permitted to earn and pay a dividend that will give it a ready and definite market value.

As the purpose of this paper is constructive, I have set down below a brief statement of the conditions precedent to so safeguarding issues of street railway bonds that they will enjoy the popularity which should be their right:

First—More reasonable attitude on the part of the public, which may come through the knowledge obtained by regulating commissions that the profits of the street railway business are not unduly large, and that to enable the street railway companies to obtain from investors the funds necessary for the development of their business their securities must be made not only safe but attractive.

Second—Larger rates of return to insure investment of additional capital in the business and give larger margins of net earnings over funded debt charges.

Third—Relief from burdensome taxes and free street im-

provements and maintenance that have no relation to the street railway business.

Fourth—Introduction of proper systems of fares so that no part of the service may be performed at a loss.

Fifth—Development of more stable relations with employees, reducing the hazards from that source.

Sixth—Recognition by street railway operators of the necessity of carefully safeguarding their capital obligation account and properly maintaining their physical properties.

Seventh—Safeguarding public against accidents by better equipment and safety devices and increased vigilance on the part of employees.

### SINKING FUNDS\*

BY WILLIAM H. FORSE, JR., SECRETARY-TREASURER UNION  
TRACTION COMPANY OF INDIANA

A great many of the early electric railway mortgages contained sinking fund provisions.

Theoretically, the sinking fund should be sufficient, with its accretions, to pay off the entire debt at maturity; in practice this is not usually considered necessary unless the company operates under expiring franchises or is limited in its charter or other rights. There is no universal rule of application which governs. Sinking funds are accumulated in a great many different ways. The following examples are cited for illustration:

The Central California Traction Company thirty-year mortgage provides that payments to the sinking fund shall commence six years after date of issue and shall be \$15,000 per year for ten years, \$30,000 per year for the next ten years and \$45,000 per year during the last four years. These payments are to be proportionately reduced if the entire authorization of bonds is not issued.

The Butte Electric Railway twenty-five-year mortgage provides for a sinking fund of 10 per cent of the bonds outstanding, beginning sixteen years after the date of the mortgage.

The Muncie, Hartford & Fort Wayne Railway mortgage provides that payments to the trustee shall be made semi-annually for sinking fund purposes. The payments are to be 2½ per cent of the gross receipts, and the company has the option of depositing its own bonds at par in lieu of cash.

The Columbia Railway, Gas & Electric Company mortgage provides for payments to the trustee annually, commencing three and one-half years after date of the mortgage, of an amount equivalent to 1 per cent of the outstanding bonds.

The mortgage of the Citizens' Street Railway, Muncie, Ind., provides for the payment of a lump sum semi-annually, plus a sum equal to the amount which would have then accrued upon all of the bonds then and theretofore redeemed and canceled through operation of the sinking fund. The fund is used in redeeming bonds, called by lot, at 105.

Sinking funds are not so common in recent electric railway mortgages. It is considered better policy to use cash in keeping the physical property up to high standards instead of depositing it to remain idle in sinking funds or using it to pay off bonds in instalments through the operation of such funds. When the bonds mature they are refunded, frequently at lower rates of interest, provided the company has maintained its property and credit well and is not hampered by short-term franchises, rights or charters.

An examination of the accounting systems prescribed by regulatory commissions discloses the fact that in some cases the methods of accounting for sinking funds are broadly defined.

The Wisconsin system of accounting for electric railways groups "contractual sinking fund requirements" under the head of "deductions from gross income." The text of the

account provides that all accruals required to be made by the railway to sinking funds in accordance with the provisions of trust deeds, mortgages or other contracts requiring the establishment of sinking funds shall (without exception) be included in the monthly income account.

The New York system of accounts for street and electric railways contains an account entitled "sinking fund accruals," to which shall be charged month by month all accruals required to be made to sinking funds in accordance with the provisions of mortgages or other contracts requiring the establishment of such funds. This account is to be included in the income account in a group of "income deduction accounts."

The Interstate Commerce Commission form of "income and profit and loss account" for steam roads provides accounts in the income statement and in the profit and loss statement for contributions and accretions to sinking funds, the amounts of which are to be credited to certain balance sheet accounts. The text of the income account provides that "amounts of appropriation of income for sinking funds" shall be included in this account, and it is further explained that "the terms of mortgages, deeds of trust or other contracts providing for the allocation of income or for the payment of definite sums into sinking funds and for accretions to such funds on account of income from previous investments may be made the basis of such appropriations." A footnote to the text explains that if appropriations for direct payments are made from surplus they should be charged to the account "appropriations of surplus to sinking and other reserve funds."

Dicksee, in his "Advanced Accounting," says that "the advantage of employing a sinking fund lies not in any direct economy of revenue charges that it may effect but in the assurance which it gives that when the wasting asset against which it has been created has become valueless there will be moneys in hand available for the purchase of another asset of equal cost."

M. M. Kirkman, a steam railway executive and a writer on accounting subjects, has this to say: "Sinking fund is unrepresented capital. It is not chargeable against income account any more than any other capital expenditure. The reason why we so often find it included in the income account is because of the conservatism of proprietors."

Hatfield, in "Modern Accounting," writes as follows: "Neither national banks nor foreign corporations consider the compulsory establishment of a surplus a reason for understating the annual net profits, and they do not charge the required percentage of their profits as if it were an expense, but show it properly as an appropriation of profits. So the compulsory nature of the sinking fund, while lessening the amount which may be available for dividends, should not diminish the net profits shown."

The chief object sought to be attained by the presentation of this paper is a full and frank discussion of a subject which concerns some, though not all, electric railway accountants.

The directors of the Melbourne Tramway & Omnibus Company, Melbourne, Australia, report that the balance shown after paying 3s. per share in dividends and bonuses for the year, and including £95,991 brought forward from last year, is £202,754. From this they propose to pay a final bonus of 1s. per share, £480,000; to carry to reserve for return of capital, making it £480,000, £105,741, leaving to carry forward £49,013. The traffic receipts for the year to June 30 improved by £34,181, and 4,284,810 more passengers have been carried than during the previous year. The negotiations for the sale of the company's business to the government that were in progress at the time of the last report ultimately lapsed. For the quarter ending Sept. 30 the directors announce a dividend amounting to 6d. per share and also a bonus of 6d. per share.

\*Abstract of a paper read before the American Electric Railway Accountants' Association at Atlantic City, N. J., Oct. 13 to 17, 1913.

## ENGINEERING ACCOUNTING\*

BY J. VIPOND DAVIES, CHIEF ENGINEER HUDSON & MANHATTAN RAILROAD

With respect to the question of interdepartmental and overhead charges, the conditions are totally different in shop work and in construction work, and should, it seems to me, be considered differently if such work of construction is being done within the organization itself or without the organization, as the two items appear to me to be distinctly separable. Interdepartmental charges for work executed and disbursements distributed from one department to another should be considered as separate from the question of overhead, and any interdepartmental charges so made should be rendered as bills which must be passed upon by the debtor department just as though they were bills of any outside concern. I believe this to be the usual practice, but I have in my personal experience had illustrations where such interdepartmental charges were made by the creditor department and entered as a cost of the work without any notice to the debtor department and there were no means whereby the debtor department might know what was being billed against it. Such departmental bills should be open to just as much criticism and adjustment as bills of outside parties.

The question of overhead, where no additional officers or expenditures are needed for carrying on the interdepartmental work, does not appear to me to be a reasonable or sensible proposition. If any additional expense, over and above the normal operating overhead, is necessary to carry out any construction or extensive maintenance, then such extra overhead expense incurred should legitimately be made as a charge against such work. On the other hand, where work is done by a railroad organization for outside parties and charges for such work are made against outsiders, then unquestionably an adequate overhead charge should be distributed to and charged against such outside parties. As an illustration of this, I would instance such cases as those of street railroads having to reconstruct or carry out extensive repairs in consequence of the construction of subways or other subsurface improvements within the limits of cities. In such cases I think it is perfectly reasonable and proper to distribute an overhead expense to represent the cost of general administration and the general accounting, which cannot be charged in and accounted for as items of cost detail. In my experience I have been charged by different companies for this item amounts ranging from  $7\frac{1}{2}$  to 20 per cent on the cost of labor and materials employed and used in the work, and this notwithstanding the fact that the unit prices of such labor and materials have in themselves indicated an inflation more than sufficient to cover any reasonable and proper overhead expense. Of course, it has occurred to me that 20 per cent was unduly high and that probably an amount between  $7\frac{1}{2}$  and 20 per cent, or say about  $12\frac{1}{2}$  per cent, would be a fair, reasonable and legitimate charge for overhead and administration. This feature has been recognized by the city of New York, and in certain franchises granted by the city for the construction of subways the city has inserted in the text of such franchises a limitation of  $7\frac{1}{2}$  per cent.

### COST ACCOUNTING

In respect of accounting it is also very important to bear in mind the text of the interstate commerce act applicable to railroads doing interstate commerce business and reporting to the Interstate Commerce Commission. This says, in part, that it shall be unlawful for such carriers to keep any other accounts, records or memoranda than those prescribed or approved by the commission.

I have quoted this clause for the further reason that

there has been an attempt, in preparing recent contracts for the construction, operation and maintenance of rapid transit railroads, to insert the substance of this act in the contracts and to require that no accounts, records or memoranda shall be kept other than in accordance with the uniform system of accounts laid down either by the Interstate Commerce Commission or the state commission governing public utilities. To comply literally with such a prescription as this would make an intelligent operation of cost accounting ridiculous and would permit the officers of a railroad to know nothing whatever about what the costs of work involved. The fact of the matter is that in any accounting of costs for work done by the engineering departments of any railroad it is not sufficient to follow out a hard and fast system, but it is necessary to conduct such accounting of costs in such form as will convey to the engineer a definite understanding of the relative value and costs of any piece of work executed so that such information as to value and costs may be of use and service in making comparison with the costs of other work or in arriving at an understanding to guide the engineer in his ability to estimate on the cost of proposed work.

What is really wanted in this respect is that the engineer shall be posted in the same manner as a contractor is informed as to the resulting value of labor and materials used and employed in executing any piece of construction work, and, further, shall be so informed as to know that the labor so employed is honestly and intelligently executing its work economically and rendering value for the money paid out.

This work, it seems clear to me, involves the greatest possible flexibility in cost accounting and can only be done by an accounting department that is thoroughly familiar with the engineering end of the work. In many large construction works with which I have been identified I have found that the results of the cost accounting as executed through the auditing departments have been utterly valueless in establishing the true value of work executed, particularly in such forms as are nowadays necessary for supplying costs of reproduction, such as are essential in the evolution of the provisions of the federal valuation act. Hence, I have long since ignored entirely the auditing departments of corporations in respect of arriving at the actual costs of construction work and have organized definite departments of engineering cost accounting, which segregate the quantities of labor and materials involved in any given piece of work so that the result furnishes the engineer with information which can be applied to any of the purposes to which cost accounting is essential and necessary. In the final wind-up of a construction work the disbursements distributed by the engineer's cost accounts should aggregate the same as the costs according to the books of the auditing department, but with the units segregated and distributed so differently that it is only in the final wind-up that these figures will tally and correspond. The value and advantages of so keeping and maintaining the engineer's costs have time and again been demonstrated with several organizations for which I have acted as engineer, when they have been called upon to furnish information regarding costs of the properties in response to demands from public commissions, tax boards, etc. In all such cases it has been the engineer's cost account which has been accepted as against the accounts of the auditing departments. I do not mention this as disparaging the system of accounting followed by auditors generally, but as illustrating the point that costs as maintained by the engineer convey more clearly and concretely to the engineering representatives of public commissions, tax boards and the like the information which they are seeking and which it is essential they should have to enable them to arrive at conclusions which are fair and equitable to all parties involved in determining the cost of reproduction of public utilities. The influence of

\*Abstract of paper read at joint meeting of Accountants' and Engineering Associations, Atlantic City, N. J., Oct. 13-17, 1913.

federal legislation in due time, I have very little doubt, will spread into the state laws.

#### TIMEKEEPING

With respect to the matter of timekeeping, there is a great deal that could be said on either hand. If timekeeping is considered to be purely the recording of time expended in the service of the company by each individual employee, then I have no doubt that the weight of evidence would be in favor of the timekeeping being administered and directed through the auditing department and independent of the engineering department. Such a plan, theoretically at least, would insure the least likelihood of collusion between the superintendents and foremen, on the one hand, reporting to the engineering department, and the timekeepers, on the other hand, reporting to the auditing department. However, the distribution of the labor accounts is as essential to proper cost accounting as the distribution of the materials, and with the view to obtaining the most intelligent record of the work executed by each employee or gang of employees and the cost of labor involved in such work, comparing the work of an individual or a gang with another individual or gang, then without any question the weight of evidence would lead to the conclusion that the timekeeping should be under the control and supervision of the engineering department. One thought that occurs to me strongly is whether collusion would be reduced or prevented entirely by timekeepers reporting to the auditing department. The honesty of a timekeeper is absolutely and solely a question of the personal equation of the individual, and the question as to what department he reports to has nothing whatever to do with it. If this view is agreed to, then there seems to be no question that the most satisfactory and advantageous manner of keeping the time of labor is by maintaining it within the control and under the supervision of the engineering department. As a compromise, I submit the suggestion that the work of the timekeepers might with advantage be audited from time to time by the auditing department as a check on the responsibility and honesty of the individual timekeeper. I mean, in the broadest sense, that a superior timekeeper or superintendent timekeeper should have the right of supervision over the timekeepers with powers of detection if necessary to establish freedom from collusion.

#### EFFICIENCY ENGINEERING

There is still another item regarding which I would like to say a word, and that is in regard to Appendix B on efficiency engineering. This portion of the report is prefaced by the remark that men are to turn out so much work and of such a quality and are to be paid accordingly. I doubt if anyone interested in this question of accounting will question or criticize this desire. It is what we should all like to attain to, but it is that which the tendency of all labor organizations is to upset and destroy. Unfortunately, owing to the socialistic development of labor unions, they will not consider any such proposition as a possibility, and the main aim and purpose of the labor unions, it seems to me, is to level down to the standard of the least competence the work of all labor, both skilled and unskilled. From the point of view of efficiency we should, of course, all desire to attain the results indicated by Mr. Maize, but we have the labor union conditions confronting us, which I am afraid will make this proposition of little effect. Carrying this to the greatest extreme that I have heard of is the case of the condition of the Paris labor unions, where in the execution of tunnel construction under compressed air every man is classed at the same rate, whether he is shoveling mud or whether he is doing skilled engineering and construction work, the labor unions in that case putting a definite premium on the degradation of labor. Some elaboration, I think, should be given by the committee to the "authority for expenditure" forms for construction work.

## STUDY OF ECONOMIC CONDITIONS BY CIVIC FEDERATION

The National Civic Federation is planning a study of industrial and economic conditions in this country to determine whether during the last few years there has been progress or retrogression.

Here are a few of the many questions that the investigators will seek to determine:

"Is wealth being concentrated in fewer hands? Has the organization of large corporations resulted in a great withdrawal of wealth from the people or a more general distribution of wealth

"How do the provisions for the wage-earners' health, safety and comfort during working hours compare with those of a generation ago?

"How about our political and business ethics? Are our moral standards and our aspirations higher or lower now than at any time in the past? What, if anything, are the gains for purity and cleanliness in politics, through the regulation of primaries, publicity of campaign contributions and other changes in election machinery?

"Should philanthropy be undertaken by the State?"

## COST OF PASSENGER TRANSPORTATION SERVICE\*

JAMES D. MORTIMER, CHAIRMAN; PATRICK CALHOUN, PAUL SHOUP,  
HENRY G. BRADLEE, THOMAS N. M'CARTER

1. We have considered your directions for the establishment of a permanent organization by the American Association to study the problems of rates and fares.

2. We have considered the cost of conducting such a bureau for a period of about three years, and have ascertained that the association will appropriate \$7,500 toward the conduct of such a bureau for such period. We have estimated that the additional cost of carrying on this work will be not less than \$15,000 or that the total cost of such work will be about \$22,500, distributed in annual expenditures of about \$7,500.

3. We have determined that the additional \$15,000 can be obtained from contributions by member companies. We have agreed that this work shall be begun immediately after the annual convention, and that it should be carried on under the title of "Bureau of Fare Research." The man in active charge might properly be known as the director of Bureau of Fare Research.

4. We have determined that, for the present at least, it will be advisable for this director to be subject in his work to the guidance of the committee on cost of passenger transportation service, although in all other respects subject to the orders of the officers of the American Association.

5 We recommend that the scope of the bureau be defined to include:

(a) The determination of the factors affecting the cost of passenger service, including investment, investment charges, operating expenses, length of haul, traffic density and the distribution to the member companies of the results of these studies as far as they were completed, and developed in as simple language as the subject permits.

(b) The assembly, statistical compilation and distribution of various operating data now being received by the secretary of the association.

(c) The assembly, statistical compilation and distribution of financial operating results of member companies.

(d) The study and distribution of results of such study of unusual conditions, affecting either the rate of fare received or operating expenses of electric railways.

(e) Providing a source of authentic, accurate and detailed information relating to the economies of the subject of rates of fare, on which member companies may draw.

\*Abstract of report read before the American Electric Railway Association, at Atlantic City, N. J., Oct. 13-17, 1913.

## REPORT OF COMMITTEE ON COMPANY SECTIONS\*

C. N. DUFFY, CHAIRMAN; W. M. CASEY, R. J. CLARK, E. J. COOK,  
P. H. GADSDEN, D. A. HEGARTY, P. N. JONES, MARTIN SCHREIBER

Since the first report of the committee, made at the 1912 convention, only one company section has been organized—Company Section No. 3, the Denver City Tramway Company. In only one company have any definite steps been taken looking to the organization of a company section, namely, the Washington Railway & Electric Company, Washington, D. C.

While it is gratifying to your committee to know that the membership in the three company sections already established numbers some 600 or more, that this number is slowly but steadily increasing, that the three companies in question, as well as the employees composing the membership of the three company sections, are well satisfied with the work already accomplished and feel hopeful for the future, your committee is keenly disappointed with the poor results of the company section movement thus far attained. Instead of three company sections there should be fifty. Instead of 600 company section members there should be 5000.

So much has been written, spoken and printed regarding the advantages of company sections for both the companies and the employees that it is incomprehensible why the electric railway companies in the membership of the American Electric Railway Association do not, in their own interest and in the interest of their employees, make use of these advantages. This indifference or failure to respond to and co-operate with the American Electric Railway Association in its efforts to broaden its field of usefulness to its members through the company section movement is in strange contrast with the quick response, hearty co-operation and splendid results accomplished through the company section movement of the National Electric Light Association.

It may be of interest and importance to the association to present briefly some of the advantages of the company section movement as viewed by each of the three company sections now organized, based upon experience.

Company Section No. 1, The Milwaukee Electric Railway & Light Company, has put forth these advantages to its members in the following:

"An opportunity to attend monthly conventions, so to speak, of the American Electric Railway Association.

"An opportunity to present papers and to take part in the discussions of the monthly conventions, thereby enabling each member to add to his knowledge of the business he is engaged in, enlarge his field of action and develop himself in a broad educational way.

"An opportunity to compete for the gold medal offered by the American Electric Railway Association for the best paper presented at a company section meeting.

"An opportunity to acquire without effort the ability to 'speak out in meeting' and participate in debates. This inspires reading, studying and thinking, thereby lifting one out of a deadening rut.

"An opportunity for members to meet and be brought in close touch with the officials, department heads and employees of the company.

"An opportunity to learn from company officials and departmental heads the broad principles of management, a knowledge of the problems with which the company may be confronted and the relation of the company to the public and its employees.

"An opportunity to develop into missionaries for the education of the public and to spread the gospel of truth and fair play, as opposed to misunderstanding and prejudice, regarding the company and the conduct of its business.

"An opportunity for members to bring to the attention of company officials and departmental heads, at close range,

some of their problems. This means enthusiastic co-operation which spells success, alike for the employees and the company.

"An opportunity for the members to learn what it means to carry responsibility of management and what employees must do in order to fit themselves to carry such responsibility, if departmental heads and officials are to be chosen from the rank and file of the employees."

Company Section No. 2, Public Service Railway Company, has this to say:

"The principal advantage of monthly section meetings is on account of the application of particular local problems, which are a matter of vital concern to the company and employees in their everyday existence. Problems that are not theoretical are the ones that the men can see, appreciate, investigate and experiment upon for themselves. It is not possible to bring one of these operating problems, that are met with day by day, to the attention of a body of men who are directly or indirectly interested without gaining some knowledge or new thought that later may be capitalized. Nor, on the other hand, can the employees consider the subjects of the section meetings without developing and broadening their viewpoint and themselves. It is from these men that the people at large, to a great degree, get their impressions of what the railway company is really doing toward carrying out its obligations. A man who doesn't know cannot explain that his company is carrying on its work according to the best modern practice, or in a way that compares favorably with it and possibly meets certain difficult local conditions.

"It is well known that anyone practising a profession or carrying on a business who is not able to show or explain the benefits arising can never expect anything but a small success, if success at all. So it is with a railroad company; its very existence and operation must be defended.

"The better the company's employees are trained and educated and are able to think for themselves, the more efficient the army of the general manager to fight his operating battles and uphold his true position with the public that he serves. A great many railroad men believe in educating the public, or general publicity. Why not begin at home and train our own men first by the association section movement?"

Company Section No. 3, the Denver City Tramway Company, hits the nail on the head with respect to the fundamental principle of company section work:

"Membership is open to all employees, as a result of which each department of the company is well represented, trainmen being in the majority. Every employee who becomes a member very quickly develops into a booster for the section as well as an enthusiast for the industry which it represents, displaying his pride at every opportunity when coming in contact with the public. This is especially true of trainmen, who are constantly dealing with the public. It would be difficult to estimate in dollars and cents their value as molders of public opinion.

"The question has been asked 'Should motormen, conductors and other employees, irrespective of their positions, be invited to become members?' I should unhesitatingly answer yes. I think any company would derive its greatest benefits from this class of membership. Only the most intelligent and ambitious among them will want to join, and the more of this type there are on any property the more valuable the property. The same applies to length of service. Only the man who desires to remain will become a member, and the more of such men we have the greater is our business. This type of employee when he registers as a member usually becomes very active, studying the business he is following, constantly improving his work as his knowledge increases. He is not satisfied with this but knows several other good fellows whom he induces to become members by telling them the advantages to be derived by such association. Before adding their names to the section rolls, when

\*Abstract of report read at meeting of American Electric Railway Association, Atlantic City, N. J., Oct. 13-17, 1913.



discussed with outsiders, the affairs of the company were referred to as 'they' and 'theirs.' After admission the words 'we' and 'ours' at once took the places of those formerly used, with a corresponding feeling of friendliness and loyalty. Put several hundred of such men on our cars to deal with the public, and, as before stated, it would be difficult to estimate their value."

In the face of this testimony it is the duty of every one interested in or concerned with the electric railway industry to do everything possible to further the company's movement and co-operate with the association in the work it has undertaken for the benefit of the member companies and the employees of the member companies.

The success or failure of the company's movement and all that it stands for rests, not with the association, not with this committee, but with you. Therefore it behooves each of you, individually and personally, to take this home to himself to see that he does his full duty.

### REPORT OF COMMITTEE ON COMPENSATION FOR CARRYING UNITED STATES MAIL\*

BY T. H. TUTWILER, CHAIRMAN (RESIGNED); J. McMILLAN, H. A. NICHOLL, E. C. SPRING, C. H. HILLE, J. K. CHOATE, A. R. PIPER,  
GEORGE B. WHEELER

While the committee is not able to report any successful conclusions at this time, nevertheless some progress has been made, and if the statistical information now in hand can be augmented by that from a considerable number of companies which have not yet responded, we should be able to put our case clearly before the proper authorities during the next Congressional session. However, the individual companies, which will gain by any successful results, will have to provide us with our ammunition in the form of general and authentic figures.

One departure during the present year was the appointment of a special committee, representing a few of the larger electric railways particularly interested, which went to Washington to attend a hearing arranged by Henry S. Lyons, secretary Boston Elevated Railway.

The members of the special committee met at a hearing before the joint committee on postage and second-class mail matter and compensation for transportation of mails, held in Washington Jan. 28 and 29, and Feb. 7, 12 and 17, 1913. To support their contention that 1.5 cents per linear foot for each car mile should be the compensation, they submitted statements showing that the actual cost of operation was substantially that amount.

As a result of this conference, Senator Bourne, chairman of the joint committee, suggested that it might be expedient for the railway association to offer an amendment to the so-called Talbot bill or the so-called Postmaster-General's bill, which were pending action. Full consideration was given to this suggestion, and after full deliberation and advice of counsel we advised Senator Bourne that it was impossible for us to suggest amendments to these bills that would cover the needs of street railway service. These bills referred only to steam railroads.

Shortly after this, Senator Bourne stated that the post office appropriation bill for the year ending June 30, 1914, would give his committee authority to consider an independent bill.

Consequently for the association drafted a bill entitled "A Bill to Equalize Pay for Mail Service on Electric and Cable Car Routes," which was presented to Senator Bourne. Since this was presented to Senator Bourne, we have kept in close touch with the matter, and in our opinion the prospect seems bright for railways to obtain increased compensation this coming year.

The bill presented to Senator Bourne authorizes the Postmaster-General to readjust the compensation to be paid from and after July 1, 1914, for the transportation of mails on electric and cable car routes.

For space the full width and height of the inside of the car and not exceeding 30 ft. in length, authorized to be used in independent or trailer cars or in apartments in independent or trailer cars (except on interurban routes as defined), the bill provides 1.5 cents per linear foot for each mile run in the performance of service.

For closed-pouch service not performed in independent or trailer cars or apartments thereof entirely devoted to mail service, the bill provides \$150 per annum for consignments of not more than three pouches 2000 miles or less in a year, \$175 per annum for the carriage of such consignments more than 2000 and not more than 3500 miles in a year, and thereafter 5 cents per mile for the carriage of each such consignment 5 miles or less, and 3 cents per mile for each mile in excess of 5 miles, and for all pouches in consignment in excess of 3 miles, 1 cent per mile additional.

For all service on routes over 20 miles in length outside of cities (designed as interurban routes) the bill stipulates the same rates provided by law to be paid for like service on steam railroads.

A minimum annual rate on the basis of 30,000 miles run shall be paid for all independent cars or apartments in independent cars required in the service.

The Postmaster-General is directed by the bill to provide for the carriage of the mails to and from the electric and cable cars by the Post Office Department.

[The report also contains a tabulated statement prepared by the Boston Elevated Railway of the estimated cost of the operation of United States mail cars on that system. This statement was published in the ELECTRIC RAILWAY JOURNAL for Feb. 15, 1913.—Eds.]

Consul C. P. H. Nason at Grenoble, France, said recently in a report to the Bureau of Foreign and Domestic Commerce, Department of Commerce, made as a result of investigations: "With great dispatch in recent years the waters from the melting snows and glaciers of the French Alps have been put to industrial uses. The very large, picturesque, and mountainous section of southeastern France, which extends 375 miles from Lake Geneva to the Mediterranean and which some thirty years ago was given over mostly to pastoral industries, has become the home of hydroelectric installations on an ever-enlarging scale. The electric current developed from the streams fed by the melting snows furnishes the motive power for prosperous metallurgical industries in the valleys. These include industries having to do with ferroalloys, aluminum, electrosiderurgy and electrochemicals, as carbonate of calcium, carborundum, chlorates, explosives, phosphorus, sodium, etc. The manufacture of wood pulp and that of paper are equally well developed. According to statistics compiled by the engineer-in-chief of the hydraulic forces of this region of the Alps and published by the Ministry of Agriculture in the latter part of 1911, the total installations represented a maximum of 475,000 hp (with a minimum at lowest water of 180,000 hp), distributed as follows: Basin of the Isere, 260,000 hp; Durance, 93,000 hp; Arve, 54,880 hp; Rhone, 22,410 hp; Guiers, 14,760 hp; Siagne, 8,000 hp; Var, 8,350 hp, and other places, 13,000 hp. Of this total 210,000 hp were used for metallurgy, 155,000 for the distribution of force and light, 60,000 for chemical products, 30,000 for paper making and woodwork, 10,000 for traction, and 10,000 for divers other purposes. Nor is this the limit of available power. Concessions for other installations have been granted and the total horse-power of projects contemplated rises to some 700,000, of which by far the most important is that at Genissiat on the Rhone, which would produce more than 220,000 hp for transmission toward Paris."

\*Abstract of report read before the American Electric Railway Association, at Atlantic City, N. J., Oct. 13-17, 1913.

## SOME ASPECTS OF THE MODEL PUBLIC UTILITY BILL\*

BY WILLIAM D. KERR

The National Civic Federation on June 23, 1911, called a conference to consider the regulation of public utilities. Some four years previously the federation had completed the most extensive investigation of the municipal ownership of public utilities which had been attempted up to that time. Its conclusion, based on detailed analyses of the operation of typical privately and publicly owned plants in this country and abroad, was adverse to public ownership and operation when adequate regulation of privately owned and operated utilities was obtainable. An investigation of the regulation of public utilities was a logical outgrowth of the earlier investigation.

The conference was largely attended by representatives of public service commissions, public utilities and by men in various walks of public life. The efforts of the federation in the public utility field were known and highly appreciated, and the federation was able at this time to command the attention and co-operation of men experienced in public utility management and regulation.

An investigation of public utility regulation was decided upon by the conference, a committee was appointed to report on the plan and scope of the investigation, and at an adjourned meeting the report of this committee was adopted. In pursuance thereof the department on regulation of interstate and municipal utilities was organized, and its executive council proceeded with the organization of the investigation and its conduct.

The department and the executive council had for its chairman Emerson McMillin, chairman of the board of the American Light & Traction Company. Mr. McMillin was widely known in the gas industry and was extensively interested in the electric central station and railway industries. The vice-chairman was a banker, Franklin Q. Brown, of Redmond & Company, New York, who was extensively interested in railroad and public utility investments. As secretary, John H. Gray was appointed. He was head of the departments of economics and political science at the University of Minnesota, historian of Boston gas, and had been an active member of the earlier municipal ownership commission of the federation.

The other members of the council, as finally constituted, and their associations were as follows: Hon. Edward M. Bassett was a practising lawyer in the city of New York, and had served one term on the New York Public Service Commission, First District. Hon. Martin S. Decker was a member of the New York Public Service Commission, Second District, and is now its chairman. Mr. Decker has not been able to give active attention to the work of the federation for some time. Hon. Halford Erickson was a member of the Railroad Commission of Wisconsin, having served in that capacity continuously since the organization of the commission. Perhaps no individual in private or public life has contributed more to the success of public utility regulation than Mr. Erickson. Hon. Franklin K. Lane, at the time of his appointment, was a member of the Interstate Commerce Commission and now is Secretary of the Interior. It had been the expectation that special attention would be devoted to certain phases of railroad regulation. When this was found to be impracticable Mr. Lane withdrew his active participation in the work. Blewett Lee, of Chicago, was general solicitor of the Illinois Central Railroad. William D. Kerr, of Chicago, was a lawyer who, as assistant to the director, was associated with the department at the time of his appointment to the council. Hon. Milo R. Maltbie had been a member of the New York Public Service Commission, First District, since its organization, and had been an

active member of the earlier municipal ownership commission of the federation. With propriety it may be said of Mr. Maltbie that his presence on the Public Service Commission has constituted in the past, and to an increasing extent to-day constitutes, a bulwark of strength for the safe, sane and progressive regulation of public utilities. Arthur Williams was general inspector and general agent of the New York Edison Company and chairman of the public policy committee of the National Electric Light Association.

All appointments to the executive council were made by the president of the National Civic Federation, Hon. Seth Low, one time Mayor of the City of New York, former president of Columbia University, and a man distinguished for his long, disinterested and able service in the public interest.

### PROGRESS OF WORK

Dr. Gray was appointed director of investigation. The recruiting of a staff and the actual work began in February, 1912. From that time to the first of March, 1913, the work progressed with all possible speed. Public utilities and public service commissions in all parts of the country were called on for advice and assistance. Investigators visited all of the important commissions in this country, and special investigations were conducted in England and on the Pacific Coast.

The drafting of a model bill for the regulation of public utilities was decided on very early in the investigation. To this end existing statutes were compiled and analyzed, the results of this activity being embodied in a 1300-page volume recently published, which is entitled "Commission Regulation of Public Utilities."

Seven sub-committees were organized, to which the council looked for recommendations in drafting the bill. These committees were widely representative, but limitations of time and the press of other duties prevented many of their members from devoting to the work the close, personal application which was required.

In the latter part of February, 1913, representatives, designated as such, of the electric railway, electric lighting and telephone industries requested a conference on the subject of the bill. This request was gladly acceded to. Throughout the investigation it had been the policy of the council to encourage the fullest and freest discussion of the bill.

The first of the series of conferences resulting from this request was held the last of February at Atlantic City. It was attended by a number of prominent public utility representatives and by representatives of the National Civic Federation. The public utility representatives at the conclusion of the conference appointed a so-called conference committee composed of E. W. Burdett, Boston, chairman, and E. A. Armstrong, H. J. Hemmons and J. L. Swayze. This committee presented to the council early in April a detailed report on the bill which amounted practically to a substitute bill. The report was considered at length in conference and by the council alone.

In the latter part of June the conference committee presented another detailed report at a meeting of the department. At this time the committee was designated to represent the views of certain members of the department, and a number of conferences have been held by representatives of this committee and of the council.

In the time that has elapsed since the Atlantic City meeting the bill has been improved both with respect to a few important principles and a great number of minor details. It was to have been expected that any further time and effort spent on the bill would be productive of some improvement. The council at no time has believed it possible for it to produce a perfect bill. Its purpose has been rather to develop the best bill possible in a reasonable time and with the resources of information and experience available.

\*Abstract of paper read before the American Electric Railway Association, Atlantic City, N. J., Oct. 13-17, 1913.

## FUTURE PLANS

The course which the National Civic Federation will pursue in the future cannot be predicted. It is to be hoped, however, that it will arrange before the beginning of another legislative year to publish a bill which commends itself to the federation as representing fairly a progressive attitude toward the subject. It would have been desirable, had it been possible, to publish such a bill prior to the legislative sessions of 1913. It is quite improbable, however, that any legislature will adopt a model bill in entirety. But there is reason to believe that the legislatures of the country will pay respectful attention to the principles embodied in a model bill promulgated by such a body as the National Civic Federation and carrying the support of all parties concerned as to its essential provisions. Of even greater importance, however, than the direct effect of the bill on legislation is its effect on public opinion. The publication of this bill with the approval of the industries affected will serve as a convincing argument to the entire country of the sincerity of the public service industries in their expressed desire for proper regulation of public utilities and of the desire of the advocates of public regulation to do justice and encourage the proper development of public service agencies.

The publication of the model bill will mark an important step in the development of sound relations between the public and its public service agencies. It will be only one step, however. Of equal, if not greater, importance to the public as well as to the corporations is the growth and development of a sound and discriminating public opinion respecting the administration of commission laws. No public utility law will administer itself. The success of regulation depends as much upon the personnel, integrity, intelligence and initiative of the regulating body as upon the perfection of the regulating statute. To obtain and maintain these qualifications, constant effort on the part of those who are informed is an imperative necessity.

## IMPORTANCE OF WORK

This is one of the important suggestions arising from close association with the drafting of the proposed model bill. On the success or failure of the regulation of public utilities depends the future of private industry and investment in the field of quasi-public service. This opinion might be supported with public statements of many men prominent in private and public life, but this would involve repetition of what any observer of the tendencies of the present day must already appreciate. That a termination of the system of private ownership and operation in this field would be accompanied by general losses to the public in the lowering of the standards of service, in additional and uncompensated burdens on the tax roll, and in a virtual revolution in political conditions, I believe most thoroughly. The alternative to such a change undoubtedly is the establishment on a sound and responsible basis of a well developed and well founded plan of state regulation of public utilities.

The model bill of the National Civic Federation is a joint product of unofficial representatives of the public and of public utilities. The same parties in much the same way should give serious consideration to a joint undertaking with the avowed purpose of strengthening the administration of regulating laws and of opposing unwise and destructive theories and tendencies. The model bill will be an important step in a much needed program of informing the public of the true nature of the issues raised from time to time. The greatest benefit could be derived from a continuous organization of the character of the department of the National Civic Federation which developed the proposed model bill.

The facts concerning the developments of the past and the requirements of the future in the important public service industries should be brought forcibly to the attention of the public. How many of us realize that the entire

history of such wonderful industries as the telephone, the electric central station and electric traction embraces a period no longer than the active lives of some of the still young men now directing their destinies? What then may not the story of the next twenty-five years be? Destructive tendencies are rampant. Fanciful theories are finding resting places in many an uninstructed mind. There is a great dearth of intelligently collated and easily digested information with which to combat these tendencies and establish a sound understanding. There is an unwarranted lack of organization with which to meet intelligently the active propaganda of the enemies of the present form of social organization.

A model public utility bill will afford a common ground on which all who believe in the principle of public regulation may stand. Time will necessitate changes in the bill. Experience will show the need of advancing or retiring on one line or another. It will be many years, at least, before an ideally perfect bill is drafted. In the meantime, however, a standard will be available wherewith to measure legislative proposals.

The model bill is not yet published. The future program with respect to the bill rests with the federation, and I am unable to say what it may be. I hope that when the model bill is published all who are interested in promoting sound and lasting public relations may be able to give it their indorsement for what it purports to be. Let us look upon the product of the federation with sympathy for those who have contributed to its creation, appreciation of the difficulties of reconciling a vast amount of conflicting experience and a great number of contending facts, and confidence in the patriotism and high purpose of the National Civic Federation.

No discussion of the proposed model bill of the National Civic Federation is complete without a word of appreciation of the tireless energy, undaunted enthusiasm and unselfish generosity of the chairman of the department. Without stinting in any degree the praise to which all are entitled who have been associated directly or indirectly in the undertaking, it may well be said that the inspiration of Mr. McMillin's broad-minded leadership has been indispensable to a successful outcome. Mr. McMillin is entitled to the generous thanks of the public service industries and of the public at large for this unofficial service for the public welfare.

## LORAIN STEEL COMPANY EXHIBIT

The Lorain Steel Company, space 418, has a number of special pieces which merit careful study. One of these is a switch for a temporary cross-over, using 110-lb. grooved rail. This is the heaviest grooved rail which has been rolled, but the demand for heavy temporary special work is now sufficient to warrant the expense. This cross-over is designed to be non-obstructive so that by throwing dirt around it a wagon can run over it. A remarkable piece of special work on exhibition has been made for use in New York at Tenth Avenue and Forty-second Street. It is a steel casting with manganese inserts, containing three wheel frogs, six slot frogs and three slot bonds. There are five hand plates located over the insulators. The company is also showing the largest tongue switch yet made for steam railroad service in paved streets. This will be placed in San Francisco for use by the Southern Pacific Railroad. It is a solid manganese steel casing 20 ft. long with an entry guard casting 10 ft. long. It is designed to accommodate a Pacific type locomotive with eight flanged driving wheels and having a 22-ft. wheelbase. The piece is a tongue switch and is made for a curve of 400-ft. radius. The main casting weighs 5400 lb. and the entry 1500 lb. Among the other important exhibits is the standard tadpole heel switch, of which more than 3000 were called for last year. A short length of manganese mate and frog is also exhibited.

## REPORT OF COMMITTEE ON LIFE OF RAILWAY PHYSICAL PROPERTY\*

BY ROBERT N. WALLIS AND MARTIN SCHREIBER CO CHAIRMAN

The 1913 joint committee on life of railway physical property has reached the following conclusions:

(1) That the basic elements which determine the life of railway physical property are: (a) use; (b) climatic and soil conditions; (c) maintenance; (d) inadequacy; (e) obsolescence; (f) the human element; (g) public demand; (h) earnings.

(2) That it is not practical or even theoretically possible to assemble compositely these several elements into any form of a logical life table that will apply equally in Maine as in California, in Minnesota as in Louisiana, or on different routes or lines of the same system embracing such physical property.

(3) That the ultimate solution of depreciation of railway property is insured earnings.

A discussion of the foregoing basic elements is presented as follows:

### USE

The electric railway industry came into general practical commercial use only about twenty years ago, and the principal elements of which it has been composed, through various wonderful developments in the art during this period, have not been permitted to remain in use long enough, under the conditions which they were designed to meet, to determine their physical life.

An illustration of the demand for railway physical property to do or withstand a service over and above that for which it was originally intended is the rail and joint and track foundation problem. A track construction is designed of such section and weight of rail and joint and such depth and character of material of foundation as are ample to carry the load to be put upon it by the rolling stock which it was intended to carry, but no sooner has such construction been completed and put into use than the weight of the rolling stock and its movement over the structure are almost immediately increased to provide increased carrying capacity to take care of the ever increasing business.

If this is a fact, how is it possible to determine in advance the ultimate life of such physical property, when its use is constantly changing from day to day, month to month and year to year?

Similar illustrations could be cited relative to rolling stock, generators, engines, boilers, and in fact every physical element of electric railway property.

The use of railway physical property is necessarily a purely local one with each individual property, and no two properties, even though of very similar construction and nature, would have the same amount and character of use to an extent making them comparable.

The use of one item of physical property depends greatly upon some other item to which it is closely related. For instance, the use of track depends largely upon the weight and physical condition of rolling stock, and also, to some material extent, on the character and amount of vehicle traffic. The physical condition of track and rolling stock is also closely related to the condition of the overhead construction, motors, generating plants, etc.

Use may wear out the same items of physical property in one, five, ten, thirty, fifty years or more, depending upon the amount and character of such use, which is necessarily governed by some or all of these other basic elements. To attempt to establish the life of railway physical property based on use would result in as many different periods of life as there are properties under consideration.

### CLIMATIC AND SOIL CONDITIONS

On no two separate properties are climatic and soil conditions so similar that the physical elements of such properties would not be affected differently. A coast property would be affected by the salt water and salt air, while one inland not 50 or 100 miles away would not be subjected to such more or less destructive elements. Property in a mild climate would not be affected by the conditions met with in a cold climate. Wet and dry climates affect physical properties differently, as also do the different soils of different localities. Construction on a rock foundation has a physical life materially different from construction on any less firm foundation. Two localities may have the same soil, but one is situated topographically so that it is easily subjected to adequate drainage, while the other may be almost impossible of drainage owing to its topography. This would also affect differently the physical life of each. Any attempt to establish the life of railway physical property based on climatic and soil conditions would result in as many different periods of life as there are properties under consideration.

### MAINTENANCE

On maintenance necessarily depends the amount of use to which physical property can be subjected, and the kind of maintenance depends to a most material extent on the amount of earnings. A property maintained to a high standard of operating efficiency would naturally have longer life than a similar property maintained in a less high state of efficiency. To illustrate: A firmly constructed and adequately maintained, smooth-running track must affect more favorably the life of the rolling stock and its electrical equipment, the overhead construction, the generating plant, etc., than would a rough track less firmly constructed and less adequately maintained. A study of the maintenance costs of various street railway properties will develop the fact that any attempt to establish a life of railway physical property based on maintenance would result in as many different periods of life as there are such properties under consideration.

### INADEQUACY

This is a subject relating to life of railway physical property that is too often confused with physical depreciation. As stated in our opening paragraph on "Use," an item of physical property may have been at the time it was installed fully adequate for the purpose for which it was designed, but owing to the wonderful strides in electric railway art and the ever increasing demand of the public, which to a large extent is responsible for the increased weights and sizes of various elements of a property, such property has become inadequate though no material apparent physical deterioration exists at the time of its inadequacy. Physical property could be adequate in one locality and inadequate in another locality though used for the same purpose.

To attempt to establish the life of railway physical property based on inadequacy would result in as many different periods of life as there are properties under consideration.

### OBSOLESCENCE

As in the case of inadequacy, obsolescence is often confused with physical depreciation. Obsolescence is also often confused with inadequacy, whereas they are not necessarily related. Physical property becomes obsolete not necessarily through depreciation of such property itself but by reason of the improvement in the art and the ever increasing demand of the too critical public, often voiced through demagogues. The end-entrance car of yesterday may be obsolete as compared with the improved side-entrance car of to-day, but nevertheless this end-entrance car of yesterday may be in as good physical condition as the side-entrance car of to-day, or the four-pole motor of yesterday may be obsolete as compared with the interpole motor of

\*Abstract of a paper read before the American Electric Railway Engineering Association, at Atlantic City, N. J., Oct. 13-17, 1913.

to-day. Numerous other illustrations could be made along this line concerning various elements of physical property to the end that any attempt to determine the life of railway physical property based on obsolescence would result in as many different periods of life as there are properties under consideration.

#### THE HUMAN ELEMENT

This is the most variable and inconsistent element, both as relating to the public and the utility, with which we have to deal. The public of one locality may be content and satisfied with the physical railway conditions of its locality, while the public of a different locality would take an entirely different viewpoint and enforce more severe and often unjust conditions on its railway utility.

Again, those in charge of physical elements of property and the force under them in one locality may not be as efficient as those of some other similar locality; also their methods may be entirely different, occasioned possibly by the differing conditions to be met with. Any attempt to establish the life of physical property based on the human element, as found in each of such properties, would result in as many different periods of life as there are properties under consideration.

#### PUBLIC DEMAND

Public demand has a material bearing on the physical life of railway property. This demand is often inconsistent, without reason and unlimited, and receives serious attention from municipal and state authorities and commissions regardless of contract agreements, rates of fare, earnings, etc. It is an ever increasing element that cannot be applied equally in one locality and in another, as such demands on different properties affect different physical items of such properties. Any attempt to establish the life of physical property, based on public demand, would result in as many different life periods as there are properties under consideration.

#### EARNINGS

After devoting as much time as you will to unitizing into composite form all of the foregoing elements affecting the life of railway physical property, you come against the very essence of the whole problem, namely, earnings. A study of this subject will more than likely undo all of the so-called unitizing that you may have in some theoretical manner worked out, for all of these other elements are necessarily correlated to earnings. On no two electric railway properties are the numerous conditions affecting earnings similar.

In addition to the wide difference, as between localities, of the basic elements affecting the life of railway physical property, there is also a great difference relating to franchise conditions and rates of fare which directly and unequally influence the earnings of contrasting properties.

Those representing the Engineering Association here to-day must bear evidence that, while they provide in their yearly estimate for certain renewals of the property in their charge, it is a fact that such property may not have been renewed at the time they provided for it to be renewed, and sometimes not for several years later, their estimate having in the interim been held up by the management for financial reasons. This same property continues to give nearly the same service at no material increased cost of operation proportioned on the earnings it produced.

These engineers will also tell you that in making up their yearly estimate for renewals they do not turn to a pigeonhole in their desk and take out an "average life of railway physical property" table and reason that the table shows that an item of physical property has been in use for so many years, therefore it must be replaced. They will state that they determine these problems from an intimate knowledge of their property supplemented by a direct examination of the physical condition of the item under consideration.

Who has yet been able to define satisfactorily where main-

tenance ends and depreciation begins? The necessity that is vital to the electric railway of to-day is not for some theoretical rule or theory for estimating the life of railway physical property, but rather for some definite and fixed means of insuring the earnings necessary to take care of any amount of deterioration the public through its city, state and government authorities may demand. Our electric properties can be maintained in any state of improvement and efficiency that the public demand and will pay for, but so long as the maximum fare is limited while this public demand is unlimited, the amount to be deducted from earnings for such purposes must necessarily rest in the judgment of those having in charge the financial management of these properties.

#### CONCLUSION

The committee of 1913 has used sincere and earnest endeavor to comply with this purpose for which, in part, it was brought into being and came to the foregoing conclusion only after a thorough study of the subject with all the data before it. This committee, in order to enlighten itself as much as possible, amplified the forms which had previously been sent out and used earnest endeavor to have such forms filled out as completely as possible to the extent of the experience of the many members to whom they were sent.

This committee during the past two years has consistently endeavored to secure from qualified representatives of member companies of these associations and others figures expressing in years the length of life of the elements of railway physical property. Two inquiry forms have been sent out and personal solicitation for careful consideration and answers made. During the past year the form which had previously been sent out was amplified along lines suggested in the discussion at last year's joint convention.

The result of this careful effort was (a) that several replies were received; (b) that many wrote confessing inability to express any opinion of value; (c) that many, as usual, ignored the matter entirely.

An examination of replies received shows a wide divergence of opinion as expressed in figures among those qualified to judge by actual experience and training. Those having had practical experience for the most part felt that any attempt to express at present the life of railway property exclusively in years was at best a guess.

All this goes to emphasize the conclusions of the committee that life of railway property cannot at present be expressed in any tables measuring the life either in years or units of use; that where such are attempted they are merely estimates and often no better than guesses.

In the present inconclusive state of the data received the committee does not feel justified in submitting any compilation. We suggest, however, that the replies be filed in the secretary's office for the use of members. We also suggest that the work be continued with an endeavor to establish actual life conditions in individual instances, rather than estimates.

Plans for a vigorous campaign for the prevention of blockades and delays of cars of the Philadelphia (Pa.) Rapid Transit Company was outlined at a recent meeting of the co-operative committee by T. E. Mitten, chairman of the board. Mr. Mitten said that the management of the company desired to enlist the co-operation of the public, the city authorities, the bureau of police and the motormen and conductors in its efforts to remove the causes of blockades and delays. In order to accomplish the desired result it was deemed necessary first to determine the most frequent causes of delays. To this end motormen and conductors will, beginning Oct. 15, be supplied with blanks upon which they will report all delays of five minutes or over, together with the causes and any suggestions they may have as to how similar delays can be avoided.

## REPORT OF THE COMMITTEE ON FEDERAL RELATIONS\*

ARTHUR W. BRADY, CHAIRMAN; FRANK R. FORD, H. S. LYONS, F. W. BROOKS, L. S. CASS, RICHARD M'CUULOCK, R. I. TODD,  
L. S. STORRS, J. N. SHANNAHAN

The executive committee at the beginning of the year authorized the appointment of E. B. Burritt as the representative at Washington of the association. Mr. Burritt has kept closely in touch with affairs at Washington and the labors of your committee have been materially aided and lightened by the efficient work which he has done.

Three matters of federal relations stand out conspicuously in the history of the past twelve months. These consist of, first, the definition by the Supreme Court of the United States of the jurisdiction of the Interstate Commerce Commission with respect to electric railway carriers; second, the enactment of a law by the federal Congress requiring a valuation by the Interstate Commerce Commission of the property of all carriers coming within the jurisdiction of that commission, and, third, the renewal of efforts in Congress to bring about the enactment of a law for the compulsory use of steel cars by interstate carriers.

### JURISDICTION OF THE INTERSTATE COMMERCE COMMISSION OVER STREET RAILWAY COMPANIES

At an early date the question arose whether street railway companies were within the purview of the original interstate commerce act, which became a law in 1887. The question was first passed on by the Interstate Commerce Commission in 1897, in a case involving a street railway 7½ miles in length, lying partly within the District of Columbia and partly within the State of Maryland (Wilson v. Rock Creek Railway Company, 7 I.C.C., 83). The commission held in that case, and has consistently maintained at all times since, that it had full jurisdiction over that class of carriers when engaged in interstate business.

In 1908 the same question arose again in a case involving the charges fixed by the Omaha & Council Bluffs Street Railway Company for transportation between Council Bluffs, Ia., and certain points in the city of Omaha, Neb. The commission contended that the position taken in the earlier case involving the Rock Creek Company had been strengthened by subsequent federal legislation, including the Hepburn act, and held (three members, however, dissenting) that the commission had jurisdiction over the respondent street railway company. It is only fair to state that the commission appears to have regarded the line operated between Omaha and Council Bluffs as an interurban line, although doing purely a passenger business, instead of a street railway line proper (West End Improvement Company v. Omaha & Council Bluffs Railway & Bridge Company et al., 17 I.C.C., 239).

The correctness of the conclusion of the commission was promptly presented to the United States Circuit Court, which enjoined the enforcement of the order made by the commission, saying that "The judges are of the opinion that the Congress never intended that the act to regulate commerce . . . or its amendments . . . should apply to, and they are of the opinion that they do not apply to, such street railway companies, that no power has been delegated thereby to the Interstate Commerce Commission to regulate or affect the rates of transportation of such companies, and that the order of the Interstate Commerce Commission was beyond its powers . . ."

The next step was, upon the creation of the Commerce Court, to transfer the cause to that tribunal, which in 1911 held that the conclusion of the commission was right and that the commission was invested by Congress with jurisdiction over the class of carriers in question. It is inter-

esting to note that the Commerce Court marked the difference between an ordinary urban street railway and an interurban railway and apparently regarded the Omaha & Council Bluffs Company as more nearly an urban than an interurban company, because not empowered to carry freight and having no right of eminent domain.

Finally the case came for decision before the Supreme Court of the United States, which in June of the present year decided that the Interstate Commerce Commission and the Commerce Court were wrong and that street railroad properties are not subject to the jurisdiction of the Interstate Commerce Commission, even when doing an interstate business (Omaha & Council Bluffs Street Railway Company v. Interstate Commerce Commission, U. S. Supreme Court Decisions, Advance Sheets, October Term, 1912, page 890).

Thus, more than a quarter of a century after the enactment of the interstate commerce act, the question of the application of that act to urban street railway companies has finally been settled, and that class of carriers is now to be regarded as entirely beyond the jurisdiction of the commission under the laws now in force.

### THE VALUATION ACT

The act approved March 1, 1913, imposes upon the Interstate Commerce Commission the duty of making a valuation of all the property of every common carrier subject to the interstate commerce act. The importance to electric carriers of securing a fair and just valuation of their property and the seriousness of the burden imposed upon them by the act are generally recognized. The valuation act, like the original interstate commerce act, was directed especially at the steam railroads, and that class of carriers have taken active steps to co-operate with the commission in making the required valuation. Various conferences have been held between representatives of the steam railroad companies and the commission, and plans for carrying out the enormous task which confronts both the commission and the railroads are being formulated.

The attention of the commission has been so engrossed with preparations for a valuation of the steam railroad properties that it has not been ready thus far to take up the matter of valuing the electric carriers. Communications on the subject have been exchanged between the commission and the president of this association, and it is believed that the commission will welcome co-operation in the work on the part of this association, as representing the electric railway industry of the country. The precedent for such action has already been established in the case of accounts for electric railways, with respect to which the Accountants' Association has co-operated with the statistical branch of the commission to their mutual advantage. The differences between steam and electric railroads which made it wise and proper that the system of accounts adopted for electric carriers should differ from that adopted for steam railroad carriers are equally in evidence when valuations are being considered. It is clear that the methods of valuation determined on in the case of the steam railroads should not, as a mere matter of course, be imposed on the electric railroads.

It will be the office of this association to represent the electric carriers of the country in presenting their position in this matter to the commission, and in securing the adoption of efficient and economical methods of valuation when the commission desires to proceed with the appraisal of electric railway properties. When that time arrives it is probable that the appointment of a special committee, composed in part of representatives of the engineering association, will be found desirable.

### STEEL CAR BILLS

For several years past bills have frequently been introduced in Congress requiring all common carriers engaged in interstate commerce to use steel cars in such commerce.

\*Abstract of report read before the American Electric Railway Association, Atlantic City, Oct. 13-17, 1913.

These bills have generally been so framed as to apply to electric railroads as well as to steam railroads and differ from each other chiefly in the length of time in which the use of any other type of car is permitted. Quite recently bills of this character have been introduced in both the House and the Senate. It is not expected that any action will be taken upon the matter at the present special session, but at the regular session beginning in December it is probable that legislation of this character will be vigorously pressed. Of the bills now pending, that introduced in the House by Mr. Allen (H. R. 8187) provides that after July 1, 1918, "it shall be unlawful for any common carrier engaged in interstate commerce by railroad to operate on its lines in interstate traffic or in interstate transportation of passengers any express car, baggage car or passenger car not constructed of steel in accordance with plans approved by the Interstate Commerce Commission." The commission is authorized within ten years from the passage of the act to extend the time for compliance therewith. The bill introduced in the Senate by Senator O'Gorman (S. 3094) and in the House by Mr. Talcott (H. R. 3374) contains a prohibition almost the same as that contained in the Allen bill, providing that after Jan. 1, 1918, "it shall be unlawful for any common carrier engaged in interstate commerce to use on its lines in interstate traffic or in interstate transportation of passengers any express car, baggage car or passenger car not constructed of steel." The Senate bill authorizes the Interstate Commerce Commission to extend the period for compliance with the act "upon full hearing and for good cause," but no limitation of time is imposed upon the commission. Both bills impose a penalty of \$1,000 for every violation of the act.

There is also a fourth bill, introduced by Mr. Esch in the House (H.R. 2479), which, however, excludes electric carriers from its operation. This bill is, apparently, intended to apply only to new construction after Jan. 1, 1914.

There is still a fifth bill, introduced by Mr. Roberts in the House (H.R. 6142), which requires "every railway company engaged in interstate traffic" within four years to equip all its lines with passenger cars of steel construction, practically fireproof and indestructible." This bill also requires the equipment within the same period of four years of all lines of side companies with signals and other safety appliances approved by the Interstate Commerce Commission. No provision extending the four-year period is made.

Your committee, when similar bills were pending earlier in the year, contemplated the collection of the data necessary to demonstrate to Congress the difference between steam railroads and electric railroads in respect to the necessity of steel car equipment and the impossibility from a practical and financial standpoint of complying with any drastic requirements. The announced intention of Congress to devote its time to other matters caused the committee to refrain from gathering these data until the time for use had more nearly arrived. It will doubtless be an important part of the work of the committee on federal relations for the next year to give this matter attention.

#### OTHER FEDERAL MATTERS

Besides the three subjects which have thus been spoken of at length, there are others which should be adverted to briefly. Some of these are of considerable consequence and may have to receive active attention during the ensuing year. The past twelve months have, for reasons well known to you, not been marked by the pressing of a large mass of general legislation, but it is probable that the coming year will witness a change in this respect.

The "hours of service" bill, which attracted considerable attention in 1912, was reintroduced in April by Mr. Cary of the House (H.R. 2490). This bill is of great importance to the interurban railways of the country and requires amendment if they shall not be subjected to substantial and useless increases in operating expense.

There is also a bill introduced in the Senate by Mr. Kenyon (S. 958) which amends the "hours of service" act so as

to require one full twenty-four-hour day off duty in every week.

The bill to provide for the coinage of 3-cent pieces has been revived, ½-cent pieces being a new addition (H.R. 1885, H.R. 1887 and H.R. 4356).

A workmen's compensation act applicable to the employees of all interstate common carriers by railroad is proposed by Senator Sutherland in Senate bill 959. This bill is compulsory and exclusive in its character.

So far does the desire to regulate railroads extend that one bill has been introduced in the House (H.R. 2461) that requires the Interstate Commerce Commission, co-operating with the civil service, to examine and pass on the competency of roadmasters, foremen and other employees of common carriers by railroad, subject to the act to regulate commerce, employed by such carriers to superintend the construction, maintenance and repair of tracks, bridges, switches and signal apparatus. Each employee thus examined and approved is to receive a certificate of competency, good for one year, and any carrier employing any person belonging to the classes named not so certified shall be liable to a penalty of \$100 for each offence.

In addition to the bills mentioned there are others to provide for the investigation of labor controversies affecting interstate commerce, to make sanitary inspections of cars, stations, etc., and in other ways to regulate the affairs of common carriers. Besides these are many bills of importance applying to other businesses besides railroads.

#### EXPANSION OF THE SUBJECT

It is interesting to note the gradually increasing scope of the relations between the electric railway industry and the United States government. The decision of the Supreme Court already referred to will reduce somewhat the number of companies required to report to the Interstate Commerce Commission, unless the scope of the interstate commerce act be enlarged as has been proposed by an act already introduced (H. R. 8637). At the same time, the importance and seriousness of the valuation legislation already enacted and of the steel car legislation proposed to be enacted illustrates strikingly the expansion of the control which the federal government exercises over the electric railway industry. We are unfortunate in one respect. So far as Congress is concerned, the steam railroads constitute the target at which practically all of the legislation thus far enacted and proposed is aimed. The ills, actual or assumed, which the federal government has undertaken to remedy have arisen in the case of the steam railroads and not of the electric railroads. The electric carriers are a mere incident to the interstate commerce which Congress undertakes to regulate and control. At the same time, the regulatory acts are generally so framed as to be applicable to electric railroads as well as to steam railroads. It is often hard to convince legislators, commissions and courts that there are essential differences between the two classes of carriers and that these differences make laws and rules which are fully applicable to one class a misfit when applied to the other.

Moreover, the desire to enact measures strong enough to control effectually the steam railroad carriers renders legislators in some cases timorous as to the effect of excluding other carriers from the act by modifying the character of the regulation so far as any particular class of carriers are concerned, lest thereby the entire enactment be weakened or destroyed.

The phenomenon of multiplying relations between the electric railways and the federal government is a permanent and not a temporary one. It is in line with the movement toward a general expansion of the powers of that government which the last half century has witnessed. Our association will, therefore, find that in order to perform its duties to the industry which it represents more and more of its attention must be given to the consideration of the many questions which those relations present.

## Among the Exhibits

### EXHIBIT NOTICE

The exhibits will close officially on Friday afternoon at 2 p. m., as announced at the annual meeting of the Manufacturers' Association on Wednesday afternoon. It is earnestly requested that no exhibits be dismantled before that hour.

\* \* \*

The Cameron Electrical Mfg. Company, Ansonia, Conn., is represented at the convention by John T. Kent and John B. Davidson.

\* \* \*

T. J. Ryley, of Ryley & Thomas, New York, special representatives of the National Brake Company, Inc., is attending the convention in the interests of the latter firm.

\* \* \*

The Home Rubber Company, Trenton, N. J., has an instructive exhibit of its product. In addition to automobile tires there are various types of sheet packing, gaskets, etc. The exhibit is located in space 359.

\* \* \*

W. H. Sauvage, president Sauvage-Ward Brake Company, New York City, formerly with the Standard Coupler Company, dropped in yesterday to meet his old friends. Mr. Sauvage states that he expects very soon to offer some new air-brake appliances to the trade.

\* \* \*

The Western Electric Company is exhibiting Matthews pole line specialties. Some of the latest devices which have attracted particular attention are the Boltless guy clamp and teleheight. The advantages of money-saving and labor-saving devices, such as cable clamps, two-bolt clamps, sleet cutters and screw anchors, will be explained by Sales Engineer W. M. Heim.

\* \* \*

The Atlas Preservative Company of America, New York, N. Y., manufacturer of "Atlas-A" weed killer and track preservative, has no exhibit at the convention, but R. N. Chipman, manager of the company, has been circulating among the railway men. Mr. Chipman sails on Saturday for Cuba on a business trip. He reports his first active campaign for electric railway business this past season as highly successful.

\* \* \*

The Cooper Heater Company's exhibit consists of a hot-air heater and hot-water heater. The special feature of the former is the provision for taking air from the top or side of the car. The air is circulated by a Sirocco blower, driven by a motor specially built for this service by the Robbins & Myers Company. Three sizes of the heater are manufactured, the largest having a motor consuming 0.8 amp.

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A feature of the exhibit of the Ackley Brake & Supply Company, in spaces 117-119, is the widely used Automatic trolley guard. This guard is made of aluminum coated sheet steel of selected thickness. The trough is held in place by pressed-steel yokes or hangers which take any standard type of trolley ear. The shape and position of the sides have been designed to replace the trolley wheel on the wire automatically if it jumps off.

\* \* \*

The Lord Manufacturing Company at space 537 is showing several interesting demonstrations of the Multi-Vapo gap and Shaw lightning arresters. Most attention is attracted by the 40,000-volt horn-gap arcing produced after sending this voltage through an M. & G. 500-volt arrester. Another exhibition at this booth which attracts much attention is the operation of a Spencer or Lord screenless compressor air cleaner under service conditions. The exhibition cleaner is built with glass sides so that the dirt fed into the intake may be seen as it is caught by the oil surface within.

While the Graphite Lubricating Company, Bound Brook, N. J., has no individual exhibit at the convention, its trolley bushings can be seen at the spaces of the following firms: A. & J. M. Anderson Manufacturing Company, space 319; Electric Service Supplies Company, space 414; R. D. Nuttall Company, spaces 142-144; Bayonet Trolley Harp Company, space 545; Western Electric Company, spaces 339-341; and Star Brass Works, space 508. O. P. Johnson, of the last company, states that "Bound Brook" bushings are standard in the manufacture of his company's "Kalamazoo" wheels and have been since it began selling trolley wheels. George Smalley, assistant to General Manager L. S. Bache of the Graphite Lubricating Company, is attending the convention.

\* \* \*

The Pennsylvania Steel Company at space 23 is making a special feature of a high semaphore switch standard for electric railway use as introduced on the Detroit United Railway. A large aluminum model has also been made to show the construction of the hook-heel switch. This model, which is full size, is mounted on trunnions so that it can be rotated. An instructive exhibit of a joint constructed with Mayari steel bolts compared with joints made with ordinary steel and iron bolts consists of three joints which have been subjected to blows from a standard drop hammer. The superiority of the special steel is quite apparent. Among other exhibits attracting attention, the popular No. 160 hard-center street railway frog is coming into use in electrical work where M. C. B. equipment is used. Visitors should notice also a simple tongue-locking device designed to take the place of the loose blocks ordinarily used in blocking switches. This is illustrated in connection with one of the standard Manard switches. This device effectively prevents the theft of the blocks which has caused much inconvenience in the past.

### ENLARGING THE SOUTH LONDON TUBE

The oldest tube railway in London is the City & South London line, which was begun in 1884. This, by virtue of a very recent act of Parliament, is now to be modernized and enlarged. The method of doing this work is thus described by a British contemporary:

"The cast-iron rings forming the lining of the existing tunnels are to be taken out one by one and sufficient soil is to be excavated to allow the plates to be fixed in their new position. Each new ring is to be placed in position as soon as possible after the removal of the existing ring, and in no distance of 80 ft. will more than three consecutive rings of lining, or a length of 5 ft., be removed without the immediate fixing of the substituted lining. All such lining is required to be of plates made of iron or 'other sufficient metal.'

"The contractors for the work will be required, in the event of there being any space between the lining of the tunnel and the surrounding soil, to fill this up with lime or cement grouting supplied under pressure as each ring is bolted up. As regards the size of the tunnels, those in the stations will have a maximum internal diameter of 30 ft., the maximum diameter of the tunnels between the stations, except at cross-overs, being 13 ft. An interesting provision in the act concerns the Royal Observatory, Greenwich. For the protection of the observatory from the effect of stray currents, the Admiralty is empowered to compel the railway to use such precautions, including insulated returns, as it may deem necessary.

"The work of enlarging the tunnels must be completed within five years, and the engineers anticipate no difficulty in finishing their task well within this time limitation, though the work will naturally be very slow, seeing that the tube will continue working regularly for twenty hours every day as usual, so that very little time will be daily available."