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NEW YORK, SATURDAY, JANUARY 28, 1911.

The New York Accident Conference

The conference on accidents held on Jan. 19 last in Syracuse between the Public Service Commission and the electric railways of the Second District, State of New York, brought out in the most forcible manner the difficulties with which the managements are confronted in the selection and education of trustworthy trainmen and dispatchers. The cause for every accident quoted at this meeting was clearly traced to the breakdown of men and not of apparatus. The possible failure of a signal device can be discounted by an emergency rule, but what wisdom can foresee the failure of an employee who has hitherto proved faithful to his duties? It was well, therefore, that there should have been so frank an interchange of opinions on this grave subject. The cardinal point of the whole discussion was the irresponsibility of the individual. As an applicant for work, he can submit false references of character with little danger of detection and punishment; as an employee found guilty of the grossest negligence, he can escape scot-free because of the unwillingness of juries to indict him despite the provisions of the penal code. Electric railway companies, if left to themselves, cannot obviate these conditions to a measurable degree. As Mr. Peck clearly showed, the question is not one relating entirely to the qualities of reliability or of intelligence in the employees, as these terms are usually employed. In that class of accidents which are attributed to "man failure" the record of the employee at fault usually shows that his general conduct has been exemplary and that his previous railroad record has been good. For this reason Mr. Peck suggests the desirability of introducing some means of maintaining the mind of the employee in the alert condition in which it should be in the case of a man in charge of the operation of any high-speed car or train, whether it is operated by steam or electricity. How to secure this combination of alertness, reliability and intelligence, then, is the question which must be solved by any transportation manager who wishes his road entirely immune from accidents due to the human cause. Whether such a goal is possible is another question. One real improvement in the standard of employees can come, however, if a public sentiment can be aroused to demand the passage and enforcement of laws penalizing men for making false statements in employment applications and also punishing those who are found guilty of disastrous disobedience to the prescribed rules of railway operation.

Increase in Boston Earnings

The last annual report of the Boston Elevated Railway does not give opportunity for a comparison of results with previous operations. As the Board of Railroad Commissioners of Massachusetts changed the fiscal year to end June 30 instead of Sept. 30, the report covers the period of but nine months.

There is an advantage in the adoption of the new date, which conforms to the fiscal year of the Interstate Commerce Commission and of various State commissions, but it is unfortunate that the value of comparison not only of the 1910 figures with 1909 but possibly also of 1911 with 1910 is to be lost. An abstract of the report for the nine months ended June 30, 1910, was published in the issue of the Electric Railway Journal of Jan. 7, 1911, page 47. It shows gross earnings from operation for that period of \$11,383.686. This sum is equal to 78.5 per cent of the total gross earnings for the fiscal year ended Sept. 30, 1909, which amounted to \$14,493,853. It is therefore evident that the company earned gross in three-quarters of the year an amount greater than three-quarters of its total revenuefor the previous year. It still had remaining, however, the three very good traffic months of July, August and September, and the revenue in that period brought the total gross income for the year ended Sept. 30, 1910, to \$15,503,000. This is an increase of more than \$1,000,000 over the preceding year, or 6.9 per cent. This compares favorably with the increase made in the fiscal year 1909 over 1908, which was 3 per cent. In one other important detail the last annual report permits a comparison with the previous year. The report states that the total payments for taxes and public benefits during the twelve months ended Sept. 30, 1910, reached the large proportion of 13.2 per cent of the gross revenue of the company for the year. In the preceding year the corresponding payments were but 12.4 per cent.

Handling Men in the Shop

The statement made by Louis Brandeis a few weeks ago at the hearing on increase of freight rates before the Interstate Commerce Commission that the steam railroads of the United States could save \$1,000,000 a day by the introduction of modern machinery and efficiency methods in all departments received wide publicity at the time and has been frequently quoted and commented upon since in the daily newspapers and popular magazines. The answer of one railroad officer was that if he were given a choice between all the latest shop facilities and methods and of an experienced, capable and efficient shop superintendent with only a fairly modern equipment of tools he would choose the latter. He believed that the result in any shop would be greater output and economy than with all the modern facilities, but without such a man to superintend their use. This is only another way of saying that a good carpenter can do good work with poor tools, but a poor carpenter cannot do good work with the best tools. The ability to handle men, to get the most and best out of their labor and to keep them satisfied with the conditions under which they work is no less an essential qualification of the successful master mechanic than of a successful general manager. Many master mechanics have been selected for the place they occupy because they were clever at devising shop "kinks" to do a particular job of minor importance at a slightly lower cost or because they were skilled workmen in some one line. The specialist or the man who rides a hobby usually is so absorbed in some one detail of the shop work that he fails to see the waste and lack of efficiency in other departments. The ideal master mechanic is one who combines mastery of men with mastery of tools and an appreciation of the relative importance of the different branches of work placed under his charge with a true conception of the relations of the shop department to the operating, purchasing, claims and accounting departments.

CO=OPERATION BETWEEN ASSOCIATIONS AND COM-MISSIONS

The discussion at the Syracuse conference on Jan. 19 between the Public Service Commission and the electric railways of the Second District, State of New York, has already been commented upon in these columns so far as the subject of employees is concerned. It is instructive, however, to refer to another and very interesting matter brought up at this conference, namely, the suggestion of Chairman Stevens, of the Public Service Commission, that a further study shall be made of the subjects considered at the meeting and of others relating to electric railway operation by joint committees composed of representatives of the commission and of the electric railway companies.

Among the topics mentioned by Mr. Stevens as being particularly desirable for consideration in this way were dispatching, operating rules and a physical examination standard for trainmen. In making this suggestion Mr. Stevens candidly acknowledged the fact that the State association had been and still was working faithfully along the lines defined in its constitution as "the acquisition of * * * knowledge relating to the construction, equipment and operation of street railways, and the diffusion of this knowledge among the members of this association, with the view of increasing the accommodation of passengers, improving the service and reducing its cost." His reasons for suggesting committees outside of those in the association were, first, that not all of the companies in the commission's territory were members of the association, and, second, that no action of the association was binding even upon the member companies. On the other hand, if the representatives of the electric railways should in future agree on fixed standards of operation such standards could be made compulsory on all companies through the executive and judicial powers vested in the commission.

The effect upon the electric railways in New York State of the adoption of Mr. Stevens' suggestion should be very beneficial. Up to this time the usual policy of railroad commissions has been to devote themselves principally to the investigation of the results of past operation rather than to lay down rules for future service. There is every reason, however, why they should participate in the latter kind of constructive work. Such co-operation should be beneficial to both the commissions and the companies because it would give the former a closer insight than they otherwise might obtain of the practical reasons for the adoption of various rules and methods, and it would give a standing to the conclusions reached which they would not acquire in any other way. In this connection it might be said that the plan suggested is a common one abroad. There joint committee and association work between corporations and the authorities is very general and nearly all of the European governments regularly send official delegates to the conventions of the International Railway Congress and the International Street & Interurban Railway Association to take part in the discussions and assist in reaching conclusions.

Although the reasons given by Mr. Stevens for making the membership of the committees broader than that of the membership in the State association are entirely logical, we believe that the plan proposed would also greatly widen the field of usefulness of the New York State Association. Its present membership comprises practically all of the important electric

railways in the Second District in the State and its committees have already accomplished a great deal of valuable work on the subjects which would naturally receive first attention. The results already secured properly could, and undoubtedly would, be made the foundation for future action by any new committees. The matter is still in an inchoate form, but is capable of becoming the basis for a practical working arrangement which may prove very beneficial to the railway companies in the State of New York.

THE REDUCTION OF TAXES IS A FEASIBLE MEANS OF RELIEF

In interviews published recently the executive heads of at least two great industrial corporations have discussed the impracticability of a decrease in wages as a feasible remedy for existing or threatened conditions that might prove inimical to the interests of their companies. These conditions consisted in the one case of a stability in prices which has not led to a normal output in such times as the present and in the other case of a threatened revision of the tariff.

We do not recall any recent instance where lower wages have been suggested for employees of electric railways as a means of lightening the burden arising from higher costs of operation and the decreasing returns per passenger carried. The various suggestions for relief advanced by the companies throughout the country pertain usually to the abolition or curtailment of transfers, the adoption of the zone system of fares in the hope that it will furnish a larger average revenue per mile traveled, an increase in the rate of fare, or relief from taxation.

In one or another of these directions some help has been secured by a few companies, but the examples which may be cited are so slight in number that they are an almost infinitesimal proportion of the whole number of companies in the country. With the large majority of companies the introduction of substantial relief measures in almost any one of the four directions mentioned will require some form of legislative, commission or municipal sanction.

As the necessity for such sanction exists generally, a period of public education should be the initial step in the movement of each company concerned. The direction which this publicity should take is a problem that each company, because of its knowledge of local characteristics, should settle by itself. The Boston Elevated Railway follows the practice, in its annual reports to stockholders, of giving the details of its payments for taxes and other public benefits during the fiscal year and their percentage of the gross revenue. Other companies have compiled similar statements for their own information, and exact figures of the large outlays on these accounts might be made public with great advantage.

The public is inclined to forget that the payment which it makes in return for a commodity or a service is one which must be disbursed in large part before the small net return can be computed. The payment for railroad transportation is not different in this respect from the cash paid to the merchant or the manufacturer. If a cash fare passenger lengthens his ride by the use of a transfer, he does not reflect that he dilutes the average fare received by the company. He is likely to think that his 5-cent piece goes to enrich the stockholder. He does not remember that by far the larger part of his coin is devoted to operating expenses, taxes and fixed charges and that, after the deduction of the proportion required for these

purposes, the return in most instances is not over a reasonable rate and that frequently it is less. It is the duty of the companies to make these facts plain.

Good service is the first and essential feature of the business of the street railway company, and its maintenance has not permitted any general reduction in the scales of wages for trainmen. Under existing conditions relief for electric railways should have come through other avenues. However, as the tendency of the wages of trainmen has been uniformly toward higher scales, the companies should demand some other form of definite relief in order to offset the rising tide of costs. Of all suggested methods, the one which is applicable most reasonably to all companies is that of reduction in taxes. This would afford an equitable means of distributing the abatement among the entire community.

THE MAINTENANCE OF HAND BRAKES

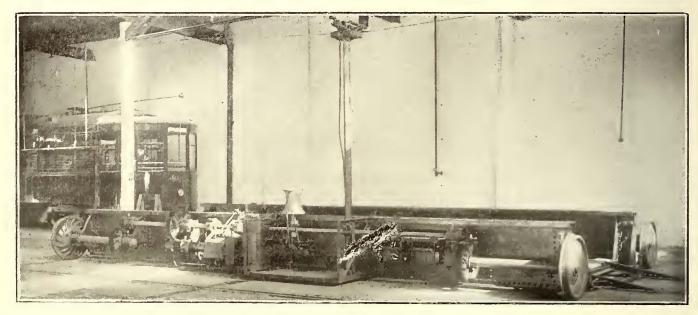
The increasing use of air brakes on cars of even moderate size tends toward a reduction in some cases in the amount of inspection given to hand-braking equipment. It is an easy matter to overlook apparatus which is used only in extreme emergencies, although the regulations of most roads provide for the frequent testing of hand brakes on all rolling stock. Like all equipment with many detailed parts, hand brakes are subject to many minor ailments which are capable of development into serious troubles on account of the vital relation of such apparatus to the safety of operation. Among these defects are disturbances of the mechanical system due to breaks in fittings, looseness and excessive wear. At the handle a common difficulty is the failure of the staff to wind, on account either of broken pawl springs or excessively worn tatchets. Experience indicates that steel springs give better service here than brass coils. Loss of set screws or excessive wear of the top of the brake staff so that the screw can pass by the butt also leads to failures in service. Another trouble sometimes encountered is the breakage of the handle proper on account of an effort to bend it back into shape after it has become deformed through shock. The best practice takes no chances on equipment of this character, preferring to scrap the handle rather than risk its failure when a strain is applied at a critical moment.

The cutting of holes in the brake staff at points where the ratchet rivet should be placed from time to time weakens the stock and tends to cause a break in the staff, and the plan of cutting the top entirely off and fitting on a new one is well known to be preferable. Care in the selection of links to be used in the brake chain forestalls no little trouble from the chain riding and slipping off the sprockets or else binding so as to cause the brakes to pull with extreme difficulty. In this connection it is important to discard the links before they wear down to the danger point, since the common fault of trying to utilize the maximum life of the chain opens the way toward serious trouble in emergencies. The cost of a single accident, apart from the humanitarian side, will offset in a moment all the bone-cutting economies of many months in stock. Missing cotter pins, the excessive wear of brake-shoe links, poor welding of brake rods in the forge shop, failure to take account of the settling of the car body under load, cracks in castings and fractures in rods resulting from bends or shocks are all fertile causes of disaster and need to be looked after with special care by the inspection force.

FLUSH TRANSFER TABLE IN KANSAS CITY RAILWAY SHOPS

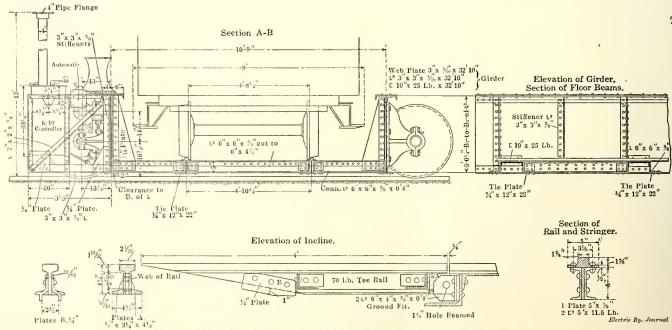
The mechanical department of the Kansas City Railway & Light Company recently installed at its main repair shops a flush transfer table the design of which includes a number of interesting details. Half-tone illustrations and drawings of the transfer table are shown. Probably the chief reason why a flush table was installed rather than one of the drop-pit type

plate girders 37 ft. 10 in. long by 3 ft. 1/4 in. deep. The web plate of each is 5/16 in. thick and is stiffened and reinforced at the top by a 10-in. 25-lb. inverted channel iron and at both top and bottom by 3-in. x 3-in. angle irons. The floor system connecting the two main girders and supporting the car-track rails is subdivided into panels 5 ft. between centers along the axis of the bridge. The clearance between the sides of the bridge is 1 ft. less than the spacing of the main girders, which is 10 ft. 9 in. This leaves ample room in which to handle a



Kansas City Flush Transfer Table-Side View

was because it does not interfere with the use of any tracks now extending through the car house; also, it does not sectionalize the bays in which it is placed so as to make difficult the trucking of materials and the passage from one end to the other. It is understood that where a sprinkling system with drop heads has not been installed a substantial reduction in insurance rates may be expected, because a transfer table 9-ft. car. The cross members of the bridge are made of angles and channel sections to which two Trilby rail heads are riveted to carry the car wheels. The entire transfer bridge is supported by two 33-in. chilled cast-iron plate wheels. The clearance between the lowest part of the transfer table and the top of the car house rails is 2 in. These rail tops are 15% in. above the level of the concrete floor of the car house.

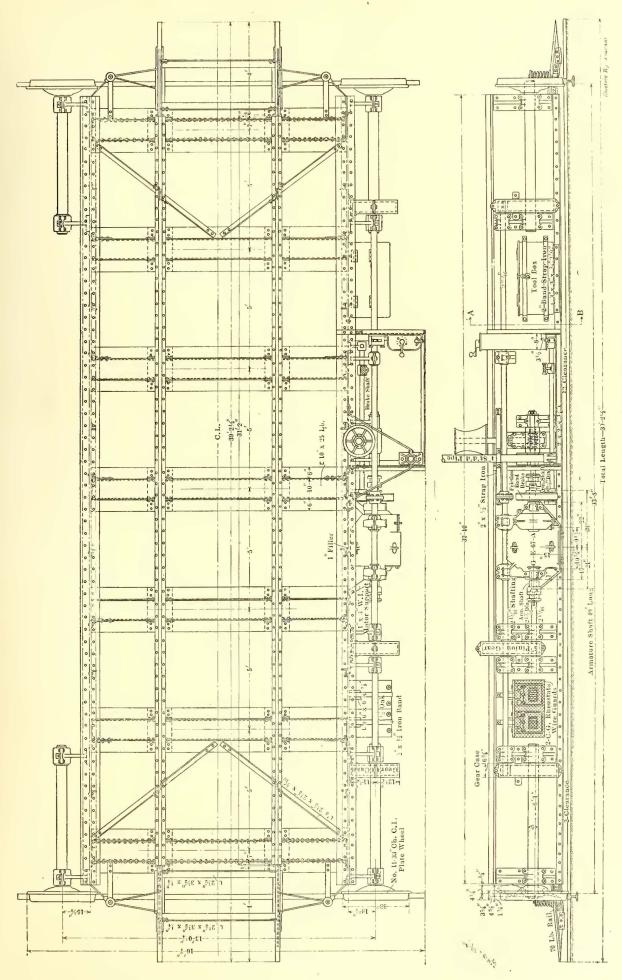


Kansas City Flush Transfer Table-Cross-Sections and Details

of the flush type does not interfere with the full use of tracks extending from one bay to another.

The table designed and installed at the Kansas City shops has a bridge 37 ft. 10 in. long. Under test this bridge carried a 58,000-lb. car with a deflection of but ½ in. The bridge of the transfer table essentially is made up of two through

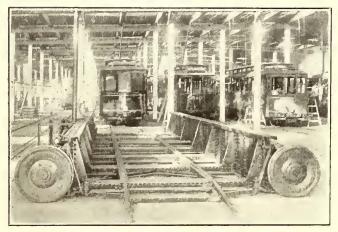
Inclines 4 ft. long connect the track rails on the bridge with the rails buried in the car house concrete floor. The inclines are made of short sections of 70-lb. T-rail pin-hinged at the points where they join with the bridge rails. Normally the inclines are supported clear of the car house floor by springs which permit the incline rails to rest on the car house track



Kansas Çity Flush Transfer Table-Plan and Side Elevation

rails as soon as the car wheels touch the incline. Each incline rail is fitted with two guide plates which fit over the sides of the car house rails and prevent the incline from side-play while loaded.

The transfer table is operated with 500-volt current. A K-10 controller serves to regulate the speed of the driving motor. The control apparatus is installed on a platform 3 ft. 3 in. wide, bracketed to the driving side of the table. The currentcollecting trolley pole also is installed on a platform so that the entire handling of the transfer table may be done by one man. The transfer table is moved by a GE-67-A motor driving two of the supporting wheels through a system of shafts and gearing. This motor also serves to drive a hauling winch built as a part of the transfer-table equipment. The armature shaft of the motor, which is bracketed to one of the main girders of the transfer table, is 25% in. in diameter and is extended at each end of the motor casing to carry a positive clutch. The clutch at one end of the motor drives the transfer table through a double-reduction gearing using 5-in. pinions with 15 teeth and 23-in. gear wheels with 69 teeth and 5-in. face. The clutch at the commutator end of the motor drives



Kansas City Flush Transfer Table-End View

a worm gear, which in turn operates a rope drum substantially mounted at the center of one side of the transfer table and so arranged that one man may use this drum to haul a disabled car onto the transfer table. A friction band brake is connected to the armature shaft inside of the couplings so that no matter whether the motor be coupled to move the transfer table or operate the winch this single brake will be in gear.

THE BYLLESBY CONVENTION IN CHICAGO

The second annual convention of the employees of H. M. Byllesby & Company and of this firm's affiliated public service companies was held in the Congress Hotel, Chicago, on Jan. 17 to 20, inclusive. The registered attendance was 286; 128 of this number were from the home office and 158 from the various affiliated companies scattered throughout the country. These companies operate electric service, street railway, gas, power transmission and telephone utilities in 82 municipalities throughout the West and South.

In his address to the convention Mr. Byllesby referred to the fact that the employees directly on the payroll of the company and those connected with the various local companies aggregated 2538, in addition to an average of about 2000 men in the field on construction, making a total of 4538. Mr. Byllesby also referred to the financial condition of the company and its banking business in the sale of securities in different public service corporations, both of which were in a very satisfactory condition.

During the four-day convention papers were presented by men connected with the different companies on topics connected principally with the central-station industry. The meeting concluded with a banquet on the evening of Jan. 20 at the Congress Hotel.

REPORT OF MASSACHUSETTS RAILROAD COMMISSION

The forty-second annual report of the Board of Railroad Commissioners of Massachusetts gives returns of street railways for the nine months ended June 30, 1910, as the fiscal year has been changed to end on that date instead of on Sept. 30. Returns for the full period were received from 73 companies and to the date of consolidation or purchase from five companies additional. An abstract of the report follows:

"The net increase during the past nine months in the mileage of the Massachusetts companies is 7.746 miles of street railway line and 9.393 miles of second track, making 17.139 miles additional main track. There was also a net increase of 4.883 miles of side track, making a total net increase of 22.022 miles reckoned as single track.

"The Massachusetts companies now own 2246.247 miles of street railway line, 456.485 miles of second main track and 188.347 miles of side track, making the total length of track owned, reckoned as single track, 2891.079 miles. This does not include 3.195 miles of main line and 0.103 mile of side track of the Rhode Island Company located in this Commonwealth. All of the track owned is surface street railway track, with the exception of 9.983 miles of elevated line and 9.809 miles of elevated second track. Of the sidings all are surface track, with the exception of 4.378 miles of elevated track.

"The gross assets of the companies, June 30, 1910, were \$185,456,187. The gross liabilities at the same date, including capital stock (but not including sinking and other funds), were \$175,470,489.

"The aggregate capital stock of the 73 companies June 30, 1910, was \$84,345,065, an increase of \$3,616,185 over the amount returned Sept. 30, 1909. The total amount of dividends declared during the nine months' period was \$2,767,314.99. Thirty-five out of the 78 companies paid dividends ranging from 1.50 per cent to 10 per cent, and 43 companies declared or paid no dividends during the nine months. One company paid 10 per cent; three paid 8 per cent; one paid 7.22 per cent; seven paid 6 per cent; one paid 5.5 per cent; two paid 5 per cent; one paid 4.5 per cent; three paid 4 per cent; two paid 3.75 per cent; one paid 3.6 per cent; one paid 3.5 per cent on common and 8 per cent on preferred; one paid 3.25 per cent; one paid 3 per cent on preferred; three paid 3 per cent; one paid 3 per cent on common and 3 per cent on preferred; three paid 2 per cent; one paid 2 per cent on common and 3 per cent on preferred; one paid 2 per cent and 4 per cent on varying amounts, and one paid 1.5 per cent.

"The funded debt of the companies June 30, 1910, was \$67,762,000, a decrease of \$316,000 from the year ended Sept. 30, 1909. The total unfunded debt, including mortgages, was \$23,363,424, an increase of \$3,542,153 over the year ended Sept. 30, 1909.

"The average cost of the street railways of the State per mile of main track (including the cost but not the length of sidetrack), as returned by the companies June 30, 1910, was \$32,484 for construction, \$11,654 for equipment, and \$17,594 for lands, buildings (including power plants), parks and other permanent property, making a total average cost of \$61,732 per mile of main track.

"The total income of the companies from all sources for the nine months ended June 30, 1910, was \$25,329,312, and the total expenditures (including dividends declared) for the same period were \$25,496,252, making a net deficit of \$166,940 to be deducted from the surplus of previous years.

"The total number of passengers carried during the nine months on the railways in operation of the 78 companies making returns to the board, computed on the basis of 5-cent fares collected, was 469,330,784. The total number of miles run by street cars during the nine months was 87,712,572. The operating ratio during this period was 67.38 per cent.

"The gross earnings per mile of track owned averaged \$8,892 for the nine months. The expenses of operation were \$5,991 and the net earnings \$2,901. Per car mile the results were: Gross, 27.39 cents; expenses, 18.45 cents; net, 8.94 cents.

The averages per passenger were: Gross, 5.12 cents; expenses, 3.45 cents; net, 1.67 cents.

"The whole number of persons injured in connection with street railway operation, as returned by the companies for the nine months ended June 30, 1910, was 5458, of whom 80 received fatal injuries and 5378 injuries not fatal. The number of passengers injured was 3730, of whom nine were injured fatally. The injuries to employees were 246 in all, 12 of which were fatal. The number of injuries to travelers and others on the street was 1482, of which 59 were fatal. These figures include a very large number of injuries of a trivial character that have been returned by the companies.

COMMUTATION RATES

"During 1910 the board has been engaged in a study of the equalization of the rates for commutation tickets outside of the suburban district and also of a uniform commutation ticket, and in view of this study, together with its recommendation to the general passenger agents of the three principal railroads of the Commonwealth requesting their study and cooperation, it deems it in the public interest that a recommendation should not be restricted to the time limit of the tickets solely but should cover a uniformity of rate for equal distance, so far as possible, not only upon each of the said railroads, but upon all of them.

"The present inequalities of rate arise largely from the practice of certain companies in establishing rates of fare many years before consolidation or lease, and public policy demands that these rates should, in many instances, be readjusted. This will doubtless result in raising certain rates and lowering others, but a complete fabric of rates in operation will tend to the same results as have been secured by the principle of the act of 1908, which has received the general acquiescence of the traveling public.

"The board is now anticipating schedules from the several railroad companies within a few weeks, the rates being made upon the uniform basis of all commutation tickets limited to one month in duration. Upon presentation they will be carefully examined with a view to securing their uniformity. It is somewhat doubtful at the date of this report if any legislation will be necessary, as the board hopes to work the matter out to a satisfactory conclusion. If, however, occasion should present itself for the enactment of any statute, we desire, so far as we properly may, to reserve the right to submit a draft of any legislation necessary.

THROUGH ROUTES

"Chapter 138 of the Resolves of 1910 provides for a report as to the desirability of requiring street railway companies to convey cars of other companies. In the opinion of the board the public interests require additional legislation making it compulsory under certain conditions for street railway companies to receive and convey over their tracks traffic and cars tendered by connecting street railway companies. The controlling reason therefor is as follows:

"Under the permissive right a street railway company exclusively serving a community, especially one of considerable size, is enabled to make its own terms or to refuse to make any terms with a connecting street railway company which desires to route through cars into the thickly populated portion of the territory served by the terminal carrier. The connecting carrier, in most places an interurban street railway company, is thus left at the mercy of the terminal carrier. Some public supervision of this situation is necessary. We do not believe, however, in view of the different sizes and weight of cars, different weight of rails and differences of power equipment, that one street railway company should be required to receive and convey over its tracks cars of another street railway company except upon approval of the public authorities, for it is doubtless true that in some instances the requirements of safety would preclude such arrangement.

ISSUES OF SECURITIES

"Ten orders approving issues of street railway stock, aggregating \$2,479,500, have been signed. Of this amount \$10,000 was original stock issued upon the petition of the Point Shirley

Street Railway Company, and three petitions for preferred stock were approved, the total amount being \$208,000.

"There have been nine petitions by street railway companies for approval of issues of bonds, the total amount being \$2,-047,700. In each case an order of approval was issued.

"In three cases the board has required, under the provisions of Chapter 536 of the Acts of 1910, the establishment of a sinking fund. The law provides for the designation by the board of some Massachusetts trust company as trustee and custodian of the fund.

"Under the general law providing for the purchase and sale or consolidation of street railways no adequate provision is made for the protection of minority stockholders. The board, therefore, suggests legislation upon this subject."

REGULAR AND COMMUTATION RATES ON WASHINGTON SUBURBAN LINE

There is pending before the Interstate Commerce Commission a case in which the rates of fare charged by the City & Suburban Railway, of Washington, D. C., and the Washington, Berwyn & Laurel Electric Railway are in question. The City & Suburban Railway is a subsidiary of the Washington Railway & Electric Company. At the time of the hearing in the case the Washington, Berwyn & Laurel Electric Railway was in the hands of receivers, but it has since been acquired by the City & Suburban Railway. After the hearing of the case before a special examiner a brief for the defendant companies was filed by S. Russell Bowen, attorney. The following information is taken from the brief.

It was alleged by the complainants, residents of the district affected, that the existing rates for regular fares and commutation books were unreasonable, excessive, unjust and discriminatory, and that the companies were subject to the act to regulate commerce. The substitution of a reduced schedule of rates was requested.

The City & Suburban Railway answered that it operated an electric railway from Washington to the District line for which a cash fare of 5 cents or a ticket amounting to 4 1-6 cents was collected; that it operated a line within the State of Maryland, commencing at the State line and extending to Berwyn, Md., which was divided into two zones for which 5 cents for each zone was demanded, and that it did not give any through rates, although it sold a commutation book to points within the State of Maryland. The company denied the jurisdiction of the commission as to street railways engaged in passenger business and not carrying any express or freight traffic, and asserted that, therefore, it was not amenable to the act to regulate interstate commerce.

After the presentation of testimony by the complainants, the defendants moved for a dismissal of the complaint on the ground that the complainants had not made out a prima facie case and had not introduced any proof to show that the rates demanded by the defendants were unreasonable or unjust.

The defendants introduced W. F. Ham, comptroller of the City & Suburban Railway, who testified as follows: "The bonds of the City & Suburban Railway amount to \$1,750,000, the stock to \$1,750,000 and bills payable to \$200,787. The deficit for the year ending Dec. 31, 1909, amounts to \$6,946." Mr. Ham further testified that if the revenue of the City & Suburban Railway was reduced the bonds would be jeopardized and the financial condition of that company would be disturbed. He stated that it was impossible under the zone system to eliminate all inequalities; those living just across the point of collection had to pay a higher rate per mile than those who happened to be at the dividing point.

Mr. Ham further testified that the issue of bonds and stock covered the cost of the property, and that the limit set by Congress was \$150,000 per single mile of track, whereas the average cost had been \$110,000 per mile of single track, including the making of changes in motor power, etc., by the City & Suburban Railway as required by acts of Congress.

Mr. Ham testified that the revenue per car mile within the District of Columbia was 23.31 cents and in Maryland 23.62 cents. He said that the defendants did not give any through rates and that the rates within the District of Columbia were fixed by act of Congress. In the State of Maryland on the City & Suburban Railway there were two zones. The defendants had never paid any dividends and the cost of the City & Suburban Railway for road and equipment had been \$3,682,993. Mr. Ham made certain comparisons of the rates charged by the defendants with those of the competing steam road. Tables showing some of these rates charged by the two defendant companies are reproduced herewith.

Mr. Ham testified that the rates proposed by the complainants in lieu of existing rates were unreasonably low and confiscatory and that no electric railway could afford to operate its line under such rates.

STATEMENT SHOWING REGULAR RATES OF FARE
Between Maryland points and Washington, of the Baltimore & Ohio
Railroad, compared with the City & Suburban Railway.

| | _ | B. & O. 🗆 | R. R.—— | | C. & S. R | y |
|-------------|--------|-----------|------------|--------|-----------|-----------|
| | | Regular | Reg. fare. | | Regular | Reg. fare |
| Station. | Miles. | fare. | per mile. | Miles. | fare. | per mile. |
| Brentwood | | \$0.17 | \$0.03 | | | |
| Hyattsville | 6.6 | .20 | .03 | | | |
| Riverdale | | .23 | .03 | 7.72 | .09 1/6 | 1.19 C. |
| College | | .26 | .03 | | | |
| Lakeland | | .29 | .03 | | | |
| Berwyn | 9.8 | .29 | .03 | 9.95 | .14 1/6 | 1.43 C. |
| | | | | | | |

STATEMENT SHOWING COMMUTATION RATES Between Maryland points and Washington, of the Baltimore & Ohio Railroad, compared with the City & Suburban Railway.

| | – B. & C | O. R. R. | | | —— C. i | S. Ry | |
|-----------------|----------|----------|--------|--------|---------|---------|-------|
| | Comm. | Comm. | Comin. | | Comm. | Comm. | Comm. |
| | rates | ratc | rate | | rates | rate | rate |
| | 60 | per | per | | 52 | per | per |
| Station. Miles | trips. | trip. | mile. | Miles. | trips. | trip. | mile. |
| Brentwood 5.6 | \$4.15 | .069 | .0123 | | | | |
| Hvatteville 6.6 | 4.15 | .074 | .0112 | | | | |
| Riverdale 7.5 | 4.75 | .079 | .0105 | 7.72 | \$3.50 | .06 2/3 | .0085 |
| College 8.5 | 5.05 | .084 | .0099 | | | | |
| Lakeland 9.6 | 5.30 | .088 | .0992 | | | | |
| Berwyn 9.8 | 5.40 | .090 | .0092 | 9.95 | 4.80 | .09 1/6 | .0092 |

STATEMENT SHOWING REGULAR RATES OF FARE Between Maryland points and Washington, of the Baltimore & Ohio Railroad, compared with the City & Suburban Railway and Washington, Berwyn & Laurel Electric Railway.

| | | B. & U. I | C. K. | | C. & S. K | y. — |
|--------------|--------|-----------|------------|--------|-----------|-----------|
| | | Regular | Reg. fare. | | Regular | Reg. fare |
| Station. | Miles. | fare. | per mile. | Miles. | fare. | per mile. |
| Branchville | 10.I | \$0.30 | \$0.03 | | | |
| Sunnyside | 12.1 | .36 | .03 | * | | |
| Beltsville | 12.9 | .39 | .03 | 13.19 | .19 1/6 | 1.45 C. |
| Ammendale | 13.9 | .42 | .03 | | | |
| Muirkirk | 15.1 | -45 | .03 | | | |
| Contee | 16.4 | .49 | .03 | 16.49 | .24 1/6 | 1.46 c. |
| Oak Crest | 17.0 | -51 | .03 | | | |
| Mistletoe Sp | 17.7 | -53 | .03 | | | |
| Laurel | 18.7 | .56 | .03 | 18.90 | .29 1/6 | 1.54 C. |
| | | | | | | |

STATEMENT SHOWING COMMUTATION RATES Between Maryland points and Washington, of the Baltimore & Ohio Railroad, compared with the Washington, Berwyn & Laurel Electric Railway and the City & Suburban Railway.

| | - B. & | O. R. R | . — | | — Electr | ic lines | |
|--------------------|--------|---------|-------|--------|----------|----------|--------|
| | Comm. | Comm. | Comm. | | Comm. | Comm. | Comin. |
| | rates | rate | rate | | rate | rate | rate |
| | 60 | per | per | | 52 | per | per |
| Station. Miles | trips. | trip. | mile. | Miles. | trips. | trip. | mile. |
| Branchville . 10.1 | \$5.50 | .092 | .0091 | | | | |
| Sunnyside . 12.1 | 6.00 | .100 | .0083 | | | | |
| Beltsville 12.9 | 6.30 | .105 | .0081 | 13.19 | \$6.10 | .11 2 3 | .0088 |
| Ammendale 13.9 | 6.60 | .11 | .0079 | | | | |
| Muirkirk 15.1 | 7.00 | .117 | .0078 | | | | |
| Contee 16.4 | 7.35 | .122 | .0074 | 16.49 | 7.40 | .141/6 | .0086 |
| Oak Crest 17.0 | 7.45 | .124 | .0073 | | | | |
| Mistletoe Sp. 17.7 | 7.60 | .127 | .0072 | | | | |
| Laurel 18.7 | 8.05 | .134 | .0072 | 18.90 | 8.00 | .15 1/3 | .0081 |

Mr. Ham also testified that the present commutation rates were not enough to compensate the defendants; that they only tended to develop the territory along the electric lines; that if all the business of the defendants were at those rates the defendants would show a greater deficit than now; that it was the policy of most transportation companies to have a commutation rate whereby they could help to develop their business; that the commutation rates were not profitable, but by having the commutation rates the regular traffic was increased; that if the City & Suburban Railway was doing twice as much business as it was now doing the present rates would not be unreasonable. Mr. Ham said that the expenses of the City & Suburban Railway exceeded its income and that none of the expenses or charges for the past two years included improvements. He further testified that about \$150,000 of new money had been

put into betterments upon which no return had been received and that during the last 10 years the total deficit of about \$70,000 had accumulated.

Although at the time of making the answer the City & Suburban Railway had nothing to do with the management of the Washington, Berwyn & Laurel Electric Railway, Mr. Ham testified as an expert accountant who had examined the books of the latter company. He stated that the line of the Washington, Berwyn & Laurel Electric Railway between Berwyn and Laurel was 8.95 miles; that the road was divided into three zones and that a fare of 5 cents for each zone was collected. He further testified that the monthly commutation rates charged by the Washington, Berwyn & Laurel Electric Railway were less than those charged by the competing steam road and that all of the proposed rates asked for by complainants were unreasonable and would be confiscatory.

Concerning the jurisdiction of the commission the brief says: "At the outset we respectfully urge that this honorable commission has no jurisdiction over street railway companies engaged in operating street cars for the transportation of passengers, not engaged as commercial railroads in the general transportation of freight and passengers and not doing an express business. We are supported in this view by the recent case of Omaha & Council Bluffs Railway & Bridge Company vs. Interstate Commerce Commission in the United States Circuit Court for the District of Nebraska.

"We also contend that this honorable commission has no jurisdiction over intrastate rates such as are demanded by the Washington, Berwyn & Laurel Electric Railway between Berwyn and Laurel.

"The City & Suburban Railway charges merely local rates within the District of Columbia and in the State of Maryland. It gives no through rates and sells no through tickets.

"It has also been held that commutation tickets as well as party tickets and mileage books are exempted from the provisions of the act to regulate interstate commerce."

An abstract of the argument follows:

"The complainants neither called any witnesses nor submitted any proof to substantiate the allegations in their complaint, and, while not qualifying as experts on rate-making, testified in their own behalf, in substance stating their own individual wishes or what rate would suit them and their particular locality or place of residence. All the complainants disclaimed attempting to show the value of the service and the cost of the property employed in rendering the same in determining their belief in the unreasonableness of the rates. They made no inquiry into the character of the business, the amount of capital required, the hazard involved and especially the losses which the defendants were meeting under the rates attacked. The complainants simply alleged that the rates are unreasonable per se.

"The complainants have not considered any point along the lines of the defendant except where they reside, not caring what effect reductions demanded may have upon other points. The respective complainants swore that they did not know what patronage was given to the electric lines; that they personally had no knowledge of the effect of the rates complained of upon the property or the development of the country along the line of electric railways. They could not tell personally the actual straight or commutation rates charged by the defendants at their place of residence or at other points along the lines operated by the defendants and could not state what effect the reductions demanded would have upon the defendants. They testified that they were not concerned whether the defendants were able to suffer the proposed reduction or not. They had not considered that the rates of the defendants carried with them certain transfer privileges which were not given by the competing steam road, which carries its passengers to the union terminal in Washington City.

"The commission is not administering the law to regulate interstate commerce upon such a flimsy basis as that proposed by complainants. It is not authorized under the act to order a reduction in rates in cases where it has jurisdiction upon

complaints of such character unsupported by competent evidence. The commission will only order a reduction of rates when it is made clearly to appear that existing rates are unjust or unreasonable, or unjustly discriminatory.

"The complainants fail to realize that many electric lines have to go through a sort of pioneer period and are real suburb builders. Complainants say that the defendants have deterred settlers from settling in the locality contiguous to the line operated by the defendants, but, strangely enough, point to figures in their brief which prove the contrary. The defendants report an increase in the number of passengers carried in 1900 over those carried in previous years, which was to be expected. But how does this square with the complainants' charges that defendants' rates are prohibitory and deter development of the country along the lines operated by the defendants?"

Regarding the reasonableness of regular and commutation rates the brief says in part: "The issuance of commutation tickets is merely voluntary on the part of the carrier. They may be issued to induce people to travel or to meet a competition, and may be withdrawn.

"The complainants fail to realize that tickets issued upon the commutation principle owe their origin to a different cause from that of the ordinary or regular kind which are fixed or made on a dissimilar basis. The complainants evidently fail to realize that if there should ever come a day when the regular and ordinary rates of an electric railway should be superseded by commutation fares entirely then the latter would take the form of a regular rate and should be reckoned with as such. The facts are that the defendants not only have an ordinary or regular rate in existence, but a commutation rate as well, which they give to develop territory along their lines.

| Revenue from transportation | \$499,047.45 18,420.21 |
|---|----------------------------|
| Gross earnings from operation Operating expenses: \$67,084.43 Equipment 33,507.43 Traffic 624.35 Conducting transportation 236,998.90 General and miscellaneous 60,176.95 | \$517,467.66 398,392.06 |
| Net earnings from operation. Miscellaneous income | \$119,075.60 648.28 |
| Gross income less operating expenses. | \$119,723.88 126,670.16 |
| Net deficit | \$6,946.28 |

"This honorable commission has held that it has no jurisdiction over commutation rates of carriers.

"While the complainants failed to introduce any evidence showing any of the rates charged to be unreasonable, the defendants on the other hand introduced material evidence proving conclusively that the existing rates, both regular and commutation, are reasonable.

"The law does not prohibit all discrimination. To be unlawful discrimination it must be unjust and unreasonable. The law does not undertake to put persons in all localities on exactly the same footing at all times and under all circumstances. It prohibits only undue or unreasonable preferences or advantage.

"What the company is entitled to ask is a fair return upon the value of the property which it employs for the public convenience. What are the facts involved in this hearing? Neither of the defendants has earned expenses, and both have suffered annually a deficit. The City & Suburban Railway has carried and is carrying a deficit to the amount of about \$70,000. Can it be said under such conditions that the existing rates charged by the defendants are unreasonable and unjust? On the contrary, we respectfully submit that any reduction in present rates would be confiscatory. We do not believe, even if this honorable commission holds it has juris-

diction over electric railways not doing an express or freight business, it would, under the guise of regulation, attempt to require the defendants to carry persons without reward, nor would it do that which in law amounts to a taking of private property for public use without just compensation or without due process of law.

"Defendants, therefore, respectfully urge, in view of the above, that the complaint herein should be dismissed."

The income account of the City & Suburban Railway of Washington for the year ended Dec. 31, 1909, is shown in the table in the first column.

SPECIAL REPORTS BY JOINT COMMISSION ON BOSTON TRANSIT MATTERS

The Massachusetts Railroad and the Boston Transit Commissions, sitting as a joint board by order of the Legislature of 1910, have submitted three reports on Boston transit matters to the General Court of 1911, taking up in detail the subway propositions referred to it in the last session. Three matters in connection with subway development were assigned to the joint board for investigation during the recent legislative recess. One covers the extension of the Boston end of the Cambridge subway to the South Station via Winter and Summer Streets, another the construction of a subway to provide additional rapid transit facilities from Park Street to South Boston and Dorchester, and the third a proposed subway under the West End district of Boston, from Park Street through Scollay and Bowdoin Squares to the vicinity of the Charles River.

SUBWAY TO SOUTH STATION

In a report to the Legislature of 1910 the joint board pointed out that quicker and easier means of transit between Park Street and the South Station by means of a subway under Winter and Summer Streets are legitimately demanded, and the resolve passed last year directed the board to investigate the cost of construction and to report a bill in 1911 for the building of such a subway. In its present report the board reiterates the point that such a connection would co-ordinate the existing lines of the Boston Elevated Railway Company and create a direct, rapid and easy means of connection between the largest passenger terminal in the City of Boston and the territory now served by the Washington Street tunnel and the Tremont Street subway. The length of the proposed subway is but 1/2 mile between terminal stations. The estimated cost of the subway, with connections, stations, entrances and exits, but exclusive of land damages, is \$2,600,000. The subway is to be designed for double-track service, and the plans provide for its construction beneath the existing subway and tunnel lines. The work would be done by the Boston Transit Commission, which has built all the existing subways and tunnels in Boston proper. The extension of the Cambridge subway to the South Station will enable passengers to travel from Harvard Square, Cambridge, to the Boston & Albany and New York, New Haven & Hartford terminal in about 10 minutes, as compared with about 30 minutes at present under the most favorable conditions.

SUBWAY TO SOUTH BOSTON AND DORCHESTER

In its report on additional rapid transit facilities to South Boston and Dorchester the joint board points out that the objections cited in its report to the Legislature of 1910 against extending the Boston subway system from Park Street to Marine Park and Milton Lower Mills, in South Boston and Dorchester respectively, still hold. The expense of such extensive subways would be prohibitive. This year the joint board is able to deal with far more practicable proposals affording the people of these districts rapid transit to a terminal at Andrew Square, with transfers to surface cars. The board estimates that such a subway will cost about \$3,500,000.

An interesting feature of the report in this connection is an analysis of recent subway development in Boston, which shows conclusively that the rapid transit lines have been laid out according to a consistent general plan, meeting the needs of Boston and its more immediate suburbs with due regard to the radial character of the city. Studies of the acting-chief engineer of the Boston Transit Commission, Edmund S. Davis, show that the Boston metropolitan district is divided into the following somewhat arbitrary areas, with populations as tabulated tributary to the principal subway and elevated lines:

| Direction of | | |
|--------------------|--|-------------|
| Dist. from Area in | Rapid Transit Lines F | opulation |
| | Serving District. | f District. |
| N. & N. W17.92 | Sullivan Sq. and Malden "L" | . 164,000 |
| N. E14.60 | East Boston tunnel | |
| W | Cambridge subway and E. Camb. "L" | |
| W. & S. W30. | Tremont St. and Riverbank subways. | |
| S. & W | Wash. St. tunnel and Forest Hills "L". | |
| S. & E30. | New subway or "L" line | . 190,000 |

In all cases the above districts are within 10 miles of Boston City Hall. The board points out that, in addition to surface cars and steam railroad facilities, rapid transit by elevated or subway lines is very desirable, and that the existing surface facilities of the South Boston and Dorchester sections of the city are inadequate. The population of the Dorchester district is increasing with great rapidity, the gain in the past 10 years in Dorchester being 55 per cent. In Mr. Davis' studies are included numerous valuable statistics of the character of the existing service on the elevated and surface lines serving various parts of South Boston and Dorchester through surface car transfers, the population of various portions of the metropolitan district and counts of traffic taken by the commission

WEST END LOOP SUBWAY

All members of the board sitting in this matter are agreed that it is inexpedient to build a subway under the West End as desired by various property interests and embodied in the so-called Codman bills filed with the Legislature of 1910 and referred to the commissions for investigation. The project provided that the two tracks of the Cambridge subway, after entering Park Street station, shall be continued northerly under the Tremont Street subway to Scollay Square, and thence under Court Street, Bowdoin Square and Cambridge Street, to the authorized Boston elevated section of the incoming Cambridge subway, forming a loop through the West End. The arguments in favor of the subway were chiefly from real estate interests desirous of revivifying one of the most retrograde sections of Boston. The board points out that many other elements besides transportation affect the increase or decrease of real estate values; that easy and convenient access alone will not improve a district; that the presence of a subway will not in itself improve a territory; that much depends on the location and distance apart of stations and upon the number of persons that wish to reach a given area, and that a subway with stations considerable distances apart will not promote the growth of a district as well as a system of surface lines in which the cars stop at every corner. The board states that a subway is justified only when the congestion on the surface of the streets is so great that travel on the surface lines is seriously impeded and where the distances to be traversed are so great that some means of more rapid transit than can be permitted on the surface, even with congested streets, is necessary or desirable. A subway with stations far apart tends to increase real estate values disproportionately near the stations, and with surface car service no such disparity exists. The hoard shows that no portion of the district is over 750 ft. from some transportation line, that the trend of travel is in other directions, and that the proposed loop would duplicate the most expensive and least used portion of the Tremont Street subway. It finds that if further facilities are later needed in the West End they can best be obtained by the extension of the East Boston tunnel. No legislation is, therefore, recommended in favor of the proposed loop.

At a recent meeting of the Hull (Eng.) corporation street railway committee it was decided to recommend the City Council to seek powers during the next session of Parliament for extending the tramway. When carried out the plan will nearly double the length of the lines.

PUBLIC SERVICE COMMISSION CONFERENCE ON ACCIDENTS

In accordance with the request of the Public Service Commission, Second District, State of New York, a conference was held in Syracuse on Thursday, Jan. 19, between the members of the Public Service Commission and the representatives of the electric railways under their jurisdiction. The meeting was very well attended. There were present about 100 electric railway men from New York State and the five commissioners of the Second District with their secretary and electric railroad inspector. There were also a number of guests from other States, including Commissioner George W. Bishop, of the Massachusetts Railroad Commission; Commissioner J. C. Sullivan, of the Ohio Railroad Commission; Philander Betts, chief engineer Board of Public Utility Commissioners, New Jersey, and M. H. Hovey, safety device expert, Railroad Commission of Wisconsin. There were two sessions, one from 10:45 a.m. to 1:15 p.m. and the other from 2:55 p. m. to 7 p. m. Frank W. Stevens, chairman Public Service Commission, Second District, presided at both sessions.

MORNING SESSION

Chairman Stevens opened the proceedings with a brief address, in which he gave the reasons for calling the conference. He said that as long as cars are propelled at high speed and as long as human beings are not blessed with infinite wisdom accidents will happen. Nevertheless, it was part of the duty of everyone connected with electric railway operation to endeavor to reduce such accidents to a minimum. The most forcible fact that was impressed on his mind was that all accidents of consequence seemed to be resolvable into failures of the human being. Human negligence, human error and human inefficiency in some form or other were chargeable with the serious accidents which had occurred on interurban railways. 'Another factor was the failure at times of the best trained men to perform their duties properly. Many serious accidents had resulted from the lapses of careful and highly efficient men. There were two objects to be obtained: First, to procure skilled employees; second, to procure devices to prevent the mistakes of employees. The conference had been called that each operator might have the benefit of the experience of others and that the commissioners might have the benefit of the experiences of all the operators as to their difficulties, troubles and dangers, and how they can best be corrected. However helpful such suggestions might be, there would be no really valuable results unless the work of the conference was followed up. Whenever it had been determined by a consensus of the opinion of all the operators that something not now done should be done, or some device not now used should be used, then the carrying out of such policies and the installation of such devices would be made obligatory by the commission.

C. E. Lewis, chief train dispatcher New York State Railways, then read a paper entitled "Train Dispatching on Interurban Roads." This paper was published on page 114 of the ELECTRIC RAILWAY JOURNAL for Jan. 21. Mr. Lewis' paper was followed by a paper by E. H. Wade, train dispatcher of the Buffalo & Lake Erie Traction Company, entitled "Train Dispatching on the Buffalo & Lake Erie Traction Company's Line." This paper appears on page 158 of this issue.

W. G. Park, train dispatcher Buffalo, Lockport & Rochester Railway, said that his company operated a dispatching system similar to that of the New York State Railways. All conductors must give their motorman a bell signal before reaching a meeting point, and this signal must be answered by the motorman.

DISPATCHER'S CONTROL OF POWER CIRCUITS

C. R. Barnes, electric railroad inspector of the commission, inquired what, if any, provisions were made for the shutting off of power by train dispatchers in cases of emergency caused by mistakes in train orders issued or for other reasons.

J. M. Campbell, former receiver Buffalo, Lockport & Rochester Railway, said that this question had been taken up by his company with the Niagara, Lockport & Ontario Power Company, from which energy is purchased. He thought that when power is cut off all of the substations should be affected and not one.

H. C. Prather, master mechanic and superintendent of motive power Buffalo, Lockport & Rochester Railway, stated that the present practice in shutting off power is to call the operator of the substation nearest to the point where the power is to be cut off. When the substation has only one operator there is no assurance that this can always be effected, because he may be outside of the building on other duties. The company therefore took up the question of making the whole line dead in emergencies. This object probably could be accomplished either by grounding or short-circuiting the high-tens on line, assuming that the latter extends from one end of the railway to the other. The object desired could be carried out with some device like an electrolytic cell and operated by remote control from a button on the dispatcher's desk.

J. K. Choate, general manager Otsego & Herkimer Railroad, thought that when there was any question of danger it was a good plan to stop the entire road. There should always be proper connection between the dispatcher's office and the power station to permit the immediate stopping of every car.

C. O. Weidman, superintendent of transportation Otsego & Herkimer Railroad, said that a special wire from the dispatcher to the power plant was in circuit with a large warning gong in the latter. Mr. Barnes did not think that this was the ideal way, as it involved loss of time and the possibility of not getting the power house attendant in time. There should be some plan whereby the train dispatcher himself could shut off the power.

J. P. Maloney, superintendent Albany Southern Railroad, which is a third-rail line, stated that all that company's stations were equipped with an iron bar which was placed in a convenient location, so that the agent could have immediate access to it in case he desired to stop a train after it had passed his station. He simply had to place the iron bar across the third rail and the running rail. This would short-circuit the line and "dead" that section of the rail between substations. Each car is also equipped with the same kind of an iron bar for the use of train crews. In case of serious trouble a crew is able immediately to short-circuit the rail and "dead" that section of the rail between substations and in the immediate vicinity of its car. The dispatchers also have an arrangement by which they can immediately order the power shut off on the whole line or on a certain section of the line, as the case may require. This method had been in vogue for the past five or six years.

W. J. Harvie, chief engineer Oneida Railway, said that after a conference between the officials of his company it was concluded that the shutting off of power should be controlled by the dispatcher. Therefore, the crews have instructions to get the dispatcher first, to put the latter in immediate touch with conditions. Furthermore, the substation operators have instructions when called up by a crew which reports serious trouble to take the power off and notify the dispatcher. Mr. Harvie saw no reason why it was not perfectly feasible to follow Mr. Barnes' suggestion that the cutting off of power should be effected directly by the dispatcher. The cars were put on the road to serve the transportation department and were under the control of the transportation superintendent and his agents. It was his privilege, if he thought fit, to take the power off the entire system. Therefore, ail delay should be eliminated in making this change. It should be possible to eliminate all waste time except that required to make the first

REGISTER STATIONS

Mr. Barnes brought up the question of where register stations should be maintained.

Mr. Lewis said that on the New York State Railways there is a register station at all terminals and at the end of double

track. The rules provide that all train crews which pass these stations must register.

J. H. Cain, superintendent Buffalo, Lockport & Rochester Railway, said his practice was similar to that of the New York State Railways. In addition to registering stations, the company's rules require the trains to register at all terminal points. A terminal point meant any place where a train or section of a train is annulled for any reason. The standard "31" order was used, but it was ruled to avoid mistakes in time and place. Some steam lines and electric interurban lines use an order board for stopping trains. The usual practice is to direct the operator to display an order board and take the train order where the stations are at terminals and certain other stations spaced to give flexibility of train movement. On his system if there are no order boards the station itself is a positive stopping point. A train which leaves one block station cannot go beyond the next without communicating with the train dispatcher. The object is to prevent failures of operators to display the boards after being directed to do so. Should the operator fail to be awake the train crews will stop and arouse him. The block stations also permit the train dispatcher to have trains in individual blocks without getting out train orders. The block stations are register stations only where the train terminates or leaves a line.

Mr. Barnes asked if register stations were maintained at the end of sidings, say, I mile long.

R. A. Dyer, Jr., assistant general manager of the Auburn & Syracuse Electric Railroad, said that when a siding was I mile or even ½ mile long it would be good operating practice to register at the end. Where the siding was shorter there was not much danger that the motorman would forget whether he had passed a car.

W. H. Collins, general manager Fonda, Johnstown & Gloversville Railroad, did not agree with Mr. Dyer in cases where the siding was parallel to the main line. If such a siding were only I mile long the register station would be quite unnecessary. A register station was all right, however, on sidings with a detour which would cause the motorman to lose sight of the other track for some time.

M. D. Kilbride, superintendent transportation, interurban lines, New York State Railways, agreed with Mr. Collins. He said his company had a parallel siding about 2 miles long. Should a motorman forget whether he had passed an opposing train there was no reason why he should not call up and inquire when he reached the end of the siding.

Mr. Cain asked whether register stations were maintained where there are passing points in city limits with city cars and if any accidents had ever occurred because of the absence of such stations. Mr. Barnes replied that he could not recall any accidents from this source. In reply to a question by J. B. Potter, local manager New York & Stamford Railway, Mr. Barnes said that the headway on lines where register stations are maintained varies from half an hour to 5 minutes. Yet each car is obliged to register.

Mr. Campbell said that this was good practice. The only complaints had come from the public, who resented the loss of time taken by the conductor to register.

MEETING POINTS AND OTHER DISPATCHING DETAILS

Mr. Barnes inquired whether the opposing regular train should not be notified when orders are given to crews to run extra between two points.

Mr. Wade thought it was more practicable to notify trains running in the same direction rather than opposing trains. It was almost impossible to notify all opposing trains. One could not always tell when an extra was coming out. The extras look out for themselves, but the men who run second sections depend too much upon the man ahead. The trouble was that too many train orders were being issued. To notify the men on the extras about opposing trains would tend to make them more careless.

Mr. Cain said that wherever they could not run specials or chartered cars as second sections they figured a schedule to make meets with all opposing trains.

Mr. Barnes asked what was the permissible number of meets which should be contained in one train order. He mentioned one instance where on a 40-mile to 50-mile line the crew had an order given it which contained half a dozen meets, so that the train was run with one order for the entire length of the road. It seemed to him that there should be a limit to the number of meets on one order to reduce the chances of error.

Mr. Cain said that an order was given his men for a particular meet only, but in the course of their runs they would receive a number of individual orders.

There was an active discussion on this subject from which it appeared that the general opinion was that there should not be more than two or at most three meets on one order.

Mr. Barnes inquired what methods were employed where crews were changed to insure that the train orders followed the change.

Mr. Choate stated that he did not see how misunderstandings were possible unless the train ran without regular orders. Every one of his trains moves with an order, and that order must be handed over to the next crew or else the new crew will not move. In reply to a query from Mr. Campbell, Mr. Choate said that if the telephone got out of order the trains would be dispatched by time card and moved with a clearance order from the agent. Under these conditions, of course, extra trains could not be moved.

Mr. Cain said that the man who runs the car has the order before him on a hook; if he takes the order away his successor, not finding the order on the hook, will immediately call the other motorman back. The new motorman will not move the train a foot without receiving the order.

TRAINING OF DISPATCHERS.

Mr. Barnes asked what examinations train dispatchers were required to pass.

E. J. Cook, general manager New York State Railways, said that his men were taken off the road. It was customary to try them out for a while to determine their fitness as dispatchers. The men selected were those who had good records in the transportation department, but one could not tell without a trial whether a man would make a good dispatcher.

Mr. Cain said that his train dispatchers are required to pass a written examination which embraces 275 questions on operating rules and 25 to 30 questions on the issuance and understanding of train orders. The men now employed were all recommended by the operators of other roads, but before direct responsibility was given them they were placed with the chief train dispatcher until it was clear that they understood the full procedure.

Mr. Maloney stated that the Albany Southern Railroad also employs only experienced train dispatchers. They are questioned by the superintendent of transportation and are under his personal supervision for a long period before they are permitted to have entire operation of trains.

R. R. Smith, superintendent Buffalo & Lake Erie Traction Company, did not believe in taking men from the transportation department for dispatchers. He thought it better to get a well-recommended steam-railroad dispatcher. It seemed to him that this was the only safe way to handle a long interurban property, especially a new one, which required the building up of a sound organization.

Mr. Campbell asked whether it was possible to get out a "lap" order under the standard system of train dispatching. Mr. Wade said that this was possible where the telephone was used.

Mr. Lewis added that "lap" orders were possible on roads with telegraph dispatching. Many "lap" orders were caused by operators not taking the proper pains to trace the order from its original copy, or, if they made an error in the first place, they did not like to call up the dispatcher to ask for a repetition of the order.

Chairman Stevens suggested that the train dispatchers get together and discuss the points which had come up at the conference and any others which required their attention. If real action was to be secured it would be desirable to have the train dispatchers form committees to work in harmony with other committees of railway men to study, amend or approve existing practices.

LIABILITY OF EMPLOYEES

The next order of business was the reading of the paper entitled "Collisions on Interurban Roads and Their Causes." This paper, which is published on page 159 of this issue, was prepared by E. F. Peck, general manager Schenectady Railway. As Mr. Peck unfortunately had a cold, his paper was read by W. B. Rockwell, general manager Eastern Pennsylvania Railways.

Chairman Stevens was particularly interested in Mr. Peck's final suggestion that one thing that would have a tendency to prevent collisions would be the enforcement of the present criminal law or the enactment of new laws that would severely penalize the negligence of railroad employees. If the motormen mentioned by Mr. Peck had been indicted they would not have been convicted. He mentioned one case where the Grand Jury refused to indict a motorman despite his confession of negligence which had resulted in the death of another motorman. It was his experience that juries would not prosecute a railroad employee unless it was evident that he had wilfully intended to commit murder. He had never heard of a case in New York State where negligence alone had convicted any man. A brief discussion followed on the responsibilities of conductors. Mr. Cain said that there were several roads in New York which hold the conductor and motorman equally responsible for train movements. In approaching meeting points the conductor must signal the motorman, who is required to answer. On his line the conductor pulls the emergency valve cord if he gets no answer from the motorman.

Mr. Choate then read his paper entitled "Methods of Employment, Instruction and Discipline of Motormen and Conductors on Interurban Lines." This paper was published in the ELECTRIC RAILWAY JOURNAL of Jan. 21, on page 120. After the reading of Mr. Choate's contribution the meeting adjourned for luncheon.

AFTERNOON SESSION

James McPhillips, claim agent Hudson Valley Railway, opened the discussion on the papers of Messrs. Choate and Peck. He said it was true that accidents happened even under the oldest and best conductors and at times even three parties were at fault. If the employees realized that they were facing at least a possible term of imprisonment through negligence they would be deterred from taking such risks.

Chairman Stevens said that there was already a statute to cover criminal negligence, but the trouble was the failure of juries to indict.

Mr. Choate mentioned one thing wherein the railroad men needed the help and co-operation of the commission—it concerned the unwillingness of the railroad men themselves to prosecute. Possibly a law that would require sending to the commission and to the district attorney an account of all cases reported might be of help in having a deterring effect on the men. Something must be done to make the men feel their responsibility and to punish those who are reckless.

EMPLOYEES

Chairman Stevens replied that the object before the conference was not so much the punishment of men who had done wrong, but to determine ways and means which would obviate the employment of men of reckless or inefficient character. Continuing, Chairman Stevens asked what the railroad companies were doing to keep their men up to date on the rules of operation. He had found great variations in practice. Some companies even had no rules at all.

Mr. Choate believed the men should be examined from time to time and that every railroad should have a skeleton instruction car.

A free discussion followed on the best method of estimating the character of applicants for employment. There was a common sentiment that letters of recommendation were generally worthless, as few men would undertake to give a bad character to individuals who had been in their employ.

Mr. Choate thought that a man should swear to the truthfulness of his record and that this record should be placed on file with the Public Service Commission.

Mr. Cook said that so few men were employed on his interurban lines that it was perfectly feasible for the trainmaster and superintendent of each division to be in thorough touch with the individual trainman. Both oral and written examinations were given. The company had no skeleton car, but instruction was given by arrangement with the mechanical department.

Mr. Kilbride said that a motorman employed on the interurban lines of the New York State Railways must have a year's experience under the standard code of rules. After his breaking-in period he must pass an examination on that code with a minimum rating of 80 per cent. A conductor is not always an experienced man. He must pass the same examination but is given six months to become thoroughly posted. He must pass the examination in the rules with the same rating as a motorman. It does not follow that the men who receive the highest percentages prove the best operators. In one case a conductor learned the entire code perfectly and yet permitted a passenger to ride from one end of the line to the other without collecting more than the first nickel.

Mr. Dyer thought that books of rules were a good thing, but in the final analysis the selection of men got down to the personality of the superintendent and his judgment of human nature. It was just as impossible to make a motorman good by rule as it was to make people good by law. The greatest safety of operation lay in getting men of good character rather than judging them by their ability to pass examinations. His company did not hire steam railroad men, preferring to take inexperienced men who would more readily accustom themselves to his company's operating methods. The number of accidents might be decreased by suitable signal systems, but he did not know of much more that could be done to improve the present methods of selecting employees. He had tried the merit system some years ago, but it had not proved very successful. Practically it was sometimes hard to penalize a man for an accident. If a man had an accident which was at all excusable he was cautioned to follow the rules to the letter. Generally such a man returned to his work more reliable than before the accident. On the other hand, if a man was responsible for an accident through direct negligence he was discharged at once. Mr. Dyer thought that a quiet reprimand usually was better than humiliating a man by laying him off. The merit system and the practice of laying off tended to promote ill feeling between the men and the company.

Mr. Cook said that the New York State Railways were using the merit system. A man was discharged when he had 60 demerits. Ninety per cent of the men had voted for the adoption of this system. Mr. Cook thought that one of its valuable features was that the men could work off demerits by exceptionally good behavior.

W. O. Wood, president of the New York & Queens County Railway, thought that the greatest weakness of the Rochester merit system was that a specific penalty was provided for each offense. He had been very careful in his experience never to prescribe a penalty for any specified offense against the rules, but to graduate the penalty in accordance with the circumstances of the case and the previous record of the man. Some managers thought that the merit system was not severe enough, but as a matter of fact results had shown that it was too severe, because a man may accumulate 60 demerits in a very short time. The employment of an instructor was a great help in decreasing accidents.

Mr. Potter said that rules could be compiled and bulletins set up without end, but unless the inspectors and superintendents and managers saw that they were carried out with vigilance mere regulations were useless.

Mr. Peck suggested the possibility of making the physical examination of applicants for employment somewhat broader, so as to include tests for alertness, mentality, etc. A committee of physicians representing the different New York

railways might be brought together to determine the scope of this new form of examination. Surprise tests would be a good thing in connection with keeping the men up to date on the operating rules. He thought that the Public Service Commission ought to see that those New York electric railroads which do not belong to the association should follow the standard rules adopted by the association.

Chairman Stevens said that there was a difference of opinion as to whether these rules were adequate for all conditions. Mr. Peck replied that of course some local rules would always be necessary but that the main rules could easily be made standard.

Mr. Cain said that as the basis of 75 per cent of train movements hinged on the accuracy of the trainmen's watches more attention should be given to specifying standard makes and allowable variations. At the last surprise test made on his line it was found that about 85 per cent of the watches varied no more than 15 seconds.

W. C. Callaghan, superintendent transportation, city lines, New York State Railways, thought that the interurban men had turned about completely in placing the man above the signal. He thought that accidents would be reduced when the men appreciate that the signals were secondary to them. He was greatly interested in the accident prevention work done by E. F. Schneider, general manager of the Cleveland, Southwestern & Columbus Railway. Railway managers did not talk often enough to the men about maintaining the same pitch of efficiency every day as they do on extra days. With regard to application for employment, his company had succeeded in securing six convictions out of eight arrests of men who made false statements concerning employment.

John E. Duffy, superintendent Syracuse Rapid Transit Railway, said that the electric railways should leave no stone unturned for the proper instruction of their men. He did not believe that a superintendent could always look a man in the eye and decide at once whether he was a good man. He thought that the formulated code of rules of the American Electric Railway Association fundamentally was proper and correct and could be used by any electric railway in the United States. The company should make sure by follow-up work and personal supervision that the employees understand the rules. New men especially should not be lost sight of until the management is satisfied that they are going to make trustworthy employees. He had secured very good results by having frequent meetings at which the rules were explained to the men in detail.

GENERAL

Chairman Stevens said that to some extent the frequency of accidents depended upon the ability of the supervising officers. He asked whether it would not therefore be advisable for the Public Service Commission annually to publish a list of the accidents on different roads to show whether the supervision is good or bad.

Mr. Potter said that the detailed publication of accidents was a feature of the Connecticut Railroad Commission's reports. He thought this practice was of material help in furthering improvements in the service.

Mr. Rockwell said that there was hardly a general manager present who could not better his system if he had the means. There were a number of roads in New York State which could lessen their accidents at least 50 per cent if they had the money to put their roads in shape. It would consequently be unfair to a great many managers to publish accounts of accidents which could have been forestalled had enough money been available for improvements. Thus, very few roads could afford to install a complete block signal system, although there was no doubt that such a system would help greatly to prevent accidents. Many roads which could not afford to do so have double-tracked their lines, thinking that the accidents were due to single-track operation. Experience had shown, however, that there were more rear-end collisions on double tracks than head-on collisions on single tracks. No steam railroads would dare to follow the interurban railway practice of running

trains at 40 m.p.h. on a 2-minute headway, yet this was done right along when the annual State Fair is held in Syracuse.

Mr. Barnes added that for the year ended June 30, 1910, there were three head-on and nine rear-end collisions in the Second District, New York.

Mr. Cook said that the objects of the conference, as defined by Chairman Stevens, were exactly those of the Street Railway Association of the State of New York. Work of this character was being carried on at both its quarterly and annual meetings.

Chairman Stevens said that he appreciated the point made by Mr. Cook, but the practical difficulty was that not all of the companies in the Second District were members of the association. The association had no other powers than to discuss, urge and recommend, but the commission had the power to enforce. If the representative of the railways should make certain definite recommendations it was probable that the commission would order all companies under its jurisdiction to obey them.

Calvert Townley, vice-president Connecticut Company, believed that there were great possibilities for beneficial cooperation between the commission and the association and that the result of this and similar conferences would be to bring into the fold of the association many who were now outside of it. The commission will get the benefit of the experiences of all the railway companies while the help of the commission would give new impetus and life to the association.

Chairman Stevens concluded this discussion by stating that the commission would be very unwilling to do anything to injure the excellent work which the association is performing.

BLOCK SIGNALING

The next order of business was the paper by W. K. Howe, of the General Railway Signal Company, Rochester, N. Y., entitled "Block Signaling for Electric Railways." Mr. Howe gave a historical review of signaling, including the time interval, space interval, manually controlled and automatic block systems. After pointing out the principal characteristics of each and their unsuitability for high speed and efficient service he discussed the latest developments in automatic track-circuit block signals. His talk was illustrated by a number of diagrams of circuits, illustrations of signal apparatus and fullsize working installations which had been set up in the meeting room of the conference. Mr. Howe laid particular stress on the fact that there has now been developed an automatic block signal system, the cost of which made it available for the average electric interurban railway. The speaker believed that the signal should be under the control of the dispatcher and that means should be provided to compel the obedience of the trainmen to signal indications.

MEETING OF CENTRAL ELECTRIC TRAFFIC ASSOCIATION

The annual meeting of the Central Electric Traffic Association was held in the office of the chairman of the association at Indianapolis, Ind., on Jan. 16, 17 and 18, 1911. Regular routine business and work on the revision of Joint Passenger Tariff No. 3 consumed most of the time. On the afternoon of Jan. 18 the annual report of the chairman was presented, as shown in the ELECTRIC RAILWAY JOURNAL of Jan. 21, 1911, page 113. It was decided to furnish a copy of this report to the companies which are members of the Central Electric Railway Association. The annual election resulted in the selection of A. L. Neereamer as chairman for the ensuing year. The next meeting of the association will be held in the office of the chairman on Feb. 13, 14 and 15, 1911.

A study is being made of conditions on the Congo River, between Matadi and Leopoldville, for obtaining power to electrify the railway between the two places operated by the Compagnie du Chemin de Fer du Congo, whose headquarters are at 48 Rue de Namur, Brussels, Belgium. This railway is the connecting link between the Upper and Lower Congo, and is about 250 miles in length.

TRAIN DISPATCHING ON THE BUFFALO & LAKE ERIE TRACTION COMPANY'S LINE*

BY E. H. WADE, TRAIN DISPATCHER, BUFFALO & LAKE ERIE TRACTION
COMPANY

The adoption of a standard book of rules by the electric roads of this country will open the way to make a more careful set of railroad men. Superintendents and assistant superintendents try to see that rules are properly understood and obeyed, but they cannot do so regularly because of other pressing duties demanding a large share of their time. For this reason there should be one competent man to supervise all examinations and to travel over the system as often as possible to see that his instructions are understood and are being observed. Instructions upon the air brake are of minor importance compared with train rules and orders. The examiner should call all employees in frequently and re-examine them to keep them brightened up. It is only by these means that the company will reap the full benefit of the expense of issuing a book of rules.

Two years ago this company installed a train dispatching system on its 90 miles of single interurban track between Buffalo and Erie, adhering to the steam railroad ideas as far as praeticable. Our dispatching force consists of three men on eighthour tricks, all of whom are steam road dispatchers with several years' experience. Our telephone system consists of a private dispatcher's wire and a commercial wire, both of which are cut in at all sidings. We have register stations located at all terminals and ends of double track; our telephone booths are lighted by electricity and in each booth is a locked box in which conductors deposit a copy of all orders received.

The double-order system on "31" blanks is the only system used by us, and must be personally signed by the conductor and motorman. The orders are copied by the conductor and repeated by both the conductor and the motorman, then the word "complete" and the time are given by the dispatcher. Our motorman must also thoroughly understand how to receive train orders. Handling train orders in this manner insures perfect safety in so far as the system is concerned. The results have been very gratifying because we have a lot of unusually careful men, who are examined and thoroughly instructed regarding both train orders and standard steam road rules, and they are not allowed to take charge of a train until they are thoroughly competent.

In handling trains in sections the usual steam railroad system is used, that is, green flags by day and green lights by night. The same orders are used, the conductor of the first section copying a sufficient number of orders to cover the sections of that train, his motorman repeating same to the dispatcher. The following sections repeat orders in turn to the dispatcher, receiving "complete" when the dispatcher is satisfied that the orders are understood by all concerned.

If one or more sections drop out at a non-register station, this fact is promptly reported to the dispatcher, who satisfies himself at once that the proper exchange of orders has been made. Then he immediately notifies all opposing trains that a section of a certain train has been represented to that certain point, but if a train displays signals for one or more sections to a given point and if it takes down the signals at that given point they notify the dispatcher and then proceed as a single train to destination. They must also, in all cases, stop opposing trains and advise them of their having displayed signals to that certain point. At all meeting points our trainmen are required to notify each other personally what train they represent.

When advance notice is given of special movements the dispatcher creates them as sections. When they are designed to run to non-register stations all opposing trains are given a copy of the section order. While this insures double safety, it also gives the dispatcher a chance to move special trains without delay.

^{*}A paper presented at a conference called by the Public Service Commission, Second District, New York, Syracuse, Jan. 19, 1911.

This company is nearly ready to install a method which should add to the safety of running trains in sections. A box with lettered and numbered slides is to be placed in the front window of each car to indicate whether the car is the first, second or last section, or an extra. This is to be used in addition to the present signals. As another means of adding to the protection of such trains, I would suggest having a partly printed form which could be quickly filled in, giving notice of such movements to all opposing trains concerned. I always feel that in the movement of trains in sections the chance of accidents is greater than in any other movement, so no means should be spared to protect them.

I would recommend the placing of semaphores at points where substations are located in the vicinity of sidings and instructing the substation operators in the handling of train orders, etc. It is my opinion that better movement thus would be gained with a certain amount of safety added. This would especially protect trains which drop out at non-register stations, and, in cases of breakdowns of cars between stations, their meets could be advanced and serious delays averted.

At present we are inaugurating a freight system, which consists of a half dozen freight cars moved as extra trains. Inasmuch as it is a difficult matter to move extras through sections where work extras and other extra trains are constantly using the main track, I should like to see such trains placed on the timetable as second-class trains. This action would necessitate all irregular extras keeping clear, adding safety, giving better movement and requiring the issuance of fewer orders. The fewer orders the better, and in cases of wire trouble the cars will not be tied up. Then, again, regular schedule trains are seldom overlooked by trainmen.

Our work extras are manned by a train crew of three men. When they receive an order to protect against an extra after a certain time they are required to clear that extra five minutes, just as they would a regular train, unless where they are unavoidably detained; then they are to protect with a flag. The extra is also given a copy of the work extra's order. If an extra be given an order through the working limits of a work extra, the crew receives an order to protect. To do this the crew must send a flag ahead on a regular train until the work extra is reached, when arrangements are made to allow the extra to pass. When circumstances permit we create the extra as a section of a regular train through the working limits.

We have practically built and rebuilt our entire system with this system of handling our work trains. We have operated thousands of cars of slag, other ballast and material, the greater portion of which was handled in large-capacity steam railroad cars. We have also replaced and built bridges and we have as yet to hear the first complaint from our construction superintendents regarding our system.

The most dangerous proposition is the operation of snow plows on the interurban lines, because they are used only in storms and bad weather. We have used extra precautions to avoid accidents, employing the same thoroughly instructed erews as on our regular cars. We realize the danger of moving regular or extra trains in proximity to a snow plow, owing to the fact that during storms the snow plow is covered with ice and snow to such an extent that the headlight and markers often are practically useless, and in cuts or snowbanks the plow is liable to be stalled or derailed. In such cases there is only a short notice for the flag to protect properly. In other words, we practically block from siding to siding in extreme weather. I would suggest that when it is necessary to drop a flag the flagman be instructed always to go back to a stop, where the following train is more likely to observe the signal while looking to pick up passengers.

Trainmen on electric as well as on steam railroads occasionally forget their orders. As a reminder to the motorman that he has orders to fulfil, we are to have placed in each ear, just above the motorman's order clip-board, a small red incandescent lamp. This lamp is to be turned on by the motorman as soon as he places an order in the clip, and it will remain lighted until the order has been fulfilled.

COLLISIONS ON INTERURBAN ROADS AND THEIR CAUSES *

BY E. F. PECK, GENERAL MANAGER, SCHENECTADY RAILWAY

There is no man here to-day who will not admit that rail-roading, be it steam or electric, is the most exacting and fascinating business in this busy world of ours; but there is one great and overwhelming obstacle to the complete happiness of railroad employees and that is the ever-present fear of accidents. The proper protection of passengers who are intrusted to our care is a duty that cannot be neglected. It must also be remembered that every person, be it man, woman or child, who rides on our cars is guaranteed insurance against accident. To some of our roads the cost of this insurance has been extremely heavy.

In order to bring this subject before you in a practical way it is my purpose to outline a series of accidents that have happened on interurban roads during the past few years and their causes.

On Scpt. 21, 1910, a disastrous collision occurred on the lines of the Ft. Wayne & Wabash Valley Traction Company, resulting in the death of a large number of passengers. The cause of the accident was the fact that the crew operating a southbound extra car failed to make proper clearance, as required by the rules. Both employees had had proper training and instruction and were apparently fully qualified to perform the duties in which they were employed. They had not been overworked, the motorman not having been on duty the day before and the conductor having had nine hours' rest since his ten hours' labor on the previous day; prior to the accident they had been on duty only about three hours. They were given an order at Ft. Wayne to take car 303, southbound, to Bluffton, the order reading, "Run extra to Bluffton." They were fully aware of the rule and had passed written examinations as to the necessity of clearing regular trains by five minutes; the motorman himself had been operating regular train No. 56 northbound, with which they collided, so without doubt he was fully aware of the time of the northbound train at all of its points. By having the extra southbound train run at the speed of the "Limited" schedule the farthest south the crew could have got and properly cleared northbound train No. 56 was siding No. 105. This they overran and also ran past siding No. 106, meeting the northbound car at the point of a sharp curve, where the view was obstructed by a clump of trees. The southbound extra was operated at a speed of about 40 m.p.h. and the northbound regular at a speed of perhaps 20 m.p.h.

On Oct. 4, 1910, by overrunning a meeting point at Wall's Siding, near Staunton, Ill., a head-on collision occurred on the lines of the Illinois Traction System. This accident resulted in the death of 36 passengers, serious injury to 12 and minor injury to 15. It occurred at 3:38 p. m. on a curve at the foot of a grade two miles north of Staunton and one mile north of the meeting place and was due solely to the failure of the motorman to obey orders. The motorman in question was one of the oldest, most efficient, sober and careful employees in the service. He was noted for the care with which he executed train orders and there seems no tangible reason for his fatal, if not criminal, absent-mindedness.

Last summer a collision occurred on the lines of the Albany Southern Railroad during a period when considerable construction work was going on. This accident was due to one employee leaving a switch open so that one of the regular passenger trains collided with the rear-end of a work train which stood on a siding. In this particular case the blame was placed entirely upon two employees who failed to observe the rules of the company. The motorman in charge of the car could have seen the switch in sufficient time to avoid the accident had he noticed its position, and, of course, the party leaving the switch open was inexcusably negligent. Both of these men had been first-class employees up to the time of the accident.

^{*}A paper presented at a conference called by the Public Service Commission, Second District, New York, Syracuse, Jan. 19, 1911.

On the night of Sept. 2, 1907, a serious rear-end collision occurred at a point known as stop No. 1 on the Albany division of the Schenectady Railway Company. This was on the night of Labor Day, when traffic was exceptionally heavy and cars were scheduled five minutes apart. The first car was stopped on signal at the above-mentioned point to pick up a number of passengers. Just as the motorman was starting his car the second car ran into the rear end, causing the death of 4 passengers and injuring 55. After a rigid investigation it was found that the first car was on schedule time and the motorman of the second car by his utter disregard of all rules was responsible for the accident. The Albany division of the Schenectady Railway Company is a double-track line through from terminal to terminal. The motorman who was responsible for the accident, before leaving Albany for Schenectady, knew that a car had preceded him five minutes, as he was in the terminal when the preceding car left. The first car was run as an accommodation, making all regular stops on signal between Albany and Schenectady. The motorman of the second car knew he might overtake the car ahead and should have used every precaution to prevent collision. He disobeyed the rules. of the company in running ahead of his schedule and also failed to obey a slow-up order in effect.

Again on Oct. 9, 1909, on the Saratoga division of the Schenectady Railway Company another collision occurred; this resulted in the death of the motorman of the second car and injuries to passengers aboard both cars. After a careful investigation it was brought out that the motorman of the second car was running ahead of his schedule and was also violating a fog order which provided that a motorman who operated a car through fog banks or dark places where vision was obstructed should reduce the speed of his car so that he could stop within the length of his vision.

A serious head-on collision which resulted in a number of deaths occurred on the Washington, Baltimore & Annapolis Electric Railway. This accident happened on a single-track line between Naval Academy Junction and Annapolis. It was due to the failure of the crew of the westbound extra properly to take its siding to permit the regular eastbound train to pass.

My object in reviewing the accidents that have just been cited is to call your attention to the fact that without exception 80 per cent of the serious accidents which have happened on interurban electric roads have been caused by the frailty of human nature. In practically all the cases the rules were adequate and sufficient to prevent the mishap if the employees had performed their duty. Interurban collisions seldom are caused by faulty car equipment or defective roadbed, and, while it may be said that varying weather conditions often contribute to the causes of such collisions, yet the largest percentage is chargeable to lack of judgment on the part of crews or to the gross carelessness of the motormen. This at once brings up the question as to whether or not the trainmen whom we employ are sufficiently examined as to their mental qualifications and rigidly enough trained in obedience.

I was recently asked to investigate the school report of a 12-year-old boy on which the teacher had written the word "immature." The teacher stated that the child lacked the ability quickly to grasp the meaning of questions which were put to him. We found it was necessary to repeat the question several times before the mind of the child would fully grasp the facts. The child was not stupid, but simply lacked that elasticity of mind to act quickly when questions were put to him. The teacher on being asked as to what training was necessary to improve this condition immediately replied that giving the child some regular task to perform and holding him strictly responsible for its performance would have a tendency to improve his alertness. Is it not true that the railroads have many employees in their organizations who have minds that are immature, men who can perform thoroughly their ordinary duties, but who in case of emergency or where decisive action is necessary fail to respond quickly? It may be that the monotony of the labor of a motorman has a tendency to make his mind less alert.

Must we wait until some other terrible accident occurs to demonstrate the incompetency of the employee, or should we have some form of examination and practical tests to weed out men of this type? It would seem that we have an intricate problem to solve, one which might be classified as mental or human engineering. It is a question that involves not only the motorman and conductor but also the trainmaster and dispatcher.

The collision of interurban cars has been minimized to a certain extent by the installation of double tracks, improved dispatching methods and the use of modern block signals; but no matter how perfect the protective device and danger-proof appliances may be, as long as the forgetful or disobedient motorman is assigned to cars the preventive virtues of up-to-date railroad devices will amount to little. It is emphatically the man in charge of our cars to whom we must look for the prevention of collisions. He must obey his orders and be so trained that in case of emergency he can be trusted to use good judgment.

Another thing that would have a tendency to prevent collisions would be the enforcement of the present law or the enactment of new laws that would severely penalize negligence on the part of railroad employees. It seems to me unjust that employees who are the direct cause of death, personal injury and large property loss should be allowed to escape all responsibility for their acts and suffer only the loss of their positions.

WOOD PRESERVERS' ASSOCIATION

The seventh annual meeting of the Wood Preservers' Association was held in the Auditorium Hotel, Chicago, on Jan. 17, 18 and 19. President Walter Buehler, of St. Louis, was in the chair and F. J. Angier, of Chicago, the secretary, performed the duties of his office. The attendance was about 100, composed principally of railroad men or commercial men interested in methods of wood preservation. The discussions were technical to the art of wood preservation and were brought out by the following papers: "What Railroads Have Done for Forestry," by E. A. Sterling, of Philadelphia; "Impurities in Zinc Chloride," by C. M. Taylor, Port Reading. N. J.; "Piling of Timber," by J. H. Waterman, Galesburg, Ill.; "General Review of Timber Treating in This Country," by Walter Buehler, St. Louis; "Results with Treated Ties Along the South Atlantic Coast," by William A. Fisher, Wilmington, N. C.; "The Covering of Retorts," by R. W. Yarbrough, of Texarkana, Tex.; "Plants in the North and in the South," by Andrew Gibson, Brainerd, Minn.; "Grouping Timbers for Treatment," by W. F. Goltra, Cleveland, Ohio; "Penetrations from Different Amounts of Preservatives," by R. L. Allardyce, Texarkana, Tex.; "Prolonging the Life of Railway Cross Ties," by F. J. Angier, Chicago; "Treatment of Sawn and Hewn Ties," by H. J. Whitmore, Denison, Tex.; "Depths of Penetration with Different Amounts of Preservatives," by David Allerton, Madison, Ill.; "Benefits of the Annual Meetings," by William Townsley, Jr., Cleveland; "Withdrawal of Creosote from Wood by Subsequent Vacuum," by C. E. Chanute, of Chicago, and "General Review of Timber Treating in This Country," by John T. Logan, Texarkana, Tex.

This list of papers indicates the varied aspects of the art of wood preservation. It is the province of the Wood Preservers' Association to maintain a high standard of professional procedure in the work. One point brought out which may be of some importance to electrical men interested in the preservation of poles is that creosote penetrates farther into wood than the discoloration of the wood would indicate. Officers were elected as follows: President, John T. Logan, Texarkana, Tex.; vice-presidents, Andrew Gibson, of Brainerd, Minn.; R. J. Calder, Galveston, Tex., and D. Burkhalter, of Bradford, Pa.; secretary-treasurer, F. J. Angier, 1033 First National Bank Building, Chicago. The next annual meeting will be held in Chicago on Jan. 16 to 18, 1912.

TEMPORARY ORGANIZATION OF ILLINOIS ELECTRIC RAILWAYS ASSOCIATION

At a meeting of Illinois electric railway operators held at the Great Northern Hotel in Chicago on Jan. 19 temporary organization of the Illinois Electric Railways Association was effected. H. E. Chubbuck, vice-president executive of the Illinois Traction System, Peoria, was elected temporary president, and C. E. Flenner, auditor of the Aurora, Elgin & Chicago Railroad Company, Chicago, was elected temporary secretary. G. W. Quackenbush, traffic manager of the Illinois Traction System at Springfield, acted as temporary chairman of the meeting.

The names of the companies represented at the meeting and of the gentlemen present follow:

Chicago, Aurora & DeKalb Railroad Company, Aurora—Joseph O'Hara.

Chicago & Southern Traction Company, Chicago—W. B. Tarkington, Robert A. Barnett and Charles Oldenburg.

DeKalb, Sycamore & Interurban Traction Company, DeKalb

Central Illinois Public Service Company, Mattoon—Marshall E. Sampsell and Charles H. Cox.

Chicago, Ottawa & Peoria Railway, Ottawa—A. E. Blackburn and H. J. Vance,

Sterling, Dixon & Eastern Electric Railway, Sterling—

Henry S. Dixon.

Joliet & Southern Traction Company, Joliet—L. D. Fisher.

Aurora, Flg'n & Chicago Pailway, Chicago P. Breekingides

Aurora, Elg'n & Chicago Railway, Chicago—R. Breckinridge, B. E. Merriman, C. E. Flenner and J. W. Brown.

Illinois Traction System—C. F. Handshy, of Springfield:

Illinois Traction System—C. F. Handshy, of Springfield; H. E. Chubbock, of Springfield; G. W. Quackenbush, of Springfield, and J. D. Maynes, of Champaign.

Chicago & Joliet Electric Railway, Joliet—J. R. Blackhall, W. H. Heun and A. W. Jordan.

Springfield Consolidated Railway, Springfield, and Rockford & Interurban Railway, Rockford—A. A. Anderson.

East St. Louis & Suburban, East St. Louis, and Alton, Granite City & St. Louis Traction Company, Alton—C. F. Hewitt.

Elgin & Belvidere Electric Company, Chicago—W. L. Arnold.

Terre Haute & Western Railway, Paris—T. F. Grover. Chicago & Milwaukee Electric Railroad, Chicago—E. E. Downs.

Galesburg & Kewanee Electric Railway, Kewanee—R. H. Haywood.

Mr. Quackenbush called the meeting to order, and Mr. Flenner acted as secretary. Mr. Quackenbush explained the purpose of the meeting, which was to form a permanent organization of the electric railway men of Illinois. He recited the history of the Interstate Electric Railway Association, formed in Illinois six years ago to act as a clearing house for interchange of mileage, and said that through lack of interest that association had virtually gone out of existence. The present organization is, in a way, a successor to it. On Dec. 1 last a preliminary meeting was held to form an association to embrace all the street railways, elevated railways and interurban railways in the State, and Messrs. Quackenbush, Fisher and Flenner were named as a committee at that meeting to issue a call for the present meeting.

C. D. Emmons, general manager of the Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind., was introduced as representing the Central Electric Railway Association and made a plea to the Illinois men to join that association. He related its history and said that it had fifty-two member companies in Michigan, Ohio, Indiana and Kentucky, with a total mileage of 4000. Its scope is broad enough to take in other States, and the speaker urged the appointment of a committee to consider the matter of joining the Central Electric Railway Association. The latter, he said, would be perfectly willing to change its organization so that Illinois would have full representation. The Central Electric Railway Association holds meetings every two months, and if it be urged that there is no physical connection between the Indiana and Illinois roads

Mr. Emmons argued that that was also true in the case of some of the territories already served by member companies of the Central Association. He spoke of the advantages of the association's mileage book, which could be changed to embrace Illinois, and spoke of the good work done by his association's committees on standardization, insurance and carrying United States mail. The association's claim index bureau is also of great value for the prevention of fraud. The importance of the properties in Illinois was appreciated. At the same time Mr. Emmons thought that the Illinois men necded the support of the Interstate organization, especially as in a short time it is probable that the electric railways of Illinois and Indiana will be connected physically. The matter should be considered from a broad business point of view, and if the Illinois men would join there would be a strong electric railway association in the Central West only second to the national association.

F. I. Hardy, Fort Wayne, Ind., also spoke for the Central Association, directing his remarks particularly to the advantages of the Central Electric Railway Traffic Association. He spoke of the benefits of the common mileage book and also of the work of the standardization committee, the latter having been a great help in traffic relations of the various companies and a great incentive to the shipping of freight over different roads, so that now a shipment may be made from Toledo to Indianapolis, a distance of 270 miles, within twenty-four hours. Standard forms of tickets, standard passenger tariffs, through tickets, through checking of baggage, official classification books and uniform exception sheets are also some of the benefits which have accrued from the efforts of the Central Association. These advantages and also such details as excess baggage rates, milk tariffs and other results of concerted action have given the electric railways of the States mentioned prestige with the traveling public and with steam railroads. A permanent secretary and a central office are maintained.

A. A. Anderson, of Springfield, Ill., a former president of the Central Electric Railway Association, said the work of that association had been very beneficial, and he believed that the Illinois companies should consider seriously the desirability of affiliating with it.

Mr. Emmons added that the Central Association is about to issue an official interurban railway map of the territory which it covers, and also an official interurban guide. Illinois roads should be shown in both these publications. It was explained that the State work is taken care of by the State people, as the Central Association is exclusively an interstate association.

The matter of affiliating with the Central Association was discussed in executive session by the representatives of the Illinois companies, and it was decided to go ahead with the temporary organization of the Illinois association and take up the mater of possible affiliation later.

After an adjournment for luncheon Messrs. Blackhall, Handshy, Hewitt, Flenner and Tarkington, who had been named in the executive session as a committee to nominate a temporary president and secretary, reported the names of Messrs. Chubbuck and Flenner, and these gentlemen were elected, as stated above.

To get the new association in working order various committees were appointed, as follows:

Executive Committee—E. C. Faber, Chicago; A. A. Anderson, Springfield; C. F. Handshy, Springfield; M. E. Sampsell, Mattoon, and J. R. Blackhall, Joliet.

Constitution and By-Laws—George W. Quackenbush, Springfield; L. D. Fisher, Joliet, and T. F. Grover, Paris, Ill.

On Affiliation with the Central Electric Railway Association— H. J. Vance, Ottawa; Charles H. Cox, Mattoon, and B. E. Merriman, Wheaton.

Membership-W. L. Arnold, Chicago; Joseph O'Hara, Aurora, and R. Breckinridge, Chicago.

The companies represented at the meeting subscribed to the temporary organization, although some of the representatives did so with the proviso that their action was subject to formal approval by superior officers. The name "Illinois Electric Railways Association" was adopted, and the question of admitting

supply men was left to the committee on constitution and by-laws. After a general discussion and the adoption of a resolution of thanks to the representatives of the Central Electric Railway Association for their attendance adjournment was taken until 10 a. m. on Feb. 17, when a meeting will be held at the Great Northern Hotel, Chicago, to perfect the organization.

ANNUAL MEETING OF THE CENTRAL ELECTRIC RAILWAY ASSOCIATION

At the annual meeting of the Central Electric Railway Association held at the Claypool Hotel, Indianapolis, Ind., on Jan. 19, 1911, officers for the ensuing year were elected as follows: President, E. B. Peck, vice-president Indianapolis Traction & Terminal Company, Indianapolis; first vice-president, W. S. Whitney, general freight and passenger agent Ohio Electric Railway, Springfield, Ohio; second vice-president, A. W. Brady, president Indiana Union Traction Company, Anderson, Ind.; treasurer, A. L. Neereamer, Indianapolis. The members of the executive committee elected for the year are as follows: H. A. Nicholl, C. N. Wilcoxon, J. H. Crall, T. C. McReynolds, C. L. Henry, George Whysall, R. A. Crume, F. W. Coen, E. F. Schneider, S. D. Hutchens, F. W. Brown, J. F. Jeys, M. J. Insull and A. A. Anderson.

The meeting was well attended by members of the association and 19 new members were elected to membership. The day's proceedings were not confined so closely to the reading and discussion of set papers as is ordinarily the case. During the morning session the report of the standardization committee was read and approved without discussion. The report was substantially as presented in the Electric Railway Journal of Jan. 14, page 70. In substance, the committee recommended the adoption of the automatic system of air-brake equipment for electric interurban railway service. Other recommendations made by the committee related to the desirability of adopting standard heights for bumpers on electric railway cars and the use of anti-climbers on the faces of bumpers.

President Whysall stated that as there were no members of the insurance committee in attendance at the meeting a report from this committee would be deferred until such time as definite action has been made by a similar committee appointed by the American Electric Railway Association. He also stated that owing to the absence of the members of the vigilance and membership committee no report would be forthcoming from that committee. He said that C. D. Emmons, chairman of this committee, was attending a meeting of the electric railway men of the State of Illinois at Chicago and endeavoring to get them to join the Central Electric Railway Association instead of organizing a new association for the State of Illinois. Later in the day the president received a message from Mr. Emmons stating that the Illinois men had perfected a temporary organization, but that a committee had been appointed to confer with the members of the Central Electric Railway Association to determine on what basis the railway men of Illinois could join forces with the Central association.

The paper read by C. G. Young, New York City, on "Logical Basis of Valuations of Interurban Street Railways," which was published in abstract in the Electric Railway Journal of Jan. 21, 1911, page 115, opened up many new lines of thought regarding the relations that exist between the public and the public service corporations. Following the presentation of this paper a discussion prepared by F. Lavis, consulting engineer, of New York City, was read. An abstract follows:

In beginning his remarks Mr. Lavis asserted that most of the opponents of the policy of valuation started off with the argument that the value of the purely physical elements did not represent the value of the property. Of course it did not. One would hardly suppose that this could be put forward seriously, but it had been, not only once but frequently, and recently. The so-called intangible values must be considered

in making any valuation for the purpose of protecting the investor from the effects of improper inflation of capital, the public from the imposition of unjust rates, or to compel adequate service. In a determination of the real worth of a property a careful appraisal of the value of the physical elements must be the first step taken. The gross or net earnings, market values and amounts of stocks and bonds, etc., all had a certain weight, but the weight or value they had could not properly be determined without due reference to the physical value. If it were not for so many statements to the contrary, this would seem to be self-evident. Mr. Lavis favored decidedly the cost of reproduction as a basis for valuation, with unit prices based on a fair average for several years, although the Supreme Court of the United States had apparently decided that the original cost must be taken into consideration.

Mr. Lavis had been surprised in looking up some information on the subject of valuation to find a widespread objection among railroad men to valuation for any purpose whatsoever, but he believed that this was largely because they felt that they did not know how or by whom such valuations were to be made, or what use was to be made of the data after they were obtained. He believed that the valuations should be undertaken by the federal government if for only one reason, to get away from the almost insuperable difficulties incidental to division of the property of railroads at the State lines by the States themselves. If valuation was to be made a basis for rate regulation, such regulation should be of the aggregate rates, and the adjustment of individual rates should be left to the railroads themselves. There should be an understanding that the ascertainment of the value of the physical elements was simply an item of information for the use of the government authorities. Such valuation should be intrusted only to a thoroughly competent body of men, some of whom at least should be engineers, and all well qualified by training and experience in railroad affairs.

Mr. Lavis thought that the classification of the rate of return made by Mr. Young was admirable as a basis on which to start a consideration of the proposition. There must not, however, be any definite rate as the maximum. If one of the rates should be fixed as the amount which the operating company was to have all to itself the property should be allowed to earn as much more than this as it could and divide the extra amount in some equitable way with the State. No scheme would work which removed the incentive to continued improvement, and the only incentive which really counted was money.

It seemed to Mr. Lavis that it was incumbent upon the railroad men of the country to present their ideas of the controlling elements in valuation instead of lying back and saying that valuation was entirely useless and leaving it to the various commissions to say how it ought to be carried out and what ought to be done.

A. W. Brady, president of the American Electric Railway Association, stated that the paper read by Mr. Young was one of the most able and thorough treatises to which he had ever listened. He thought that it would be useless for the members of the association to endeavor to discuss all of the various commendable references made in the paper without a further opportunity to digest them. Mr. Brady believed that the fundamental subjects so carefully treated by Mr. Young were of the greatest importance to all electric railway men. The experiences during the past few years at Chicago and Cleveland, and those now being had at Detroit and Toledo and a few other large cities, made the questions of valuations, rate of return, securities, capitalization and operating expenditures of the greatest possible interest. The questions involved in Mr. Young's paper could not be solved in a year or in a quarter of a century. In the minds of a large part of the public to-day some public service companies had no right to live. This reflection of the mind of the public was due to a lack of knowledge of just what rights the companies had and what they were really trying to accomplish. The public had an idea that public-service properties owned by independent interests must be treated differently from properties owned by companies engaged in other lines of work. Since railways enjoy certain public privileges they must expect some kind of regulation. There seemed to be a prevailing idea that the public service companies should be curtailed in their earning capacities in order that the properties should earn only a minimum rate of interest on the investment. Instead of giving the railways the same privilege of earning a fair rate of profit that is expected in other lines of business, the public seemed to think that they should not be allowed a free hand in the matter of developing their business to make a fairly good earning proposition. Mr. Brady cited the case of railroad projects which had been developed at a great expense in mountainous and sparsely settled districts. He stated that wherever financial men were induced to place their money in a proposition involving tremendous difficulties they should at least be allowed to expect to get a larger percentage on their money than they would if they were supporting a less speculative venture. He did not think that the American public should continue to expect financial men to place their money in projects without a chance of a fair interest return. He stated that a great deal of criticism had been directed toward the railroads because of the so-called "watered" stock. He did not believe that the electric railways of the United States need apologize for their "watered" stock, as this was the only means that was permissible to-day whereby the investor could get an adequate return on his money. He thought that the tentative percentages which Mr. Young laid down as a fair rate of return on invested capital formed a very commendable schedule, although he stated that the questions involved could not be discussed offhand. He suggested that if careful study of the subject referred to was made by the railway men present, a very interesting discussion of the subject could be had at a future meeting of the association.

At the afternoon session Joseph A. McGowan, secretary and treasurer Terre Haute, Indianapolis & Eastern Traction Company, gave a pleasing impromptu talk on "Relation of the Common Carrier to the Public." After paying tribute to the members of the Central Electric Railway Association for the good work they had done in the past for the electric railways of the States which they represented, he said that the development of the electric interurban railways during the past 10 years, as compared with the development of the steam roads during the past 60 or 70 years, was next to marvelous. He believed that the progress made by the electric railways was due to a great extent to the close relations that had existed between the public and the railway companies and between the railway companies and their employees. He stated that if these pleasant relations should be continued he could see a great future for the electric railways, as, with loyalty and enthusiasm existing between the interests mentioned the public service companies would be able to accomplish great things. Because of the improvements that had been made in the means of transportation in the past he stated that we might well expect wonderful achievements to be accomplished during the next decade.

The report of the secretary and treasurer for the year 1910 was read. This report was published in last week's issue of this paper.

President Whysall took occasion to compliment the members who had given their hearty support on the various committees to which they were appointed during the past year. He stated that the work done during that period by the members of the Traffic Association was commendable. These men have met frequently to discuss matters pertaining to tariffs, etc., and although they had not been given, in many instances, a free hand to develop the ideas that had come to their attention they had accomplished a great deal of good for the industry in the Central States. He thought it was the duty of every railway company to give its best support to this association. He also expressed his gratitude to the members of the standardization committee who had worked conscientiously during the past year to bring about uniform standards in car equip-

ment. He recommended that the superior officers of railway companies should insist that the members of committees from their companies, appointed by the president of the Central Electric Railway Association, should attend all meetings of those committees. He also thanked Secretary Neereamer for the good work he had done during the past year.

After his election and upon being conducted to the chair President-elect Peck made a short address. He said he had noted in the report of the secretary that the association had lost one member company during the past year. He urged that every member of the association do everything possible to get this member back into the association during the coming year and with it several other companies which are not now members. He stated that he believed this association was the strongest and most successful of the State associations and that more than ever before could be done in the future for the benefit of the industry through close application and thorough co-operation of the members.

When called upon in behalf of the executive committee Martin J. Insull, general manager Louisville & Northern Railway & Lighting Company, recommended that a claim adjusters' association be organized as a part of the Central Electric Railway Association. He stated that there were several members of this association who had a national reputation because of their advanced ideas on matters pertaining to the equitable adjustment of claims. If such an association was organized he thought much good could be accomplished and the heavy drain now made on railway companies by unjust claims could be reduced materially.

James Anderson, general manager of the Sandwich, Windsor & Amherstburg Railway, Windsor, Ontario, in a very pleasing address expressed the hope that the United States and Canada would have even closer trade alliance than at present. He thought this would be equally beneficial to the residents of both countries.

A. Shane, general manager Indianapolis, Columbus & Southern Traction Company, stated that the paper presented by Mr. Young earlier in the day suggested a line of thought regarding the valuation of properties that is serious to contemplate. He said the present agitation throughout the United States regarding the earnings of public carrying companies is unjust. He reviewed the history of railroads built in the United States. The men who financed the first railroads, with but few exceptions, lost all of the money they invested in the properties. He said that the people who have had their money invested in properties for the past few years are getting very small interest on their money and the physical value of the properties has depreciated largely. He stated that with but very few exceptions there are no first-class railway systems in the United States. The roads have been built and rebuilt from time to time to meet the existing demands for additional transportation facilities until the money originally invested has been replaced many times by investors. For this reason he thought that the complaints made against railroads for having so-called "watered" stock were far-fetched. Unless the investor could be assured that he would receive a fair percentage on the money invested it would be a difficult matter in the future to get the necessary money with which to make improvements. The future growth of the industrial world of the United States depends to a large extent on the maintaining of the credit of the carrying companies. He recommended that the electric railway companies keep the public well informed of the things they are doing. By thus educating the public and by being frank and open regarding company matters many of the troubles of the past can be eliminated and better conditions will result.

G. W. Parker, general express agent Detroit United Railway, stated that the interests of the railway companies could be better conserved by closer co-operation between the railway men and the public.

W. H. Evans, superintendent of motive power Indiana Union Traction Company, stated that the standing of the Central Electric Railway Association in the railway field is shown by the fact that several of the members hold important

offices in the American Electric Railway Association and in the past have originated many things that have resulted in good for the electric railway cause. He urged that the railway men of the Central States aid the committees of the American association materially in their work by replying promptly to requests for information sent out by the big association.

The next meeting of the association will be held at Columbus, Ohio, on March 23, 1911.

WISCONSIN ELECTRICAL ASSOCIATION AT MILWAUKEE

The Wisconsin Electrical Association convention, comprising representatives from the electric lighting and electric railway properties of the State, was called to order Wednesday morning, Jan. 18, at the Hotel Pfister, Milwaukee, by Vicepresident George B. Wheeler, of Eau Claire, in the absence of President Clement C. Smith, who was detained from the sessions by illness. Nearly 100 members, including operating men and supply salesmen, were present. A commendable feature of the convention arrangements was the provision of identification tags bearing the inscription: "I am --- (name), from-My company is — Glad to meet you. Who are you?" with blanks for the insertion of names. At the special suggestion of Mr. Wheeler these tags were put on and worn by every member of the convention, including the older men, so that the younger and newer members might more easily become acquainted. The minutes of the summer meeting at Oshkosh and the secretary's report were presented by Secretary D. S. Allen, of Lake Geneva. It showed the association to be in a flourishing condition with more than \$1,000 deposited to its credit in bank and all bills paid.

PUBLICITY

Ernest Gonzenbach, of Sheboygan, read a paper on "Publicity Campaigns," in which he advocated carefully prepared advertising directed to the ultimate consumer of public-utility service. The good will of customers should be cultivated directly, without reverting to political middlemen for favors. The speaker discussed newspapers, company publications, billboards and street car cards for advertising purposes, and pointed out that in any case the material used must be exceedingly well-written and pungent to compel attention and be successful. He advocated the use of space in those newspapers of largest circulation, regardless of editorial policy or journalistic class, observing that the large number of the lower element of readers are quite as good public service customers as the socalled better class of citizens. When the newspaper's editorial policy is appreciative of the company it is well enough to use advertising space, said Mr. Gonzenbach, but the reasons are far greater for doing so if the paper is antagonistic, as carefully prepared rebuttals should then be employed to counteract unfavorable statements in the reading columns. Street car advertising should supplement the use of billboards, especially where the electric light company operates both utilities. The best advertising space in the cars should be retained for this purpose. Before closing, Mr. Gonzenbach deplored the actions of those public service managers who to secure peace at any cost submit to impositions from customers or interests. Such peace, without honor, and at the cost of self-respect, will never bring prosperity. The public admires a plucky fighter, and if it can be convinced that the corporation's position is sound and is undergoing attack from unworthy motives the offending elected representative will be thoroughly discredited and the contest result to the company's advantage.

W. H. Winslow, of Superior, spoke of the necessity for care in preparation of advertising matter, and Glenn Marston, of Chicago, urged that newspaper advertising should be undertaken only with the view of securing direct results from readers, avoiding any purpose of tribute. He advocated the use of copy prepared by experts who understand public sentiment, which tells its story directly and avoids technicalities. Mr. Marston recommended a policy of absolute frankness in public service management.

At the opening of the afternoon session a brief address was was heard from T. F. Grover, former president of the association, now at Terre Haute, Ind., and telegrams of congratulation to the convention were read from Messrs. H. J. Gille, Minneapolis, Minn.; J. H. Harding, Los Angeles; D. C. Jackson, Boston, and Harold Almert, Chicago, all of whom were formerly identified with the association. A. W. Brady, president of the American Electric Railway Association, also telegraphed extending the national association's greetings and asking the co-operation of the Wisconsin men.

SOME PRINCIPLES ESTABLISHED BY THE WISCONSIN RAILROAD COMMISSION

Edwin S. Mack, of the law firm of Miller, Mack & Fairchild, Milwaukee, then presented an instructive and carefully prepared discussion of the "Principles Established by the Decision of the Wisconsin Railroad Commission." An abstract of his paper follows.

Mr. Mack first reviewed some of the principles established by the Wisconsin Railroad Commission regarding public utilities. Good service to the public was exacted by the commission, and if, upon investigation of a case, it was found that an increase of rates was necessary to enable good service to be rendered the commission was disposed to order an increase. The adjustment of rate cases involved study of many factors. From the gross earnings the operating expenses and taxes must be subtracted, while the rate of depreciation due to age and wear, the reasonableness of return, the correct principle on which the return was to be based and the percentages allowable for interest and profit must be determined. The costs must be properly proportioned among the various classes of service so that each should pay its share.

Mr. Mack said that the gross earnings and operating expenses were usually taken from the company's books and were verified by examination and study of the property in operation.

In considering the principal on which the return was to be based, Mr. Mack pointed out that different principles apply from those in the case of property having an open market value. The principal used might be taken as the funded debt or bond issue, plus the capital stock and investments. If it was necessary to appraise the tangible property its original cost, including additions, might be considered, or cost of reproduction new, or present value—that is, reproduction value minus depreciation. Added to this was the "service" value, engineering, etc., necessary to make up the integral parts of an efficient mechanism.

The "actual total investment" was generally taken as the basis for rate making when it could be shown that the expenditures had been prudent compared with the present value of the investment and that ordinary business sagacity had been employed. When excessive or imprudent investments, not commensurate with the value of service to the customer, had been made a corresponding reduction would be ordered in the principal amount. All values, whether gifts, surplus earnings or new capital, were considered as actual parts of the investment by the commission. The sale of bonds was recognized by the commission as the modern method of raising capital, and bond discounts were viewed as proper items of cost.

"Cost of going value"—that is, the expenditure necessary before the business reached a profitable condition, with organization perfected, customers connected and harmonious operation prevailing throughout its mechanism—was also regarded as an item of the investment. The "cost of going value" was computed by the commission by the method illustrated in the diagram published herewith. This shows the elements of the business during the first year, given over to construction; the second year, when partial operation began, and the following years, during which the business expanded normally until the income finally exceeded the costs and a profit was realized by the company.

Mr. Mack stated that interest at the rate of 6 or 7 per cent would be allowed on going value, the higher figure where the service was good and it could be shown that the plant was not built ahead of public needs or in an excessively expensive or unwise manner, that there were no present prospects of profits, or

that the past management had not been incompetent. Obviously according to the commission's doctrine, public utilities could retrieve errors or losses, as could be done by private enterprises. When a good return had been earned continuously from the beginning of work no cost of going value would be allowed by the commission.

When the investment in the property was not ascertainable or it became necessary to check or approximate such investment recourse was had to the appraisal of the elements of the property by the valuation staff of the commission. Added to the sum of the costs of the elements of the plant as appraised, a general allowance of 10 to 12 per cent was usually made for the expenses of combining the plant in "harmonious operation." Of the usual 12 per cent allowance, which applied to all but store supplies and paving, 5 per cent was credited to engineering, 4 per cent to interest during construction and 3 per cent to legal expenses, commissions and contingencies. In addition there had been allowed for stores and supplies, as part of the working capital, up to 1.5 per cent in some cases. The depreciation factors for getting present values were obtained from curve sheets issued by the commission, showing various rates of depreciation applicable to elements suffering different degrees of wear and obsolescence.

The commission had refused to place a capital value on "successful good judgment" employed in locating a site, allowing

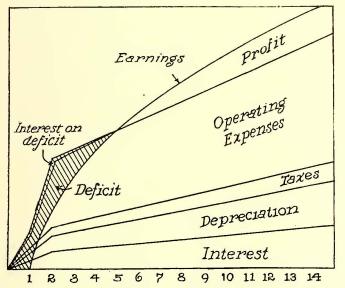


Diagram Showing Method of Computing "Going Value"

only for the amount of money actually expended in acquiring the site. Allowance was made for non-operating property held for reserve or emergency use, but not for discarded equipment or equipment held beyond plant requirements.

"Good will" as an element of public utility value was not recognized by the commission. Mr. Mack said that the commission held that this intangible asset, applicable to a private competitive business, did not hold in a public monopoly. Franchises were recognized as having value, but this value could not properly be considered for rate-making purposes, the commission had declared. The commission carefully distinguished the elements of interest and profit, decreeing for the first a reasonable rate of return on the investment, beyond which the surplus became profit. The commission frequently allowed 8 per cent, chiefly for electrical industries, while water companies were restricted to 7 per cent and sometimes 6 per cent. Municipal plants were limited to 4 per cent.

Mr. Mack added that there had been a tendency in Wisconsin to lose sight of the parts of a business in consideration of the whole, although this, of course, was contrary to cost distribution methods. The cost of service was generally held to control the rate to be charged, although this had been modified in the case of small customers so as to enable them to secure service at a cost which should not be prohibitive.

Following the presentation of Mr. Mack's paper, State Senator G. B. Hudnall, of the Wisconsin Legislature, was introduced to the convention as "the father of the public utility commission law of Wisconsin." He remarked that the success of the act had been due to the high personnel of the commission and to the co-operation of the companies themselves.

BUSINESS MEETING

A new constitution for the Wisconsin association was presented by Irving P. Lord, of Waupaca, chairman of the constitution committee, and was ratified by the convention after a brief discussion. The committee on affiliation with the National Electric Light Association, consisting of P. H. Korst, of Jancsville; L. L. Tissier, of De Pere, and W. R. Putnam, of Marinette, reported against such affiliation owing to the difference in eligibility rules and the resulting possible exclusion of valuable members from the local association. Co-operation in every way with the national association was recommended by the committee.

BANQUET

The association dinner was held Wednesday evening in the Red Room of the Hotel Pfister. Acting-president G. B. Wheeler introduced as toastmaster C. N. Duffy, of Milwaukee. This genial gentleman, between appropriate introductory remarks of his own, called upon F. C. Bolles, Milwaukee; C. M. Axford, Chicago; I. P. Lord, Waupaca; Professor Breckenridge, of Yale University; Oliver C. Fuller, banker, Milwaukee, and Prof. Shailer Matthews, of the University of Chicago, all of whom responded in humorous vein. The address of Professor Matthews, however, included also a more serious and contemplative view of the changes under way in industrial conditions and their significance. The increasing personal consideration granted employees, the responsibilities of capital and wealth, and the hopeful signs for the future of business and industry directed by trained men were some of the subjects discussed in this talk.

ELECTRIC LIGHTING SUBJECTS

Thursday morning's session was opened by A. J. Goedjen, superintendent of tests for the Milwaukee Electric Railway & Light Company, with a paper on "Meters and Meter Testing." Mr. Goedjen's paper was discussed by J. M. Cadby, meter expert of the Wisconsin commission; I. M. Lord, E. Gonzenbach, Prof. C. M. Jansky, of the University of Wisconsin; Mr. McNaughton and H. G. Nutting, of Fort Atkinson.

Frank A. Cannon, secretary of the Citizens' Association of Milwaukee, appeared before the association to enlist its sanction and co-operation for an electrical show to be held at the Auditorium in Milwaukee next January, following the Chicago show. C. M. Axford, of Chicago, also read a paper on "Ornamental Street Lighting" discussing electricity as an advertising medium. M. C. Ewing, of Wausau; R. M. Kimball, of Kenosha, and C. N. Duffy, of Milwaukee, also recounted their own companies' experiences with special lighting.

At the afternoon session W. J. Kelsh, master mechanic and chief engineer of the Eastern Wisconsin Railway & Light Company and the Wisconsin Electric Railway Company, Oshkosh, read a paper on "Electric Railway Repair Shop Practice." An abstract of this paper was published on page 122 in the Electric Railway Journal for Jan. 21. W. H. Stevenson, Chicago, commenting on the costs of car repairs given by Mr. Kelsh's paper, pointed out that the overhead items of heat, light, rental, etc., were omitted, and that these items would increase the figures by 20 per cent to 30 per cent. A 38-ft. car, he said, could be painted and finished for \$120. While this figure includes the cost of removing old paint, this is offset by the resulting filled condition of the wood, which avoids the use of several first coats of fillers.

Mr. Kelsh said about 2.5 gal. per coat would be required for a 38-ft. interurban car, while I gal. per coat was needed for an 18-ft. car. A single-truck car can be scraped, cleaned, painted and released from the shop in 15 days, three men working alternately on two cars.

J. C. Justensen, of Wausau, told of the method used to

keep his commutators in good shape where his cars are required to make 400 miles a day. Once a week each car is run back and forth on a three-block length of track near the barns while one of the crew holds a piece of grindstone against the commutator. By this method the commutators need truing only once in three years.

Mr. Mullet, of the Milwaukee system, said this scheme had been used without success on the commutators of single-phase motors on 80,000-lb. cars operated by his company, but that the commutator required turning every three months. Emery shoes, he said, enabled wheels to show service of 180,000 miles before being trued.

Mr. Kelsh advocated the slotting of commutators now that efficient tools are available. The early method was to mount the armature in a lathe and then with a narrow tool bolted in the tool rest to plow along the slot by manipulating the carriage feed back and forth several times. This was a tedious task, but the modern tools enable the mica to be undercut quickly by a little motor-driven saw. Mr. Kelsh also said that 50 per cent more babbitt metal was required with oil than with grease.

INSURANCE

C. N. Duffy, comptroller of the Milwaukee Electric Railway & Light Company, discussed the subject of "Insurance," recounting the experience and policy of the Milwaukee company. After referring to the excessive insurance rates generally charged on central station and electric railway properties, in spite of modern construction methods. Mr. Duffy pointed out that the subject of insurance affects railway properties more than electric lighting companies on account of the former's large proportion of perishable properties in car stocks. In 1908 the Milwaukee company expended \$15,000 in carrying out changes in its car houses recommended by the insurance inspectors, including the institution of fire drills, approved storage of oils and paints, cleaning of pits and concealed spaces. lowering of trolleys in car houses, provision of waste cans, extinguishers and sprinklers, etc. These changes at a cost of \$15,000 secured a reduction in rate from \$1.40 to \$1 per \$100, involving a yearly saving on \$2,000,000 of the difference between \$28,000 and \$20,000 for the Milwaukee city lines carbarn property. The placing of this insurance is divided among all of the Milwaukee agencies, following a policy established by Mr. Beggs a number of years ago. No insurance is carried on the fireproof Public Service Building or the two power plants of the company. The Milwaukee company has instituted a fire-insurance reserve of \$500,000, the 5 per cent annual interest on which, \$25,000, goes back to the fund. Fiveeighths of I per cent of the gross earnings of the company are also credited to the fund in monthly instalments, after paying the current insurance premiums. The ability of the company to carry its own insurance risk if necessary probably exerted a potent influence in obtaining the reduction which the insurance companies finally consented to give. Mr. Duffy advocated the display of consideration and reasonableness by both electric companies and insurance agents in securing the desired decrease in rates on electric properties.

A. K. Ellis, of Appleton, explained how, by the expenditure of several hundred dollars in carrying out recommendations, his company had secured a rate reduction from \$1.84 to \$1.50. R. M. Kimball, of Racine, said that in the case of the first fire his company sustained under classified insurance rates the company was forced to share the loss with the insurance people. Later he insisted on a blanket rate, without classification, and when the second fire occurred the adjustment was a satisfactory and simple matter. F. A. Hecker, of Antigo, told of a reduction from \$2.50 to \$0.80 secured by rebuilding the plant.

Mr. Douglass, commercial engineer of the Milwaukee company, deplored the often too literal interpretation of insurance ruling without individual judgment, citing a case where a 500-volt motor in the center of a foundry where molten metal was poured was required to be inclosed in a brick compartment for "fire-protection reasons."

PUBLIC SERVICE COMMISSIONS

John I. Beggs, president and general manager of the Milwaukee Electric Railway & Light Company, was called upon for a brief address, and urged co-operation between the public utility corporations. Such mutual assistance, he said, is especially needed by the smaller companies which cannot afford to employ specialists in their technical, accounting and operating departments. Mr. Beggs spoke of the fair treatment received by the companies from the Wisconsin commission in spite of public clamor, and declared that proper principles, resolutely adhered to, would in the end win out. Mr. Beggs was warmly applauded.

ELECTION OF OFFICERS

A special committee on street lighting was appointed, consisting of Messrs. Winslow, Ewing and Axford. The selection of officers made by the nominating committee, Messrs. Gonzenbach, Vallier and B. G. Broad, was unanimously approved by the convention and the following officers were declared elected: President, George B. Wheeler, Eau Claire; first vice-president, Irving P. Lord, Waupaca; second vice-president, R. M. Kimball, Kenosha; secretary-treasurer, George Allison, Milwaukee

ELECTRIFICATION DISCUSSED AT NEW ENGLAND STREET RAILWAY CLUB MEETING

The regular monthly meeting of the New England Street Railway Club was held at the American House, Boston, on the evening of Jan. 19, with President C. H. Hile in the chair. After the usual dinner and election of new members, President Hile pointed out the difficulties in transportation which arise from the growing tendency of modern population to concentrate in large urban centers during the daylight hours and practically to desert the business areas at nightfall. He touched upon the objectionable features of the steam locomotive and cited the electrification of terminals as a tendency likely to grow more and more important as time passes. He then introduced as the speaker of the evening Lee H. Parker, of the Stone & Webster Engineering Corporation, Boston, Mass., who read an extended paper on "The Electrification of Railroad Terminals."

Mr. Parker pointed out that the entire steam railroad organization of the present day is specially trained on the basis of operation by the steam locomotive and that there is naturally great inertia to be overcome before the acceleration of service possible with electrified operation can be realized. These great systems of transportation are firmly intrenched as going concerns; they have acquired great momentum, as it were, along existing lines, and some powerful economic force is required to produce such a radical change as electrification would involve. To have railroads at once throw aside their steam equipment and organization and adopt the electric motor car and locomotive with all their auxiliaries immediately after it was found possible to move trains electrically simply because it was a cleaner and quieter method was too much to expect. The public little realizes the magnitude of the additional capital expenditures involved and the so far apparent inadequacy of the savings through electrical operation to offset the increased fixed charges.

After giving an extended list of single-phase, direct-current and three-phase electrified steam roads, with data as to the mileage, line voltage employed, number of motor cars and electric locomotives and a table of similar data relating to the principal elevated railway lines in this country, the salient features of the New York Central and New York, New Haven & Hartford electrifications at New York were reviewed. Mr. Parker pointed out that if there are any important instances where steam has superseded electricity they are yet to be made public. As the different systems of electric traction are being developed we are gradually learning the kind of service for which electricity is especially fitted. The relative economy of the different systems depends on the headway and spacing of trains, the size or weight of the trains, profile of the line.

distance between stops, slow downs and schedule speed required.

Mr. Parker submitted an interesting table showing the comparative cost of equipment and operation of an interurban road having a practically level track with a few easy curves, with the 6600-volt a.c. system, the 1200-volt d.c. system and the 600-volt d.c. system.

TABLE OF COSTS OF CONSTRUCTION AND OPERATION.

Cost per mile of road, typical single-track interurban railway. Single 50-ft. cars, hourly headway, normal service, half-hourly headway, maximum. Catenary trolley, 80-lb. rail; schedule speed, 30 m.p.h.; maximum speed, 45 m.p.h.; stops, one in 2 miles; seating capacity of cars, 54; no baggage compartment, separate baggage and express cars.

| | o-voit a.c. | 1200-VOIT d.C. | boo-voit d.c. |
|---------------------------|-------------|----------------|---------------|
| Temporary construction | \$250 | \$250 | \$250 |
| Power station | 2,900 | 2,700 | 2,700 |
| Transmission line | 1,000 | 1,000 | 1,000 |
| Telephone line | 100 | 100 | 100 |
| Substations | 270 | 1,300 | 1,800 |
| Catenary trolley | 2,800 | 2,800 | 2,800 |
| Track and roadbed | 17,500 | 17,500 . | 17,500 |
| Copper feeder | | 575 | 1,100 |
| Rolling stock | 4,300 | 2,800 | 2,400 |
| Car house and office | 1,000 | 1,000 | 1,000 |
| Organization, eng'g., etc | 7,530 | 7,506 | 7,662 |
| Total | 37,650 | \$37,531 | \$38,312 |

Cost of operation, maintenance, general expense per mile per year; total mileage of all rolling stock, 16,800; power cost, 1.5 cents per kw-hour, including maintenance of power station:

| | | 1200-volt d.c. | 600-volt d.c. |
|--------------------------------|-------|----------------|---------------|
| Wages, trainmen | | \$400 | \$400 |
| Car house expense | 50 | 50 | 50 |
| Cost of power | 700 | 620 | 620 |
| Attendance substations | | 120 | 240 |
| Maintenance of cars | 335 | 250 | 245 |
| Maintenance, substations | 5 | 20 | 40 |
| Maintenance, track and roadway | 320 | 300 | 300 |
| Maintenance, electric lines | 60 | 60 | 60 |
| General expense | 1,000 | 1,000 | 1,000 |
| Total | | \$2,820 | \$2,955 |
| | | | |

With 2-car train operation the initial costs were \$47,219 for the 6600-volt a.c. system per mile, \$46,962 for the 1200-volt d.c. system, and \$48,200 for the 600-volt d.c. system. The costs of operation, maintenance and general expense were respectively figured at \$3,990. \$3,800 and \$3,950, or 23.7 cents, 22.6 cents and 23.5 cents per train mile.

In conclusion, Mr. Parker reviewed the recent reports to the Joint Commission on Metropolitan Improvements made by the steam railroads entering Boston on the subject of electrification, giving the estimated costs of the work as determined by the railroad companies. He pointed out that if the electrification should be begun in 1911 and finished in 1915, and if at that time, according to the trend of curves given in the reports, there should be handled a total of 60,000,000 passengers at the North and South Stations in Boston, there would be a total of 600,000,000 passenger miles per year if the average length of the journey on the electrified zones were 10 Assuming the fixed charges and depreciation on the estimated cost of \$40,000,000 to be 11 per cent (interest on bonds, 4.5 per cent; sinking fund interest, 4 per cent; taxes and insurance, 1.5 per cent), then the annual fixed charges of \$4,400,000 would probably be met by a terminal charge on each ticket sold. This would amount to nearly 3/4 cent per passenger mile, or an increase of not far from 50 per cent to 80 per cent on the present suburban fares. Mr. Parker quoted the increased fares charged by the Pennsylvania Railroad for suburban tickets as an example of the tendency of railroads to make passengers pay for improvements in whose benefits they share. Vice-president A. H. Smith's warning to the Joint Commission that the public should be expected to meet the expense of maintaining an electrified service was also cited.

In closing, Mr. Parker stated that the cost of electrification at Boston might be somewhat reduced by proper credits for equipment released and by the purchase of electricity from either the Boston Edison Company or the Boston Elevated Railway Company. It looks as if Boston, like Chicago and several other large cities, will have to wait a long time before its railroads can be compelled to or will voluntarily electrify. Perhaps the situation will stimulate the building of high-speed interurban roads on private rights-of-way outside and in subways inside large cities. They could make money handling from 10,000,000 to 15,000,000 suburban passengers per year. The day may come when all through freight and passenger steam traffic will be stopped at terminal points 5 miles or 10

miles outside the city limits and the passengers and freight transshipped to all parts of the city proper over the urban transportation system by electric cars, locomotives, taxicabs and autotrucks on city thoroughfares. The existing steam road tracks could be leased to the city transportation company for use in combination with its existing equipment. Such an arrangement would effectually rid the city of smoke, dust, cinders and the noise incident to steam operation.

COMMITTEES OF THE AMERICAN ELECTRIC RAILWAY TRANSPORTATION & TRAFFIC ASSOCIATION

President Henry C. Page of the American Electric Railway Transportation & Traffic Association has announced the following committees of that association for the present year:

JOINT COMMITTEE ON EXPRESS AND FREIGHT ACCOUNTING

P. P. Crafts, co-chairman, general manager, Iowa & Illinois Railway, Davenport, Ia.

W. S. Whitney, general freight and passenger agent, Ohio Electric Railway, Springfield, Ohio.

Geo. H. Harris, manager railway department, Birmingham Railway, Light & Power Company, Birmingham, Ala.

Walter Shroyer, co-chairman, auditor, Indiana Union Traction Company, Anderson, Ind.

E. L. Kasemeier, auditor, The Ohio Electric Railway, Springfield, Ohio.

J. C. Collins, secretary and auditor, New York State Railways, Rochester, N. Y.

COMMITTEE ON CONSTRUCTION OF SCHEDULES AND TIMETABLES

(For city roads.)

N. W. Bolen, chairman, superintendent of transportation, Public Service Railway, Newark, N. J.

Timothy Connell, timetable clerk, Boston Elevated Railway, Boston, Mass.

J. H. Van Brunt, vice-president and general manager, St Joseph Railway, Light, Heat & Power Company, St. Joseph,

F. L. Hubbard, secretary to the general manager, Toronto Railway Company, Toronto, Ont.

(For interurban roads.)

J. J. Doyle, general superintendent, Washington, Baltimore & Annapolis Electric Railway, Baltimore, Md.

F. Hardy, superintendent of transportation, Fort Wayne & Wabash Valley Traction Company, Lafayette, Ind.

B. E. Merwin, superintendent of transportation, Aurora. Elgin & Chicago Railroad, Wheaton, Ill.

I. H. McEwen, superintendent, Oneida Railway Company, Utica, N. Y.

COMMITTEE ON TRANSFERS AND TRANSFER INFORMATION

M. R. Boylan, chairman, general auditor, Public Service Railway, Newark, N. J.

F. T. Wood, assistant to general manager for receivers, Mctropolitan Street Railway Company, New York.

T. C. Cherry, superintendent, Utica & Mohawk Valley Railway, Utica, N. Y.

E. D. Hibbs, general superintendent, United Railroads of San Francisco, San Francisco, Cal.

Bruce Cameron, superintendent of transportation. United Railways of St. Louis, St. Louis, Mo.

J. V. Sullivan, general supervisor, Chicago Railways, Chicago, Ill.

COMMITTEE ON EXPRESS AND FREIGHT TRAFFIC

H. E. Reynolds, chairman, assistant general manager, Boston & Northern Street Railway, Boston, Mass.

Chas. F. Berry, general manager, Portland Railroad, Portland, Maine.

Gco. W. Quackenbush, traffic manager, Illinois Traction System, Springfield, Ill.

F. W. Watts, general freight agent, Utica & Mohawk Valley Railway, Utica. N. Y.

COMMITTEE ON PASSENGER TRAFFIC

L. D. Pellissier, chairman, secretary, Holyoke Street Railway, Holyoke, Mass.

F. G. Buffe, manager of publicity, Illinois Traction System, Champaign, Ill.

J. E. Gibson, general superintendent, Kansas City Railway & Light Company, Kansas City, Mo.

T. A. Cross, general manager, United Railways & Electric Company, Baltimore, Md.

E. C. Hathaway, general manager, Norfolk & Portsmouth Traction Company, Norfolk, Va.

Frank Caum, general manager, Scranton Railway Company, Scranton, Pa.

COMMITTEE ON TRAINING OF TRANSPORTATION EMPLOYEES

G. O. Nagle, chairman, general manager, Wheeling Traction Company, Wheeling, W. Va.

M. J. Feron, superintendent of transportation, Metropolitan West Side Elevated Railway, Chicago, Ill.

W. H. Douglass, general superintendent, Northern Ohio Traction & Light Company, Akron, Ohio.

C. A. Sylvester, general manager, Middlesex & Boston Street Railway, Newtonville, Mass.

C. B. Wells, superintendent of transportation, Denver City Tramway, Denver, Col.

C. S. Krick, superintendent, Pennsylvania Tunnel & Terminal Railroad, New York, N. Y.

COMMITTEE ON INTERURBAN RULES

J. W. Brown, chairman, superintendent of transportation, Aurora, Elgin & Chicago Railroad, Wheaton, Ill.

F. A. Boutelle, superintendent of transportation, Tacoma Railway & Power Company, Tacoma, Wash.

W. R. W. Griffin, general manager, East Liverpool Traction & Light Company, East Liverpool, Ohio.

C. F. Handshy, general superintendent interurban lines, Illinois Traction System, Springfield, Ill.

W. H. Collins, general manager, Fonda, Johnstown & Gloversville Railroad, Gloversville, N. Y.

A. S. Shane, general manager, Indianapolis, Columbus & Southern Traction Company, Columbus, Ind.

F. M. Durbin, general manager, operating department, J. G. White & Company, New York, N. Y.

COMMITTEE ON CITY RULES

H. W. Fuller, chairman, general manager, Washington Railway & Electric Company, Washington, D. C.

D. A. Hegarty, general manager, Little Rock Railway & Electric Company, Little Rock, Ark.

F. I. Fuller, vice-president, Portland Railway, Light & Power Company, Portland, Ore.

M. C. Brush, assistant to vice-president, Boston Elevated Railway, Boston, Mass.

C. B. Buchanan, superintendent of railways, Virginia Railway & Power Company, Richmond, Va.

Marshall M. Phinney, president, Northern Texas Traction Company, Boston, Mass.

COMMITTEE ON SUBJECTS

J. N. Shannahan, chairman, vice-president and general manager, Washington, Baltimore & Annapolis Electric Railway, Baltimore, Md.

J. K. Punderford, general manager, Connecticut Company, New Haven, Conn.

. H. M. Beardsley, acting general manager, Elmira Water, Light & Railroad Company, Elmira, N. Y.

JOINT COMMITTEE ON BLOCK SIGNALING FOR ELECTRIC RAILWAYS C. D. Emmons, co-chairman, general manager, Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind.

J. N. Shannahan, vice-president and general manager, Washington, Baltimore & Annapolis Electric Railway, Baltimore, Md.

D. H. Lovell, superintendent, West Jersey & Seashore Railroad, Camden, N. J.

J. M. Waldron, co-chairman, signal engineer, Interborough Rapid Transit Company, New York, N. Y. John Ross, assistant superintendent of tracks, Detroit United Railways, Detroit, Mich.

G. H. Kelsay, superintendent of power, Indiana Union Traction Company, Anderson, Ind.

COMMITTEE ON ASSOCIATE MEMBERSHIP

W. L. Wood, Jr., secretary, treasurer, general manager and purchasing agent, Texarkana Gas & Electric Company, Texarkana, Ark.

J. E. Duffy, superintendent, Syracuse Rapid Transit Railway, Syracuse, N. Y.

W. I. Sturtevant, manager, Everett Railway, Light & Water Company, Everett, Wash.

Duncan McDonald, manager, Montreal (Que.) Street Railway. C. D. Emmons, general manager, Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind.

M. J. Feron, superintendent of transportation, Metropolitan West Side Elevated Railway, Chicago, Ill.

Thomas A. Cross, general manager, United Railways & Elec-

tric Company, Baltimore, Md.
W. J. Jones, president, Austin Electric Railway, Austin, Tex.

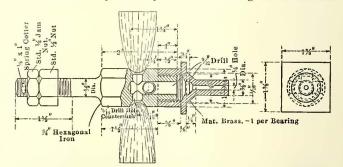
T. W. Passailaigue, superintendent railway division and traffic manager, Charleston Consolidated Railway & Lighting Company, Charleston, S. C.

C. H. Burnett, manager, Los Angeles & Redondo Railway, · Los Angeles, Cal.

H. C. Page, general manager, Worcester Consolidated Street Railway, Worcester, Mass.

CHANGE IN BROOKLYN INTEGRAL OIL CUP

The Brooklyn Rapid Transit System has recently made a change in the oil feeder post of the integral type babbitted oil cup for Westinghouse 81 motors from the construction shown in Fig. 2 on page 83 of the ELECTRIC RAILWAY JOURNAL for Jan. 14. As shown in the accompanying drawing, the post is now built in two parts to permit the wicking to be inserted



Oil Feed Attachment for Motor Bearings with Babbitted
Oil Cups

before installation in the oil cup. Ninety-two strands 4 in. long are placed in each hole for the armature bearings and 112 strands 4 in. long are placed in each hole for the axle bearings. The brass casting into which the feeder post is screwed is babbitted into the bottom of the cup. The dimensions shown are not always the same, as this construction is used on Westinghouse 68, Westinghouse 81 and GE-57 motors.

Bion J. Arnold has had conferred upon him by the University of Nebraska the honorary degree of doctor of engineering. Mr. Arnold began his higher education in the university which has thus tendered to him the highest degree within its command, completing his technical training in the East. In 1884 he achieved his B. S. from Hillsdale College, Mich.; in 1887 M. S., and two years later M. Ph. from the same institution. The University of Nebraska conferred on him the degree of E. E. in 1898, and in 1907 the Armour Institute gave him the honorary degree of D. Sc. Mr. Arnold received a "diploma extraordinary" in 1907 from Hillsdale College for distinguished learning and achievements in invention and in mechanical and electrical engineering.

COMMITTEE MEETINGS ON JANUARY 25 IN NEW YORK

The conferences held in connection with the annual midyear meeting of the American Electric Railway Association began on Jan. 25, at the New York headquarters of the association. Sessions of committees of the parent body and of the affiliated associations were also scheduled for Jan. 26 and Jan. 27. The meetings were to conclude with a banquet tendered to the visiting delegates on Friday night, Jan. 27, at the Hotel Astor, by the Manufacturers' Association. An account of the committee meetings held on Wednesday, Jan. 25, is given in the following paragraphs:

COMMITTEE ON STANDARD CLASSIFICATION OF ACCOUNTS

The committee on standard classification of accounts and form of report of the Accountants' Association met to consider questions pertaining to the uniform system of accounts. The following members of the committee were present: W. F. Ham, Washington, D. C., chairman; H. L. Wilson, Boston, Mass.; W. H. Forse, Jr., Anderson, Ind.; W. B. Brockway, New York, N. Y. F. E. Smith, of Chicago, Ill., was unable to be present. The Interstate Commerce Commission was represented by F. W. Swecney, examiner, and by A. H. Morrow, of the Bureau of Statistics and Accounts. The meeting was held for the consideration of all questions which have been raised in reference to the uniform system since the publication of Bulletin No. 5 of the series issued by the Interstate Commerce Commission, relating to the questions and answers upon the accounts for electric railways. Between ninety and one hundred new cases were before the committee. It is expected that the decisions in the cases will be published soon.

CLAIM AGENTS' MEETING

A joint meeting of the executive committee and of the index bureau committee of the Claim Agents' Association was held on Wednesday afternoon. The following members were present: H. V. Drown, president, general claim agent Public Service Railway; H. K. Bennett, first vice-president, claim agent Fitchburg & Leominster Street Railway; H. R. Goshorn, general claim agent Philadelphia Rapid Transit Company, proxy for C. A. Avant, second-vice president, claim agent Birmingham Railway Light & Power Company; W. F. Weh, claim agent Cleveland Electric Railway, proxy for W. S. Heaton, third vice-president, claim agent Los Angeles-Pacific Railway; R. E. McDougal, claim agent for the Utica & Mohawk Valley Railway, executive committee proxy for J. H. Handlon, claim agent United Railroads of San Francisco; William Tichenor, executive committee member, claim agent Terre Haute, Indianapolis & Eastern Traction Company; S. W. Baldwin, claim agent Connecticut Company, executive committee proxy for James R. Pratt, claim agent United Railways & Electric Company, Baltimore; B. B. Davis, secretary, claim agent Columbus Railway & Light Company.

Four subjects were chosen for discussion at the next convention. The nature of these subjects will be announced later in a circular to the member claim agents in connection with an account of the committee proceedings. The secretary was instructed to notify the members designated to write the papers and also to send a circular to the member companies requesting that the claim agents who attend the convention be prepared to discuss these papers. It was decided to eliminate the question box at the 1911 convention, but the renewal of this feature will be left to the pleasure of that convention. The executive committee then discussed a report on the Hooper-Holmes index bureau and expressed itself as thoroughly in accord with the arrangements now in operation between that bureau and the American Electric Railway Association. President Drown said that the answers hitherto made by the claim agents to inquiries were satisfactory, and he hoped that they would keep on sending in good reports of accidents to increase the efficiency of the bureau. After discussing several minor subjects relating to claim agents' work, the meeting adjourned.

COMMITTEE ON SCHEDULES AND TIMETABLES

The meeting of the committee on construction of schedules

and timetables of the Transportation & Traffic Association was attended by the following: N. W. Bolen, Newark, N. J., chairman; J. J. Doylc, Baltimore, Md.; Isaac H. McEwen, Oneida, N. Y.; Timothy Connell, Boston, Mass., and F. L. Hubbard, Toronto, Ont. H. C. Donecker was made secretary of the committee. Mr. Bolen read a memorandum of subjects suggested for the consideration of the committee by the executive committee of the Transportation & Traffic Association. It was recommended that the terms "tripper" and "extra" be defined; that the different methods by which companies determine the schedule speed of cars be investigated; that the subject of methods by which men are relieved for meals be considered; that inquiries be made as to the extent of adoption of the revolving extra list, and that a complete report be made regarding schedule and timetable matters affecting interurban lines.

It was decided by the committee that the subject of definition of terms was one of the most important to be considered. Definitions will therefore be framed concerning tripper, schedule, timetable, extra, patches, run, special, run guide, run number, train number, block number, assignment sheet, train, run back and car. It was pointed out that the committee on interurban rules has adopted a number of definitions, including one for "timetable," as follows: "The authority for the movement of scheduled trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto."

The committee discussed the terms to be defined and various subjects concerning which information will be compiled for the report to be made at the next annual meeting. A data sheet containing questions in reference to the research work of the committee will be sent to member companies.

COMMITTEE ON TRANSFERS AND TRANSFER INFORMATION

The committee on transfers and transfer information of the Transportation & Traffic Association met Wednesday at 2:30 p. m. Those present were: M. R. Boylan, chairman, Newark, N. J.; F. T. Wood, New York City; T. C. Cherry, Utica, N. Y.; Bruce Cameron, St. Louis, Mo., and Joseph V. Sullivan, Chicago, Ill. The chairman read the instructions of the executive committee which were to govern the work of the committee. They were, briefly, to consider the question of transfers in connection with prepayment car operation, to determine the percentage of waste due to dating transfers or to using transfers on which the date is punched out before the conductor's period of service begins, and the investigation of the transfer laws of different States. These subjects were carefully canvassed by the committee and a program was partially adopted for submission to the executive committee of the association.

SIGNAL COMMITTEE

The joint committee of the Engineering Association and the Transportation & Traffic Associations on "Signals for Interurban Railways" held a meeting on Wednesday afternoon. Those present were: J. M. Waldron, signal engineer, Interborough Rapid Transit Company; G. W. Kelsay, superintendent of power, Indiana Union Traction Company, and John Ross, assistant superintendent of tracks, Detroit United Railway, representing the Engineering Association, and C. D. Emmons, general manager, Ft. Wayne & Wabash Valley Railway, representing the Transportation & Traffic Association. On motion of Mr. Emmons, Mr. Waldron was elected chairman of the joint committee.

The committee then discussed the form and scope of questions to be incorporated in a data sheet regarding existing installations of signals. Mr. Emmons read the report of the Indiana manager's committee on signals presented to the Indiana Railroad Commission on Jan. 5, which contained a classification of automatic block, manual block and dispatcher's block signals. It was decided to adopt this classification of kinds of signals in making up the data sheet which will be sent out. A rough draft of the data sheet containing 19 questions was made. This will include questions pertaining to mileage of single-track and double-track lines, minimum headway of cars, maximum speed of cars, maximum braking distance, kind of propulsion current,

types and number of signals in use, automatic stop installations, contemplated extensions of signal systems in use, action of State authorities with regard to signals for electric railways, effect of block signals on movement of trains, etc. At the next meeting of the committee it is planned to invite representatives of the signal manufacturers to present brief descriptions of their apparatus for the information of the members of the committee. The data sheet is to be sent out as soon as it can be prepared.

MEETING OF INTERURBAN RULES COMMITTEE

The mid-year meeting of the interurban rules committee, American Electric Railway Transportation & Traffic Association, was held on Wednesday morning, Jan. 25, at the head-quarters of the association in New York. The committee members present were J. W. Brown, chairman, superintendent of transportation, Aurora, Elgin & Chicago Railroad; W. R. W. Griffin, general manager, East Liverpool Traction & Light Company; W. H. Collins, general manager, Fonda, Johnstown & Gloversville Railroad.

Replies were read from several companies in response to the committee's inquiry as to their attitude toward the American Railway Association code of rules and the Transportation & Traffic Association's Denver and Atlantic City codes. The committee then discussed the rules which should be jointly considered with the city rules committee of the Transportation & Traffic Association and also took up the question of learning from the State railroad commissions their feeling toward a standard code of interurban rules. It was suggested that the committee make a careful analysis of the several codes of rules with a view to determining the real differences between them and if possible reconciling any important differences which may be found.

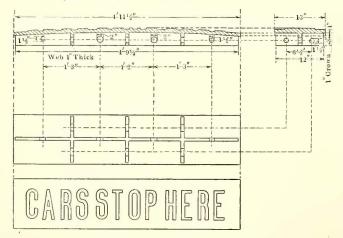
OTHER COMMITTEES

The meeting of the passenger traffic committee, which was scheduled for 10 a. m. on Jan. 25, 1911, has been postponed until Jan. 27, 1911, at 9 a. m., owing to the inability of several members of the committee to be present.

The meeting of the committee on express and freight traffic was also postponed for the same reason until 10 a. m. Thursday.

STOP SIGNS SET IN STREET PAVEMENT

The accompanying drawing shows the dimensions and constructional features of a cast-iron car stop sign which is arranged to be set in the pavement between street railway tracks at busy intersections. The cover is worded "Cars Stop Here" in 8-in. x 3-in. letters, which are raised 3% in. This cover plate



Stop Sign Set in Street Paving

is supported on three 1-in. transverse webs and one 1-in. longitudinal web, as shown on the drawing. This type of sign was devised and installed by E. D. Latta, Jr., when he was general manager of the Charlotte Electric Railway, Light & Power Company, Charlotte, N. C.

REPORT OF F. W. WHITRIDGE TO THIRD AVENUE RAILROAD BONDHOLDERS

In a report addressed to the bondholders of the Third Avenue Railroad System, of New York, dated Jan. I, 1911, F. W. Whitridge discusses the physical condition of the property and other general matters pertaining thereto, including the relations with the Public Service Commission. An abstract of the report follows:

BUILDINGS

"The building at Bayard Street is unchanged. I have been unable to make a lease of it upon satisfactory terms. The building on Forty-second Street I have not touched. It is superfluous for the uses of the railroad, and I suppose the company will ultimately wish to sell it. It is rented to a satisfactory tenant. The car barn at Fourteenth Street and Avenue B belonging to the Dry Dock road is now under process of complete repair. The car barn at Kingsbridge I have not been able to complete, but expect to put it in order this spring at an expense of \$30,000 or \$40,000. All the other buildings belonging to the system have been put in first-class condition; many of them have been almost rebuilt and equipped with sprinkling apparatus, which has materially diminished the cost of insurance, and the hotel at 130th Street and Third Avenue has been turned into an appropriate office building. An entirely new substation and ducts thereto have been constructed for the Union Railway.

CARS

"All of the cars of the system have been thoroughly overhauled. Many of those turned over to me by the Metropolitan receivers I have sold, and I have purchased 676 new cars, 75 of the old standard box cars, 50 of the old kind of open cars and 551 pay-as-you-enter convertible cars. I have also changed 248 of the old cars to pay-as-you-enter cars and have added platforms to 86 of the cars of the Union Railway for the purpose of making that change. The cars of the new type speak for themselves, and many of the bondholders have had an opportunity to look at them.

"I was subjected to some criticism in the beginning for introducing the cross-seats, but I find they have met with almost universal approval, and the inclosure of the open cars with a wire grill has prevented practically all the serious accidents which used to occur on the lines running through streets where there is an elevated structure. On nearly all the cars I have installed the simplest kind of fare box, which insures the collection of all fares, except in exceptional cases, and has, I think, proved a convenience to the public as well as a saving to the company, for I find that a very great majority of the passengers now have their nickels ready to deposit in these boxes.

REPAIRS TO TRACK

"I have done what was absolutely necessary to put the track in order and presented to the reorganization committee an estimate of \$1,000,000 to relay the whole of the Third Avenue and Forty-second Street track. This would be a very desirable expenditure, and by using Belgian blocks instead of the present asphalt pavement I think \$40,000 a year can be saved in repairs to pavements. This improvement, like many other improvements of a capital character to be made out of the funds usually provided in a reorganization, is held up in consequence of the failure of the Public Service Commission to approve the plans of the committee submitted to them.

POWER

"The agreement with the receivers of the Metropolitan has worked satisfactorily and has resulted in saving a large capital expenditure both to the Third Avenue and to the Metropolitan, and I think may now fairly be considered to be a permanent working arrangement between the two systems.

NEW LINES

"With the concurrence of your committee, I have applied for franchises for several new lines, some of which have been constructed.

"A loop was constructed at the end of the Third Avenue line

at Fort George, a great operating convenience, about 1500 ft. of double track.

"A similar loop is under way at the West 130th Street ferry.
"Franchises have been obtained in the name of a new company for operation over the Queensboro Bridge and the material has been ordered. The line will be put into operation as soon as the special work has been obtained.

"Several lines have also been constructed during the present receivership. Applications are pending and I have every reason to believe will ultimately be granted for various additional lines.

SELF-PROPELLING CAR

"I have made many experiments to find a sclf-propelling car and have now had built in our own shops 25 cars which we have equipped with battery motors, which so far have worked perfectly satisfactorily, as a substitute for horse cars. I have been using them now for three months on the 110th Street line, which while it was operating with horse cars produced 75 cents to \$1 per day and now is averaging between \$40 and \$50 per day. I do not feel justified in spending any larger sum on these cars until they have been through the winter and we have had a longer period for testing them, but if, as now appears to me to be probable, they are successful I propose to replace all the horse cars on the Third Avenue system by cars of this character.

FRANCHISE TAXES

"After long negotiations and the final decision of every point in controversy by the Court of Appeals, all the franchise taxes due upon any of the Third Avenue properties have been paid. The State Board of Tax Commissioners have appraised the value of the franchises of the Third Avenue properties for the current year at substantially the same figure at which they were appraised at the beginning of the nine years' litigation, exactly as if the courts had never spoken or as if their decisions—reducing the appraisal about half—had never been communicated to this board. It will now therefore be necessary to embark upon a new litigation to reduce the taxes for the current year. This is a surprisingly abominable situation, which I cannot but think will attract the attention of the new executive, and it ought to result in replacing the present board with a more law-abiding body.

CLAIMS AGAINST THE METROPOLITAN

"All the claims made against me by the Metropolitan receivers have been paid. Claims made by me against the Metropolitan-New York City Railway receivers are dragging on before the masters in chancery, with no appearance of an early termination. It is greatly to be regretted that a settlement of all these questions could not have been arranged.

THE BENEFIT ASSOCIATION

"With the permission of the court and the concurrence of the bondholders' committee, I established two years ago a benefit association, by the terms of which the permanent force of the railroad's employees were invited to pay 50 cents a month to the association, which should supply a doctor and free medical advice. The money was to be used in case of illness, to pay a man after the second day \$1.50 per day, and in the case of death \$250 to his widow. The funds are invested by the Central Trust Company in securities in which trust funds may be invested under the laws of this State, and I stated that if 75 per cent of the men joined the association the companies would contribute \$1 for every dollar paid in by the men. This association has been a great success, over 80 per cent of the permanent force becoming members. It has now accumulated \$27,194; it has given relief in 590 cases and has paid insurance upon the death of 15 employees. After a few years this insurance against death can be materially increased and a pension feature can be added.

"For the use of members of the association I have constructed at Sixty-fifth Street, 130th Street and West Farms club rooms for their exclusive use. At each of those places and also at 129th Street and Amsterdam Avenue a lunch counter has been provided, and in connection with each of the club rooms a library has been installed by the New York Free Circulating

Library, together with a number of shower baths for the use of the men.

EXPENDITURES

"All my expenditures have been met from the net earnings of the railway and from the proceeds of the sale of receiver's certificates. Two million five hundred thousand dollars of these were originally issued and subsequently another \$1,000,000 to provide money for paying part of the franchise tax. I was able to pay off \$500,000 of these certificates last summer and a second \$500,000 within the past few days, leaving outstanding \$2,500,000 of certificates.

EARNINGS

"The result of the improvements in your properties is a material increase in their earnings. I have endeavored to charge everything which possibly could be so charged to 'Operations' or 'Maintenance,' and there is included in the latter for the year ended June 30, 1910, upward of \$125,000 paid for masters in chancery and lawyers' fees incidental to the receivership and the operations of the Public Service Commission, and the interest on loans and mortgages also includes the interest on \$3,500,000 of receiver's certificates, which had the property been reorganized would have been, together with most of the money paid for legal expenses, applicable to the payment of interest upon new securities. Making these deductions, the total amount of net earnings would have been upward of \$2,000,000, but there was in this statement no allowance made for the franchise taxes and no allowance for depreciation, which I have estimated to be in the first instance for the new company about \$300,000 a year. I believe the Public Service Commission does not agree with me as to what this amount should be, but I think no more—at least for the present—is necessary. I have stated that-things remaining in a normal condition-I anticipate an annual increase for the next three or four years over and above these figures of about \$200,000, and I am happy to say that for the first six months of the year the increase is actually over \$125,000. In addition to this, upon the reorganization of the company, I have counted upon receiving at least \$100,000 a year from the Yonkers and Westchester companies. This I think is a moderate estimate.

SUBSIDIARY COMPANIES

"The Yonkers company, in the hands of Leslie Sutherland, receiver of the State court, and the Westchester company, in the hands of J. Addison Young, receiver of the State court, have both shown marked improvements during the current year. On both of them, however, very considerable sums should be expended.

"The Tarrytown, White Plains & Mamaroneck was sold at foreclosure sale. A portion of it was bought in your interests for \$110,000. It appeared that the Public Service Commission considered that it could be valued at only \$46,000; it was accordingly sold for \$117,000.

PUBLIC SERVICE COMMISSION

"The various suits at law brought against me by the commission, including one for the payment of \$800,000, were all unsuccessful and were a waste of time and money for everybody concerned. The bondholders may not be aware that under the present law of this State it has been considered necessary to present the plan of reorganization to the commission and to ask their approval of the issue of new securities. It is this which has prevented the reorganization, a complete rehabilitation of the property and the termination of this receivership months ago. Two plans of reorganization have been submitted to the commission and rejected. In rejecting the second plan the commission have announced views which are very serious, not only for your property but for the whole community. An appeal from their decision has been taken to the courts, but should it be decided that the jurisdiction of the commission is exclusive and these views should not be retracted or modified, it is plain enough that no property within the jurisdiction of the commission of the First District can ever be reorganized, and that no capital can be obtained for any public service corporation in this city from any banker on any terms whatsoever, and in the case of the Third Avenue it may become necessary

by some contract between the security holders themselves to avoid all reference to the commission and let the company limp along as best it can.

"The plan submitted to the commission provided:

"First—For a reduction of the fixed charges by about \$1,000,000.

"Second—For upward of \$7,000,000 of new money.

"Third—For new securities about \$4,000,000 less in the aggregate than the old securities.

"The commission in considering this plan would not distinguish between the case of a company which was already capitalized and had an assured income and the case of a new enterprise which was issuing securities for the first time to secure capital for construction. So far as I can understand their views, the commission thought further that the amount of securities to be issued for the Third Avenue Railroad was to be decided without reference to the old securities or to the necessities of the situation of the property, but solely with reference to the value of the property.

"Now, value is a subjective conception; it is not a dimension to be measured by an external standard. The commission, however, have fixed the value of your property, not with regard to its cost, nor to the amount of cash paid into it, nor to its earning capacity, nor to its actual earnings, nor to the report of their own bureau of appraisers, which they have had at work at great expense and without legal authority; they have fixed it by asking their own engineer about it, and from his appraisal they have deducted a theoretical depreciation of \$11,000,000, leaving about \$20,000,000 as the amount of the new securities which may be issued in exchange for \$38,000,000 of your bonds and \$16,000,000 of stock of the old company. That is to say, a man who has two bonds is invited to destroy one of them, and it is perfectly useless to explain to him that his property has suffered a theoretical depreciation of \$11,000,000, because his own eyes enable him to see that such is not the fact. Moreover, were it not for the necessity of raising \$7,000,ooo and paying interest on it his property would appear to be now earning substantially the whole of the interest upon the bonds he paid for. To his mind, the commission invite him to a senseless sacrifice. Their activities, though of a different character, seem to him to be more devastating and more indefensible than the performances of the old Metropolitan company which the commission were appointed to abolish, and he cannot be persuaded that the commission are not 'playing the fool' with his property.

"I believe I am disinterested in this matter, for I am only the temporary guardian of your property. I own nothing the commission can destroy, and personally I find the commission collectively amusing and individually rather amiable, though perhaps Mr. Willcox's disposition is not so sweet as it was, but I confess that when I read the letters of this commission, reflect upon their opinions, contemplate their activities, when I consider the course of the Board of State Appraisers in Albany, the vexatious confusion of the statutes and the muddling administration of the law, I am reminded of a saying of a distinguished journalist some years ago, 'This is the hardest country in the world to love.'

"This is a note of despair and not justifiable, for we know by long experience that somehow or other things right themselves. We are a very level-headed people, and Lincoln's epigram, 'You cannot fool all the people all the time,' is profoundly true. So even in the case of so powerful a body as the Public Service Commission in the First District, with the people at first heavily prejudiced in their favor, when it becomes obvious that they have made a mess of their jobs something is done about it. Sometimes the æs triplex of the self-esteem of such a body is shattered, and they learn or resign. Sometimes public disapproval which has long been passive suddenly blows them away, or sometimes a new executive who is without the parental affection for lame or blind offspring which the Governor who appointed them must be supposed to cherish comes into office and is able to view them with a just and open mind and, officially speaking, decapitates them, or in some way or other they are disposed of.

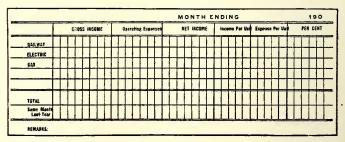
"This commission in the First District have, in my judgment, demonstrated that they must return to the shades whence they emerged. I think the people are of that opinion. By removal, consolidation or resignation we must part with them. In the slang of the day, they have not 'made good,' and they must go."

Mr. Whitridge gives a summary of the expenditures on rolling stock and equipment, which amounted to \$3,707,458, less \$201,401 derived from the sale of cars and old material; on additions and improvements to buildings, \$1,029,024; extensions, special work and improvements to track, \$612,450, and franchise taxes, \$1,000,000; total, \$6,147,531. A statement is also given of the income accounts of the operating companies in the system for the year ended June 30, 1910. Total gross earnings were \$6,570,085, and operating expenses, \$4,250,760, leaving net earnings of \$2,319,325. Income, including the net revenue from sale of power, rental of equipment and interest and miscellaneous sources, was \$3,071,136. Interest, taxes and other deductions left a surplus of \$1,302,332.

MANAGER'S LOOSE-LEAF POCKET RECORD

The accompanying cut shows the front and back of a monthly loose-leaf pocket record which was designed and used by E. D. Latta, Jr., when he was general manager of the Charlotte Electric Railway, Light & Power Company, Charlotte, N. C. This form is of special interest as it was successfully applied in watching the operations of a system which operates gas and electric service departments in addition to a city and suburban railway. It will be observed that this record, which is only

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Front and Back of Manager's Loose-Leaf Pocket Record

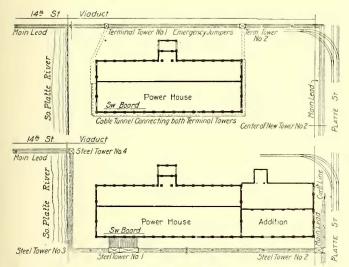
5½ in. x 3¼ in. in size, is divided to show the principal expenditures for labor and material, both as unit costs and as totals, such as the output of each power station and the fuel consumed; the car mileage; the mileage per kw-hour; power and platform payrolls; lighting and gas services connected or disconnected; gross, net and unit income together with the operating ratios. This form also provides for income comparisons with the same month of the preceding year and for general remarks. Comparisons of the other items shown can be made, of course, by referring to the records of other months, which would be bound in the same book for any desirable period.

The Northern Ohio Traction & Light Company, Akron, Ohio, will equip Meyers Lake Park, near Canton, with tank, water plugs and hose for fire protection this spring. New walks will be laid, the grounds beautified and numerous other improvements will be made.

AN INTERESTING STEEL TOWER AND CABLE INSTALLATION IN DENVER, COL.

Through the courtesy of W. G. Matthews, superintendent overhead lines Denver City Tramway, the following particulars are available concerning an interesting installation of steel towers and cables covering the feeder layout for this railway's power house:

Early last year it was decided to enlarge the power station.



Old and New Plans of the Power House and the Tower
Circuits

The building, therefore, was extended up to the street line for approximately 140 ft. The plans called for increased trackage facilities and for a scheme of waterways, wells, etc., for condensing purposes. It was soon observed that the original d. c. feeder arrangement both in the tunnels and on the poles on the grounds would seriously interfere with the proper carrying out of the plan as a whole. It was then decided to rearrange the entire d. c. feeder distribution between the switchboard and the main feeder line "pole leads." An underground duct scheme was first mapped out, as the local conditions precluded the possibility of properly guying heavy pole line corners in the usual way, but on investigation it was found that this was not practicable, on account of the water pipes, railroad tracks and river. Consequently it was decided to make four self-sustaining steel towers for the dead ends and angles. It was also decided to use nothing smaller than 1,000,000 circ. mil cable, in order to cut down pin positions and space. The spacing between the cables, the number of cables, their size and weight, height of towers, etc., were turned over to the F. O. Brown Structural Iron Works, of Denver, who prepared the details of towers and foundations and who also constructed and erected the towers. The concrete foundations and footings were placed by the building and bridges department.

The 11 poles used between towers Nos. 2, 1, 3, and 4, designated on the accompanying plan with small circles, are made up of two old "cable slot" rails latticed together and spliced out, making a 38-ft. pole. Pieces of 3/8-in. x 31/2-in. x 51/2-in. angles were bolted on to the slot rail poles, on which the cross-arms rest, thus eliminating cross-arm braces and making a much stronger construction.

Steel tower No. I is of the same length as the switchboard. Thus the cables go straight down through the floor from the nut on the switchboard (in order to leave the floor space between the switchboard and the wall clear and unobstructed), back up through floor and are cleated up the wall at the height of 23 ft. from ground outside of the building, then pass straight out to each position on the tower. Provision was made to string 24 1,000,000 circ. mil cables from tower No. I to No. 2 at Platte Street, where the new cables were cut in to the old "lead." Provision was made also to string 24 1,000,000 circ. mil cables from tower No. I by way of No. 3 to No. 4, where they

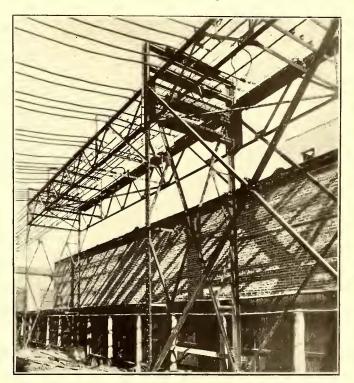
were also cut into the old "lead." When both sets of cables are installed there will be displaced all cables in the tunnels and on the poles via the old terminal towers between the points which are indicated on the new plan as the present locations of steel towers Nos. 2 and 4.

The abandoned cables of all sizes and makes thus reclaimed and put in stock for future use amounted to 71,119 lb., while the new cable put in to date on the new route amounted to 47,237 lb. This gives a difference of 23,882 lb. in favor of the new route, while maintaining in all cases the same circular mils between the switchboard and the main leads. In many cases the capacity for future growth was increased to avoid beginning at the switchboard when reinforcing a given feeder.

Selected locust pins and heavy glass insulators (Locke No. 22) were used on all wooden cross-arms, which are on the "slot-rail" poles only. Each pole carries 6—6 pin 4-in. x 6-in. x 6-ft. selected Oregon cross-arms coated with P & B paint. The steel towers have special malleable iron pins which are bolted direct to the angles comprising parts of the towers. They are placed to act as cross-arms.

The only positions where the cables are cut are at towers Nos. 2 and 4, where the circular mils on the main leads are made up of all kinds of combinations. The cables were taken direct from the power house wall to tower No. 1, then divided, one-half going to tower No. 2 and the other half going to tower No. 4. They were dead-ended in each case in the following manner:

The cables were served into the eye-bolt of an Ohio Brass ¾-in. Brooklyn strain insulator, the insulator being attached to a ¾-in. eye bolt, which goes clear through a piece of 4-in. x 6-in. selected oak. The nut is covered up and protected, to avoid contact with the metal parts of the tower. These oak dead-end pieces each hold six cables and are fastened to the tower proper with ¾-in. machine bolts placed between the cable



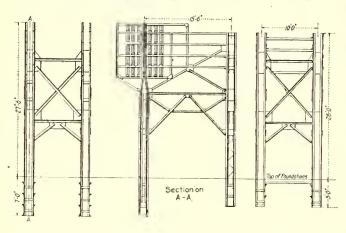
View of Portion of One of the Denver Steel Towers

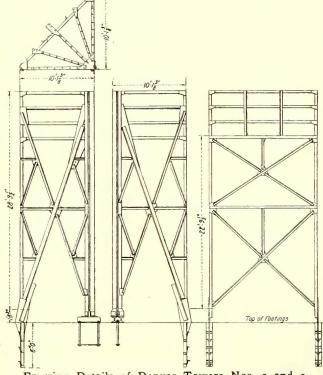
positions and extending through between two channels laid together with an open space sufficient for the bolt, with a 2-in. square washer under the nut on the back side. The channels referred to are designed and placed so that each set takes the strain of six 1,000,000 circ. mil cables with a dip of 8 in. in a 50-in. span.

The placing of the "oak" dead-ends, in addition to the Brooklyn strain insulators, between the feeder and tower was thought necessary on account of lightning discharges. All bends or

angles were carried around by means of Brooklyn strains and W. N. Matthews & Brother's cable clamps, which made a very neat piece of construction. Formerly the company braided on a piece of 5/16-in. span wire for the same conditions under which the clamps are now used. Hence, the saving in copper over the old method is not large, but the clamps are preferred because they are quicker to apply, they give more uniform splices, they look better and they permit readjustment without the necessity of unserving a lot of strands.

The accompanying illustrations show towers No. 2 and No. 3. Tower No. 2 is rectangular in plan, with sides 10 ft. x 15 ft. 6





Framing Details of Denver Towers Nos. 2 and 3

in. The four legs are made up of columns each composed of four "L"s, 3 in. x ¼ in., and two plates, 20 in. x ¼ in. with interior bracing. Tower No. 3 is triangular in plan with the two shorter sides each 10 ft. 13% in. in length. The respective weights of the towers are as follows: No. 1, 15,820 lb.; No. 2, 18,400 lb.; No. 3, 7330 lb., and No. 4, 9620 lb.

A congress of the municipal officers of the principal cities in America and abroad is to be held in Chicago, Sept. 18 to 30. 1911. The organizations in Chicago which have indorsed the congress are the Association of Commerce, Citizens' Association, Industrial Club, Civic Federation, City Club, United Charities and the Rotary Club. Among the topics are "Control of Public Service Companies by City and State," "Indeterminate Franchise," "Municipal Ownership" and "City Planning."

TROLLEY LINE SECTION INSULATOR

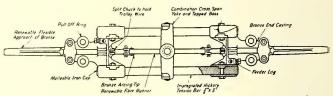
To meet the demand for a sturdy trolley line section insulator, with renewable wearing parts, the Westinghouse Electric & Manufacturing Company has developed the new form type "KB" which is shown in the accompanying cuts. A No. 0000 phono-electric wire has been broken "on a jerk" without any sign of failure in any part of this insulator.

The tension is taken by two 1/8-in. x 3-in. hickory bars. Ver-



Side View

tical slots are provided in these, and projections from the end castings engage in the slots. The stress is thus transmitted to the hickory bars without the bolts assuming any shearing stresses. The bolts serve only to clamp the end castings to the bars. Sherardized malleable-iron caps inclose the ends of the hickory bars to protect them against splitting and injury from "wild" trolley wheels. The sectioned portion of the plan view details this construction. The renewable bronze approaches are identical with those used on Westinghouse "Detroit"



Construction Details of Section Insulator

frogs. They have sufficient length to be flexible and they effectively prevent crystallization of the trolley wire. When worn out the approaches can be replaced in a few minutes by taking out the two bolts previously mentioned.

The renewable runner is of fiber with bronze tips which take the brunt of the arcing. By removing the two cotter pins shown in the plan a worn-out runner can be removed and replaced with a new one in a few minutes. Tapered sleeves hold the trolley wire in the end castings, the renewable approach serving as auxiliary holding device. The sleeves are internally threaded and are slotted longitudinally. Before being driven into position they fit the trolley wire with a small clearance and when tapped into the correspondingly tapered conical seats



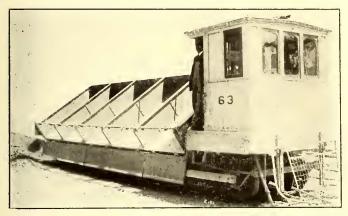
Bottom View

in the end castings they grip the trolley wire tightly. The sleeve cannot lose its grip when the wire is under tension, but by pulling the slack in the trolley wire toward the section insulator the sleeve is loosened and can be easily removed without cutting the wire. The sleeves are furnished for round, grooved or Fig. 8 trolley wires.

Feeder lugs are provided on this section insulator. One lug is cast in each of the end castings and a strong steel set screw is supplied. These lugs may be used either for feeding energy into the adjacent trolley wires or for connecting a "jumper" around the section insulator. The middle casting is tapped and can be furnished to accommodate either a \(\frac{1}{2} \)-in. or a \(\frac{1}{2} \)-in. stud. The middle casting is also formed to constitute a supporting yoke. All metal wearing parts of the insulator are of bronze and all other metal parts are of sherardized iron or steel.

MONTREAL DUMP CARS

The Montreal Street Railway Company has recently added to its freight equipment a new type of car for handling stone which dumps its load all to one side, as shown in one of the accompanying illustrations. One car was built by the Dominion Car & Foundry Company in March, 1909, and 24 more were built between July and September, 1909. An additional 25



Side View of Dump Car

more have since been ordered from the Canadian Car & Foundry Company. On the cars last ordered a plow is added to the rear truck to spread the rock after the car has deposited it beside the track. This plow is detachable and is folded in when the car is in the running position. The car can be dumped and rights itself in one minute.

The car is built entirely of steel with the exception of the cab. The center sills are composed of 12-in. 25-lb. channels, braced with six 8-in. 8-lb. channel separators at the rocker bearing point, and further tied together with a 7/8-in. rocker plate. The side is composed of 10-in. 15-lb channel reaching from end sill to end sill secured with rolled connection angles. The end sills are also 10-in. 15-lb. channel faced with an oak



End View of Dump Car

beam 5 in, thick and securely bolted to the web of the end sill channel. The body bolsters are composed of 5-in, 11.6-lb. Z-bars with 1/4-in, cover plates top and bottom and secured to side and center sills with 1/4-in, gusset plate.

The car is not symmetrical, as the 10-in. side sill is on one side only. There are four channel diaphragms 5 in. deep, reaching from the center sill to the side sill on the non-dumping side of the car; riveted to these channels are the bearing plates that secure the operating shaft. The car body, composed of light angles and ¼-in. plates securely riveted together, as shown in the upper illustration in this column, is

divided into five separate compartments, each 5 ft. wide x 7 ft. 11 in. long.

The car body rests on cast steel rockers, one at each end and at each partition. The cast steel rockers have lugs that engage openings in the ½-in. rocker plate. These rocker castings allow the car to rock easily to the dumping side of the car without any undue shock, and the car body is so balanced that it can easily be righted again. The dumping mechanism is composed of two cast-steel racks with pinions secured to the operating shaft, all easily controlled from the motorman's cab.

There are five doors of 3/16-in. plates reinforced with bars. They are hinged at the bottom and open downward, so that when the car is dumped they form an extension and help to throw the load away from the track. The locking device for the doors is composed of a shaft 1½ in. round extending the full length of car body. Secured to this shaft are ten malleable iron hooks, two to each door. The hooks lip over the top edge of doors, thus holding them securely in place. At each end of the door shaft there is a short lever which is connected to a toggle on the center sill by a connecting bar with turnbuckle for adjusting. When the car body reaches a certain angle in dumping it operates the door locks automatically and releases the doors. Buffers are provided for the doors to fall on. Wood buffers are also provided on the trucks.

The trucks are the Montreal Street Railway pattern, but any standard truck may be used, although a truck with a short wheel base is preferred. The car is built with motors on each axle, hand brakes only, with the usual electrical equipment in cab. A sand box and fenders are also used. The following are the general data: Length over end sills, 33 ft.; truck centers, 21 ft. 3 in.; width of box, 7 ft. 3 in.; length of box, 25 ft.; height of box, 21½ in.; box spring draft gear; angle of dump, 35 deg.; capacity, 40,000 lb; cubic contents, 20 cu. yd.; weight, 26,000 lb. without motors.

Dump cars of this design are now being manufactured in this country by the Simplex Self-Cleaning Car Company, New York City.

TURTLE-BACK CARS FOR KANSAS CITY

The Metropolitan Street Railway, Kansas City, Mo., is now operating 25 cars of the flat-arch single-end design shown in the accompanying illustration. These cars were built by the Cincinnati Car Company and are used for pay-as-you-enter operation. The car bodies are 24 ft. long, while the distance between bolster centers is 21 ft. 10 in. The width over the posts at the belt is 8 ft. 7 in. The car body weighs 18,388 lb. and seats 44 passengers. The body is of wood with steel paneling over the sides and vestibules, as illustrated. The body

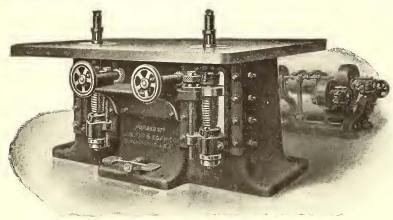


Turtle-Back Car for Kansas City

bolsters are of cast steel and the bumpers of steel plates. Each car is mounted on two Standard 0-50 trucks, each carrying two Westinghouse 306 motors. The braking equipment consists of the National Brake & Electric Company's air brakes and Peacock hand brakes. As the cars will be operated on the pay-as-you-enter system they have been equipped with Faraday push-button buzzer signals. Roof ventilation is furnished by means of 10 Garland ventilators per car. Among the specialties supplied with these equipments are Eclipse fenders, International registers, Hale & Kilburn rattan seats and Pantasote curtains with Forsythe and Dayton fixtures.

DOUBLE SPINDLE SHAPER

The accompanying cut shows the principal features of the No. 277 double spindle shaper recently brought out by the J. A. Fay & Egan Company, Cincinnati, Ohio. The spindles are made of forged crucible steel and are mounted in very rigid housings which are fitted into planed gibbed ways their entire length. These housings are adjustable vertically by independent hand wheels operating through cut spiral gears. Both spindles drop below the table. The spindle bearings are tapered and made of phosphor bronze. They have oil reservoirs completely around the inner bearing, and are so designed that a



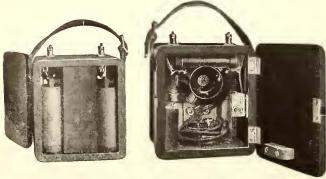
Double Spindle Shaper

continuous flow of oil is assured. Each bearing is independently adjustable with one screw, with provision for taking up wear. The oil reservoir is covered so that no dirt can get into the bearings. This construction is designed to permit the highest speed possible.

Another valuable feature is the construction of the countershaft, the base of which is cast in one piece, on which all the pulleys and belt shifters are mounted. This distinctive feature makes the most rigid design and also eliminates all assembling on arrival at destination. Adjustable independent idlers are provided to take up the slack in either belt to maintain the proper tension at all times. The table is planed true and firmly bolted to the column. It is fitted with removable concentric rings, 10 in. in diameter. The column is a single-cored casting with a broad floor support. It is not in the operator's way and it supports the working parts without vibration.

PORTABLE RAILWAY TELEPHONE

A new portable railway telephone is being manufactured by the Kellogg Switchboard & Supply Company, Chicago, Ill. This telephone weighs 6 lb. 5 oz. The height is 6 13/16 in.; width,



Portable Railway Telephone

61/4 in., and depth, 6 in. The containing cabinet is strongly built with a heavy hinged cover.

The accompanying illustrations will show the compactness of

arrangement of transmitter, receiver, batteries and the induction coil. The telephone is used by trainmen, signal men, officials and linemen for talking to dispatchers' headquarters, and is arranged to connect at any point on the circuit.

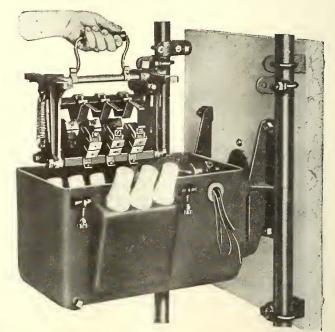
An adjustable leather strap handle makes the telephone box very handy to carry.

NON-AUTOMATIC OIL SWITCH

Allis-Chalmers Company, Milwaukee, Wis., has recently brought out a new type of oil switch designed for either switch-

board or wall mounting, for pressures of 3300 volts and under, and in capacities up to 600 amp. They are furnished with or without automatic tripping features, as may be desired. These switches are of the vertical up-break type. The oil tank is made of cast iron and constitutes the main frame of the switch. It has a cast-iron cover which is held in place by hinged bolts and thumb screws and which holds a felt packing ring tightly in place so that practically no dust can get in or oil escape from the case. The level of the oil in the case is shown by an indicator on the outside and provision is made for drawing off the oil by means of a drain pipe. The working parts of the switch, including the stationary and bridging contacts, are made in a unit which is removable from the tank without disturbing the leads or connections. An inter-lock is provided so that the switch unit cannot be removed

from or inserted in the tank unless the contacts are in the "open" position. The contacts are so arranged that a rubbing action takes place when they are brought together, tending to



Non-Autematic Oil Switch

keep them clean and to squeeze out the film of oil between them. Auxiliary removable arcing contacts are provided which break after the main contacts have spread approximately 1/4 in.

When the automatic tripping feature is applied three tripping coils, for the three-pole automatic switch, are arranged for connection to three series transformers, which are furnished with the switch. This construction affords protection under all circumstances. The two-pole switches are provided with one series transformer and the four-pole switch with two. The tripping mechanism is rugged in construction and at the same time sensitive to overload conditions and positive in its action. The switches are calibrated for from 80 per cent to 160 per cent of the rated current of the switch.

News of Electric Railways

Personnel of Consolidated Companies at Los Angeles

Following the plan of organization which governs the steam railroads of the Southern Pacific Company, the management of the Pacific Electric Railway and the Los Angeles-Pacific Company, which will be merged on Feb. 1, 1911, as the Pacific Electric Railway, will be conducted by department heads, who will be supreme in their jurisdiction, subject to the general supervision of Paul Shoup, who has assumed the active management of the properties, as announced in the ELECTRIC RAILWAY JOURNAL of Jan. 14, 1911, page 96. Under Mr. Shoup will be the new department heads, whose quarters will also be in the Pacific Electric Building, Los Angeles. With the exception of the office of auditor, which department will control the accounts of the Pacific Electric, the Los Angeles-Pacific Railway, the Los Angeles & Redondo Railway and related companies, the changes announced do not affect the Los Angeles & Redondo Railway. On Feb. 1 the following department heads will take up their new duties:

J. McMillan, general manager, in charge of the operating department, formerly general manager of the Pacific Elec-

tric Railway.

George E. Pillsbury, chief engineer, in charge of construction, formerly chief engineer of the Pacific Electric Railway.

E. C. Johnson, assistant chief engineer, in charge of maintenance of way, as well as work now under his jurisdiction, formerly engineer of Los Angeles-Pacific Railway.

D. W. Pontius, traffic manager, in charge of all traffic affairs, formerly traffic manager Los Angeles-Pacific Rail-

S. A. Bishop, general claims agent, formerly claims agent Pacific Electric Railway.

George L. Bugbee, land agent of the Pacific Electric Land Company and related companies, formerly land agent of the Los Angeles-Pacific Company.

W. V. Hill, tax and contract agent, formerly tax and contract agent of the Los Angeles-Pacific Company.

Fred F. Small, mechanical engineer, formerly mechanical

engineer of the Pacific Electric Railway.

H. A. Culloden, auditor of the Pacific Electric Railway, Los Angeles-Pacific Company, Los Angeles & Redondo Railway and related companies, formerly auditor of the Pacific Electric Railway.

S. H. Anderson, electrical engineer, formerly electrical engineer of the Pacific Electric Railway.

M. S. Wade, cashier, formerly cashier of the Pacific Elec-

tric Railway.

W. G. Sherlock, assistant cashier, formerly cashier of the

Los Angeles-Pacific Company.

No new announcement has been made affecting the organization of the legal departments of the roads. Judge J. W. McKinley is in charge of the legal department of the Pacific Electric Railway, the related land companies and the Los Angeles & Redondo Railway. The legal department of the Los Angeles-Pacific Company, of which G. E. Newlin is chief counsel, remains intact, and whether the two legal departments are to be consolidated has not yet been announced.

W. A. Sigsbee, who has been assistant auditor of the Los Angeles & Redondo Railway, Los Angeles, Cal., for some time, has been transferred to the Southern Pacific Company as a special auditor, with headquarters in San Francisco, and the position of assistant auditor with the Los Angeles & Redondo Railway has been abolished.

Earnings of Cleveland Railway

The figures shown in the statement of the Cleveland Railway for December, 1910, and for the 10 months of operation under the Tayler grant indicate that something will have to be done to increase the operating allowance, as the past four months show a deficit of \$54,305.45 and December a deficit of \$19,742.87. The grant provides that any surplus in this allowance shall be transferred to the interest fund at the end of each six months. This prevents carrying over the surpluses shown in favorable months of operation to take care of the months when expenses are heavy.

The surplus accrued under the old scale of wages paid conductors and motormen. The award of the board of arbitration giving the employees an advance of sub-stantially 4 cents an hour and other increased costs of operation during the winter months resulted in a deficit. Officials of the company notified the city authorities of the probable inadequacy of the allowance to cover the additional expenses incurred by the increase in wages, but the city refuses to change the ordinance. It is stated that the company will ask the city for an increase in the operating allowance, which is now 111/2 cents per mile. Such an increase would probably endanger the 3-cent fare, as the margin is already very small. Should the request of the company be refused, it can then demand arbitration, under the franchise, and both city and company must abide by the decision of the board.

Table No. 1 published herewith shows the results of operation for December, 1910, and for the period of 10 months ended Dec. 31, 1910, based on the allowance made in the ordinance. Table No. 2 shows the results of operation for December, 1910, based on the actual expenditures for operation and maintenance expenditures on the basis allowed in the ordinance:

TABLE No. 1 .- BASED ON THE ORDINANCE ALLOWANCE.

| | | Ten Months | |
|---|-------------|--------------|-----------|
| December | , Cents Per | | Cents Per |
| 1910. | Car Mile. | 31, 1910. | Car Mile. |
| Gross earnings from operation\$525,88 | 5 22.50 | \$6,166,370 | 23.20 |
| Maintenance allowance 93,49 | | 1,142,919 | |
| Operating allowance 268,79 | | 2,561,207 | |
| Total allowances 362,29 | 5 15.50 | 3,704,126 | 16.63 |
| | | 3,7 - 4,1-0 | |
| Net earnings from operation \$163,59 | 0 7.00 | \$1,462,244 | 6.57 |
| Miscellaneous income 3.61 | | 30,101 | .13 |
| naiscentificous income | | 30,101 | 3 |
| Gross income less allowances\$167,20 | 1 7.15 | \$1,492,345 | 6.70 |
| Taxes | | 310,598 | |
| Taxes 32,10 | 7 1.37 | 310,590 | 1.39 |
| Income, less allowances, etc\$135,09 | 4 5.78 | \$1,181,747 | |
| | | | 5.3I |
| Interest 114,83 | 6 4.91 | 1,128,022 | 5.07 |
| C1 | 0 0- | <u></u> | - |
| Surplus \$20,25 | 8 .87 | \$53,725 | .24 |
| Based on Actual Dis | BURSEMENT | S. | |
| | - | and the same | |
| Gross earnings from operation\$525,88 | | \$5,166,370 | 23.20 |
| Disbursements for maintenance \$68,70 | | \$1,283,058 | |
| Disbursements for operation 288,54 | 2 | 2,593,218 | |
| Total disbursements 357,24 | 7 15.28 | 3,876,276 | 17.40 |
| | | | |
| Net earnings from operation\$168,633 | 3 7.22 | \$1,290,094 | 5.80 |
| Miscellaneous income 3.61 | | 30,101 | .13 |
| | | 3-, | |
| Gross income, less disbursements.\$172,24 | 3 7.37 | \$1,320,195 | 5.93 |
| Taxes 32,10 | | 310,598 | 1.39 |
| 14.05 32,10 | 1.3/ | 310,390 | 1.39 |
| Income, less disburs, and taxes \$140,14. | 2 6.00 | \$1,000,597 | 4.54 |
| Interest | | 1,128,022 | |
| Interest | 6 4.91 | 1,120,022 | 5.07 |
| Surplus \$25,30 | 6 1.09 | *\$118,425 | -53 |
| Duipius \$25,30 | 1.09 | Ψ110,425 | -53 |
| *Deficit. | | | |
| Dencit. | | | |

TABLE NO. 2.—BASED ON ORDINANCE ALLOWANCES FOR MAINTENANCE AND ACTUAL DISBURSEMENTS FOR OPERATION, DECEMBER, 1910.

| Gross earnings from operation\$525,885 | 22.50 |
|--|-------|
| Allowance for maintenance 93,495 | |
| Disbursements for operation 288,542 | **** |
| Total\$382,037 | 16.34 |
| 10tal\$302,037 | 10.34 |
| Net earnings from operation\$143.848 | 6.16 |
| Miscellaneous income | .15 |
| | |
| Gross income, less allowance and disbursements\$147.458 | 6.31 |
| Taxes 32,107 | 1.37 |
| | |
| Income, less allowance, disbursements and taxes\$115,351 | 4.94 |
| Interest 114,836 | 4.91 |
| | |
| Surplus 515 | .03 |
| Based on the Ordinance Allowance. | |

| Based on the Ordinance Allowance. | |
|--|---------|
| (See Table No. 1.) | |
| Surplus as shown in statement\$20, Deficit in operating reserve19, | |
| Actual surplus for the month\$ | 515 .03 |
| MAINTENANCE RESERVE. | |
| Allowance for the month\$93, Expended for the month68, | |
| Balance to be credited to previous deficit\$24, | 790 |
| Allowance for the month\$268, | 799 |
| Expended in the month 288, | 542 |
| Deficit to be added to previous deficit\$19, | 742 |
| Deficit for four months (0.61 cents per car mile) \$54, | 305 |

Toledo Traction Situation

Mayor Whitlock of Toledo has continued to improve steadily. His illness, however, has delayed the franchise negotiations, as the City Council and city officials refuse to proceed without his aid.

On Jan. 18 the Mayor began to go over the tentative franchise prepared by City Solicitor Schreiber and the data that have been collected. It is said that differences of opinion over the proposed franchise have developed among the city officials. There has been some discussion as to the points that will be taken up first when the Council meets as a committee of the whole to begin the negotiations. Valuation and the rate of fare were to be taken up last, according to the understanding, and blanks were to be left in the draft of the ordinance to be filled in when these points were agreed upon. Paving, bridges, control of interurban cars, tracks and many other points will probably be taken up before property valuation and rate of fare are touched.

An informal conference of the officials of the Toledo Railways & Light Company was held on Jan. 17 to discuss the provisions of the tentative ordinance, but no statement will be made until the city takes definite action upon the various points. At the annual meeting of the stockholders of the company on Jan. 19 Frank Hafer, treasurer of the Milburn Wagon Works Company, and Charles F. Meilink, of the Meilink Manufacturing Company, were elected directors to succeed Dr. J. F. Demers, who died recently, and William B. Hale, who retired. The board organized by re-electing all of the old officers. The executive committee for the present will consist of President Albion E. Lang, Jay K. Secor, Toledo, and William E. Hutton, Cincinnati. The annual statement of the company will be presented at the meeting in February.

Subway Urged by Mayor of San Francisco

P. H. McCarthy, Mayor of San Francisco, Cal., has addressed a communication to the Supervisors of that city, in which he refers to the steadily increasing congestion in Market Street and recommends that they consider the advisability of constructing a subway system. In his letter the Mayor says, in part:

"Between 4 p. m. and 6 p. m. we find the sidewalks on both sides of Market Street, between Sansome Street and Sixth Street, inclusive, crowded to the extent of being uncomfortable for the pedestrian and a handicap to traffic and transportation wherever this moving mass of humanity is obliged to leave such sidewalk. What is true of Market Street in this regard is likewise true of other locations in this city, perhaps, however, in a lesser degree. I have in mind, for instance, certain intersections and transfer points in the Mission district and on Fillmore Street.

"I would respectfully recommend and urge that your honorable board, in view of the above facts, take under advisement the proposition of constructing subways which shall safeguard the pedestrian and facilitate both traffic and transportation, thereby proving of incalculable benefit and advantage to our people. The subway in this, as in other great cities, is inevitable, and particularly is that true of San Francisco, since Market Street is the great intersecting thoroughfare in a rapidly growing city, having as its feeders all the streets north of Market Street."

The public utilities committee of the Council will consider the recommendation.

Transit Affairs in New York

The Bradley Contracting Company, through its president, Frank Bradley, made an offer on Jan. 21, 1911, to the Public Service Commission to construct with the city's money the entire subway part of the triborough as laid out by the commission, to equip it, as well as the Fourth Avenue subway in Brooklyn and the Bridge loop, at its own expense, and to operate these lines upon such terms as the commission might determine. The proposal offers the city the right to take over these routes at any time by paying the cost of the equipment, plus 10 per cent. The offer to the commission follows:

"We hereby offer to construct the triborough route, for

which bids were submitted on Oct. 27, 1910, in accordance with the plans, specifications and terms which accompanied said bids, for the sum of \$85,437,561, or in accordance with such modifications for the triborough route as you may decide upon, at a cost proportionate to the above figure.

"We agree to equip at our expense the said triborough route, the Fourth Avenue route and the Brooklyn loop line route, and to operate them all in such manner and upon such terms as you in your judgment shall determine to be reasonable to us and to the city of New York, giving proper security for such equipment and operation.

"We agree at any time, upon your request, to turn over said roads or routes to the city of New York on payment of actual cost of the equipment, plus 10 per cent on such cost, or we will equip at our own expense said roads or routes and operate them for a period of years to be agreed upon."

William G. McAdoo, president of the Hudson & Manhattan Railroad, speaking at a meeting in Brooklyn on Jan. 19, 1911, outlined a plan for construction by the city of an independent subway system embracing the main features of the triborough route. The physical features of the system to which Mr. McAdoo referred are practically those of the original triborough with these modifications: Connections between the Centre Street loop subway with the three downtown East River bridges and the trunk line in Broadway, so as to allow the operation of trains from Brooklyn through the bridge loop subway up and down town over the main stem in Manhattan; these connections consisting of a link from Centre Street into Broadway at Spring Street and a link from the Brooklyn Bridge into Broadway at Vesey Street. The construction of a local loop from Lexington Avenue and Forty-second Street through Forty-second Street and Sixth Avenue to Thirtyfourth Street and thence down Broadway to rejoin the main line at Tenth Street. Reduction of the size of the triborough tube as adopted by the Public Service Commission to a cross section 9 inches higher than the subway operated by the Interborough Rapid Transit Company. The elimination of reservoir stations and the substitution therefor of separate loading and unloading platforms to avoid the collision of two streams of traffic at the express stations. An operating contract giving the city the right to take over the subway not only at the end of 10 years (as required by the present law) on payment of cost to the operator plus 15 per cent, but the right to take over at any time after one year on payment of the operator's cost plus 20 per cent. If universal subway transfers are deemed desirable, a provision in the operating contract of the independent line that it transfer at intersections with the subway operated by the Interborough Rapid Transit Company and a stipulation that the grant of such transfers by the Interborough Rapid Transit Company shall be a condition precedent to any extensions or third-tracking of its elevated lines. This, Mr. McAdoo estimates, could be built, with roadbed, track and signal systems, for \$107,000,000, and equipped by the operator with electrical apparatus of the most improved design, cars, power houses, storage yards, shops, &c., for \$47,000,000.

At the request of the Board of Estimate and Apportionment a hearing attended by members of the Staten Island Chamber of Commerce and several officials of that borough was held on Jan. 18, 1911, before the Public Service Commission on the proposed tunnel to connect Staten Island with either Brooklyn or the New Jersey shore. Several routes were suggested, but one from St. George to Sixty-fifth Street, Brooklyn, connecting with the Fourth Avenue subway, was the most favored. Borough President Cromwell said he thought any new subway system should include benefits for all boroughs, and that the work should begin in all five at once. He favored the St. George route because of the converging of all the railroad lines of his borough there. He said he had been informed by engineers that a tunnel could be built for about \$6,000,000.

The Pennsylvania Railroad has announced that unless some unforeseen hindrance should be introduced the high-speed line of the Hudson & Manhattan Railroad from the Saybrook Place terminal, Newark, to New York, will be placed in operation in July, 1911.

The Board of Estimate adjourned on Jan. 18, 1911, without taking any action on the subway proposal of the Interborough Rapid Transit Company. A resolution was adopted, at the suggestion of Borough President McAneny, that the Mayor should appoint a committee to confer with the members of the Public Service Commission on rapid transit matters. Comptroller Prendergast raised the point that such conferences should be on subway matters in general and not only on proposals of the Interborough Rapid Transit Company. Communications received by the board which set forth reasons why the Broadway (Brooklyn) subway should be built were referred to committee of the whole.

Another Suit to Set Aside Chicago Settlement.—Clarence H. Venner has filed a suit in the United States Circuit Court at Chicago in which he asks the court to annul the agreement entered into between the Chicago Railways and the City of Chicago and to require all payments from the earnings of the company to the city thereunder to be refunded. He has also asked for an injunction to restrain further operations by the company under the agreement with the city pending a hearing of the suit. He alleges illegality of contract. The dismissal by the Supreme Court of the United States of a similar suit brought by Mr. Venner as a stockholder of the Chicago City Railway to set aside the street railway settlement ordinance of Chicago which was approved in 1907 and under which the Chicago City Railway now operates was noted in the ELECTRIC RAILWAY JOURNAL of Jan. 14, 1911, page 90.

LEGISLATION AFFECTING ELECTRIC RAILWAYS

Connecticut.—The report of the committee on the initial public utilities bill of 1909 has been referred to the judiciary committee of the House. Senator Spellacy's resolution for a special joint committee to consider all measures relating to workmen's compensation acts was tabled again after brief consideration. The opinion seems to prevail that this matter should go to the judiciary committee. The Senate bill for an extension of time until Nov. 1, 1912, for constructing the Danbury & Bethel Street Railway has been referred to the committee on railroads. Feb. 2 has been fixed as the last date for the introduction of new measures. This date has also been selected for a hearing on all public utility measures.

Indiana.—The committee on railroads has recommended persons and corporations interested in the passage of legislation affecting railroads to confer with the Railroad Commission before having bills introduced. Senate bill No. 44, which makes railroads liable for damages by fires which escape from rights-of-way, has been passed. This measure gives the roads an insurable interest in property adjacent to the rights-of-way. House bill 156 would prohibit interurban railroads from employing motormen unless they have had at least one year's experience either as a steam or interurban trainman, and would make it obligatory for interurban roads to operate under a uniform set of rules ratified by the commission. Another bill would amend the Railroad commission act so as to require a report of an accident involving loss of life by telegraph to the commission immediately. The present law allows five days in which to make a report to the commission. House bill 155 would require all railroads to build, establish and maintain farm and foot crossings and provide gates at crossings where tracks cross a farm. A bill introduced in the Senate specifies a clearance of 21 feet for wires and obstructions which cross railroad tracks and regulates fastenings to prevent swagging. Senate bill No. 196 prescribes the distances at which interurban trains shall stop before crossing tracks of other lines.

Kansas.—Two bills to create public utility commissions have been introduced. One is known as the administration bill and the other as the Hodge measure. The so-called administration measure provides that the name of the Railroad Commission shall be changed to the Public Utilities Commission. The jurisdiction of the commission is extended to street railways, suburban electric railways, interurban railways, equipment and pipe line companies, railroads, water companies, electric companies, telephone and telegraph companies, etc. The bill would confer ratemaking powers on the commission and give it power to prescribe the amount of stocks and bonds to be issued. Home rule jurisdiction is provided for Councils over local

utilities, with power to appeal to the commission where an amicable settlement between such Councils and companies cannot be effected. The Hedges measure calls for the election of a commission of three to have jurisdiction over railroads, street cars in two or more counties, telephones in five counties, pipe lines in two or more counties and other utilities. Strict home rule regulation is allowed for waterworks, electric lights and kindred utilities.

Massachusetts.-A bill has been introduced into the House to authorize the Worcester & Southbridge Street Railway to acquire the Worcester & Webster Street Railway and the Webster & Dudley Street Railway. A bill has also been introduced into the House to provide for placing underground within two years of the passage of the bill all electric wires in Boston which carry current at 600 volts or over. The recommendations of the Railroad Commission and Boston Transit Commission in regard to Boston subway extensions are met by a bill which would authorize the Boston Transit Commission to construct a subway or tunnel from a point in Atlantic Avenue, near the South Station, under Fort Point Channel and Dorchester Avenue to Andrew Square. The cost of the subway is to be provided by the issue of bonds by Boston. At the petition of the Massachusetts Street Railway Association a bill has been introduced to eliminate so far as possible abuses of the scholars' tickets which are required to be issued by companies in the State (excluding the Boston Elevated Railway). By Chapter 267, Acts of 1904, all street railways are required to print on transfer tickets issued to passengers the conditions under which such tickets may be used, and for the misuse of a transfer ticket a penalty is provided in the shape of a maximum fine of \$50 or a maximum imprisonment of 30 days. The new bill provides that the same course shall be followed with respect to scholars' tickets, with an additional section which provides that whoever uses or attempts to use a scholar's ticket for any purpose except to attend a session of the school in which he is a pupil or to return therefrom to his home, or disposes or attempts to dispose of a scholar's ticket, and whoever, not being such a pupil, attempts to use or dispose of such a ticket to a person not known by him to be a pupil, shall be subject to the above fine or imprisonment. A bill introduced in the Senate provides that damages for the loss of life through the negligence of a railroad or street railway may be collected within two years instead of one year, as at present provided. A bill introduced into the House provides for the State and city ownership of street railways. Bills have also been introduced which require the use of fenders, lifting jacks and other tools on street railway cars, for an investigation into the affairs of the Boston Elevated Railway and to provide for a determination of the value of the shares of stock of consolidated railroads and street railways.

Pennsylvania.-Little was done in the General Assembly during the week which ended on Jan. 21, 1911, beyond the appointment of committees and the passage of the supplemental appropriation measure. The draft of the proposed railroad commission bill extending the powers of the commission has been prepared. It contains about 30 sections. In the appointment of the committees Senator Keyser and Representative Riebel, Philadelphia, again head the committees on electric railways. Nearly 200 bills were introduced in the Senate and House at the opening session during the week commencing on Jan. 23, among them the following: To prohibit trespassing upon the rights-of-way of steam and electric railways; to require street railways to inclose the platforms of their cars; to require that from Nov. I to May I the front end of trolley cars should be inclosed for the protection of the motorman, with a penalty of \$500 for violation; to give the trustees of Valley Forge Park power to grant electric railway franchises through the park; to prohibit side running boards on summer cars, and to require motormen to be placed on all trailers of the Philadelphia Rapid Transit Company. Mayor Magee, of Pittsburgh, is interested in presenting a bill to supplant the Railroad Commission with a public utilities commission. The new bill would vest the commission with authority to compel compliance with its rulings and recommendations and would confer upon municipalities the right to construct and operate street railways and to acquire by condemnation street railways now in operation.

Financial and Corporate

New York Stock and Money Market

Jan. 24, 1911.

Under the persistent manipulation of professional traders the Wall Street market was pushed up a few points last week and the volume of trading increased slightly. There is considerable increase in activity in bonds and the investment demand is very encouraging.

Money continues to be plentiful and rates easy. Quotations to-day were: Call, 21/4@21/2 per cent; 90 days, 31/4@31/2

per cent.

Other Markets

In the Philadelphia market thousands of shares of Rapid Transit and Union Traction changed hands during the week, but prices have not advanced. There has also been considerable dealing in American Railways with fractionally higher prices.

In the Chicago market there was increased activity last week in the certificates of the Chicago Railways. Series 2 was the most active of the lot and the price for this issue advanced about 2 points. There has also been very liberal trading in Railways, Metropolitan and Northwestern Elevated bonds. Price changes have not been important.

While there was some dealing on the Boston Stock Exchange last week in Massachusetts Electric and Boston Elevated, tractions as a rule were dull. Prices were some-

what lower.

In the Baltimore market there was very little trading in traction shares during the week; in fact, no important sales were made. The bonds of the United Railways continue fairly active at unchanged prices.

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

Quotations of traction and manufacturing sec compared with last week follow:

American Light & Traction Company (common).

American Light & Traction Company (preferred).

American Railways Company.

Aurora, Elgin & Chicago Railroad (common).

Aurora, Elgin & Chicago Railroad (common).

Aurora, Elgin & Chicago Railroad (common).

Aurora, Elgin & Chicago Railroad (preferred).

Bosion Suburban Electric Companies (common).

Bosion Suburban Electric Companies (common).

Boston & Worcester Electric Companies (preferred).

Brooklyn Rapid Transit Company, 1st ref. conv. 48. 83%

Capital Traction Company, Washington.

Alega Chicago & Oak Park Elevated Railroad (common).

Chicago & Oak Park Elevated Railroad (common).

Alega Chicago & Oak Park Elevated Railroad (preferred).

Thicago Railways, pteptg., ctf. 1.

Chicago Railways, pteptg., ctf. 1.

Chicago Railways, pteptg., ctf. 2.

Chicago Railways, pteptg., ctf. 3.

Consolidated Traction of New Jersey.

Ara Consolidated Tracti Jan. 24. a288 a105 a44 1/2 a42 83 a71 77 /4 83 7/8 a130 77/4
a93
225
a9
a61/2
a731/2
a1041/2
a1152
a118 88 19 1/4 52 7/8 79 a21 a71 140 a18 a86 *691/2 70 3/4 a22 ½ a63 53 44 ½ 20 ½ 86 ½ a96½ a115¾ a110 a102 a70 a10½ a8 a110 a48 a17 43 68 38 1/2 a89 1/2 a91 1/2 a105 68

Annual Report of the Interborough-Metropolitan Company

The annual report of the Interborough-Metropolitan Company for the year ended Dec. 31, 1910, presented by Theodore P. Shonts, the president, at the annual meeting of stockholders, show these receipts and disbursements:

| Surplus balance of income account, Dec. 31, 1909 RECEIPTS. Dividend of 9 per cent on 339,128 shares Interborough Rapid Transit Company stock\$3,052,152 Interest on bank balances and loans | \$738,308 |
|---|-------------|
| | 3,261,243 |
| TotalDISBURSEMENTS. | \$3,999,551 |
| Paid and accrued interest on \$67,825,000 Inter- borough-Metropolitan 4½ per cent collateral trust bonds | \$3,052,125 |
| Add amount of claim of Interborough Metropolitan Company against the New York City Railway, cancelled in accordance with agreements of June, | 117,203 |
| 1910 | 36,405 |
| | \$3,205,733 |
| Surplus income | \$793,818 |

Mr. Shonts says in his statement:

"On Feb. 10, 1909, a judgment was rendered against the Metropolitan Securities Company in a suit of the receiver of the New York City Railway Company for the balance alleged to be due under agreement of May 22, 1907, amounting to \$5,271,582, which judgment was subsequently affirmed by the circuit court of appeals. Various payments upon this judgment reduced the amount to July 1, 1910, with interest, to approximately \$4,495,000. In the meantime the receiver of the New York City Railway had instituted an action to collect the amount of the judgment from the stockholders of the Metropolitan Securities Company upon the ground that 25 per cent of their stock subscriptions remained unpaid. Your company being the owner of 293,920 shares out of a total issue of 300,000 shares, its liability for such unpaid balance would have amounted to \$7,348,000.
"There was also instituted by the receiver of the New

York City Railway a suit against the Metropolitan Securities Company and certain of its former directors individually to recover the discounts on \$9,324,000 of 10-year 3 per cent debenture notes of the New York City Railway issued under agreement with the Metropolitan Securities Company, dated Feb. 14, 1902, at 70 per cent of par and subsequently redeemed at their face value amounting, with interest to July 1, 1910, to approximately \$4,000,000.

"Other suits were threatened and in course of preparation involving indirectly the Interborough-Metropolitan Company through its ownership of stock in the Metropolitan Street Railway and Metropolitan Securities Companies which, while there did not appear to be any sound legal ground upon which they could be maintained, nevertheless had their effect upon the company's credit. The certainty also that the company, in the most favorable aspect of the case, would have to pay out large sums of money, and the immense advantage of rescuing it from a mass of vexatious and possibly dangerous litigation impelled your directors to join in negotiations with the various claimants and the court having jurisdiction over the various receiverships for a final adjustment of all litigation. Under the terms of this setlement agreements were entered into and orders filed in court disposing, so far as possible, of all pending and threatened litigation upon the payment by the Metropolitan Securities Company of \$4,000,000, its contribution toward the amount required to effect such settlement. This amount was advanced by your company under an agreement by which it will be credited upon its unpaid subscription to the stock of the Metropolitan Securities Company.
"The franchise or capital stock tax assessed by the State

comptroller for the year ended Oct. 31, 1908, was fixed at \$104,251. The company believed the amount and the principle on which it was assessed to be inequitable and instituted litigation to review the comptroller's determination. The courts upheld the company's contention and as a result the franchise tax for that year was reduced from \$104,251 to \$13,485, a saving to the company of \$90,766. A

like basis of reduction was applied in the taxes assessed by the State for the years 1909 and 1910.

"The administration expenses of your company for the year ended Dec. 31, 1909, were \$104,803 and for the year ended Dec. 31, 1910, \$92,426, a reduction of \$12,377.

"The reorganization of the Metropolitan Street Railway is still under active consideration, no definite agreement having yet been arrived at between the stockholders and the joint bondholders' committee. The sale of the property was postponed on Jan. 5, 1911, to Feb. 16, 1911.

"The surplus earnings of the Interborough Rapid Transit Company after the payment of the regular 9 per cent dividend for the fiscal year ended June 30, 1910, were \$2,932,147, an increase over the previous fiscal year of \$1,492,323.

Modification of International Traction Company Bondholders' Plan

On Jan. 20, 1911, the committee of bondholders of the International Traction Company, Buffalo, N. Y., which consists of R. L. Fryer, Thomas DeWitt Cuyler, Lewis Cass Ledyard, T. E. Mitten and Charles Steele, issued a notice to the owners of the 50-year, 4-per cent collateral trust gold bonds of the International Traction Company, and to the depositors under the bondholders' agreement, dated

June 21, 1910, in which they said, in part:

"Pursuant to the terms of Article 5 of the bondholders' agreement, dated June 21, 1910, the committee acting under the said agreement has filed with J. P. Morgan & Company, New York, N. Y., a statement of a proposed change, modification or departure from the 'bondholders' plan' set forth in said agreement. The committee announces that more than two-thirds of the above-mentioned bonds have been deposited, and that such modification or change is made in compliance with the expressed wishes of the owners of large numbers of both deposited and nondeposited bonds. In place of the alternative rights of bondholders under the original bondholders' plan, to receive either 5 per cent bonds of the new company to the amount of 80 per cent of the par value of the deposited bonds or cash to the amount of 70 per cent of the par value thereof, the 'modified bondholders' plan' offers the single right to all holders of the company's bonds who have deposited or shall in the future deposit the same with the committee, upon the consummation of the plan, new 4 per cent bonds of the same par value as the deposited bonds, secured by a direct mortgage upon the physical properties and the franchises of the underlying and operating com-

"The bonds of one of said series will bear interest at the rate of 4 per cent per annum and will be limited to an amount sufficient to enable the committee to make delivery thereof at par to depositors of 50-year, 4-per cent collateral trust gold bonds and coupons of the Traction Company

deposited under the agreement as above set forth.

"The bonds of the other of said series shall bear interest not exceeding the rate of 5 per cent per annum, and shall comprise all bonds secured by the said mortgage that shall be required for the other purposes of the 'modified bondholders' plan' and of the said bondholders' agreement.

"No formal act of assent to the 'modified bondholders' plan' is necessary on the part of the present depositors. In case of dissent, withdrawals of deposited bonds must be

made on or before Feb. 17, 1911.

"Pursuant to and in connection with the foregoing modified plan, the committee also announces that it has arranged for an advance to the holders of certificates of deposit to be issued for the 50-year, 4-per cent collateral trust gold bonds of the International Traction Company which shall be deposited with the committee under the bondholders' agreement and the modified plan, of the interest due July 1, 1910, and Jan. 1, 1911, on the bonds represented thereby, and also to the holders of certificates of deposit heretofore issued by the committee, of the interest due Jan. 1, 1911, on the bonds represented thereby, upon presentation of such certificates at the offices of J. P. Morgan & Company, the depositary under the agreement, the Manufacturers & Traders' National Bank, Buffalo, N. Y., or the United States Trust Company, Louisville, Ky., sub-depositaries, for the proper indorsement of such advances and for formal acceptance of such changed or modified plan thereon."

Austin (Tex.) Street Railway .- The Austin Street Railway has been incorporated in Texas as the successor to the Austin Electric Railway and has made a mortgage to the Equitable Trust Company, New York, N. Y., as trustee, to secure an issue of \$1,500,000 of first and refunding mortgage 5 per cent gold bonds. At present the company will issue \$250,000 of these bonds; \$350,000 will be reserved to rctire \$350,000 of first mortgage 5 per cent bonds of the old company and \$900,000 will be reserved for future extensions, additions, etc. The new bonds are dated Jan. 2, 1911, and are due Jan. 1, 1936, but are subject to call at any time The authorized capital stock of the company is \$1,250,000, consisting of \$750,000 of common stock and \$500,000 of 6 per cent non-cumulative preferred stock. this stock \$500,000 of common and \$250,000 of preferred are outstanding. The officers of the company are: W. H. Folts, Austin, president; A. L. Kelloch, secretary; E. P. Wilmot, treasurer.

Babylon (N. Y.) Railroad.-Judge Chatfield, in the United States Court in Brooklyn, has appointed Paul T. Brady and Willard B. King receivers for the Babylon Railroad, a subsidiary of the South Shore Traction Company, which was recently put into the hand of the same receivers, as noted in the ELECTRIC RAILWAY JOURNAL of Jan. 7, 1911, page 50.

Buffalo, Lockport & Rochester Railway, Rochester, N. Y. -Control of the Buffalo, Lockport & Rochester Railway has formally passed to the so-called Beebe Electric Railway System. The new officers of the company follow: C. D. Beebe, Syracuse, N. Y., president; J. M. Campbell, Rochester, N. Y., vice-president and general manager; Frank A. Dudley, Niagara Falls, N. Y., second vice-president; Harold C. Beatty, Syracuse, N. Y., secretary; A. M. Michael, Syracuse, N. Y., assistant secretary; Willis A. Holden, Syracuse, N. Y., treasurer; W. W. Foster, Syracuse, N. Y., assistant treasurer; William Nottingham, Syracuse, N. Y., general counsel; C. D. Beebe, J. M. Campbell, Frank A. Dudley, H. C. Beatty, W. A. Holden, William Nottingham, C. W. Seamans. New York; E. R. Wood, Toronto; F. W. Roebling, Jr., Trenton, and H. J. Clark, Syracuse, directors. The general offices of the company are in Syracuse, N. Y. The operating offices are in Rochester.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa .- The directors of the Chambersburg, Greencastle & Waynesboro Street Railway paid an initial dividend of 5 per cent on the \$300,000 of preferred noncumulative stock on Jan. 16, 1911.

Chicago City & Connecting Railways, Chicago, Ill.—White, Weld & Company, New York, N. Y., and Chicago, Ill., offer for subscription at 100 and interest yielding 5 per cent \$1,250,000 of Calumet & South Chicago Railway first mortgage 5 per cent rehabilitation gold bonds dated Feb. 1, 1908, and due Fcb. 1, 1927. The bonds are callable as a whole at the option of the company at 105 and interest on any interest date before July 1, 1912, on 30 days' notice. If the property of the company is purchased by the City of Chicago the bonds may be called for payment at par and interest on any interest date before maturity.

Chippewa Valley Railway, Light & Power Company, Eau Claire, Wis.—The Wisconsin Railroad Commission has authorized the Chippewa Valley Railway, Light & Power Company to issue the following securities: (1) \$300,000 of additional common stock in order to acquire the property of the Chippewa Falls Water Works & Lighting Company and to finance additions and extensions made and to be made thereon; (2) \$250,000 of first mortgage 5 per cent 20-year gold bonds of 1907, for extensions and additions and additional equipment. The commission's authorization of Feb. 24, 1910, so far as it relates to \$100,000 of common stock, has been canceled.

Denver (Col.) City Tramway.—Clark, Dodge & Company, New York, N. Y., and E. W. Clark & Company, Philadelphia, Pa., offer for subscription at 95 and interest yielding 5.38 per cent \$1,653,000 of Denver City Tramway first and refunding sinking fund mortgage 25-year 5 per cent gold bonds dated Nov. 1, 1908, and due Nov. 1, 1933. Interest is payable May I and Nov. I at the office of the Mercantile Trust Company, New York, N. Y., or at the office of the Denver City Tramway, Denver, Col. The Mercantile Trust Company is trustee under the mortgage which secures the bonds.

Fonda, Johnstown & Gloversville Railroad, Gloversville, N. Y.—The Public Service Commission of the Second District of New York has authorized the Fonda, Johnstown & Gloversville Railroad to issue \$380,000 of its 41/2 per cent 50-year bonds, secured by its first consolidated mortgage, the bonds to be sold at not less than 85 and the proceeds to be used for the payment of indebtedness to the amount of \$185,129.73, payment of various notes made for payment for pavements in Gloversville and Johnstown, new cars, cost of new carpenter shop at Gloversville, new railroad sidings at Amsterdam, ash track at power house at Tribes Hill and double tracking Main Street in Amsterdam. The authorization is made upon the condition that the company shall credit to its capital account and charge to its surplus the sum of \$22,000, the amount of replacement made in connection with the construction of the new double track in Amsterdam.

Johnstown (Pa.) Traction Company.—The Johnstown Traction Company has announced an initial annual dividend of 3 per cent on its \$500,000 capital stock, of which \$200,000 is said to be paid up.

Lancaster & Southern Street Railway, Lancaster, Pa .-A syndicate managed by George B. Atlee, Philadelphia, Pa., proposes to merge the Lancaster & York Furnace Street Railway, the Lancaster & Southern Street Railway For four and the Coleman Water & Power Company. years the Lancaster & York Furnace Street Railway and the Lancaster & Southern Street Railway have been embarrassed financially, and George B. Atlee conferred with representatives of the three companies recently and submitted a proposition for taking them over which was accepted and the syndicate which Mr. Atlee represents will pay the interest on the loans and assume the liabilities and pay the owners a fixed amount for their equity in the properties. An agreement has been made with the Conestoga Traction Company whereby it is to pay to the Lancaster & York Furnace Street Railway one-third of the fares of the passengers delivered to it by the Lancaster & York Furnace Street Railway.

Los Angeles (Cal.) Railway Corporation.—The Los Angeles Railway Corporation has made a mortgage to the Los Angeles Trust & Savings Bank as trustee to secure an issue of 5 per cent bonds of \$1,000 each, limited to \$20,000,000 in amount, dated Dec. 1, 1910, and due in 1940. Of the new bonds \$5,500,000 are reserved to retire an equal amount of underlying bonds that remain outstanding. The mountgage covers the purchase of the Los Angeles Railway, a portion of the Los Angeles & Redondo Railway, and narrow-gage lines in Los Angeles formerly operated by the Pacific Electric Railway.

Louisville & Eastern Railroad, Louisville, Ky.—The Federal Court at Louisville has confirmed the purchase of the Louisville & Eastern Railroad by the Louisville & Interurban Railroad, which was announced in the ELECTRIC RAILWAY JOURNAL of Jan. 7, 1911, page 50, and the formal transfer of the property has been made.

Montreal (Que.) Street Railway.—The General Trusts Corporation, Montreal, Que., has addressed a letter to the shareholders of the Montreal Street Railway in Montreal asking for a 60-day option on their holdings at 235 a share on behalf of a client who desires a large block of the stock.

Northern Texas Traction Company, Fort Worth, Tex.— The Northern Texas Traction Company has filed with the Secretary of State an amendment to the charter of the company increasing its capital stock from \$3,500,000 to \$4,500,000.

Ocean Shore Railway, San Francisco, Cal.—The property of the Ocean Shore Railway was sold under foreclosure in San Francisco on Jan. 17, 1911, to representatives of the bondholders for \$1,035,000, the upset price.

Ohio Electric Railway, Cincinnati, Ohio.—Drexel & Company, Philadelphia. Pa., are said to have placed privately with financial institutions in Philadelphia an issue of \$7,000,000 of 6 per cent notes of the Ohio Syndicate which was organized to finance certain Ohio public service properties with which United Gas Improvement Company interests are identified, among them it is said the Ohio Electric Railway. According to the Philadelphia Financial Bulletin

the details, such as the time for which the notes are to run, the price at which they were sold to the institutions, the names of the members of the syndicate, etc., are known only to the participants in the negotiation. Continuing the Financial Bulletin says: "It is understood, however, that some of the leading interests in the United Gas Improvement Company are largely interested in the syndicate, that the negotiation is for the purpose of financing the further development of a number of going gas, electric lighting and trolley properties in Ohio, and that \$4,000,000 of stock in the enterprise has also been sold to Philadelphia investors. In general the financing has been arranged on much the same lines as were successful in the case of the 'Indiana Syndicate,' in which the same set of capitalists was interested."

Pacific Electric Railway, Los Angeles, Cal.—The merger of the Pacific Electric Railway and the Los Angeles Pacific Railway will become effective on Feb. 1, 1911, under the name of the Pacific Electric Railway. It is said that the merger of the Los Angeles & Redondo Railway and the Pacific Electric Railway has been decided upon, but that it has not been accomplished as far as the appointment of operating officials is concerned.

Puget Sound Electric Railway, Tacoma, Wash.—The Puget Sound Electric Railway has announced its plans for refunding \$1,500,000 of coupon notes due in 1911 and 1912 and paying floating debt of \$1,100,000 incurred in making improvements. Of the coupon notes \$1,000,000 mature on Feb. 1, 1911, and \$500,000 on Feb. 1, 1912. It is proposed to sell \$1,700,000 of new notes which are to be secured by pledging \$2,429,000 of consolidated 5 per cent and new refunding bonds and also to sell \$500,000 of unissued preferred stock and the further amount of \$116,700 of preferred stock, which is part of the \$625,000 of preferred stock of the company heretofore reported as outstanding, which has been held in trust for the company.

Quebec Railway, Light & Power Company, Quebec, Que.—The Quebec Railway, Light & Power Company proposes to apply to the Railroad Commission of Canada for permission to deed certain parts of its lines to the Quebec County Railway.

Rochester Railway & Light Company, Rochester, N. Y.— The Rochester Railway & Light Company has applied to the Public Service Commission of the Second District of New York for permission to issue mortgage bonds to refund obligations which amount to \$810,000.

Seattle (Wash.) Electric Company.—Harris, Forbes & Company, New York, N. Y.; Lee, Higginson & Company, Boston, Mass., and Esterbrook & Company, Boston, Mass., offer for subscription at 98½ and interest yielding 5½ per cent \$2,721,000 of Seattle Electric Company consolidated and refunding mortgage sinking fund 5 per cent gold bonds dated Aug. I, 1907, and due on Feb. I, 1929, with interest payable on Feb. 1 and Aug. I in Boston, Mass. The bonds are callable at 105 and interest on or after Aug. I, 1912, in blocks of not less than \$500,000 or for the sinking fund. The Old Colony Trust Company, Boston, Mass., is trustee under the mortgage which secures the bonds.

Somerset Water, Light & Traction Company, Somerset, Ky.—The property of the Somerset Water, Light & Traction Company was sold under foreclosure on Jan. 16, 1911, at Somerset, Ky., to J. H. Gibson, Somerset.

South Penn Railways & Light Company, Cumberland, Md.—The South Penn Railways & Light Company, which was incorporated in New Jersey on Nov. 17, 1910, with an authorized capital stock of \$4,500,000, proposes, it is said, to merge the electric railways and electric light and power plants between Cumberland, Md., and Garret, Pa., including the Cumberland & Westernport Street Railway, and the Pennsylvania & Maryland Street Railway, and to construct an electric railway from Frostburg, Md., to Boynton, Pa. V. A. Murray, D. Bellinger and J. R. Bradley, Camden, N. J., were the incorporators of the company. Among those who are said to be interested in the company are James Hartshorne, W. Hicks and George K. Preston, New York.

United Properties Company of California, San Francisco, Cal.—The United Properties Company of California, the incorporation of which was noted in the ELECTRIC RAILWAY

Journal of Jan. 14, 1911, page 92, has organized as follows: F. M. Smith, president; William S. Tevis, first vice-president; R. G. Hanford, C. B. Zabriskie and W. R. Alberger, vice-presidents; C. B. Zabriskie, treasurer; F. W. Frost, secretary; Gavin McNab, general counsel. It was arranged that each official of the new company should be assigned to certain duties. F. M. Smith will have general supervision of all of the various kinds of business that are to be absorbed by the new company, but he will give most of his attention to the development of existing railways and those to be created. W. S. Tevis will assume direct charge of the water, electric light, heat, power and the land holdings. R. G. Hanford will have the financing under his direction. C. B. Zabriskie, in addition to his duties as treasurer, will attend to the handling of the funds and securities in New York. W. R. Alberger will be responsible for the railways, the water lines and general traffic matters.

Washington-Oregon Corporation, Vancouver, Wash .--The Washington-Oregon Corporation, which was organized in Vancouver on Dec. 9, 1910, with a capital stock of \$5,000,000, has concluded negotiations to take over the Vancouver Traction Company, the Vancouver Gas Company and the Vancouver Water Works Company.

Wilmington, New Castle & Southern Railway, New Castle, Pa.—Robert H. Richards purchased at foreclosure sale on Jan. 14, 1911, the portion of the Wilmington, New Castle & Southern Railway between New Castle and Delaware City. Mr. Richards is said to represent the bondholders.

Dividends Declared

Cities Service Company, New York, N. Y., monthly, 1/2 of 1 per cent, preferred; monthly, 1/4 of 1 per cent, common.

Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., quarterly, 11/2 per cent, preferred.

Harrisburg (Pa.) Traction Company, 3 per cent.

Helena Light & Railway Company, Helena, Mont., quarterly, 11/4 per cent, preferred.

Jacksonville (Fla.) Electric Company, 3 per cent, pre-

ferred; 3½ per cent, common. Metropolitan West Side Elevated Railway, Chicago, Ill., quarterly, 3/4 of 1 per cent.

North American Company, New York, N. Y., quarterly, 11/4 per cent.

Union Street Railway, New Bedford, Mass., quarterly, 2 per cent.

ELECTRIC RAILWAY MONTHLY EARNINGS AMERICAN PAILWAVE COMPANY

| | | A | MERICAN R | CAILWAYS | COMPAN | Υ. | | | |
|--|-------------------------------|------------|-----------|------------------------|-----------|-----------|--------------------|--|--|
| | | | Gross | Operating | Net | Fixed | Net | | |
| 1 | Period. | | Revenue. | Expenses. | Revenue. | Charges. | Income. | | |
| ım. | , Dec. | 1.0 | \$340,575 | | | | | | |
| I " | 66 | '09 | 316,867 | | | | | | |
| 6" | ** | 10 | 2,084,498 | | ***** | | | | |
| 6 | | '09 | 1,943,386 | **** | | | ***** | | |
| EL PASO ELECTRIC COMPANY. | | | | | | | | | |
| ım. | Nov. | 10 | \$59,985 | \$33,438 | \$26,548 | \$8,224 | \$18,324 | | |
| 1 " | ** | · '09 | 56,069 | 31,302 | 24,767 | 8,398 | 16,370 | | |
| 12 " | 44 | 10 | 635,157 | 364,663 | 270,494 | 100,916 | 169,578 | | |
| 12 44 | 44 | '09 | 596,484 | 364,863 | 231,621 | 96,580 | 135,041 | | |
| GALVESTON-HOUSTON ELECTRIC COMPANY. | | | | | | | | | |
| ım. | Nov. | ,10 | \$118,251 | \$69,922 | \$48,328 | \$26,026 | \$22,302 | | |
| T 66 | 84 | '09 | 109,058 | 61,246 | 47,812 | 22,986 | 24,827 | | |
| 12 " | 46 | 10 | 1,298,730 | 786,239 | 512,491 | 287,639 | 224,851 | | |
| 12 " | ** | '09 | 1,202,675 | 705,482 | 497,193 | 251,536 | 235,657 | | |
| | GRAND RAPIDS RAILWAY COMPANY. | | | | | | | | |
| ım. | Dec. | 10 | \$96,274 | \$54,973 | \$41,301 | \$19,248 | \$22,053 | | |
| 7 66 | , Dec. | 'og | 90,274 | 45,186 | 44,958 | 18,383 | 26,576 | | |
| 12 " | 41 | ,10 | 1,132,578 | 563,265 | 569,313 | 237,653 | 331,660 | | |
| 12 " | 44 | '09 | 1,029,011 | 492,855 | 536,156 | 227,056 | 300,100 | | |
| | W. | ANSAS | | ., | LIGHT CO | | 309,100 | | |
| | | | | Malor Selection (CE) | | | | | |
| ım. | , Dec. | ,10 | \$684,385 | \$417,682 | \$266,703 | \$191,069 | \$75,633 | | |
| 7 " | 61 | '09 '10 | 622,049 | 377,571 | 244,478 | 172,062 | 72,416 | | |
| 7 " | 44 | '09 | 4,513,591 | 2,701,178 2,396,205 | 1,812,413 | 1,323,245 | 489,168 568,370 | | |
| | EWICE | | | | 1,777,492 | 1,209,122 | | | |
| LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY. | | | | | | | | | |
| Im. | , Dec. | 10 | \$37,694 | \$24,706 | \$12,988 | \$13,735 | *\$747 | | |
| 6 " | 04 | ,09 | 36,417 | 24,925 | 11,492 | 15,186 | *3,694 | | |
| 6 " | 44 | ,10 | 292,985 | 166,617 | 126,368 | 82,413 | 43,955 | | |
| U | | '09 | 293,088 | 158,245 | 134,843 | 89,589 | 45,254 | | |
| MONTREAL STREET RAILWAY. | | | | | | | | | |
| Im. | , Dec. | 10 | \$377,274 | \$235,209 | \$142,065 | \$37,642 | \$104,423 | | |
| 1 " | ** | 09 | 337,563 | 212,006 | 125,557 | 34,481 | 91,076 | | |
| 3 " | 44 | 10 | 1,130,060 | 668,401 | 461,659 | 101,653 | 360,006 | | |
| 3 | •• | '09 | 1,026,441 | 586,879 | 439,562 | 96,345 | 343,218 | | |
| TAMPA ELECTRIC COMPANY. | | | | | | | | | |
| ım. | | 10 | \$43,249 | \$22,980 | \$20,269 | \$6,213 | \$14,056 | | |
| I ** | 41 | '09 | 52,900 | 28,583 | 24,317 | 4,594 | 19,723 | | |
| 12 " | 44 | 10 | 602,099 | 334,243 | 267,856 | 63,202 | 204,654 | | |
| 12 " | ** | '09 | 589,977 | 346,280 | 243,697 | 56,362 | 187,335 | | |
| | | | | | | | | | |

Trafficand Transportation

Service in Albany

The United Traction Company, Albany, N. Y., has replied to the Public Service Commission of the Second District of New York regarding the recommendations which it made to the company in regard to service over its Pine Hills and West Albany lines based on the investigation made for the commission by Charles R. Barnes, its electric railroad inspector. These recommendations were referred to at length in the Electric Railway Journal of Dec. 31, 1910, page 1283.

The company takes issue with many of the figures submitted by Mr. Barnes, and states finally that an analysis of its affairs will show that carrying out the wishes of the commission would greatly impair the credit of the company. If large cars are put on any line in Troy or Albany the company would be under pressure to equip every line in both cities with such cars, and as there are 237 closed cars on the company's line, of which 184 are 20 feet or under in size, a serious situation would be produced.

A number of important matters will have to be taken care of in the next few years other than the one now under consideration. Among them is the placing of the feed wires in the business district of Albany underground. The company says that this will involve an enormous outlay and the matter is of such vital importance that the engineer of the commission and the company's electrical engineers should reconcile their differences in figures, and the commission should give the officials of the company an opportunity to discuss the entire question after the figures have been recon-

In regard to the cost of power, the company asserts that actual conditions would make the cost 60 per cent more than the commission's figures. The company also questions the figures on the additional cost of power on the large cars over the 16-ft. cars, and says that there are many items of expense due to double-truck cars beyond the additional power consumed, namely, the wear and tear, the increased cost of accidents, the motor and truck repairs and the maintenance and paving expenses. The company concedes the correctness of the figures of the commission's engineer on the question of car houses, but says that if the small cars are replaced by double-truck cars these would have to be placed in the open or destroyed, and the book value of each car is placed in the neighborhood of \$2,200.

The company also insists that a new transformer station would be necessary. The company has in the past four years invested \$750.000 in a power station at Mechanicsville and in power lines, and is now considering a further investment of \$175,000. Had it not been for this investment Albany would have suffered in more ways than lack of street car facilities.

The company insists that the double-truck car which was recently tested ran more slowly than schedule during the rush-hour periods, whereas the schedule was maintained with the single-truck cars. After studying the result of the test of the three cars the officers of the company are sure that the requirements of Albany will be well cared for by providing a new design of single-truck car, that it will be possible for the company to run this car continuously at more frequent intervals than it could run the double-truck cars, that during the rush-hour period it will load and unload more quickly, that it will be operated at less cost, and that such a car can be provided by rebuilding the present 16-ft. cars. The company states that it would welcome an order to increase the speed of its cars in the downtown districts of Albany from 8 m.p.h. to 12 m.p.h., and will make every effort to obey such an order if made.

In relation to the body of the remodeled car No. 82, now running on the Pine Hills lines, the company says that the criticism is not a serious one, and that in remodeling other cars the platforms, height of steps, shape, size of seats or other changes can be made to suit the requirements; that the car was changed hurriedly to show and prove what could be done, with the special view of getting a car with exits at either end, wide platforms, wide doors, and that without inconvenience would carry a large number of people and allow them quick ingress or egress. The car probably rode less comfortably than the double-truck car because it was equipped with new springs.

The company is not aware of any double-truck car that weighs only 15 tons which is suitable for operation on the Albany bills. No question as to ability to operate double-The question has been truck cars has been involved. only as to the advisability of operating such cars. The cost of rebuilding all the old 16-ft. cars into cars of the type of No. 82, but changed to meet the objections of the commission's expert, would be not more than \$1,200 each, while a complete new car of this type would cost at least \$3,000. The cost of the double-truck cars would be \$7,000 each, and this would necessitate the scrapping of the 16-ft. cars, at a loss of \$2,200 each, less scrap value.

Adverse Report on Bill to Fix Fares of Standees

The following bill was recently introduced in the House of Representatives by Mr. Clark, of Florida, "to prescribe passenger rates on street cars within the City of Washington and to provide punishment for violating the provisions of the same":

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no passenger on any street car operated on any line within the city of Washington who on boarding a car is not furnished with a seat before traveling one block shall be required to pay more than 2 cents fare for such transportation.

"Sec. 2. That any conductor who shall collect more than 2 cents fare, in violation of the provisions of Section 1 of this act, and who, upon demand therefor, shall refuse to return the amount over and above the said 2 cents so collected, shall be deemed guilty of a misdemeanor and on conviction shall be fined not less than \$10 nor more than \$50 for each and every offense.

"Sec. 3. That in addition to the punishment prescribed in Section 1 the company on whose line such overcharge shall occur shall be liable in damages in the sum of \$10 for each such overcharge to the passenger at his suit in any court of competent jurisdiction.

"Sec. 4. That this act shall take effect immediately upon its passage and approval by the President or upon its

becoming a law without such approval."

The bill was referred to the Committee on the District of Columbia of the House, and was in turn referred to the Commissioners of the District of Columbia for examination and report. The Commissioners of the District have reported as follows:

"The bill provides that no passenger boarding any street car in Washington who is not furnished with a seat before traveling one block shall be required to pay more than 2 cents fare for such transportation, and makes it a misdemeanor, punishable by fine, for any conductor to violate its provisions. It also provides that the street railway on whose line an overcharge of fare is made shall be liable in damages, at the suit of the passenger, in the sum of \$10 for each such overcharge.

"Street railway companies operating in the District of Columbia under charters from Congress are authorized to charge a cash fare of 5 cents, but are required to sell six tickets for 25 cents. By section 16 of the Act of Congress approved May 23, 1908, entitled, 'An act authorizing certain extensions to be made of the lines of the Anacostia & Potomac River Railroad, the Washington Railway & Electric Company, the City & Suburban Railway of Washington, and the Capital Traction Company, in the District of Columbia, and for other purposes,' it is provided as follows:

"'Sec. 16. That every street railroad company or corporation owning, controlling, leasing or operating one or more street railroads within the District of Columbia shall on each and all of its railroads supply and operate a sufficient number of cars, clean, sanitary, in good repair, with proper and safe power, equipment, appliances and service. comfortable and convenient, and so operate the same as to give expeditious passage, not to exceed 15 m.p.h. within the city limits or 20 m.p.h. in the suburbs, to all persons desirous of the use of said cars, without crowding said cars. The Interstate Commerce Commission is hereby given power to require and compel obedience to all of the provisions of this section, and to make, alter, amend and enforce all needful rules and regulations to secure said obedience; and said commission is given power

to make all such orders and regulations necessary to the exercise of the powers herein granted to it as may be reasonable and proper; and such railroad companies or corporations, their officers and employees, are hereby required to obey all the provisions of this section, and such regulations and orders as may be made by said commission. Any such company or corporation, or its officers or employees, violating any provision of this section, or any of the said orders or regulations made by said commission, or permitting such violation, shall be punished by a fine of not more than \$1,000. And each day of failure or neglect on the part of such company or corporation, its officers or employees, to obey each and all of the provisions and requirements of this section, or the orders and regulations of the commission made thereunder, shall be regarded as a separate offense.'

"As will be seen by this section, street railroads are required to furnish and operate a sufficient number of cars to all persons desiring the use of said cars, without crowding, and the Interstate Commerce Commission is given power to enforce a compliance with these require-The commissioners believe that the enforcement of the provisions of this bill would be attended with so many difficulties that it would be practically inoperative, and would give rise to conditions of disorder, endangering the comfort and safety of the traveling public. During the rush hours of the morning and afternoon the street cars frequently carry many more passengers than are provided for by their seating capacity, and it is believed that it would be an impossibility for one conductor, or even two, to attempt to enforce the provisions of this bill. Such an attempt to carry out its provisions by collecting the lower rate of fare from all passengers on boarding the car, and then collecting an additional fare from those who obtain seats, or by collecting the full fare and giving a rebate to those passengers who are not provided with seats, would undoubtedly lead to interminable disputes between passengers and conductors, which would in all probability terminate in breaches of the peace. Moreover, it is not improbable that the practical effect of the passage of this bill might be to put a premium on traveling in a crowded car, and thereby aggravate the very condition which the bill intends to relieve, as a large proportion of the traveling public, to whom it would be no hardship to stand for one square, would deliberately board a car already over-crowded in order to effect a saving of car fare.

"The commissioners believe that the authority given the Interstate Commerce Commission to require a reasonably sufficient number of cars for carrying the traveling public should be ample to secure the desired result as far as it can be practically obtained, and they recommend adverse action

"In this connection the commissioners invite attention to the bill now pending in Congress conferring upon them the powers of a public service commission. If this legislation was passed matters of a character contained in this bill could be given consideration by the commissioners."

The Objection of the Interborough Rapid Transit Company to Service Order

Theodore P. Shonts, president of the Interborough Rapid Transit Company, New York, N. Y., has issued a statement explanatory of the company's application for a rehearing on the recent order of the Public Service Commission of the First District of New York regarding service in the subway. The company does not object to the order to furnish a seat to every passenger during the non-rush hours, but to the method of determining whether or not the order is obeyed.

The statement of the company follows:

"In view of the impression which seems to exist that the recent action of the Interborough Rapid Transit Company in requesting a rehearing regarding the last order of the commission, bearing date of Dec. 28, 1910, was a protest against this company's furnishing a seat to every passenger during non-rush hours, it is felt that in justice to ourselves the public should be told that the company has entered no such protest. There has been for some time in effect an order providing a seat for every passenger during non-rush hours, but the feature of the order of Dec. 28 which caused this company to request a rehearing was the fact that this

last order so modified the rule established by the commission when it first came into power, and which it has since adhered to, for determining whether the order was being violated as to double the chances of a technical violation of the commission's order by the company, besidumaking no allowances for accidents, unavoidable interruptions to the service, or an unexpected inflow of passengers at some point. What the company has objected to is not the order providing a seat for every passenger during the non-rush hours, but to the method of determining whether such order has been violated."

The rehearing before the commission, which was originally set for Jan. 12, 1911, has been postponed on account of the illness of counsel.

Five-Cent Zone Extended in Los Angeles.—The Los Angeles-Pacific Railway, Los Angeles, Cal., has extended the 5-cent fare zone on its Sixteenth Street-Venice line from Arlington, the former city limits, to the new city limits at Vineyard.

More Trains Added.—The Central California Traction Company has added two more trains each way between Stockton and Sacramento. One of them will be called the "Lodi Express" and will run via Lodi, without change of cars at Lodi Junction.

Want Car Stops Changed.—The Cincinnati Traction Company has received a request from Service Director Sundmaker to have cars make regular stops on the near side of the streets instead of on the far side as at present, especially in the business district.

Record of Accidents in Pennsylvania.—During the year 1910 187 people were killed and 4116 injured on Pennsylvania electric railways. The fatalities included 16 employees, 18 passengers and 27 trespassers. As compared to 1909 there was an increase of four killed on the electric railways.

New Car Service.—The Philadelphia Rapid Transit Company is now operating cars between Delaware Avenue and Market Street and Sixty-ninth Street and Market Street, in conjunction with the Philadelphia & West Chester Traction Company, over which route west of Sixty-third Street the cars pass.

Another No-Seat Ordinance.—Supervisor Hocks, of San Francisco. Cal., has submitted to the Council of that city a proposed ordinance which provides that passengers unable to secure seats on boarding a street car shall not pay more than a 3-cent fare. The bill has been referred to the public utilities committee of the Council.

Recommends Subway Where Canal Now Occupies Land.—A special committee of the Engineers' Club of Cincinnati, Ohio, has recommended that a proviso be inserted in the proposed bill which calls for the abandonment of a portion of the canal in Hamilton County, that a subway be constructed, to be under the control of the city, and that it be used by the interurban roads for an entrance to the city.

Ten-Car Trains in New York Subway.—The Interborough Rapid Transit Company, New York, N. Y., has placed several 10-car trains in regular service on its subway express lines. The company has announced that the work of extending the station platforms to accommodate the 10-car trains is well advanced, and that the number of 10-car trains in service will be increased as fast as the facilities of the company will permit.

Prepayment Cars in Brooklyn.—The Brooklyn Rapid Transit Company has placed two pay-within cars in operation on its Fifth Avenue line to operate from Thirty-sixth Street to Bay Ridge Avenue, and will soon place two pay-as-you-enter cars in operation on the same line. One of the pay-within cars has cross seats and the other has longitudinal seats. One of the pay-as-you-enter cars will have cross and the other longitudinal seats.

Reply Made to Protest.—The United Railways & Electric Company, Baltimore, Md., sent a reply to the protest of State Senator James Young and others concerning the fare and service on the Middle River line. At present cars are operated on a half-hour schedule with a 10-cent fare to Back River and a 15-cent fare to Middle River. In the reply the company claims that the schedule is arranged to meet traffic conditions and that the fare is just.

Officers Organize Club.—The executive officers and the department managers of the Lehigh Valley Transit Company, Allentown, Pa., have organized a "Get Together Club." which will meet once a month for a dinner, after which a discussion of various matters pertaining to the welfare and improvement of the company's service will be taken up. The idea of the club is not only to discuss the affairs of the company, but also to create a closer friendship among the department heads.

Employees to Receive Increase in Wages.—The Philadelphia & Westchester Traction Company has announced that the wages of its employees will be increased I cent an hour, beginning Feb. I, 1911. In the notice to the employees, A. Merritt Taylor, president of the company, said: "It becomes my pleasant duty to inform you that the increase in the business of our company this winter has been larger than I anticipated and that the time has arrived when we can announce a new wage scale."

Service in Atlanta.—The Railroad Commission of Georgia has adopted an order for a hearing in Atlanta on Feb. 2, 1911, at which the Georgia Railway & Electric Company has been asked to show why, among other things, a 5-minute headway should not be adopted on certain specified lines of the company during the rush hours, why a 2½-minute headway should not be adopted on other specified lines during the rush hours and why a properly regulated all-night service should not be inaugurated and maintained by the company.

Toronto Railway Situation.—As previously stated in the Electric Railway Journal, the Ontario Railway and Municipal Board on Dec. 19, 1910, ordered the suspension for one month of the pay-as-you-enter system on such cars of the Toronto Railway as were not equipped with a fare box upon the rear platform. The company obeyed the order of the board and the pay-as-you-enter system has since been in operation only on the Yonge Street and College Street lines. In the meantime A. B. Ingram, vice-chairman of the board, has been on a tour of the different cities in the United States collecting data in regard to prepayment systems so as to report to the board and have that tribunal decide upon the type of car to be used by the Toronto Railway.

Ruling by Maryland Commission.—In the case of the Old Frederick Road Improvement Association against the United Railways & Electric Company, Baltimore, Md., the Public Service Commission of Maryland has ordered the company to establish satisfactory connections between the present terminus of its Catonsville line at Stoddards and its Ellicott City line at a point one-half mile away. The commission in passing on the matter pointed out the inconvenience caused by the abandonment of the trackage. The commission was further asked to reduce the fare on the Ellicott City line and order certain changes in the routing of the cars operated over it, but declined to do so on the ground that the facts set forth did not warrant such action. It has, however, accepted the proposition of the company which was made voluntarily to grant transfers from eastbound Ellicott City cars to eastbound Towson cars.

To Save Human Life.—The great number of deaths due to railway accidents in California has caused Frederick S. Hughes, founder of the American Safety League, to organize a branch of the order in Southern California. The next two months will be spent in giving instruction to some 65,000 pupils in the schools and colleges throughout the district around Los Angeles, the whole expense of which will be borne by the Pacific Electric Railway and the Los Angeles Railway. The rules 10. patrons as to how to ride in safety are: "Wait until the car actually stops before getting on or off." "Don't step off a car backwards. Broken heads have resulted from this indiscretion." "Wait a second before starting to cross a street. Look. Open your ears. Then cross safely and go home without the help of an ambulance." "Teach the children that streets are not public playgrounds. Keep them on the sidewalks. Tell them every day to look out for wagons, automobiles and street cars." "Don't put your head or your arms out of car windows." "Don't ride on street car steps unless you must, then be careful." "Warn children against stealing rides." "Eternal caution is the secret of safety."

Personal Mention.

Mr. Edwin A. Barnitz, who has been purchasing agent of the York (Pa.) Railways, has been elected treasurer of the company. Mr. Barnitz will also retain the position of purchasing agent.

Mr. Charles R. Scott has been appointed master mechanic of the Dedham & Franklin Street Railway and the Medfield & Medway Street Railway, Westwood, Mass., to succeed Mr. J. H. Smith.

Mrs. Lena Irwin Sweeney has been elected vice-president of the Indianapolis, Columbus & Southern Traction Company, Columbus, Ind., to succeed Mr. W. G. Irwin, who has been elected president of the company.

Mr. B. E. Parker, formerly division superintendent of the Indiana Union Traction Company at Marion, Ind., has been appointed superintendent of transportation of the Rockford & Interurban Railway, Rockford, Ill.

Mr. M. G. Stees, contracting agent for the Edison Electric Light Company, York, Pa., has been elected secretary of the York Railways. Mr. Stees will also continue as contract agent for the Edison Light Company.

Mr. W. G. Irwin, vice-president and purchasing agent of the Indianapolis, Columbus & Southern Traction Company, Columbus, Ind., has been elected president of the company to succeed his father, Jos. I. Irwin, deceased.

Mr. J. B. Hammond, who has been connected with the Galveston-Houston Electric Railway, Galveston, Tex., since the construction of the road was started, has been appointed assistant superintendent of the company in charge of construction.

Mr. Wm. P. Kellett has resigned as general manager and chief engineer of the Grand Valley Railway, Brantford, Ont., to become general manager and chief engineer of the Lake Erie & Northern Railway, Brantford, which will build an electric railway from Brantford to Port Dover.

Mr. W. A. Sigsbee, who has been assistant auditor of the Los Angeles & Redondo Railway, Los Angeles, Cal., for some time, has been transferred to the Southern Pacific Company as a special auditor, with headquarters in San Francisco, and the position of assistant auditor with the Los Angeles & Redondo Railway has been abolished.

Mr. W. G. Ross, fourth vice-president of the American Electric Railway Association, is spending January in Egypt. He left Montreal Nov. 12 on a trip abroad, and he does not expect to return until next June. While in London he completed financial arrangements for important extensions to the electric railway system of the Quebec Railway, Light & Power Company, of which he is president.

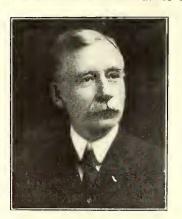
Mr. James F. Shaw, president of the Providence & Fall River Street Railway, Swansea Center, Mass., president of the Citizens' Electric Street Railway, Newburyport, Mass., and formerly president of the American Street & Interurban Railway Association, has been elected president of the Long Acre Electric Light & Power Company, New York, N. Y., which has recently passed to the control of New England interests.

Mr. George H. Hart, who has been foreman of the car house of the Pawcatuck Valley Street Railway, Westerly, R. I., for three years, has been appointed superintendent of the company. Mr. Hart was foreman of the New London (Conn.) Street Railway for seven years, and was also foreman of the New London & East Lyme Street Railway for two years. For several years previous to entering street railway work he was employed by the New London Northern Railroad.

Mr. Wilbur B. Foshay has resigned as manager of the Pacific Power & Light Company, Walla Walla, Wash., to become manager of the Washington-Oregon Corporation, Vancouver, Wash., which has taken over the Vancouver Water Works Company, the Vancouver Traction Company and the Vancouver Gas Company. Mr. Foshay was with the New York Central & Hudson River Railroad for about five years. He then entered the employ of the United Gas Improvement Company at its branch at Tarrytown, N. Y. He next became assistant to the manager of the water, light and gas company at Hutchinson, Kan. Subsequently he entered the employ of one of the subsidiary companies of the New Jersey Zinc Company at Depew, Ill. He was

also general manager of the gas and electric properties at Fort Dodge, la., and manager of the natural gas and electric properties at Wichita, Kan.

Mr. George B. Wheeler, who was elected president of the Wisconsin Electrical Association at the annual meeting of the association in Milwaukee on Jan. 18 and 19, 1911, was



G. B. Wheeler

graduated from Bowdoin College. After engaging in journalism for a number of years Mr. Wheeler entered the electric railway field in 1891 as general manager of the Eau Claire Street Railway, Light & Power Company, Eau Claire, Wis. Subsequently he was receiver of the property in the United States Court, and after the reorganization he was elected secretary and general manager of the property, which has since been succeeded by the Chippewa Valley Railway, Light & Power Company. This. company now owns all the

water power on the Menominee River and a valuable water power on the Chippewa River and supplies all the current used in Eau Claire, Chippewa Falls, Menomonie and Bloomer, Wis., Red Wing, Minn.. and numerous small towns.

Mr. L. H. McCray, who was superintendent of the Atlantic Shore Line Railway, has been elected general manager of the Atlantic Shore Railway, Kennebunkport, Maine, which has succeeded the Atlantic Shore Line Railway. Mr. McCray entered the employ of the Atlantic Shore Line Railway in 1908 and shortly afterward was appointed trainmaster and assistant to Mr. E. B. Kirk, general manager of the company. Mr. McCray began his railway work with the Winnebago Traction Company, Oshkosh, Wis., which he served in various capacities from 1904 until 1907, when he resigned as assistant foreman of the transportation department of the company to become superintendent of the Sterling, Dixon & Eastern Railway, Sterling, Ill. Mr. Mc-Cray continued with the Sterling, Dixon & Eastern Railway, Sterling, Ill., until March 15, 1908, when he resigned from the company to become connected with the Atlantic-Shore Line Railway.

Mr. E. B. Peck, Indianapolis, Ind., the newly elected president of the Central Electric Railway Association, was born in the western part of New York State in 1860 and



E. B. Peck

was educated in the common schools of that State. During his early business career Mr. Peck moved to-Kansas City, Mo., where he was associated with the Barber Asphalt & Paving Block Company for several years. About 11 years ago he went to Indianapolis assecretary to Mr. H. J. Mc-Gowan, who had recently secured control of the properties in and around Indianapolis with which he is now associated, and gained his first railroad experience while acting assecretary to Mr. McGowan.

In 1900 Mr. Peck was appointed manager of the Broad Ripple Traction Company, Indianapolis, and since that time has had many executiveduties in connection with the McGowan properties. In 1907 he was elected vice-president and comptroller of the-Indianapolis Traction & Terminal Company, in which capacity he has general supervision of terminals and buildings owned and controlled by the company.

Mr. John Fennimore, who was appointed assistant general manager of the Joplin & Pittsburg Railway, Pittsburg, Kan... recently, was born in Pittsburg on July 15, 1881, and has-

been connected with the Joplin & Pittsburg Railway for seven years. Prior to June 1, 1908, Mr. Fennimore served as a motorman and a conductor. On June 1, 1908, Mr. Fennimore was placed in the department of claims and served as head of the claim department till he was made assistant general manager of all the lines of the Joplin & Pittsburg Railway. Prior to June, 1910, Mr. Robert Biles was in charge of the south lines of the Joplin & Pittsburg Railway, covering about 75 miles of trackage, and Mr. L. H. Phillips was general manager and superintendent of the Pittsburg & Kansas City Railway, covering about 30 miles. Those two roads were consolidated in June, 1910, and Mr. Fennimorc was subsequently given the position of assistant general manager of the 105 miles of trackage, as both Mr. Phillips and Mr. Biles resigned. The company also does a lighting business in the towns in Southwest Missouri in which it operates.

Mr. H. E. Chubbuck, executive vice-president and general manager of the Illinois Traction System, Peoria, Ill., was elected president of the Illinois Electric Railway Associa-

tion at the meeting held in Chicago, Ill., on Jan. 19, 1911, at which the association organized permanently. Mr. Chubbuck is one of the most influential men in the electric railway field in the Middle West. For more than 12 years now he has been associated with Mr. William B. McKinley in the management of the Illinois System Traction and other properties familiarly referred to as McKinley properties. Biographical sketches referring length to Mr. Chubbuck's railway and business ca-



H. E. Chubbuck

reer were published in the ELECTRIC RAILWAY JOURNAL of Oct. 17, 1908, and Feb. 19, 1910. The systems embraced in the Illinois Traction System and the Western Railways & Light Company aggregate about 700 miles of line and are greatly diversified. Despite this Mr. Chubbuck has been very successful in bringing them to a high state of operating efficiency and in preserving and fostering the friendly relations between the companies and the public and in maintaining an *esprit de corps* among the employees.

OBITUARY

G. E. Schmelz, vice-president of the Newport News & Old Point Railway & Electric Company, Newport News, Va., is dead. Mr. Schmelz was a member of Schmelz Brothers, bankers, Newport News, Va.

Charles J. Hughes, Jr., Democratic United States Senator from Colorado, died at his home in Denver, Col., on Jan. 11, 1911, after nearly a year's illness. Mr. Hughes was born in Kingston, Mo., on Feb. 16, 1853. He was graduated from the University of Missouri in 1873 and taught school for a time, but abandoned teaching for the law in 1877, when he went to Colorado. Mr. Hughes was counsel for the Denver (Col.) Tramway Company before he went to Washington as Senator from Colorado.

Henry W. Brown, auditor to the receivers of the Metropolitan Street Railway, New York, N. Y., and president of the Transportation Equipment Company, died at his apartment in New York on Jan. 19, 1911. Mr. Brown was born at Wilkes-Barre, Pa., March 4, 1876. He was educated in the public schools of Buffalo, N. Y. When a young man he went to St. Paul and became connected with the St. Paul & Duluth Railroad, with which he continued until its acquisition by the Northern Pacific Railroad. He came to New York in 1900 and in 1906 was made comptroller of the New York City Railway. In 1907 he was appointed general auditor of the New York City Railway and controlled companies, and on Sept. 25, 1907, was made auditor to the receivers of the Metropolitan Street Railway. He was a member of the New York Railroad Club and the American Electric Railway Accountants' Association.

Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (*) indicates a project not previously reported.

RECENT INCOPORATIONS

*Willimantic & Stafford Street Railway, Stafford Springs, Conn.—Application for a charter has been made in Connecticut by this company to build an electric railway through Tolland and Windham Counties to connect Willimantic, Mansfield Center, South Willington, Spring Hill, Storrs, Mansfield and Stafford Springs. Incorporators: L. T. Storrs, A. W. Buchanan and C. W. Comstock.

*Indianapolis, Nashville & Southern Traction Company, Indianapolis, Ind.—Application for a charter has been made by this company in Indiana to build an electric railway to connect Indianapolis, Bloomington, Bedford, Mitchell, Nashville, Paola, French Lick and Evansville. Capital stock, \$150,000. Headquarters: Indianapolis. Incorporators: John A. Johnson, Thomas F. Wakeland, John A. Shaffer, Robert J. Espy and George W. Long.

Twin City Electric Company, South Bend, Wash.—Incorporated in Washington to build an electric railway from South Bend to Raymond, a franchise has been granted in South Bend and work will begin in the spring. Capital stock. \$10,000. Incorporators: J. D. Crcary, Aberdeen, and J. B. Bridges. [E. R. J., Jan. 21, '11.]

FRANCHISES

Burbank, Cal.—The Pacific Electric Railway has received a 50-year franchise from the Board of Supervisors to build a line on Fourth Street in Burbank.

San Diego, Cal.—The San Diego Electric Railway has received a franchise from the City Council to extend its railway from Old Town to La Jolla.

Bridgeport, Conn.—The Bridgeport & Danbury Electric Railway, Bridgeport, will ask the Common Council for a franchise to build a single track line from the present terminal of the Connecticut company on North Main Street, in Bridgeport, to the Trumbull town line. A. W. Sperry, chief engineer. [E. R. J., July 9, '10.]

Terryville, Conn.—The Bristol & Plainville Tramway, Bristol, has asked the Secretary of State for an extension of its franchise so that it may extend its lines on Agency Avenue and South Main Street, in Terryville.

Louisville, Ky.—The Louisville Railway will ask the City Council for a franchise to extend its Main Street line to Thirtieth Street in Louisville.

East Orange, N. J.—The Public Service Railway, Newark, has asked the City Council for a franchise to connect the Orange and Passaic Valley line with the Orange road line, in Montclair, by means of a track through North Park Street.

Patchogue, N. Y.—The Suffolk Traction Company, Patchogue, has asked the Town Board for an extension of time on its franchise for the completion of its cross-island section between Patchogue and Port Jefferson.

Hamilton, Ohio.—The Cincinnati Traction Company will ask the City Council for certain franchises to build extensions of its lines in Hamilton.

Medford, Ore.—Dr. J. F. Reddy, representing a syndicate of capitalists who contemplate building an electric railway through the Rogue River Valley, will ask the City Council for a franchise to construct a railway in Medford. [E. R. J., Jan. 1, '10.]

*Chattanooga, Tenn.—C. E. James will ask the City Council for a franchise to build several interurban railway lines into Chattanooga.

Palestine, Tex.—The Corpus Christi & Interurban Railway, Corpus Christi, will ask the City Council for a franchise to build its railway through Palestine. V. S. Heinly, Corpus Christi, secretary.,

TRACK AND ROADWAY

Mobile Light & Railroad Company, Mobile, Ala.—This company will build an extension of its Spring Hill Avenue line several miles long to connect with the Government Street line in Mobile.

*Arkansas Interurban Railway, Little Rock, Ark.—This company is preparing plans for building a 70-mile railway from Little Rock to Hot Springs and a belt line at Little Rock. H. H. Edwards, 764 Oakwood Boulevard, Chicago, is interested.

Stockton Terminal & Eastern Railroad, Stockton, Cal.—This company advises that it is now constructing a 13-mile steam railway between Stockton and Linden, and that it will electrify this line next year. Nothing has yet been decided as to the necessary equipment. It also expects to build a railway from Bellota to Jenny Lind, a distance of 13 miles, during 1911.

Wilmington, New Castle & Southern Railway, New Castle, Del.—This company contemplates numerous improvements to its railway, and it is now surveying for several extensions.

*De Leon Springs, Fla.—It is stated that Col. R. A. Hammond, New York, has organized a company to build an electric railway from De Leon Springs to De Land.

Illinois Traction System, Peoria, Ill.—During 1911 this company proposes to build from Morris to Joliet, via Minooka and Rockdale, a distance of about 22 miles. This will be an extension to the Chicago, Ottawa & Peoria Railway, one of the corporations of the Western Railways & Light Company, under same management and control as this company.

Bloomington, Pontiac & Joliet Electric Railway, Pontiac, Ill.—It is said that this company will build an extension of its line from Chenoa to Bloomington.

*Goshen, Ind.—John M. Kinney is considering the construction of an interurban railway from Goshen to Albion and Kendallville. This will complete the gap between Butler and South Bend.

Ft. Wayne & Toledo Electric Railway, Harlan, Ind.—This company states that considerable grading has been done and some bridges are built. It expects to build its proposed 44-mile electric railway to connect Ft. Wayne and Marysville, Ind., and Hicksville, Bryan, Farmer and Toledo, Ohio, with a spur of 11 miles to Montpelier, Ohio, during 1911. R. T. Bastress, Harlan, general manager. [E. R. J., Nov. 12, '10.]

Indiana Northwestern Traction Company, Monticello, Ind.—Owing to the failure of Eugene Purtelle, of Chicago, who was interested in the Indiana Northwestern Traction Company, it is probable that the plans of this company to build an electric railway to connect Cedar Lake, Hammond, Crown Point and Chicago will probably be abandoned, especially as the company was unable to secure a franchise in Hammond. Surveys had been partially completed and four miles of grading had been done. [E. R. J., Sept. 17, '10.]

Boone (Ia.) Electric Company.—This company contemplates building a mile extension to its railway in Boone. It also expects to construct an amusement park at an initial cost of about \$15,000.

Charles City & Western Railway, Charles City, Ia.—This company completed and placed in operation on Jan. 1 its 14-mile railway between Charles City and Marble Rock. C. W. Hart, president.

Portland (Maine) Railroad.—This company has been asked to extend its electric railway line in Cape Elizabeth from its present stopping place at the Pond Cove School House to Crescent Beach.

Frederick (Md.) Railroad.—This company will build from Jefferson to Brunswick, a distance of 8 miles, during 1911.

*Crystal Valley, Mich.—I. C. Harwood, Crystal Valley, and associates are said to be promoting plans for building an electric railway to connect Crystal Valley and Pentwater.

Lansing & Northeastern Electric Railway, Detroit, Mich.—It is stated that this company, which has nearly completed its 30-mile electric railway from Lansing to Owosso, will take over the Owosso & Corunna Electric Company's line and operate it in connection with its new line.

Meridian Light & Railway Company, Meridian, Miss.— About 2 miles of new track will be constructed by this company during 1911.

Metropolitan Street Railway, Kansas City, Mo.—This company has completed and placed in operation the exten-

sion of its Roanoke line, known as the Forty-fifth Street loop, in Kansas City.

Helena Light & Railway Company, Helena, Mont.—This company is securing right of way for building a 2-mile extension of its railway in Helena.

Newark & Marion Railway, Newark, N. Y.—This company has under consideration a proposition to extend its railway from Marion to Williamson, N. Y., and thence to Lake Ontario, probably to Poultneyville. Such an extension will give this company a lake port as well as connection with the Rome, Watertown & Ogdensburg division of the New York Central lines.

New York State Railways, Rochester, N. Y.—About 2 miles of railway will be built by this company in Rochester during 1911.

Syracuse & South Bay Electric Railroad, Syracuse, N. Y.— This company is now making surveys from a point just north of North Syracuse, at Stop 9, on the Bay Road, by way of Brewerton to Central Square. It is expected to extend this branch to Watertown.

Syracuse, North Shore & Northern Railroad, Syracuse, N. Y. —This company, which is building an extension of its railway from Fulton to Oswego, has been able to perform but little work owing to the extreme severity of the weather since Dec. 15, but it is expected that the line will be in operation by midsummer, when through limited service will be installed from Syracuse to Rochester.

Tidewater Power Company, Wilmington, N. C.—This company will build about 2 miles of track during 1911.

Carolina Traction Company, Winston-Salem, N. C.—Contracts will be awarded immediately by this company for building its 92-mile interurban railway to connect Winston-Salem, Rural Hall, Lawsonville and Danbury, N. C., and Floyd, Va. The company has secured water rights and will erect a power plant at Dan River. A. M. Clark, Southern Pines, N. C., president.

Columbus, Marion, Upper Sandusky & Toledo Traction Company, Marion, Ohio.—Frank M. Ohl, Toledo, is engaged in interesting local men at Tiffin and other places in the proposed electric railway to connect Marion, Tiffin, Upper Sandusky, Fostoria, Columbus and Toledo. [E. R. J., Feb. 19, '10.]

Hamilton & Buffalo Railway, Hamilton, Ont.—It is reported that this company is considering plans for the electrification of the Hamilton and Waterford branch of its railway.

Niagara, St. Catharines & Toronto Railway, St. Catharines, Ont.—This company has completed and placed in operation its new line from Welland to Port Colborne, on Lake Erie. Passengers will be transferred temporarily at the Michigan Central Railway crossing south of Welland, pending permission from the Railway Commissioners to put in grade crossing, after which through cars will be operated.

Oregon Electric Railway, Portland, Ore.—During 1911 a 75-mile extension will be constructed by this company between Salem and Eugene.

Lancaster & York Furnace Street Railway, Lancaster, Pa.—George B. Atlee, of George B. Atlee & Company, Philadelphia. Pa., has arranged to take over this company and the Lancaster & Southern Street Railway, and proposes to make a number of changes in the route of the two railroads so as to make them continuous and also to build several extensions.

Aberdeen (S. D.) Street Railway.—From 2 to 4 miles of track will be built by this company in Aberdeen during this year.

Houston (Tex.) Electric Railway.—About 4 miles of new track will be built by this company in Houston during 1911.

*Malad, Utah.—Earle M. Dives and Lewis D. Jones, Malad, are said to be completing the preliminary arrangements for building a 65-mile electric railway to connect Malad and American Falls.

Bellington-Skagit Railway, Bellington, Wash.—This company will construct its 32-mile railway from Bellington to Mount Vernon during 1911. A branch will be extended to Sedro Woolley. Charles M. Drummond, president. [E. R. J., Aug. 6, '10.]

Spokane (Wash.) Traction Company.—Preparations are being made by this company to extend its Corbin Park line a distance of 2 miles, and its North Howard Street line about a mile in Spokane.

Morgantown & Dunkard Valley Railroad, Morgantown, W. Va.—The building of a 27-mile extension from Morgantown to Fairmont is being planned by this company. E. Herch, general manager.

SHOPS AND BUILDINGS

Los Angeles Pacific Company, Los Angeles, Cal.-It is reported that this company will build a new car house on the Southern Pacific Athletic Park. The company's new car house at Sherman is about completed.

Iowa City (Ia.) Electric Railway .- It is reported that this company has awarded the contract to T. S. Leabke & Company, 112 Clark Street, Chicago, for building a 1-story station at Murphysboro, Ill. The structure will be 24 ft. x 123 ft., and of brick construction. It is expected to begin work

Old Colony Street Railway, Boston, Mass.—This company has completed and placed in operation its new car house at Brockton. It has a capacity of 75 cars, and has cement floors, pits and sand-dryers for the cars. It also has a steam-heated lobby for the men.

Detroit (Mich.) United Railway.—This company is preparing plans to build a depot at Royal Oak, Mich., in the spring.

Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn.—This company is said to be considering plans for building a 1-story station in Lakeville this summer. The cost is estimated to be about \$2,500. This company is also planning to build a station in Northfield.

Twin City Rapid Transit Company, Minneapolis, Minn.-This company and the Minneapolis, St. Paul, Rochester & Dubuque Traction Company are considering plans for building a passenger station in Minneapolis, to be used jointly by both these companies. The cost of the structure will be about \$5,000.

Great Falls Electric Properties, Butte, Mont.-The car houses and repair shops of this company at Black Eagle Park, Great Falls, were destroyed by fire on Jan. 12. The loss is estimated to be about \$20,000, all of which is covered by insurance. It is expected that the company will build new car houses and repair shops on a new site to be selected and construction will begin as soon as the weather permits. A temporary building will be erected near the old site.

Morrisburg & Ottawa Electric Railway, Ottawa, Ont .-It is stated that this company will soon erect a freight and passenger terminal station at Main Street and Hawthorne Avenue, in Ottawa, in the near future. [E. R. J., Jan. 21, '11.]

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa .- A site in Waynesboro has been bought by this company upon which a new car house and warehouse will be erected during the present year.

POWER HOUSES AND SUBSTATIONS

Boone (Ia.) Electric Railway.—This company will install four 300-hp boilers, one 500-kw unit, 2300-volt, 60-cycle three-phase; one 200-kw motor generator set 500-volt d.c. for street railway and switchboard for above. It will also build a concrete stack 210 ft. high, 10 ft. at top. John Keynolds Boone, purchasing agent.

Lancaster & York Furnace Street Railway, Lancaster, Pa.—George B. Atlee, of George B. Atlee & Company, Philadelphia, Pa., has arranged to take over this company and the Lancaster & Southern Street Railway, and will operate these properties in the future as one, from a common power house.

Warren & Jamestown Street Railway, Warren, Pa .- This company expects to change the line and equipment of its railway from the present single-phase alternating current to the direct-current system, thereby necessitating the building of two new rotary converter substations, which will probably be located at Frewsburg and North Warren.

Manufactures & Supplies

ROLLING STOCK

City & Suburban Railway, Brunswick, Ga., will purchase one gasoline motor car.

Philadelphia & Easton Electric Railway, Doylestown, Pa., is in the market for two additional cars.

Manhattan City & Interurban Railway, Manhattan, Kan., will purchase three new interurban cars.

Union Street Railway, New Bedford, Mass., will purchase 32 new cars as authorized by the directors.

Norfolk & Portsmouth Traction Company, Norfolk, Va., has ordered from 8 to 15 pay-as-you-enter cars.

Sydney & Glace Bay Railway, Sydney, N. S., will purchase one four-motor equipment for snow plow.

Sioux Falls (S. D.) Traction System is in the market for two semi-convertible cars and one or two open cars.

Shawnee (Okla.) Electric Railway is in the market for eight interurban passenger cars and one baggage car.

Citizens Railway, Waco, Tex., is in the market for six 30-ft. 8-in. semi-convertible, single-end prepayment cars.

Winona Railway & Light Company, Winona, Minn., is in the market for four 20-ft. passenger cars, with complete equipment.

Corpus Christi Street & Interurban Railway, Corpus Christi, Tex., is in the market for four 32-ft. or 34-ft. semiconvertible cars.

Denver (Colo.) City Tramway has ordered 16 45-ft. closed cars, with Brill trucks, and 25 38-ft. trail cars, for city service, from the Woeber Car & Manufacturing Company, Denver, Colo.

Geary Street Municipal Railway, San Francisco, Cal., noted in the Electric Railway Journal of Jan. 21, 1911, as being in the market for 200 cars, will purchase only 20 steel cars of the pay-as-you-enter type.

Connecticut Company, New Haven, Conn., has ordered 200 GE-80, four-motor car equipments, with K-35 controllers and 20 GE standard straight-air brake equipments, with CP-27 compressors, from the General Electric Company.

Portland Railway, Light & Power Company, Portland, Ore., has placed an order with the General Electric Company for 40 70-hp, two-motor car equipments. Of these 25 will be GE-218, type B motors, with K-11-A controllers, while 15 will be GE-210, type E motors, with Sprague-General Electric type M control.

Lake Shore Electric Railway, Cleveland, Ohio, noted in the Electric Railway Journal of Jan. 21, 1911, as having ordered four passenger, baggage and smoking cars from the Jewett Car Company, Newark, Ohio, has specified the following details:

Seating capacity..........64 Air brakes....Westinghouse Weightbronze Length of body...49 ft. 7 in. Curtain fixt. .. Curtain S. Co. Over vestibule......59 ft. Curtain material...Pantasote Width over sills....8ft.4in. Hand brakes......geared Over posts at belt..8ft.4in. Heating system...hot water Sill to trolley base..oft. 5 in. Headlights..... Mosher arc Interior trim.....mahogany Seating material......plush Underframecomposite Trolley retrievers..Knutson

TRADE NOTES

Sangamo Electric Company, Springfield, Ill., has made a large shipment of integrating mercury flotation watt-hour meters to Manila, Philippine Islands.

McKeen Motor Car Company, Omaha, Neb., has shipped two 70-ft., 200-hp gasoline motor cars to the Southern Pacific Railroad under their own power.

Lackawanna Steel Company, New York, N. Y., has appointed H. H. Barbour district sales agent for the metropolitan district with offices at 2 Rector Street, New York.

Baldwin Locomotive Works and the Standard Steel Works Company, Philadelphia, Pa., have moved their St. Louis offices from 914 Security Building to 1613 Wright Building.

Carnegie Steel Company, Pittsburgh, Pa., announces that H. P. Bope, vice-president of the company, has been appointed general manager of sales, to succeed S. A. Benner.

McGuire-Cummings Manufacturing Company, Chicago, Ill., has appointed M. L. Kirschke, Jr., mechanical engineer of the company. Mr. Kirschke was formerly connected with the Pullman company.

Chicago Pneumatic Tool Company, Chicago, Ill., has acquired the gasoline hand-car business of the Duntley Manufacturing Company, Chicago, Ill., and in future will make these cars on a large scale.

Hall Signal Company, New York, N. Y., has appointed H. B. Taylor special designing engineer of the company. Mr. Taylor formerly held a similar position with the Federal Signal Company, Albany, N. Y.

Ackley Brake Company, New York, N. Y., has shipped a large number of brakes to the Sociedad Comercial de Montevideo and also to the Trasatlantica Compania de Tranvias Electricos, Montevideo, Uruguay.

Perry Ventilator Corporation, New Bedford, Mass., has received an order to equip with its ventilating system 50 paywithin cars now being built for the Boston Elevated Railway at the works of the Laconia Car Company.

Pittsburgh Wood-Preserving Company, Pittsburgh, Pa., has elected Grant B. Shipley president of the company. Mr. Shipley recently resigned as engineer of mining and timber preserving machinery of the Allis-Chalmers Company, Milwaukee, Wis.

Indian Refining Company, Cincinnati, Ohio, has appointed William Stevenson special representative, with headquarters at Chicago, Ill. Mr. Stevenson has been connected with the McGuire-Cummings Manufacturing Company for a number of years.

Henry B. Seaman has opened an office as consulting engineer for railway, bridge and valuation work, at 165 Broadway, New York. Mr. Seaman resigned in September, 1910, as chief engineer of the New York Public Service Commission, First District, after serving three years.

National Brake & Electric Company, Milwaukee, Wis., has completed additions to its steel foundry which will now give a floor space of 80 ft. by 725 ft. The new machine shop and warehouse, which are now under construction, will be completed about April I, 1911. With these new facilities the capacity of the plant will be more than doubled.

Edgar Allen & Company, Limited, Imperial Steel Works, Sheffield, England, whose principal American office and warehouse is at Chicago, Ill., announces that agency arrangements have been made with Roehm & Davison, Detroit, Mich., J. L. Osgood, Buffalo, N. Y., and John J. Greer & Company, Inc., Baltimore, Md.

American Ship Windlass Company, Providence, R. I., has sold eight Taylor stokers to the Springfield Street Railway which is making a determined effort to eliminate smoke in its power plant. Each stoker is to be used under a 375-hp B. & W. boiler. In addition to the elimination of smoke this company expects that the Taylor stokers will enable it to carry its entire load on one boiler room, whereas at present it is operating two boiler rooms, one of which is hand-fired and the other stoker fired. The present type of stoker is to be replaced by the Taylor.

William S. Turner has resigned as managing engineer of the northwestern office of W. S. Barstow & Company at Portland. Orc., having practically completed the work upon which he has been engaged in that city during the past three years. This has consisted in a considerable amount of interurban railway construction for the Oregon Electric Railway and supervising the contract which W. S. Barstow & Company had for underground electric conduit construction for the Portland Railway, Light & Power Company. Mr. Turner has had long experience in electric railway construction, having been a member of the firm of Woodbridge & Turner, which did a great deal of pioneer work in electric railroading. Later Mr. Turner built some electric railroads in New Zealand for J. G. White & Company, with whom he was connected for some eight years. After a short vacation in the East Mr. Turner expects to make Portland his home and possibly to engage in business there on his own account.

American Brake Shoe & Foundry Company, New York, N. Y., has issued its report for the fiscal year ended Sept. 30, 1910. According to Otis H. Cutler, the president, the company enjoyed the most profitable year in its history, the net earnings being \$1,022,684, after making the usual liberal provision for depreciation and reserve accounts. While the item of cost of melted metal showed a slight increase per ton for the year over the preceding year, the shop cost of brake shoes at all plants for 1910 was substantially the same as for the previous year. On Feb. 24, 1910, the stockholders of the company authorized an increase in the capital stock from \$3,000,000 preferred stock and \$3,000,000 common stock to \$5,000.000 of each class, immediately following which \$1,000,000 of preferred stock was issued and subscribed for by the stockholders at 105, and \$1,000,000 of common stock was issued for property acquired, making the total outstanding issue on Sept. 30, 1910, \$4,000,000 of preferred stock and \$3,600,000 of common stock. Subsequently the company acquired the patents and properties of the Featherstone Foundry & Machine Company and the National Brake Shoe Company, Chicago, Ill., thereby adding three foundry plants-one at Burnside, Ill., one at Melrose Park, Ill., and one by lease in Chicago. A new plant in the Chicago district is made necessary, however, by the sale by the company of its Chicago Heights brake-shoe foundry and plans have been made for a new plant which the company believes represent the most complete, efficient and economical brake-shoe foundry that it is possible to design at this time. A suitable site has been purchased and it is proposed to erect this plant, at a total expense for site, buildings and equipment of approximately \$300,000, with a guaranteed output of at least 100 tons of brake shoes per day.

ADVERTISING LITERATURE

N. W. Halsey & Company, New York, N. Y., has issued a booklet entitled "The Most Satisfactory Bonds."

Arthur S. Partridge, St. Louis, Mo., has issued list No. 36, of second-hand electrical and steam equipment for January, 1911.

Federal Storage Battery Car Company, New York, N. Y., has issued a catalog illustrating and describing Beach cars, which are equipped with Edison storage batteries.

Electric Storage Battery Company, Philadelphia, Pa., has recently issued bulletin No. 130, on the installation of the "Chloride Accumulator" for the Slate Belt Electric Street Railway, Pen Argyl, Pa.

Whiting Foundry Equipment Company, Harvey, Ill., has issued catalog No. 82, illustrating and describing "Whiting" cranes. The catalog also contains a number of views of installations and a list of principal users of these cranes.

Precision Instrument Company, Detroit, Mich., has issued catalog E, illustrating and describing the "Precision" pressure and vacuum recorders and indicators. The catalog also contains a number of tables pertaining to the instruments.

Paragon Sellers Company, Chicago, Ill., has issued the January, 1911, number of the "Paragon Bulletin," containing articles on "Grounding for Protection Against Electrolysis," "Grounding of the Common Battery," "Grounding Telephone Train-Dispatching Circuits" and "Railway Signal Installations."

Robert W. Hunt & Company, Chicago, Ill., has published a small pamphlet on the inspection and testing of cement. It is designed to give the purchaser some idea of the value of inspection by trained and reliable engineers. The pamphlet also contains a partial list of structures, in which all the cement was tested by the company.

General Electric Company, Schenectady, N. Y., has issued bulletins Nos. 4685, 4784, 4785, 4793, 4798, 4804, 4807, 4808, 4809 and 4810, which have the following titles: "Belt-Driven Alternators," "Electric Drive in Pulp and Paper Mills," "Electric Drive in Wood-Working Plants," "Steady vs. Unsteady Voltage," "Straight-Air Brake Equipments," "Direct-Connected Generating Sets," "Small Plant Alternating Current Switchboard Panels," "Washington, Baltimore & Annapolis 1200-Volt D. C. Railway," "4500-Volt Oil-Break Switches" and "Portable and Stationary Air Compressor Sets."