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Of this issue of the ELECTRIC RAILWAY JOURNAL 9000 copies are printed.

Fare Increase on a Pennsylvania Road

The Philadelphia & West Chester Traction Company, an interurban line operating 33 miles of track, is added to the increasing list of properties which find a higher rate of fare necessary to provide a proper degree of service and afford a reasonable return on the investment.

In the letter addressed recently to the patrons of the road by A. M. Taylor, the president of the company, which is published on another page in this issue, the facts bearing upon the changes which the management decided to make are discussed with frankness. Operation of the West

Chester division, upon which an increase of fare was made effective on Sept. 27, was started in January, 1899. It appears from the letter of the company that a low rate of fare was established at the outset with the idea that development of the territory would follow the introduction of new rapid transit facilities at an inviting level of fare. In the ensuing years the company has continued to improve its service and equipment, but without making an advance in the rate of fare commensurate with the additional facilities offered.

The position in which this railway finds itself at present, therefore, is that its investment, which was made with full expectation that increased settlement of the territory would result, stands as a fixed outlay of capital. An experiment of 10 years in the operation of the line has proved the existence of two fundamental conditions which cannot be ignored: First, that expenditures resulting both from increases in the legitimate costs of operation and from the provision of additions and betterments, were larger than the projectors of the property had anticipated; and, second, that without a change in the system of fares upon which the revenue of this division was based the total gross earnings would not be adequate.

The patrons of the line have been enlightened as to the detail causes for this situation. Mr. Taylor directs particular attention to the advance in the wages of employees and to the provision of facilities designed to promote efficient and safe operation of the property. In addition to this array of strong arguments, the letter states that the outstanding securities on the property represent its true value.

Every community which enjoys modern transportation facilities should see that it is to its advantage to have the property which affords such conveniences earn an adequate return on the amount of money reasonably invested in the enterprise.

Employer's Liability in New York State

A decision rendered recently by Justice Wheeler of the New York Supreme Court in the case of Forton against Crosstown Street Railway Company, 116 N. Y. Sup., 746, is one of the first to be handed down relating to the Railroad Law as amended in 1906 and is important, partly because it includes street railway companies under the employers' liability provisions of that law, and partly because the law states that a proof of the presence of defects in railroad equipment shall be considered *prima facie* evidence of negligence of the company in actions for personal injuries brought by employees.

The case hinged upon the fact that the motorman injured claimed he was unable to hang a curtain over the window in the front door, because of the absence of curtain hangers,

and that as the vestibule was flooded with light he was unable to see far ahead and on a stormy night collided with a vehicle on the track. On the trial the court entertained doubt as to whether plaintiff was not guilty of such contributory negligence as would bar a recovery in not leaving the window of the vestibule ahead of him fully open instead of raising it only $2\frac{1}{2}$ in., and also whether negligence on the part of the railroad had been proved. But there was none in the mind of the judge that the provisions of the statute included street railway companies, although it mentions "railroad corporations" only. As there are decisions in the States of Texas, Missouri and Minnesota which hold that statutes substantially like the one in question apply only to steam roads, it is worth while to consider the reasons which led Judge Wheeler to adopt the broader interpretation.

The employers' liability law in New York State was not passed as an independent act, but as an amendment to and as a part of the general railway law, under which the street railway companies may incorporate. Another section of the statute refers specifically to "a driver, conductor, motorman or gripman," so that the court considered that in this amendment it was the intention of the Legislature to apply the law to all railways, whether electric or steam.

On the other hand, the Minnesota act reads:

Every railroad corporation owning and operating a railroad * * * shall be liable for damages sustained by an agent or servant by reason of negligence of any other agent or servant, etc.

This act was held not applicable to a street cable railway corporation, the court saying that, as there were no cable or electric railways in the State of Minnesota when the law was passed, the Legislature could not have intended to apply the law to such corporations, and argued that the law should not apply to street railways, because street cars are more readily managed than long steam railroad trains, carry no freight, and are operated with less hazard and danger of personal injury.

The Missouri statute provides:

That every railroad corporation owning or operating a railroad in this State shall be liable for all damages sustained by any agent or servant thereof while engaged in the work of operating such railroad by reason of the negligence of any other agent or servant thereof, etc.

This article is followed immediately by another which relates to street railways, and the Missouri court held that running all through the State statutes an obvious distinction was shown between steam railroads and street railroads, and that no one can read the article just quoted "and gather the idea that it has any reference to street railroads." There was, however, a dissenting opinion in the decision of the Missouri court.

Iowa has an employers' liability act which applies in terms to "every corporation operating a railway," and this has been held by the courts of that State in its broadest and most general sense sufficient to include a street railway corporation. It seemed to Judge Wheeler, however, that in ordinary parlance the word "railway" or "railroad" has a special reference to the larger, more expensive and more permanent lines or systems extending from town to town, accommodating a permanent and more miscellaneous traffic, and requiring larger forces of employees, who are exposed to greater risks than is the case with street car lines.

This point has and doubtless will continue to afford many

opportunities for argument. Dictionary definitions afford little help, but note must be taken particularly of the exact words and the position of the statute with relation to others, especially those of a general nature. The question is as interesting as it is important, and future decisions may be confidently looked for.

Profitable Operation of Parks

The closing of the electric railway park season suggests that now is an excellent time to take account of stock and ascertain if possible what were the chief factors in the success or failure of the amusement resort during the past summer. Leaving out the debatable question of the conditions under which the establishment and maintenance of a park are desirable, we may consider some of the points which have proved to be effective in attracting patronage and enabling this class of business to be handled without undue cost. Probably nothing contributes more to the success of a park enterprise than the character of the service which the company provides to and from the premises. In more than one instance during the past season it has been shown that wherever a double-track line is operated, or else a loop circumscribing the park in such a way that long delays are avoided when the travel is heavy, the conditions have been vastly superior to those introduced by the necessity of handling all the traffic on a single line of rails. It is an actual situation that in one noteworthy case the advertisement of a prominent park had to be curtailed greatly on account of insufficient trackage; but in this particular case the installation of a second track would be almost prohibitive in cost. The company was unable to force travel into the park to anything like the extent which would have prevailed had the transportation facilities been equal to the possibilities of the grounds. Strict supervision of the loading and unloading of passengers at the park entrance is another point which it pays to insure.

Experience shows that inside the park there is room for the practice of no little diplomacy in handling patronage, if all are to be satisfied and if the concessions are to be well treated by the public. Thus, if a large picnic party arrives on the grounds in the middle of the forenoon, the wise manager will endeavor to exhaust as many of the free features as possible before the afternoon theatrical performance begins, and will make careful arrangements for the use of such portions of the property as the base ball field, the swimming pool, race course, etc., for a definite period, so that succeeding parties may be scheduled for the use of these features in their proper turn. These points are familiar enough to amusement men of experience, but they are not always appreciated by street railway officers administering parks, and they are far more important than appears offhand. Again, the separation of different parties of patrons, so far as practicable, is desirable. Most groups of patrons appreciate even semi-privacy, and the manager who attends to this wins new patronage every year.

The general practice of renting concessions is undoubtedly a good one, so long as the control of the situation is vested in the railway company. The detailed operation of these features may well be left to the concessionaires; but the railway company can help matters materially by providing suitable lighting in the vicinity of these centers. It is a wise policy to group the lighting in a rather concentrated

way near the principal concessions, and to light the rest of the premises well, but not with the same emphasis that obtains at the points where selling is to take place. Finally, the use of all the local facilities and the avoidance of outside purchasing, so far as practicable, help to save money. Many little conveniences, costing a trifling sum, can be included in the park with noteworthy effect in attracting patronage. One park secured a liberal amount of business by the simple expedient of maintaining its own cows and selling milk by the bottle to mothers with visiting children. A free stove for the use of picnic parties is another feature well worth while, provided the fuel is gathered on the premises. By avoiding large expenditures in the operation of the park, and by installing numerous facilities of little initial expense, but large convenience, certain attraction of patronage is the result.

Training Men for Executive Positions

A question frequently raised by those responsible for the efficient administration of large manufacturing and operating companies is, "Why is it so difficult to secure satisfactory men for executive positions?" Capable, civil, electrical and mechanical engineers are to be had in fair abundance, thanks to the many excellent technical schools throughout the country and to their well-planned engineering courses. But from where are the prospective superintendents, secretaries, managers and presidents, who will have to administer the affairs of these companies, to come? Are they to be drafted from the ranks of those in the engineering, accounting or legal departments of the companies, or should there be a special technical training for such work corresponding in thoroughness to that required for an engineering degree, or should the men for the higher executive positions be chosen by a system of promotion and selection from the purely operating department?

The question is one which applies in large industrial as well as in large transportation undertakings, and is far more serious now than at any time in the past, because the enterprises of both classes are conducted upon a much larger scale than ever before. On the other hand, it is possible that the country has a new class of men from which executive officers can be drawn. Never before have there been so many good technical schools or so many men trained in engineering. Is it safe to assume that these schools will supply in whole or in part the raw material from which the officials we have been considering will be made? This question is one which should be answered, if that is possible, in justice to those who are thinking of making electric railway work a life career. If the most lucrative positions in the service are always to go to those who enter the service through the transportation department the young man planning to acquire an engineering degree may well question the wisdom of spending years in absorbing the special knowledge taught at the technical schools or universities.

It is proper, we believe, before considering the question further to accept first the postulate that the candidate for any responsible position must have had experience in the business, and at least be generally familiar with all branches of the work. The more familiar he is with them, the better is he fitted for his office. It is fair to say also that the

duties of a manager require him to possess qualifications and a knowledge of men and affairs which are to a certain extent innate in the man. The true manager, like the true poet, is born, not made. These qualifications can be developed to a considerable extent, but cannot be acquired by everyone; neither can they very readily be taught apart from the work itself. It is no disparagement to the engineer to say that the knowledge needed by him in his work is more susceptible of being codified than that required of the manager. The materials and forces with which he has to deal are controlled by scientific laws which are more or less known, but in most, if not all, of the problems of the manager the human element is an almost overpowering factor.

It is difficult to define all of the essential qualifications of a successful executive, but the following stand out with particular prominence: First, he must be able to secure cheerful co-operation from subordinates and must have an acquaintance with their work; second, he must be able to inaugurate new plans to fit new requirements, that is, he must be possessed of initiative; third, he must be able to secure reasonable profits on the investment in the undertaking for which he is responsible; in other words, he must have that quality which is sometimes called a financial sense. If an engineering or an accounting or a legal training develops these powers in any man, it aids in fitting him for executive work.

In view of the growing inclusion of engineering problems in electric railroading, surprise has many times been expressed that more engineers do not develop into railway managers. One reason may be that while they are good engineers they have not the special ability or abilities already mentioned. Another may be that young men of the desired characteristics do not go to the technical schools. They may feel a strong impulse to attack business problems and a revulsion from what appears to them the tedious "grind" of four more years of school. The attraction of a quick financial return for their services may also appeal strongly to them. A third, and, we believe, a more important reason than either of the other two, is that the technical schools have been graduating engineers in large numbers and by modern methods only during the past 20 or 30 years. Hence their influence is just being felt, because they are only now reaching an age when they have acquired mature experience. As these men grow older and as the younger men from the engineering schools take the places of those promoted, we believe that the proportion of engineering graduates in executive positions will be much larger than formerly.

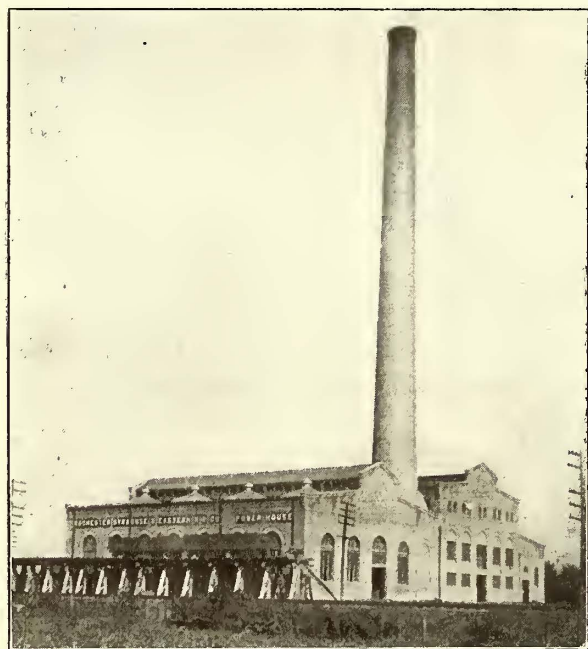
This theory, even if absolutely true, does not mean that all the prizes of the future will go to the engineering graduate, or even the college graduate, because natural ability, especially in positions of the kind we are considering, will count for more than mere knowledge. But no matter how much natural administrative talent and knowledge a man may possess, his executive ability should be greatly enhanced by a systematic pursuit of engineering studies, not only because of the mental training and ability to weigh theories and methods which it imparts, but also because engineering questions are certain to be of increasing importance in all industrial and transportation enterprises.

THE BEEBE SYNDICATE INTERURBAN SYSTEM IN CENTRAL NEW YORK—POWER SUPPLY, EQUIP- MENT AND TRAFFIC FEATURES

The principal construction features of the Beebe Syndicate interurban lines in Central New York were illustrated and described in the *ELECTRIC RAILWAY JOURNAL* of Sept. 25, 1909, page 456. The power supply and distribution scheme, rolling stock, shops and traffic of the system are described below.

POWER SUPPLY

Electricity for the operation of the Beebe Syndicate lines is obtained from Niagara Falls and from two steam plants



Beebe Syndicate Lines—Power House at Lyons, N. Y.

Niagara power is used on the Syracuse & South Bay and the Syracuse, Lake Shore & Northern also is operated with Niagara power as far as Fulton, the present terminus. The Auburn & Syracuse and the Rochester, Syracuse & Eastern are supplied, respectively, by a 1300-kw reciprocating steam plant at Auburn and by a 3000-kw turbine plant at Lyons. The standard transmission potential is 33,000 volts, three-phase, 25 cycles, except on the older Auburn & Syracuse line, which uses 16,500 volts. However, in order to tie all transmission lines together, 16,500-33,000-volt transformers have been installed at Port Byron.

POWER STATIONS

The older of the two steam power stations is at Auburn. It contains two 650-kw generators direct-connected to Westinghouse cross-compound Corliss engines. The transformers step up from 360 volts to 16,500 volts. The steam equipment consists of Heine boilers without superheaters, a Green economizer, Deane feed pumps and Deane jet condensers. One of the heaters in the Auburn plant is placed between the low-pressure exhaust of the engines and the condenser, while another heater takes all the exhaust from the auxiliaries.

The Lyons plant was erected about three years ago, in accordance with the plans of Scheaff & Jaastad, Boston, Mass., who also designed the standard substations. The building and stack are of brick, as shown in one of the illustrations. This station now contains two 1500-kw, 3300-volt Westinghouse turbo-generators, which have given such satisfactory service that a contract has been made to install

a 3500-kw unit before Jan. 1. The transformer units are 650-kw each and step up the current from 3300 volts to 33,000 volts.

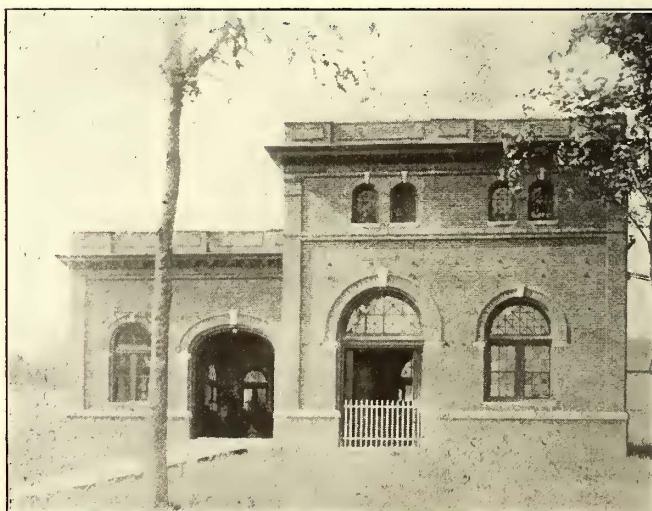
As in the Auburn station the boilers are of the Heine type, but they are equipped with superheaters. The other steam apparatus includes a Sturtevant economizer, Deane feed pumps, Cochrane heaters taking steam from the auxiliaries and Alberger surface condensers.

It is interesting to note that in the Lyons turbine plant the operating expense during the first year was only 0.6 cent per kw-hour, delivered at the a.c. side of the switchboard, and as low as 0.55 cent per kw-hour during the second year. These figures are based on load factors of 50-55 per cent and 65-70 per cent, respectively. It was assumed that the maximum output of the turbines for a month was 1,000,000 kw-hours and that the ratio between this figure and the actual output for the month should be considered the load factor percentage.

The cost of power at the Lyons station is about 20 per cent less per kw-hour than the reciprocating plant at Auburn. This is due to the larger size of the former station and the lower labor cost, no oilers being required in the turbine plant.

SUBSTATIONS

The substations generally are located 10 miles apart. Most of them are equipped with Westinghouse rotary converters of 400 kw capacity to permit the convenient interchange of apparatus. The transformers in all stations are of the oil-cooled type. These are installed in 150-kw capacities for 400-kw rotaries. Integrating wattmeters are installed only in the power houses and where power is purchased. The Auburn steam station contains two 400-kw rotaries for the city lines, while the interurban line is supplied by two equipments of like capacity at Skaneateles and Howlett Hill. The Syracuse & South Bay has one substation with two 400-kw units at North Syracuse, midway between terminals. The Syracuse, Lake Shore & Northern has two stations of 800-kw capacity each at Phoenix and Fulton and a station near Syracuse having one 500-kw rotary. The Rochester, Syracuse & Eastern now has 800-kw stations at Lyons, Macedon, Port Gibson and Savannah



Beebe Syndicate Lines—Standard Substation

and two stations, each containing two 500-kw units, at East Rochester and Port Byron. The latter substation now feeds part of the Auburn & Northern. In addition to these stations the extension from Port Byron to Syracuse will require an 800-kw plant at Jordan and a 1000-kw plant near Syracuse.

All of the substations except those on the Auburn & Syracuse line are of neat brick design with arched windows, as shown in an accompanying illustration. It will be seen from the plan and elevation that the building is divided into two rooms, the smaller of which has an ultimate capacity for three rotaries and switchboard and the larger for the high-tension wiring and transformers.

The high-tension room has a 4-in. concrete floor. In the rotary room the concrete is covered with hardwood flooring. Other details of construction are shown on the drawing. There is only one case where a ticket office is combined with a substation, for in general the waiting rooms are in the towns and the substations are on the right-of-way outside of town limits.

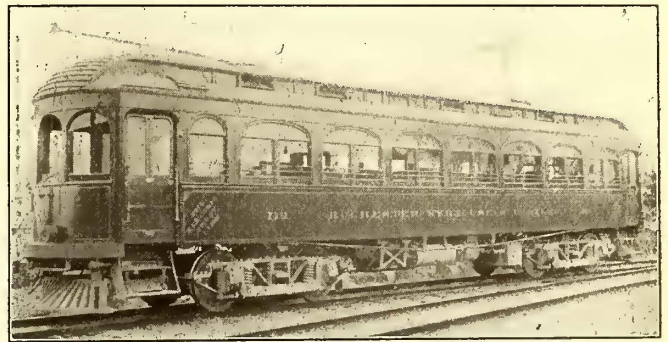
LIGHTNING PROTECTION

The high-tension lines are not protected by the usual grounding wire, but all power plants and substations have Westinghouse low-equivalent arresters on the transmission circuits. The d.c. lines ordinarily are furnished with Westinghouse multiple-gap arresters spaced five to the mile. The car equipments are protected by the lightning arresters furnished with the motors. In addition, the motor fields are so connected that the current passes through them before reaching the armatures. The fields thus act as choke coils. This method has been used for the past eight years, during which period not a single armature has been injured by lightning.

ROLLING STOCK

The interurban cars of the Beebe lines are of the most modern type, as will be apparent from the accompanying view of a Rochester, Syracuse & Eastern car, which is

hour. The electrical control is of the unit-switch type. Westinghouse air brakes, and Peacock hand brakes are used. The same type of car is in service on the Syracuse, Lake Shore & Northern. The Syracuse & South Bay cars are 50 ft. over all and are equipped with four General Electric 60-hp motors. The Auburn & Syracuse cars are

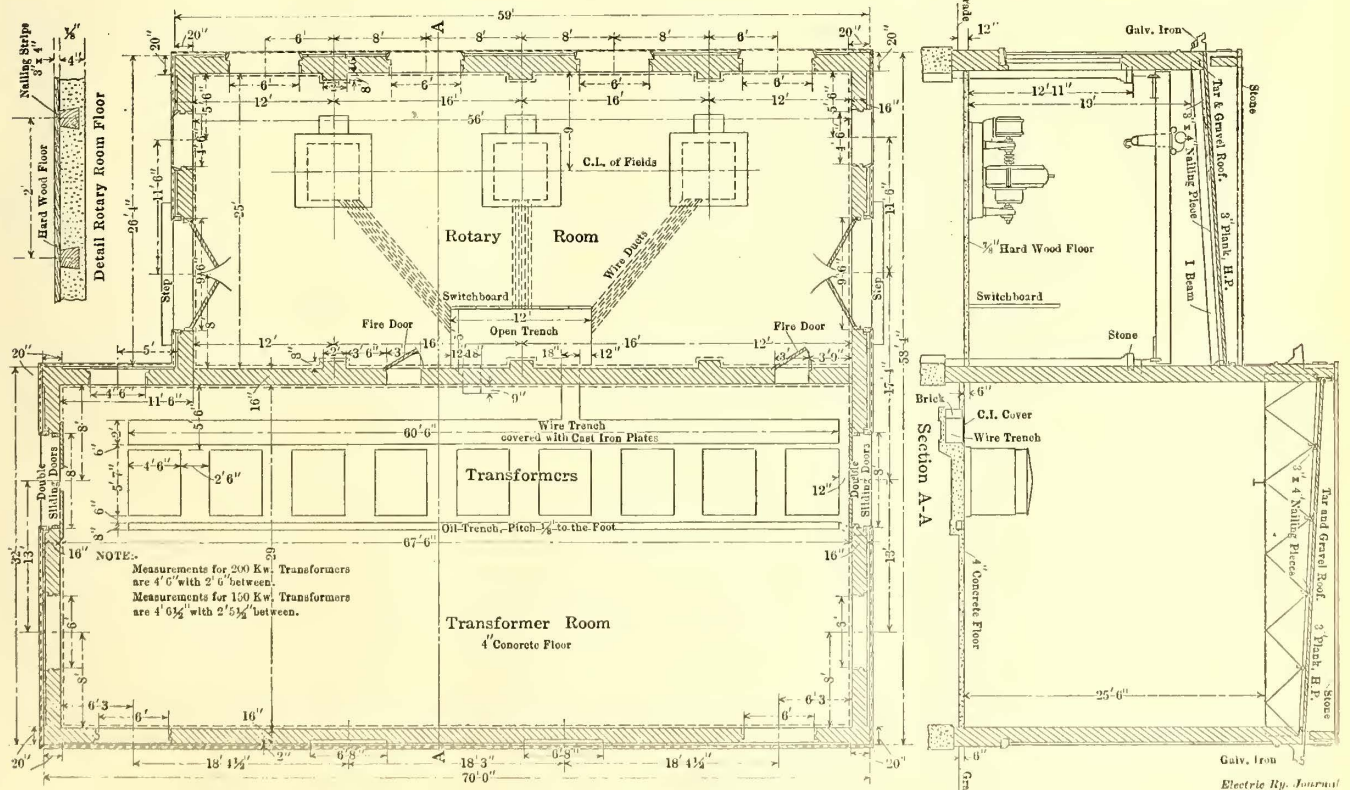


Beebe Syndicate Lines—Standard Interurban Car of the Rochester, Syracuse & Eastern

also 50 ft. over all, but are equipped with four Westinghouse No. 76 motors, rated at 75 hp each.

TRAFFIC

The Beebe lines are operated in a district abounding with steam railroads, so that fast and frequent service was necessary to get the bulk of the passenger travel between the towns reached by the lines. The Rochester, Syracuse & Eastern parallels the New York Central & Hudson River and the West Shore Railroads; the Syracuse, Lake Shore & Northern parallels the Delaware, Lackawanna & Western



Beebe Syndicate Lines—Floor Plan and Cross Section of Standard Substation

typical of the latest practice. This car was built by the Cincinnati Car Company. It is 35 ft. over all, seats 58 passengers, and is divided into passenger, smoking and toilet compartments, with mahogany interior finish. The body is mounted on Baldwin trucks, which carry four Westinghouse No. 119 motors of 125 hp each, geared to 55 miles per

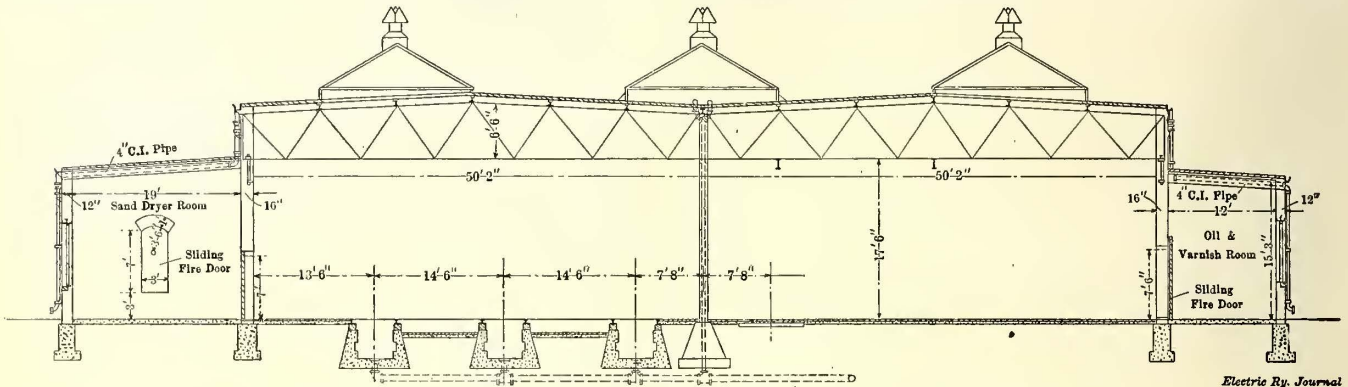
and the Rome, Watertown & Ogdensburg Railroads; and the Auburn & Syracuse parallels the Auburn branch of the New York Central & Hudson River Railroad. In general, the electric fares are slightly less than on the steam lines, and in the summer tickets are sold to parties of pleasure seekers at a reduction of about 25 per cent. On the Roch-

ester, Syracuse & Eastern the local cars make as good time as the steam trains, and the electric limiteds are 45 minutes faster between Auburn and Rochester.

The schedules throughout call for frequent cars. On the Auburn & Syracuse line the winter time table calls for a car every 40 minutes, and the summer card for one about every 20 minutes. The Rochester, Syracuse & Eastern runs an hourly service, including eight limiteds, between Rochester and Port Byron, and a half-hourly summer service be-

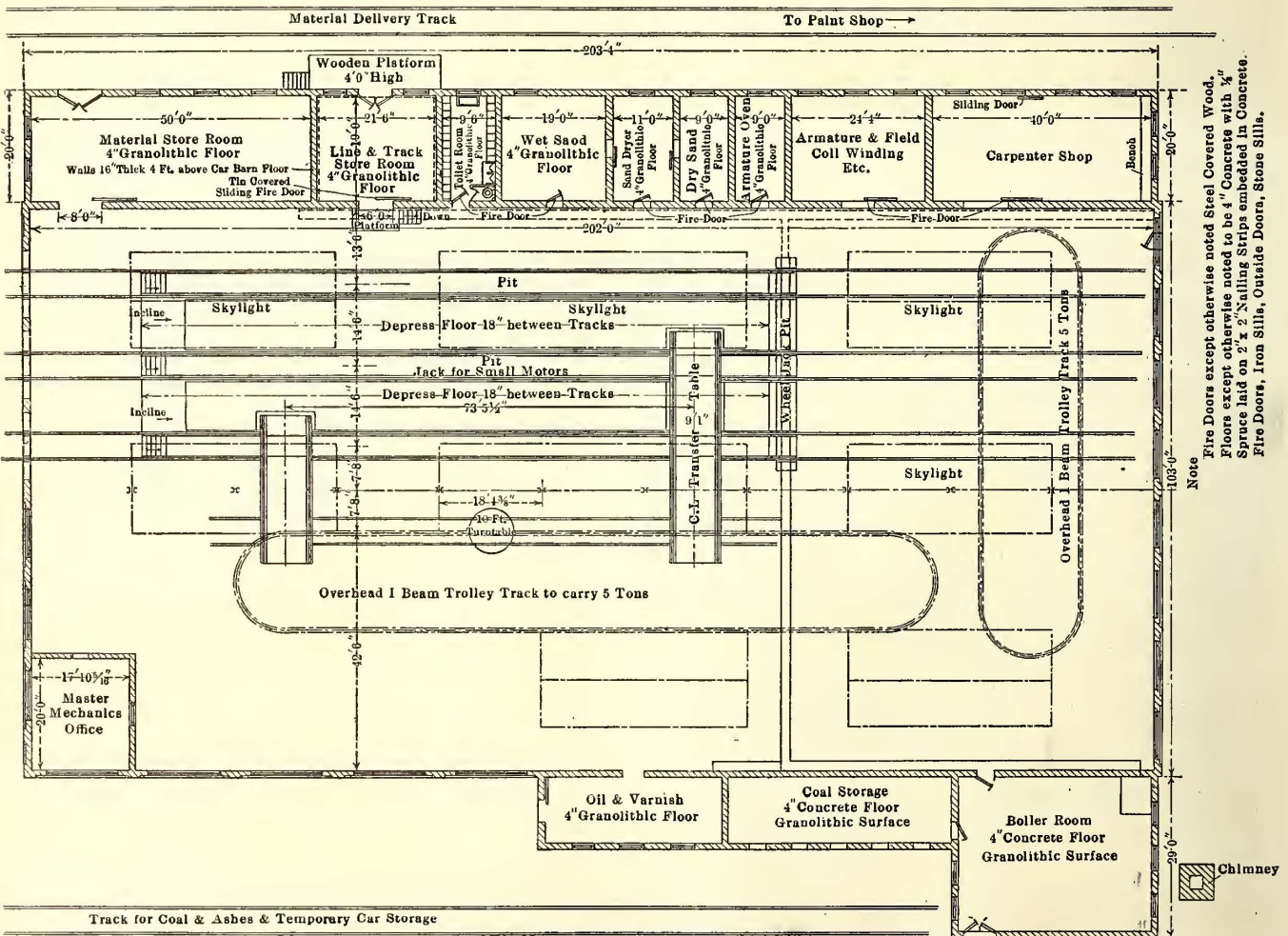
and hence the headway can be as short as the traffic and number of cars permit.

As this portion of Central New York contains plenty of hills and lakes, pleasure riding does not require much incentive in the way of artificially beautified parks. The only pleasure resorts owned by the associated lines are Lakeside Park, on Owasco Lake, which is within 5-cent riding distance via two Auburn lines, and "The Islands," in Oneida Lake, reached by the Syracuse & South Bay road. These



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Beebe Syndicate Lines—Cross Section of New Repair Shop Near Syracuse



Note
Fire Doors except otherwise noted Steel Covered Wood.
Floors except otherwise noted to be 4" Concrete with 1/2" Spruce laid on 2 x 2 Nailing Strips embedded in Concrete.
Fire Doors, Iron Sills, Outside Doors, Stone Sills.

Electric Ry. Journal

Beebe Syndicate Lines—Plan of New Repair Shop Near Syracuse, Building for Syracuse, Lake Shore & Northern

Lyons and Rochester. Locals are also run all the year round between Rochester and Fairport, which is eight miles distant. The Syracuse & South Bay line gives an hourly service, with extras in summer, and the Syracuse, Lake Shore & Northern has a normal 30-minute headway between Syracuse and Fulton, with necessary summer additions. All lines with heavy service are double-tracked,

places are maintained as beautiful gardens, and draw an excellent class of people, who want to enjoy boating, fishing, dancing and other sports in refined, natural surroundings. There is no admission fee or charge for dancing. The orchestra, which is engaged by the season, represents the only large outlay, except that for the care of the grounds. Owasco Lake is advertised by framed photo-

graphs of its principal features which are displayed in all waiting rooms and ticket offices.

The Beebe lines have not attempted to build up a heavy freight and express service. Nevertheless, the Auburn & Syracuse and the Syracuse, Lake Shore & Northern lines give a regular express service once a day. The express rates are slightly in excess of those made by the steam lines, but the electric roads get the business because of faster service. No deliveries or collections are made. Owing to

also do all wheel work, winding, etc., for the other companies. The building, which is being erected near Syracuse, will cover an area of approximately 200 ft. x 223 ft. The walls are of brick, the floors of concrete, the roof of steel trusses with a liberal skylight area, and the window framing of metal.

As shown in the plan, a series of rooms 30 ft. wide extend along the entire length of the building opposite the delivery track. These rooms will include car, line, track



Beebe Syndicate Lines—Pavilion and Flower Beds at Owasco Lake

the fact that the Rochester, Syracuse & Eastern Railroad is not permitted to enter Rochester with express cars, that line does no express business, although in the future it may give service from Syracuse to the city line of Rochester.

SHOP FACILITIES

Owing to the great amount of construction work which the Beebe Syndicate has been doing, little has been done to

and sand storage, armature oven, winding department and carpenter shop. All of these sections, except the two sand rooms, are to be isolated from one another by solid 12-in. brick walls, but inter-communication will be established through the swinging or sliding fire doors which lead to the main portion of the building. Further fire protection will be afforded by steel rolling doors at the track entrances.



Beebe Syndicate Lines—A Summer Crowd at Owasco Lake

centralize the maintenance of the rolling stock in an up-to-date shop. At present cars are inspected approximately every four days at the repair shops of each road, but with the advent of better facilities the mileage basis will be adopted. Scheaff & Jaastad, of Boston, Mass., are the architects for a repair shop which is now being built for the Syracuse, Lake Shore & Northern Railroad, which will

The truck shop will be 103 ft. wide, and will be arranged for three through tracks, with steam-heated pits and one shorter track. The floor between the pit tracks is to be depressed 18 in. for convenience in carrying on truck work. It will also be noted from the plan that there are two transfer tables and a 10-ft. turntable on the track without a pit. The wheel jack pit is also shown. The equipment in this

truck shop will include two 5-ton travelers carried on I-beams. The boiler plant, coal storage, and oil and varnish room are on the opposite side of the truck shop and near the office of the master mechanic. A paint shop, now also under construction, is an isolated building 300 ft. x 50 ft., and the painting of all cars of the system will be done therein.

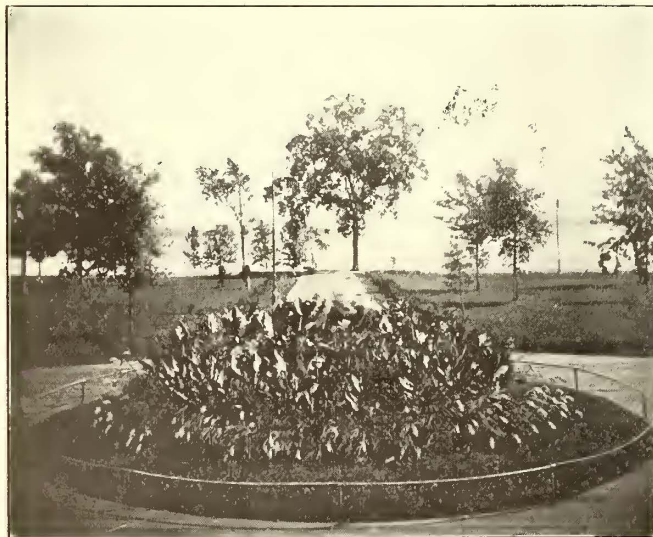
EMPLOYEES

The Rochester, Syracuse & Eastern the Auburn & Syracuse, the Syracuse, Lake Shore & Northern, and the Syra-



Beebe Syndicate Lines—Shaded Lawn at Owasco Lake

cuse & South Bay roads have employees' benefit associations, to each of which the syndicate has contributed special donations for reserve funds. All employees in good health and between 21 and 45 years of age are eligible for membership on payment of an initiation fee of \$1 and 50 cents a month for sick and death benefits. Special assessments



Beebe Syndicate Lines—One of the Handsome Flower Beds at Owasco Lake

may be levied in 50-cent installments, but the total of such assessments must not exceed \$3 a year. The members also pay \$1 a year for the maintenance of club rooms. No dues are paid during periods of sickness. When a member reports ill his application for benefit must be endorsed by the head of his department and by the examining physician.

Members on sick leave or in quarantine are entitled to receive \$1 a day for 90 days, except that only 50 cents per diem is given during the first seven days. No payments are made for illness lasting less than seven days, and the total benefits in a year must not exceed \$90. The death benefit is \$100, and is paid to the proper heirs within 30 days after proof of death. It is provided in the constitution of the association that when the reserve fund exceeds a certain limit there shall be a pro rata distribution of the excess. The benefit societies are governed by boards of trustees made up of representatives elected by a majority vote of the members. Trustees serve for one year and meetings are held monthly.

STUDY OF OPERATING EXPENSES OF MASSACHUSETTS ELECTRIC RAILWAYS

A careful study of the operating expenses of the electric railways located in the State of Massachusetts was made recently by Messrs. Stewart and Loud, senior students in electrical engineering at the Massachusetts Institute of Technology. The object of the study was to make available some figures on operating expenses which could be used as a first basis of comparison when considering the expenses of any particular road operating in the State or in territory where conditions are similar to those in Massachusetts. The results obtained are given in the tables on the opposite page.

The expenses of 62 roads were considered for the period of five years, beginning on Oct. 1, 1903, and ending Sept. 30, 1908. In choosing this period the following points were considered: It would be unwise to go back too many years, lest advances in the art or general changes in the habits of the people or methods of operation should have too large an influence. On the other hand, the study must include enough years to insure that unusual conditions in any one year will have no more than their proper effect. For example, in many cases large expenditures for repairs or reconstruction are made in one year, resulting in low cost of repairs in the years just following. The year of high expenses for this item must be included, but its effect must be distributed over several years. The five-year period appeared to be of sufficient length to give good averages.

In the annual report of the Board of Railroad Commissioners of Massachusetts giving the returns for the year ended Sept. 30, 1908, there are given the statistics of 82 electric railway companies operating in the State. Of these three had not begun operation, 16 were operated under lease by other companies and one was consolidated with a larger system soon after the beginning of that year. By omitting the statistics given for the roads not yet in operation and combining the expenses of roads operating under lease by other companies with the expenses of the company holding such lease, a total of 62 companies remained.

The car-mile was found to be the most satisfactory unit to use, but in some instances additional figures based on a mile of track are given. The term "miscellaneous expenses" is used to include matters listed in the reports under the following heads: Insurance, other general expenses, repair of miscellaneous equipment, provender and stabling, tolls for trackage rights, rents of buildings and other transportation expenses. A single heading was used to include all of these items because it was found that individual values for the separate items differed considerably from an average

value, while the general average for the group of expenses was more satisfactory.

The averages given in the tables are obtained from approximately 300 individual values. The cost for individual roads for each item listed was shown graphically for each year and then averaged for the period of five years. In obtaining the final results the five-year averages for all of the 62 roads were not always considered. For instance, the Conway Electric Street Railway was omitted in obtaining all averages because of the fact that it has an income for freight traffic more than twice that for passenger service, and thus there were introduced conditions much different from those found on any other of the roads. Again, when obtaining the cost of repairs, the roads which began operation as new roads within the five-year period have been omitted for obvious reasons.

When the five-year average of any item for a company showed values extremely high or extremely low compared with the other companies, the value of that particular company has been omitted in obtaining the final figures. As an example: One road showed an average value for "miscellaneous expenses" of 8.88 cents per car-mile while the next lower value is but 5.35 cents per car-mile, while the average is only 1.58 cents per car-mile. The road showing the extremely high value was omitted in obtaining the average of 1.58 cents.

AVERAGE OPERATING EXPENSES FOR ELECTRIC RAILWAYS IN MASSACHUSETTS.

Operating expenses per car-mile:	Cents.	Per Cent.
Repairs of cars.....	1.05	6.4
Repairs of electric equipment of cars.....	0.88	5.4
Repairs of electric line construction.....	0.305	1.8
Repairs of roadbed and track.....	1.12	6.8
Removing snow and ice.....	0.212	1.3
Cost of electric power.....	4.29	26.2
Wages of transportation employees.....	5.14	31.4
Salaries of officers and clerks, and office expenses and supplies.....	1.02	6.2
Legal expenses and damages for injuries.....	0.80	4.9
Miscellaneous expenses.....	1.58	9.6
Operating expenses per car-mile.....	16.40	100.0
Charges and deductions from income per car-mile.....	5.43	
Gross earnings from operation per car-mile.....	21.9	
Receipts from passengers per car-mile.....	21.2	
Cost per mile of track operated:	Dollars per annum.	
Repairs of electric line construction.....	82.8	
Repairs of roadbed and track.....	293	
Removing snow and ice.....	50.9	
Total operating expenses per passenger.....	3.81 cents.	
Total passengers carried per car-mile.....	4.32	

The individual items grouped under "general expenses" have not been averaged separately.

The averages of all returns to the Board of Railroad Commissioners for the period of five years are as follows:

CENTS PER CAR-MILE.

Repairs of cars.....	1.057
Repairs of electric equipment of cars.....	0.90
Repairs of electric line construction.....	0.353
Repairs of roadbed and track.....	1.121
Removing snow and ice.....	0.222
Cost of electric power.....	4.26
Wages of transportation employees.....	5.39
Salaries of officers and clerks and office expenses and supplies.....	1.124
Legal expenses and damages and injuries.....	0.800
Miscellaneous expenses.....	1.704
Total.....	16.93

PROPOSED DANISH INTERURBAN ELECTRIC LINE

It is reported in *Elektrische Kraftbetriebe und Bahnen* that the municipalities of Aarhus and Randers, of Jutland, Denmark, are to furnish a guarantee capital of over \$275,000 for the construction of an electric interurban railway between the two cities named. Aarhus is the second largest city in Denmark and Randers is also of considerable commercial importance. These places are about 38 km (23.56 miles) apart as the crow flies. The power station will also supply energy for illumination and industrial purposes. Orders have already been received for about 35,000 lamps and 2500 hp in motors.

THE OHIO ELECTRIC RAILWAY

Recent extensions have made the Ohio Electric Railway the largest system of electric railway in the world; it operates now a total of 617 miles of track. The property comprises a line extending north from Cincinnati to Toledo, passing through Dayton, Springfield, Bellefontaine, Lima and other centers and a line from Dayton west to Richmond, Dayton to Union City, Ind., from Springfield east to Columbus and Zanesville, from Lima west to Fort Wayne, Ind., and from Lima northwest to Defiance. The extent of the system is shown by the accompanying map. In addition to the interurban lines indicated the company operates the city lines in Zanesville, Newark, Hamilton, Lima and Bellefontaine and provides lighting and power service at Zanesville and West Alexandria and lighting and power service and steam heat at Lima. The local street railway and interurban properties supplement each other to a marked degree in the development of passenger business.

The present system was formed by consolidation and construction of various properties. The Ohio Electric Railway Company was incorporated in May, 1907, with \$100,000 capital stock. In August, 1907, the authorized capital stock was increased to \$25,000,000, divided equally between preferred and common, but only \$8,000,000 common and a like amount of preferred have been issued. Following this increase in capitalization the company purchased on Sept.



Ohio Electric Railway Trade Mark

1, 1907, the property of the Lima & Toledo Traction Company and leased* the property of the Lima Electric Railway & Light Company and the Fort Wayne, Van Wert & Lima Traction Company. The Lima & Toledo Traction Company had been formed to build a line from Lima to Toledo, 75 miles, and continued the construction of this property through the panic of 1907 and the uncertain financial times which followed in 1908. The other two properties named operated respectively the Lima city property and the line from Lima to Fort Wayne, Ind. The Ohio Electric Railway acquired by lease at the same time the property of the Indiana, Columbus & Eastern Traction Company, which operated 259 miles of track, and purchased, on Feb. 1, 1908, the property of the Cincinnati Northern Traction Company. With the acquisition of both of the latter-named railway properties leases on several important underlying roads were secured.

The operating mileage as stated includes the city lines in the five cities where such properties are operated by the company. At Union City, Ind., connection is made with the Indiana Union Traction Company for Muncie, Anderson and Indianapolis, Ind. At Richmond, Ind., connection is made with the Terre Haute, Indianapolis & Eastern Traction Company for Indianapolis. The financial interests identified with the Ohio Electric Railway Company also control both of these Indiana properties. One subsidiary Ohio company owns Buckeye Lake Park, which is on the largest lake in Ohio.

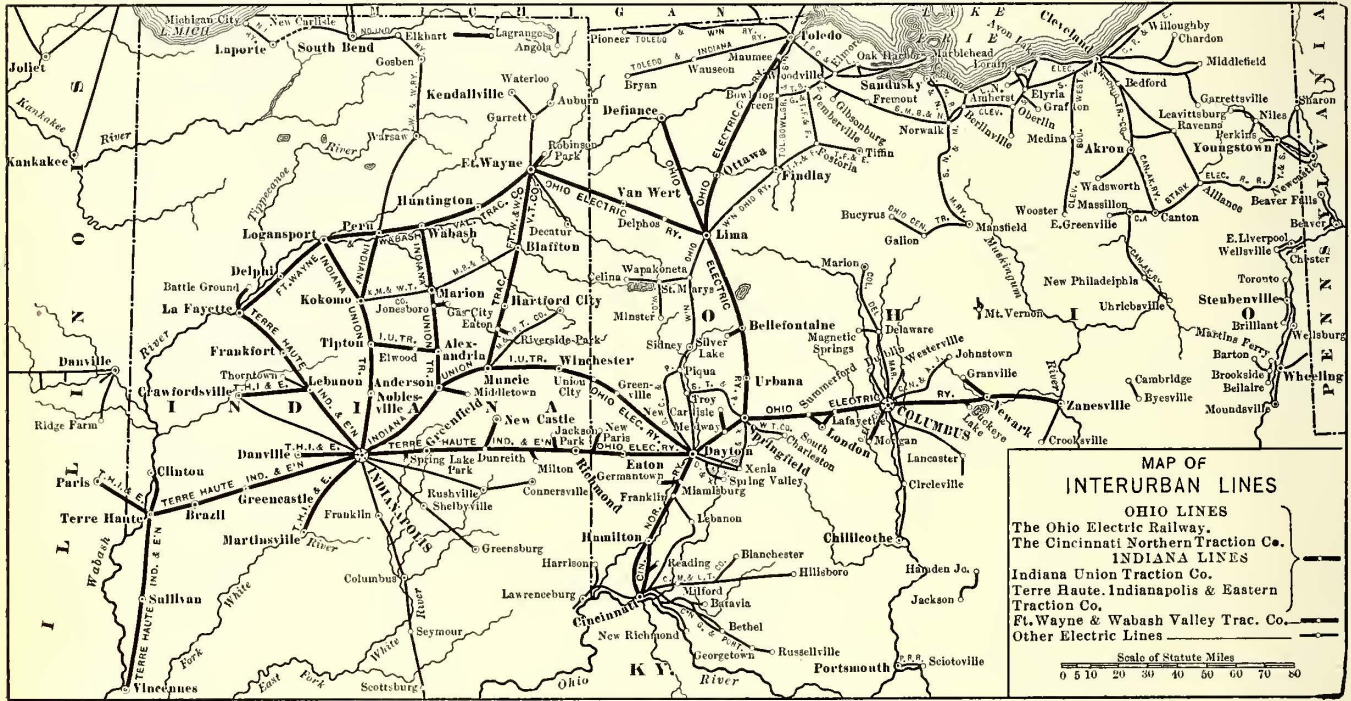
The nucleus of this extensive interurban system was obtained by purchase at receiver's sale of the properties centering in Columbus, formerly known as the Applyard lines and their rehabilitation; subsequently other lines of road were acquired or built as the advantage of expansion became plain. One of the earliest electrically operated railroads in this country is included in the system. D. J. Cable, the present counsel of the company at Lima, states that he was made attorney for the street railway line in Lima

between 1883 and 1885. It was operated by horse-power at that time, but the property was reorganized and electricity was adopted as a motive power not later than 1885. The Vanderpoele overrunning trolley system was used. Mr. Cable states that the lines in Lima, Ohio, and Scranton, Pa., were equipped within a month or two of the same time.

Practically every mile of interurban road owned by the company is built on private right of way usually 50 ft. in width, but varying in places from 30 to 100 ft. Provision has been made throughout the system for the construction eventually of double tracks; at the present time the larger part of the line between Cincinnati and Dayton, where the greatest density of passenger traffic exists, is double tracked. Trains are run between these two cities on a half-hour schedule during the day. There is also a good volume of travel between Columbus and Dayton. The line of the

the Baltimore & Ohio Railroad and Wabash; at Continental, with the New York, Chicago & St. Louis Railroad and the Toledo, St. Louis & Western Railroad; at Jones City with the Northern Ohio Railway, a subsidiary of the Lake Erie & Western Railroad; at Lima with the Cincinnati, Hamilton & Dayton Railway and through this line with other steam roads entering the same city. The company also owns and operates the old Cincinnati & North Western Railroad from Cincinnati north to College Hill and Mt. Healthy, formerly operated by steam, but now operated by heavy electric locomotives, which handle the freight cars of steam roads.

Among the improvements now being built by the Ohio Electric Railway is a new passenger terminal station at Lima, Ohio, which, including the land, will cost \$90,000. This will be used jointly with the Western Ohio Railway. A similar improvement is under construction at Springfield,



Map of Interurban Lines Comprising Ohio Electric Railway System and Connections in Ohio and Indiana

Ohio Electric Railway between these points is 70 miles in length, while that of the competitive Cleveland, Cincinnati, Chicago & St. Louis Railway is 69 miles. A train on the electric line leaving Columbus at 3:45 p. m. arrives at Dayton at 5:55 p. m.; the steam train leaves Columbus at 3:55 and arrives at Dayton at the same hour as the electric line. The regular rates for single-trip passenger fares throughout the system are practically 2 cents a mile and commutation rates vary according to conditions in each locality.

Steam railway practice is followed generally in the operation of the interurban lines. Every officer has been in steam road service. Although methods of discipline for violations of rules by trainmen and the rule books of the company are substantially the same as those of steam roads, the motormen of interurban lines are appointed only by advancement from the city lines, where they must have had an experience of two years or more.

Included in the Ohio Electric Railway system is a steam division constituting the line between Lima and Defiance, a distance of 40 miles. This is called by the name of the system and presumably will be electrified in time. Through this steam division the Ohio Electric Railway interchanges cars with various steam lines as follows: At Defiance with

which will be used by the different lines entering that city, the cost of which will be about \$100,000. It is also planned to erect a building in Columbus to serve as a freight and passenger station for the joint use of the lines entering that city. This structure, with the land, will cost \$350,000.

The city of Columbus has granted an extension of all franchises for a period of 25 years, as requested by the company, and the construction of the new terminal building and train sheds will be rushed to an early completion.

It is contemplated in the very near future to build an extensive terminal building in Dayton, Ohio, similar to the one operated by the same financial interests in Indianapolis, Ind. An effort will be made to get all of the traction lines entering Dayton to join in the enterprise.

The Ohio Electric Railway Company has been formed by the purchase or lease of the following:

The Cincinnati, Dayton & Toledo Traction Company, Cincinnati to Dayton, with a branch from Miamisburg to Germantown.

The Dayton & Western Traction Company, Dayton, Ohio, to Richmond, Ind.

The Dayton & Muncie Traction Company and the Dayton & Western Traction Company, Dayton, Ohio, to Union City, Ind.

The Dayton, Springfield & Urbana Electric Railway Company, the Urbana, Bellefontaine & Northern Railway Company and the Springfield & Western Railway Company, Dayton to Bellefontaine, with a branch to New Carlisle.

The Columbus, London & Springfield Railway Company, Springfield to Columbus, Ohio.

The Columbus, Grove City & South Western Railway Company, Columbus to Morgans, Ohio.

The Columbus, Buckeye Lake & Newark Traction Company, consolidated with the Columbus, Newark & Zanesville Electric Railway Company and the Newark & Granville Street Railway Company and the Zanesville Railway, Light & Power Company, Columbus to Zanesville, with branches to Buckeye Lake and Granville, Ohio.

The Columbus & Lake Michigan Railroad Company (steam), Lima to Defiance, Ohio.

The Fort Wayne, Van Wert & Lima Traction Company, Lima to Fort Wayne, Ind.

The Lima Electric Railway & Light Company—Lima city lines, light, power and steam heat.

The Lima & Toledo Traction Company, Lima to Toledo, Ohio.

The Indiana, Columbus & Eastern Traction Company, which constructed the line from Bellefontaine to Lima, Ohio, thereby connecting the whole system.

The general officers of the Ohio Electric Railway are:

W. Kesley Schoepf president, Cincinnati, Ohio.

Dana Stevens, vice-president and general manager, Cincinnati, Ohio.

J. B. Foraker, Jr., vice-president, Cincinnati, Ohio.

F. A. Healy, secretary and treasurer, Cincinnati, Ohio.

M. W. Glover, auditor, Cincinnati, Ohio.

The operating officials are:

A. Benham, assistant general manager, Dayton, Ohio.

B. J. Jones, district manager, Springfield, Ohio.

F. J. Moore, superintendent, Columbus, Ohio.

B. M. Brown, superintendent, Dayton, Ohio.

N. C. Draper, superintendent, Zanesville, Ohio.

H. G. Gilpin, superintendent, Lima, Ohio.

H. F. Dicke, superintendent, Lima, Ohio.

D. A. Faut, master mechanic, Columbus, Ohio.

James Warren, master mechanic, Trenton, Ohio.

B. K. Alderman, superintendent power plants, Springfield, Ohio.

The traffic officials are: W. S. Whitney, general passenger agent, Springfield, Ohio; J. C. Forester, general freight agent, Springfield, Ohio; Gaylord Thompson, Springfield, Ohio, is chief engineer; J. M. Boyer, Columbus Ohio is claim agent.

The legal department consists of the following:

Geo. H. Warrington, counsel, Cincinnati, Ohio.

W. C. Shepherd, counsel, Hamilton, Ohio.

McMahon & McMahon, counsel, Dayton, Ohio.

Martin & Martin, counsel, Springfield, Ohio.

W. R. Pomerene, counsel, Columbus, Ohio.

J. R. Fitzgibbons, counsel, Newark, Ohio.

F. A. Durbin, counsel, Zanesville, Ohio.

D. J. Cable, counsel, Lima, Ohio.

W. B. Richie, counsel, Lima, Ohio.

Smith & Beckwith, counsel, Toledo, Ohio.

Judge Walter Olds, counsel, Fort Wayne, Ind.

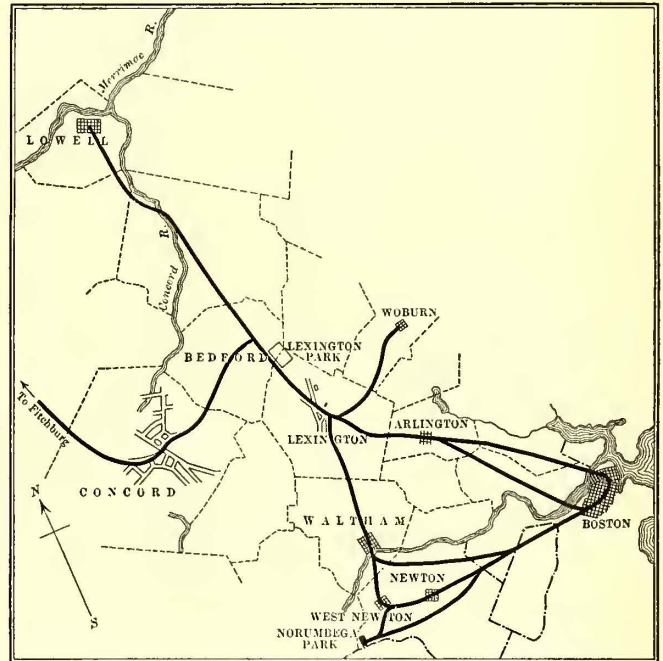
F. P. Edson, tax and land agent, Van Wert, Ohio.

When the new terminal station is completed at Springfield all of the principal operating officials, including the auditor's office, will be located at that point.

It is sometimes difficult when necessary to use a car jack on unpaved sections of the line to find a firm foundation upon which to work. To avoid trouble from this condition, the motormen of the Grosse Berliner Strassenbahn have been advised to take a motor trap-door from the car for a jack base. The men are also provided with small wooden blocks to keep the door in a horizontal plane where the roadway is very uneven.

SOME FEATURES OF LEXINGTON PARK, MASSACHUSETTS

Among the newer electric railway amusement resorts which have been created in recent years in the vicinity of Boston, Lexington Park, on the lines of the Lexington & Boston Street Railway Company, occupies a distinctive place. Located in the northwest corner of one of the most historic towns of America, and accessible via the route made famous by Paul Revere in his midnight ride of April 19, 1775, the park possesses an atmosphere of its own which has been a potent force in drawing traffic and attracting patronage ever since its creation some half-dozen years ago. The Lexington and Boston lines are a part of the Boston Suburban Electric Companies' organization, a system serving about 22 cities and towns lying to the west of Boston proper, and noted throughout the East as a property catering largely to residential and pleasure travel. In general, the lines of these companies traverse a zone extending from about 7 miles west of Boston to points about 20 miles from the center of the city, delivering traffic to and receiving it from the Boston Elevated Railway Company at the western termini of the latter system. Norum-

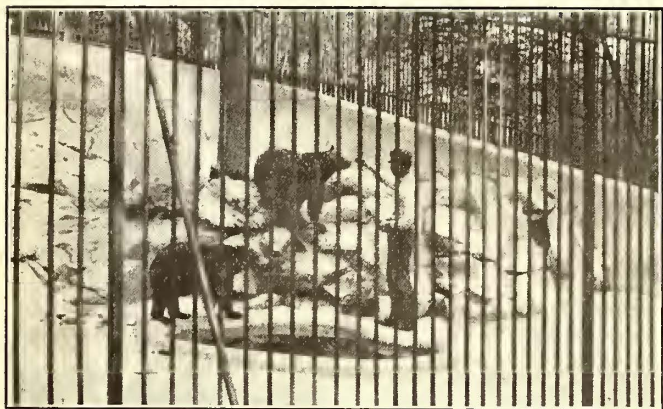


Map of Lexington & Boston Street Railway

bega Park, located on the lines of the Suburban companies at Auburndale, on the Charles River, is operated by the management which maintains Lexington Park, and in general the policy of avoiding the White City or miniature World's Fair idea prevails, the natural attractions of the park being relied upon in each case to furnish a suitable background for the pleasures offered to the public.

In the accompanying map the relative locations of Lexington and Norumbega parks are shown, with the main lines of service by which the tributary territory is brought in touch with each resort. Through cars are operated from the center of the Boston surface car system to Norumbega Park and from the Sullivan Square elevated railway terminal to Lexington Park, round trip tickets, including admission to the park, being sold by the conductors at the beginning of the Boston Suburban Electric lines at a net rate of 15 cents each. Single admission tickets to each park are sold at 10 cents each. Each park is therefore accessible to any resident of Boston for a total round trip rate of 25 cents, including admission to the grounds and

the use of many free attractions provided in each case. The distance from the city is roughly the same in each case, Norumbega being 10 miles west of Park Street subway station, at the end of the Commonwealth Avenue boulevard, and Lexington Park being about 12 miles from town. Aside from its historic surroundings, Lexington Park is several times larger in area than Norumbega, and is more



Lexington Park—Bear Pit

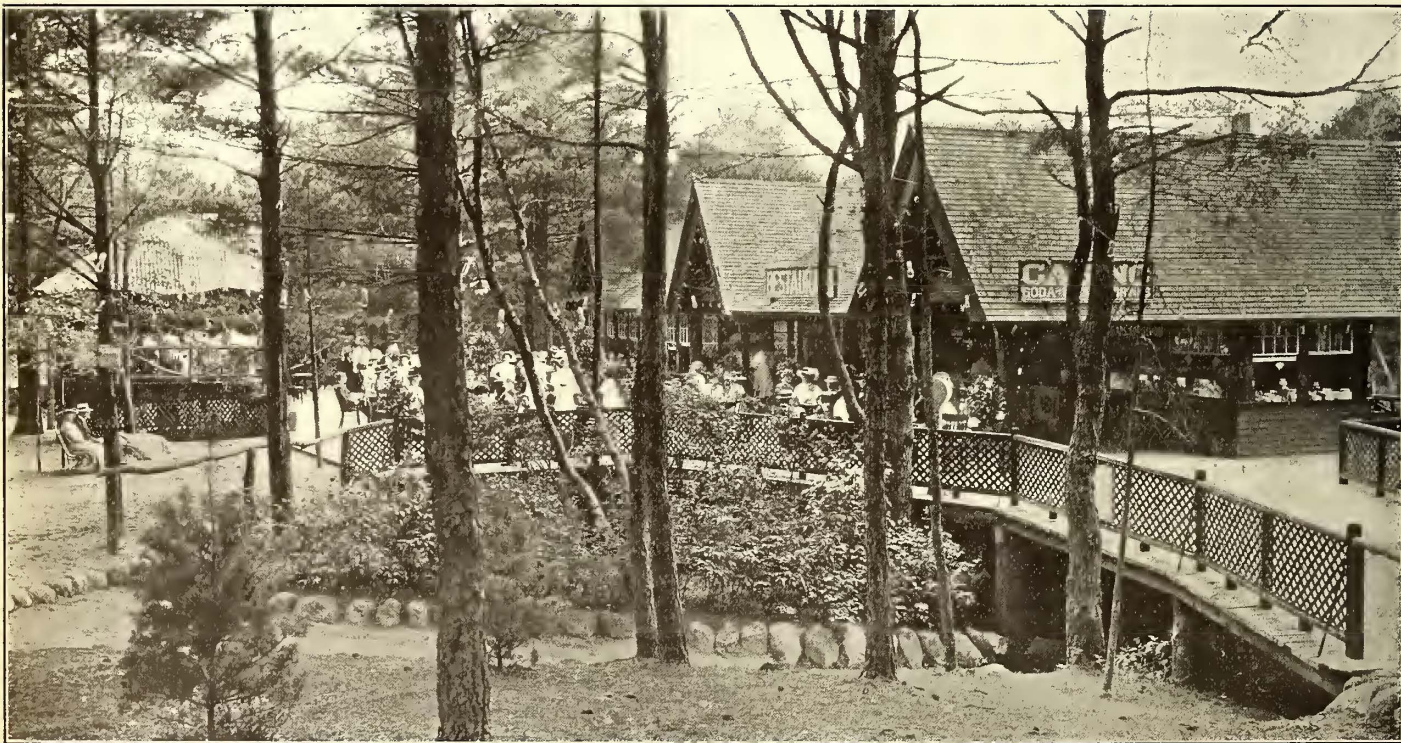
of a woodland resort, in the absence of the boating facilities which distinguish the latter playground.

Lexington Park is in immediate touch with Lowell, Chelmsford, Concord, Bedford, Woburn, Cambridge, Waltham and Arlington, while frequent service connecting with it is maintained throughout the year from the Newtons, Watertown and Winchester. The park is located on the through lines between Boston and Lowell, and Boston

of the regular movements as traffic requirements dictate. The season begins about May 30 and closes Sept. 12.

The area of Lexington Park is about 48 acres, approximately half the tract being woodland and half occupied by concessions of different kinds, the whole being under the management of J. T. Benson and operated by the Norumbega Park Company. The entire park is surrounded by a wire fence 8 ft. high. At the main entrance are located a ticket and office building, two entering turnstiles with pass meters, and two exit turnstiles. Close at hand is an automobile and carriage entrance to a storage park, where machines are checked and looked after by an attendant at a price of 50 cents each, including admission of the party to the park. The entrance turnstiles are set beneath a canopy to facilitate comfortable passage in warm or rainy weather. An extra gate is provided for employees, without a turnstile. Parcel checking facilities are available inside the office building, with telephone pay station service connected with the Bell lines in the Boston & Suburban system. The office contains a ticket safe, manager's desk, accounting table and correspondence file, in addition to the parcel division. In addition to the Bell service mentioned above, a private telephone line is installed for purely company business. A ticket chopper is provided at the main entrance, inside the grounds. The attendants are neatly uniformed in brown. About 37 persons are employed on the property, including waiters and girls in charge of the various concessions.

The extent of the grounds enables large groups of patrons to scatter through the park without personal contact or crowding, and as many as 11 different church picnics have been handled in a single day without mutual in-



Lexington Park—Open-Air Casino

and Concord, single-track service being provided, with automatic block signal control of car movements. At the park a siding is provided, with a capacity of about 20 cars, no other special trackwork being in service. In general, a 15-minute service is maintained to and from the park in each direction, although extra cars are operated as sections

interference. The attractions of the park include an open-air theater, zoological garden, base ball field, observatory, restaurant and casino, dancing pavilion, swings, merry-go-round, toboggan slide, picnic tables, music, women's building, "country store," electric arcade, popcorn store, soda fountain, lawns, walks and groves. The open-air theater is

of the rustic type and seats about 1540 persons. Several rows of free rear seats are provided in the afternoons, the charges elsewhere in the auditorium varying from 5 cents to a maximum of 25 cents for an orchestra seat at the evening performance. The vaudeville performances are given under the personal direction of the park manager, and a high standard is maintained. During the four years' incumbency of the present management not an arrest has been necessary. A single police officer is sufficient to handle the crowds.

The theater is equipped with a stage 45 ft. long by 35 ft. wide, property and dressing rooms, scenery storage space, spot light apparatus and moving picture machine. Above the center of the stage and slightly forward, a group of five 100-watt tungsten lamps is installed in a single globe, while the footlights consist of 30 incandescents of 16 candle-power each. Parallel to the footlights and above the stage are installed 30 incandescents, and at the wings 15 incandescents are installed in a vertical row on each side. Two rows of 20 incandescents each are installed at the sides of the stage, passing from the front to the rear, so that the total stage illumination, exclusive of the spot light, consists of the tungsten group and 130 incandescents. In a room at the side, knife switches are provided to cut each circuit in and out, the lamps in general being operated five in series on the railway power circuits. All the electrical energy for the park service is supplied by the Lexington power station of the railway company, which is located on a site adjoining a division car house $2\frac{1}{2}$ miles to the eastward. There are 48 direct-current enclosed arc lights and 3684 incandescents on the park. The theater gives two performances daily, the afternoon show beginning at 3:30 and lasting $1\frac{1}{2}$ hours, and the evening show beginning at 8:05 and lasting $1\frac{3}{4}$ hours. The park itself is open from 10 a. m. to 10:30 p. m. At 10:20 p. m. a large gong is rung as a signal for all patrons to leave the park. A night watchman and the police officer then make a tour of the grounds, starting from the end most distant from the main entrance,

area of 4 acres. Mr. Benson has succeeded in increasing the buffalo herd from two to six specimens during the past five years, the animals being full-blooded and descendants from those of the famous Corbin preserve in New Hampshire. Three axis deer were purchased from India on account of their superior attractiveness over the common varieties. There are five Virginia deer, three elk, two turkey



Lexington Park—Stage of Open-Air Theater

buzzards, 33 parrots, two Siberian camels, two zebu and two black bears in the zoo, as well as other animals. The bears occupy a den 60 ft. long by 40 ft. wide, with natural rock backgrounds and two individual dens with doors controlled from without, the entire premises being drained to a common outlet. A concrete bottom 6 in. thick is installed, the base below being cinders 2 in. deep. A pool 8 ft. deep is provided in the den, and each individual den, which runs 11 ft. into the rocks, is equipped with a hole at the rear, through which a hose stream can be turned when it is desired to bring the animals out into the open or for cleaning. An iron fence with inturnd pickets, 18 ft. high, surrounds the den, and the total cost of the bear quarters was about \$2,400. The grass which is fed to the different animals is cut upon the grounds, usually upon the base ball field. The property also owns four cows for the milk supply of the restaurant, and a hennery of 359 fowls for the egg supply. The animals at Norumbega Park are also under the personal charge of Mr. Benson, who takes them all to Havana, Cuba, in the winter season, where they are exhibited. The maintenance cost of the animals at Lexington Park is \$140 per week, total.

The restaurant has accommodations for about 300 persons; the cooking is done upon the grounds, and the milk and water, egg and vegetable supplies are all taken from the premises, the latter being purchased from an adjoining farm, however. An orchestra stand is provided outside the restaurant, and an out-of-door platform, surrounded by greenery is equipped with tables for the use of patrons. The café is run upon both the American and the European plans, a country steak and vegetable dinner being served at practically cost to automobilists and others, at \$1 per plate, while the a-la-carte service is run at popular prices. The restaurant is operated mainly as a convenience to park patrons, and not as a money-making establishment, the manager's experience indicating that high prices in the café discourage attendance at the park and consequent poor



Lexington Park—Souvenir Booth

and warning all persons to leave the property. At 10:25 p. m. the lights in the park are cut off for three minutes—a proceeding which tends to hasten all tardy patrons to the gate with maximum speed as soon as the light returns.

The zoological garden contains one of the best collections of herbivorous animals in New England and covers a total

patronage of the other concessions. The soda fountain is run upon a home-made basis, with water carbonated on the premises, and all ice creams are made on the property. A number of private dining rooms have recently been provided, and features of each of these are colored lighting and picture aquaria designed by the park manager. It consists essentially of a thin aquarium containing gold fish, and is hung upon the wall in each private dining compartment to form a living picture to entertain the diner while his order is being filled.

Other features of this park are the free base ball field, with 2 acres of cleared space, bleachers, running track, space for tug-of-war, horse shows and other field sports; a monkey house, reached only through an electric arcade equipped with a large number of penny-in-the-slot machines; free toboggan slide of maple boards, 80 ft. long and waxed; free kitchen, stove and firewood gathered on the grounds for the use of picnic parties; a merry-go-round, driven by a 5-hp motor; women's pavilion, with rest room,



Lexington Park—Band Stand and Refreshment Tables on Porch of Casino

matron, reclining chairs, two cribs, modern lavatory conveniences; a free library for use by park patrons upon payment of a returnable deposit of 10 cents per volume; a dancing pavilion, with an outside circumference of 365 ft., with central bandstand and illumination by festooned incandescent lamps hung from the trees, and the observatory. The latter is built on top of the main storage water tank of the park, which has a capacity of 20,000 gal. A straight stairway renders the ascent of the tank easy, and the top is about 400 ft. above sea level. Views of distant mountains in New Hampshire are obtained in clear weather. The water supply is pumped into this tank from a spring 20 ft. deep by a 3-hp electric pump. A small motor is also used to operate a corn popper in one of the concessions, gasoline burners being used for heating. At the so-called "country store" post cards are sold of park scenes, and four collections of mail are made daily from this point. The management has made a collection of representative extracts from the post cards mailed here as a test of public sentiment toward the park and its attractions, the names, of course, being omitted. It feels that in this way the real sentiments of its patrons can be ascertained, and the character of comments has been distinctly favorable to date. In

the present year over 182,000 post cards of the park have been sold on the grounds.

All the lights in the park are controlled by a single cut-off switch located in a box near the entrance of the grounds. In general, the lighting is by circuits of five lamps each in series. There are three electric fountains on the green near the dancing pavilion, and the colors of these are altered once a week. The maximum number of patrons who have entered the park in a single day is 11,000. The present year's patronage is estimated at about 200,000. The park is advertised extensively on the folders of the Boston Suburban Electric Companies; by the "follow-the-flag" idea used on the trolleys of the line, a red flag with a center "L" being used in place of the blue "N" of the Norumbega lines; and in the newspapers and on car dashers and interior signs. This year there have been 383 large picnics at the park. The property of the company is under the general management of Carl A. Sylvester, general manager of the Boston Suburban Electric Companies, who succeeded Matthew C. Brush as general manager of the property on Oct. 1.

HEARING ON VALUATION OF CONEY ISLAND & BROOKLYN RAILROAD

The hearing before the New York Public Service Commission, First District, in the case involving valuation of the Coney Island & Brooklyn Railroad, was resumed on Sept. 27.

Bion J. Arnold was recalled as a witness and presented a list of corrections of the transcript of his testimony at the preceding hearing. The cross-examination of Mr. Arnold was then begun by W. N. Dykman, of counsel for the Coney Island & Brooklyn Railroad.

During this part of the proceedings Mr. Arnold testified that he was first employed by the commission about a year and a half ago to make an exhaustive study of the New York subway and report upon methods of increasing its capacity, and such other changes as he saw fit to recommend. In his investigation of the subway situation, so far as it related to the question of the 5-cent fare, he computed the return upon the investment in the road as nearly as he could get at it, without allowance for depreciation, obsolescence or inadequacy, and not upon the capitalization of the company. He had pointed out very carefully in his report that in financing any future subway an allowance should be made to provide for depreciation.

The next work taken up by Mr. Arnold for the commission was that of director of appraisals. The first work of this character upon which Mr. Arnold entered for the commission was the appraisal of the Metropolitan Street Railway System, which was begun about July, 1908, and has not yet been completed. He had also been employed to appraise the property of the Brooklyn Rapid Transit Company, but had not yet finished this work. For the present the work on these appraisals had practically been stopped, pending the preparation of certain information by the Metropolitan Street Railway and the Brooklyn Rapid Transit Company. The examination of the properties of the Brooklyn Rapid Transit Company was comparable to the investigation of the Coney Island & Brooklyn road so far as principle was concerned, but not so far as values were concerned.

The general instructions given by the commission were to complete the appraisals as rapidly as possible and with as little expense as possible, and that policy had been fol-

lowed. Mr. Arnold did not wish to state that he was hampered by lack of funds in the work. The commission did not attempt to define the amounts to which the expense was to be limited. About two months were required to arrive at the first figures which were submitted regarding the cost to reproduce the physical property. From the records it appeared that 1068 men days, or the equivalent of 1068 men working one day, were put upon the work from December, 1908, up to the time when the appraisal on the cost to reproduce the physical property new was completed. Then, if Mr. Arnold's recollection was correct, the commission thought that further information might be necessary regarding the present value of the property. The work on this latter feature of the appraisal had continued, off and on, up to the time the hearings began in September. The valuations of the Brooklyn Rapid Transit Company, the Metropolitan system and the Third Avenue Railroad progressed at the same time.

In the work of ascertaining the reproduction cost of the physical property, the witness would have proceeded in the same way had no limit of time or money been fixed by the commission. He stated, however, as to the cycle of maintenance and 50 per cent depreciation theory, that this was the first time that he had used this theory or had known of its use; and that its use had saved some time and expense. [This theory is described in the abstract of the testimony published in the issue of Sept. 25, 1909.—Eds.] He had discussed principles with different members of the commission, but had never received any instructions to eliminate or to include any item. He was left entirely to his own judgment, so far as his reports and valuations were concerned, and the commission would approve or disapprove of his decisions later. The production of maximum or minimum values to cover development expenses and working capital was agreed to as a possible way of getting at the truth. Great difficulty had been experienced in securing information on that subject from the engineering representatives of the Coney Island & Brooklyn Railroad. Mr. Arnold's intention was not to determine these values, but to leave them to the commission to fix.

Answering questions as to whether he could take the maximum and minimum values and ascertain figures which he could consider correct values and the time that would be required, the witness said he supposed he could, but would not state what time would be needed. It depended upon what information could be secured from the experts of the railroad company bearing upon the subject. He had hoped the company would submit information which would enable him, as an engineer representing the commission, to arrive at some fair conclusion. He did not wish to be understood as attempting to keep the figures either down or up; he was open for information and hoped the engineers of the company would produce it.

No figures of the physical value of the railroad were submitted to the commission prior to the beginning of the case. Approximate figures were given once or twice, but it was understood that no final figures had ever been given until a few days ago. The witness had discussed the depreciation figures with Commissioner Bassett, so as to give him some idea as to the present value of the property. Certain items included under development expenses and working capital were also discussed with the commissioner.

Mr. Dykman asked what the cost had been of making the examination of the property. Commissioner Bassett said he did not at present see the relevancy of that information in this inquiry, and objected to it. Mr. Dykman therefore

stated that his object was to show that the company was not financially able to duplicate the work. On that account he thought the question proper. Commissioner Bassett then ruled that the witness need not answer the question; that he was under cross-examination, and so far as he was an expert witness, he was not obliged to give testimony on new matters that were not proper under cross-examination. Mr. Arnold then stated that the force on this work had varied from 10 to 50, of whom only two had been in his employ, the remaining men being in the employ of the commission, under the direction of himself or his assistants, and that these men placed tentative values on the property, which had been reviewed by him or his assistants.

WORK OF EMPLOYEES OF THE COMMISSION.

Mr. Dykman then asked for information regarding the use of employees of the commission under the direction of Mr. Arnold's assistants in the work of appraisal, and said he could not tell where they ended and Mr. Arnold began, or where Mr. Arnold ended and they began. He would therefore take exceptions to the ruling of Commissioner Bassett.

Commissioner Bassett then said that the commission was having valuations placed before the company because the law required that a hearing be given to the company. The commission was giving the company the fullest opportunity to inquire by cross-examination as to the nature and methods of the valuation. It was not a case that was made entirely by the complainant on one side and the company on the other. If that had been the fact, the commission would not have gone into the matter of valuation or, later, into the matter of operating statistics. The commission was placing the entire matter before the company for objection and sifting.

Mr. Dykman said the trouble was that the commissioner was ruling upon his own objection. He therefore took exception to the objection. Commissioner Bassett replied that it seemed to him that there was nothing especial of which to complain so long as the commission placed before the company the entire matter of the valuation and method of doing the work.

Mr. Dykman said the commissioner was withholding by this ruling something which it seemed to him was very important. The commission was acting as prosecutor and as judge, its employees were witnesses and did not come on the stand for cross-examination, but somebody who had collated their work and changed some of it went on the stand to give opinion evidence. He could not find the men who had placed the value or that their value had not been changed. Here was a witness who was employed by the commission, directed by the commission, witness, prosecutor, judge, all combined in one person, and the company was precluded from finding out what part the employees of the commission took in valuing the property. Commissioner Bassett said that Mr. Dykman should be given every reasonable opportunity the very fullest opportunity, to make inquiries from those who worked under Mr. Arnold. It was not necessary to separate the work which had been done by men in the employ of the commission and by the assistants of Mr. Arnold, because they were all working under Mr. Arnold for the purpose of getting a result. Mr. Dykman stated that, as he viewed it, the men were not under Mr. Arnold at all.

Mr. Arnold then gave a list of 50 employees of the commission who were engaged in the work. All of the men did not make valuations. Some were engaged in drawing

off quantities, examination of property and plants and taking measurements, which were handed to Mr. Arnold's assistants.

Mr. Arnold explained that the property owners' consents included in his allowance of 15 per cent in previous testimony did not include frontage consents. He stated that the cost of certain improvements made since Feb. 1, 1909, to date should be added to give reproduction cost as of present date.

Mr. Dykman said that from 1861 to 1909 the average rate of dividend paid by the company was 5.7 per cent, and the last dividend was paid before the stock was increased from \$2,000,000 to \$3,000,000, so that no dividend had ever been paid on the stock represented by the last \$1,000,000 of capital, for which 100 cents on the dollar, cash, was paid. The subscribers for the last \$1,000,000 of capital stock were far from any return now, according to the order of the commission. Mr. Arnold said that, accepting those conditions, he would not regard 5.7 per cent as an excessive return.

An adjournment was then taken to Oct. 8.

HEARING ON OCT. 8

The complaint of Jonas Monheimer against the Coney Island & Brooklyn Railroad for a 5-cent fare to Coney Island on week days was taken up by Commissioner Bassett at the hearing on Oct. 8. George H. Backus represented the commission as counsel and W. N. Dykman represented the Coney Island & Brooklyn Railroad in a similar capacity. Frank R. Ford, of Ford, Bacon & Davis, engineers, and John A. Thake, assistant secretary and cashier, were also in attendance in the interest of the company, but only Mr. Thake was called to testify at this hearing.

Mr. Backus, for the commission, asked permission to introduce as evidence the complete pleadings and testimony in the previous case against the company before the commission regarding the 10-cent fare charged on Saturdays, Sundays and holidays, which charge the commission held to be justifiable. Commissioner Bassett said his idea was to keep the two cases entirely separate, and as he was unable to see any advantage to be gained from the introduction of the full testimony in the former case it was not admitted. He recommended that Mr. Backus pick out such material from the former case as might be applicable to the one in hand and file such transcript at the next hearing.

George P. Watkins, of the statistical department of the commission, was then called as a witness to identify certain reports of the company, and in so doing passed on transcripts of monthly reports made to the directors of the Coney Island & Brooklyn Railroad by the officers which had been supplied to the commission as a matter of courtesy and to minimize the work of the employees of the commission in preparing reports from the company's books. Mr. Backus sought to have these reports accepted as evidence, but Mr. Dykman protested against this, as the reports are confidential statements, which go into details for the benefit of the directors, and contain material that competitors of the company might use to their advantage if the reports were made public. A conference was then held between Mr. Dykman, Mr. Backus and Mr. Bassett, and it was finally decided that Mr. Watkins, for the commission, should be permitted to take from the report such figures as he deemed necessary, these figures to be submitted to the company for certification and then offered as evidence at the next hearing.

Mr. Thake was asked by Mr. Backus, for the commis-

sion, to compile a record of the numbers of second fares from 1901 to date. Mr. Backus also desired a record of passengers who board the cars in the second fare zone, as a means of showing how many residents of Coney Island are affected by the second fare, but Mr. Thake said that the identification slips issued to such passengers are treated as transfers and destroyed, and that no record of them is kept. At the request of Mr. Backus, Mr. Thake agreed to prepare a summary of the boundaries fixed upon from time to time for the collection of the second fare.

The hearing was then adjourned to Oct. 14.

JOINT PASSENGER TARIFF OF THE CENTRAL ELECTRIC TRAFFIC ASSOCIATION

The Central Electric Traffic Association has just completed the compilation of a new joint passenger tariff, No. 3, giving the one-way and round-trip selling and basing fares. The tariff was issued Oct. 14, 1909, and is effective for interstate traffic Nov. 24, 1909; intrastate traffic in Indiana, Oct. 24, 1909, and intrastate traffic in Ohio, Oct. 24, 1909. This is the first tariff of its kind to be filed with the Interstate Commerce Commission, and is considerably larger than any of the previous tariffs issued by the electric lines. It is also larger than the tariffs issued by the steam roads in the Central States. The tariff contains full data and instructions to enable any agent to properly advise a prospective passenger the rate and routing to any station reached by the electric lines within the territory of the Central Electric Traffic Association. The mileage of the various lines which are parties to the tariff aggregates 2713 miles.

The tariff contains 32 headline points and quotes both single and round-trip rates to and from 450 stations to each headline point, making 900 computations or rates to each headline point, or 28,800 computations or rates in the tariff. There are an average of five routings to each station, and this necessitated five times 28,800, or 144,000 computations in compiling the rates used in the tariff in order to ascertain the lowest combination which would establish the through rates, not including the trial computations of rates via routes which were found to be impracticable.

As this tariff was not preceded by another, the compilers were compelled to build up the entire compilation by using the local tariffs of the 30 electric lines that are represented therein. After this work was done the several sheets were run off in duplicate and copies sent to the traffic departments of each road for checking and approval. At the monthly meetings of the Central Electric Traffic Association the representatives of the various lines called attention to any corrections or new rates and routes which were discovered or were covered by local or joint traffic arrangements not shown in local tariffs. After all headline points were similarly treated the checked proof sheets were rewritten on the typewriter and printer's copy prepared. The printer's proofs were checked and revised three times.

The tariff contains a table of contents, an alphabetical list of headline points, list of the participating carriers, showing the number of powers of attorney and concurrences, the general rules and regulations, an alphabetical list of stations, showing roads on which located, and the tariff of rates. The printed pamphlet contains 206 pages, two columns to the page, and weighs 2 lb. A total of 1100 copies of the tariff was printed by an Indianapolis printing

company on a monotype press. The entire type will be kept standing for printing future issues made necessary by the opening of new lines or by the preparation of supplements.

The tariff was compiled in the office of the Central Electric Traffic Association, 306 Traction Terminal Building, Indianapolis, Ind., by the chairman, A. L. Neereamer, and J. T. Britton, secretary.

VISIT OF PACIFIC COAST TRAIN PARTY TO SALT LAKE CITY AND BUTTE

The party which is making the tour of the Far West by special train under the auspices of the officers of the American Street & Interurban Railway Association left Denver at 2 a. m., Oct. 9. Several persons joined the party at Denver, including Thomas N. McCarter, of Newark, N. J., and Mrs. McCarter; E. C. Foster, of New Orleans, and Mrs. Foster, and R. T. Laffin, of Seattle.

Salt Lake City was reached about 1 p. m., Sunday, Oct. 10. The party was met at the railroad station by the following officials of the Utah Light & Railway Company: L. L. Dagrón, chief engineer; G. S. Gannett, treasurer; O. A. Honnold, electrical engineer; G. W. Manning, assistant superintendent; B. W. Mendenhall, commercial agent, and W. C. Baker, chief clerk. Luncheon was served at the Commercial Club, and the party then boarded a steam train which took them to Saltair, on the Great Salt Lake, 18 miles distant. Several members of the party took a swim in the lake and enjoyed the novel sensation of bathing in water in which they could not sink. Following the trip to the Great Salt Lake, the party was escorted on a sight-seeing trip around the city in three special cars. Several points of interest were inspected, including the handsome new car house of the Utah Light & Railway Company. The party re-embarked on the special train about 6 o'clock in the evening and proceeded northward to Butte, Mont., which was the next stop.

After leaving Salt Lake City the party sent a telegram to the officials of the Utah Light & Railway Company, thanking them for the many courtesies extended during the brief visit in Salt Lake City, and complimenting them on the excellence of the street railway system under their charge.

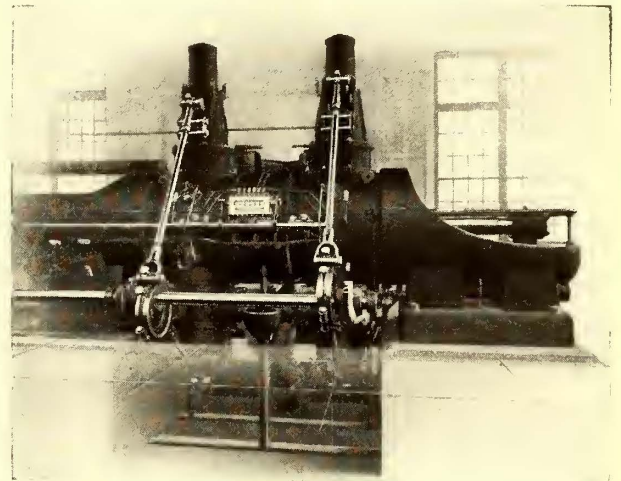
The train reached Butte, Mont., at 1:30 p. m. on Monday, Oct. 11. The party was met at the station by J. R. Wharton, manager of the Butte Electric Railway Company and other officials of the company. Electric cars were waiting to take the party to a copper mine in the vicinity of Butte, owned by Senator Clark. On reaching the entrance to the mine the party was transported 2100 ft. under ground to one of the galleries in the mine, where an elaborate luncheon was served. The Mayor of Butte presided at the luncheon, during the course of which a number of humorous telegrams purporting to come from distinguished persons, were read. After luncheon the party was escorted through the mine, and later was transported by electric cars to the railroad station. All of the ladies in the party were presented with bunches of violets with the compliments of the officers of the Butte Electric Railway Company. After leaving Butte, about midnight, a telegram of thanks was dispatched to the officers of the Butte Electric Railway Company for the many courtesies extended to the party during its stop in Butte. The experience in that city was most unique and enjoyable.

The party reached Calgary, Alta., on its way westward on Oct. 12.

A NEW DOUBLE-ACTING FOUR-CYCLE GAS ENGINE

Several years ago the C. & G. Cooper Company, Mt. Vernon, Ohio, began a careful investigation of the gas-engine situation in this country and in Europe, and after examining existing designs, finally decided to design its own gas engine, and unite, if possible, all the best engineering features which modern practice had proved to be sound and desirable. To this end the company retained Martin A. Thiel, a well-known German gas-engine expert and designer, to supervise this important work. Little publicity has been given the extensive gas-engine development carried on by the company, pending endurance tests in service of the new machines. These tests have thoroughly demonstrated the success of the design, which, it is believed, will be a valuable acquisition to the gas-engine field. Its regulation, running qualities and general reliability have been proved to be equal to that of a steam engine of the highest grade, while the thermal efficiency is, of course, far superior to that of any steam engine.

The new Cooper engine is a double-acting, four-stroke cycle machine, working on the constant mixture principle



Valve Mechanism of Gas Engine

from the center of the engine so that the pistons travel an equal distance and with equal resistance to the respective intake valves of the cylinders. The mixtures in the various cylinders, therefore, must be identical in volume and composition under all conditions of load. Upon a similar principle the cooling water is introduced into the piston rods from a central point and passes through each piston and piston rod, without reversing the flow, to the outlets at the forward and rear ends of the engine. The overhanging counterbalanced type of crank has been adopted.

The bed is of the heavy-duty rolling-mill type, having an open top, permitting access to the crosshead, and easy removal of the cylinder head and piston through the bed. The bed is rigidly bolted to the foundation, while the distance pieces and tail-rod supports, which are of cylindrical construction, rest on base plates in machined ways. The main bearing is of special design. The lower shell rests in a bored seat, and may be easily removed after relieving it of the weight of the shaft. This shell is babbitted and cored for water cooling. The side gibs are provided with wedge adjustment on either side and are lined with babbitt. The cap is babbitted at the ends only, and is used to clamp the quarter boxes and the bottom shell into place. In addition there is a transverse rib on either side of the cap extending the length of the bearing, which provides a retaining wall for the oil and compels it to enter the bear-

ing above the side gibs. The crosshead is fitted with an improved flat shoe, the top face of which is bored to allow the crosshead pin to align itself with the crankpin should the latter be thrown out of the horizontal plane by shaft deflection.

All pistons and piston rods are similar, and are interchangeable. The pistons contain no ribs and float on hollow rods between the main, intermediate and supplementary crossheads. The rods are drilled for water circulation and are forced into the pistons. The cylinder is a one-piece barrel, with inlet and exhaust chambers bolted to it so as to remove all cooling strains in the castings. The water jacket is closed at its center by a belt in three segments. The cylinders are supported only at the ends by the main bed and guide castings, and as the piston and rods are carried by their respective crossheads, the cylinder barrels are permitted to expand and contract with freedom. The exhaust piping is of flexible construction throughout, insuring free movement for expansion and contraction due to changes of temperature.

The ignition is of the "make and break" mechanically operated type, and two or more igniters are operated simultaneously at each end of each cylinder. This system is connected with a safety stop, which automatically breaks the electric circuit when the engine speed exceeds 10 per cent above normal or the cooling water supply fails. The engine is regulated by varying the quantity of a constant mixture controlled by the governor through an automatic relay. The lay shaft is driven by spur and bevel gears and is supported by bearings on the engine bed and base-plates, thus avoiding the common practice of supporting it on bearings from the cylinders, where these bearings are subjected to the changes due to expansion and contraction. This plan has the additional advantage of permitting the removal of the cylinders without disturbing the lay shaft bearings. The inlet and exhaust valves at either end of

and performance of the engine are stated to have been regarded as very remarkable by many prominent gas engineers who have inspected it. It will be built in single-tandem and double-tandem units of from 150-hp to 3000-hp capacity.

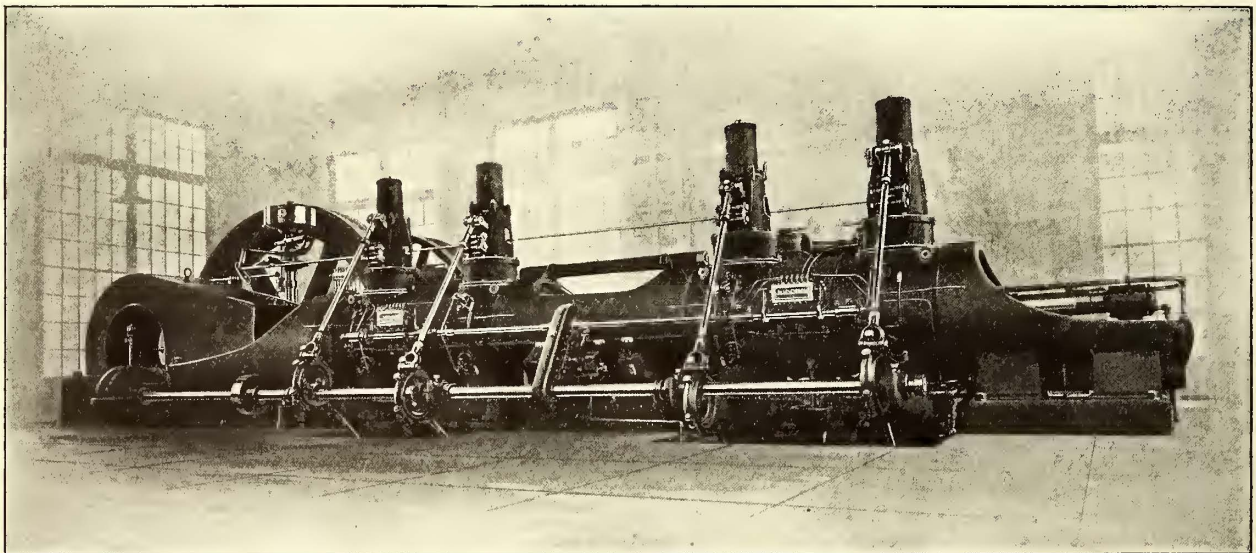
NEW TRANSFERS AT WINNIPEG

In order to lessen the losses which it has suffered for some time through the misuse of transfers by its patrons, the Winnipeg (Man.) Electric Company has adopted a new transfer, 5½ in. long by 2 in. wide, which contains the name of the issuing line and the date of the issue at the top. The lines on which the slip will be honored are printed on the left-hand side of the transfer and the time by hours divided into periods of 10 minutes is printed on the right-

St. James & Higgins	FRI. OCT. 1	VIA TO	1	10	20
		ACADEMY RD & CORTOON	30	40	50
		AGRI. COLL.	2	10	20
		ARLINGTON	3	10	20
		BANNERMAN	4	10	20
		BELT LINE	4	10	20
		BROADWAY & ST. JOHN	5	10	20
		DEER LODGE	6	10	20
		DUFFERIN	6	10	20
		ELMWOOD	7	10	20
		FORT ROUGE & SELKIRK	8	10	20
		HIGGINS	8	10	20
		LOGAN W.	9	10	20
PARK LINE	10	10	20		
PEMBINA	10	10	20		
PORTAGE	30	40	50		
SARGENT	11	10	20		
ST. BONIFACE	30	40	50		
ST. JAMES	12	10	20		
SUTHERLAND	30	40	50		
WILLIAM	12	10	20		
GOING	If space below is punched, the time punched is P.M.				
N. S. E. W.	P.M.				

New Transfer Used in Winnipeg

hand side. At the bottom on the left-hand side is the direction, north, south, east or west. At the bottom on the right-hand side is a shaded space to indicate p. m. The transfers are punched for the hour and the nearest 10 minutes, the direction, and p. m. if the slip is issued after 12 m. No a. m. indication is necessary. If the p. m. space is not punched the conductor understands that the slip was issued in the morning. The color of the tickets of one line differs from all the others. It is proposed to change the colors frequently so that passengers will never be certain



General View of Gas Engine

each cylinder are actuated by a single eccentric on the lay shaft. The gas exhaust valve is of the separate cage, water-cooled type. The gas regulator is of a special oil-sealed, inclosed construction with balanced valve.

Aside from the remarkable combination in this engine of features essential to the best results in a gas engine, the construction details common to all reciprocating engines, such as bearings, connecting rods, etc., have been worked out with unusual painstaking and skill. The design

what color slip they will receive, thus making them cautious about trying to foist old transfers upon conductors. One of the transfer slips is reproduced herewith.

The monthly report of passenger train performance on the New York steam railroads for August, 1909, shows that 65,312 trains were operated, of which 87 per cent were on time at division terminals. In August, 1908, there were operated 62,397 trains, of which 78 per cent were on time.

News of Electric Railways

Cleveland Traction Situation

The week ended Oct. 9 was marked by a series of rapidly transpiring events in traction circles at Cleveland, but at its close several obstacles still remained in the way of a final settlement. Two matters yet to be arranged are new terms with the interurban railways and the modification of the contract with East Cleveland.

In connection with the letter of Judge Tayler, setting forth the conditions upon which he would act as arbitrator of the questions of valuation and fare, made public on Oct. 4, action was taken at once by both the city and the Cleveland Railway which resulted in the acceptance of his terms by both sides. Directors of the company met that afternoon and framed a letter to the City Council. Among other things the company said:

"We acknowledge receipt of your communication of Oct. 2.

"We have received also a letter from Judge Tayler setting forth the conditions under which he is willing to act as arbitrator, and we understand that a duplicate of his letter was sent at the same time to you. We, on our part, will gladly meet the Judge's conditions, and proceed immediately upon the lines indicated by him.

"Besides valuation and rate of fare, the questions undetermined between us, and which Judge Tayler says must be settled before he can begin the work of fixing the value of the property are, as we understand them:

"1. The East Cleveland situation. As to this, we are to meet the Council of East Cleveland on Oct. 5.

"2. The interurban question. We have arranged a meeting with representatives of the interurban companies on Oct. 5.

"3. The 'invalidity clause.' This we have all agreed to leave to the determination of Judge Tayler, the city solicitor, Mr. Tolles and Judge Lawrence.

"4. The provision with reference to the company having a right to continue to serve the city upon the same terms as any intending purchaser who may make a bid after the lapse of eight years from the taking effect of the ordinance. We accept your suggestion that this also be referred to Judge Tayler, Mr. Tolles, Judge Lawrence and the city solicitor.

"We desire to urge upon you and upon Judge Tayler that if the gentlemen named are unable to agree upon the phraseology of the provisions to be written by them, or if you and we are unable to agree as to provisions covering the East Cleveland situation and the interurban question, or if any other differences arise between us in the preparation of the ordinance, every such difference be submitted to Judge Tayler for final determination."

This letter was referred to the street railway committee of the City Council at a session held that evening and a reply was framed to the communication from Judge Tayler, which was as follows:

"The Council of Cleveland has received your letter of Oct. 4 and accepts at once the conditions interposed by you upon your willingness to act as an arbitrator.

"The Council is ready now to proceed, in any order agreeable to the railway company, to complete an ordinance in every line except the insertion of the valuation and the maximum rate of fare.

"As to the itemization of the value of the property, the Council calls attention to the fact that the letter drafted by it and submitted to the railway company says: 'We concur in requesting that the valuation reached by you shall be by items, etc.' In the presentation of this subject to you we believe there will develop some claimed elements of value and some species of property as to which you will desire to make separate findings to the end that the public interest in them can be satisfied and intelligent consideration be given to the results reached.

"The Council has understood that in your view the maximum rate of fare should be as stated in your letter. We ask only that you will give our views on this subject such consideration as they seem to you to merit after the valuation shall have been determined by you as in the opinion of the Council an intimate relation exists between the amount of the valuation and an appropriate maximum rate of fare."

On motion of Councilman Koch, the city solicitor was instructed to prepare a reply to the letter of the Cleveland Railway, expressing the willingness of the city to submit the question of fare and valuation to Judge Tayler and suggesting that the Council prepare a formal letter of submission. The letter was also to express a willingness to proceed at once to the adjustment of other differences and

to allow the committee in charge of the invalidity clause to arrange the conditions of competitive bids at the expiration of eight years. The company has insisted that it should retain its property if it is willing to make terms as favorable as the best bidder. The administration did not answer the request of the company that all disputed questions be left to Judge Tayler or this committee and the interurban and East Cleveland matters were still unsettled at the end of the week.

On the forenoon of Oct. 5 Horace E. Andrews, president of the Cleveland Railway, met with representatives of the interurban companies in an endeavor to arrive at some method of compensation for the use of the local tracks by the interurban cars. Nothing was given out for publication, as the participants feel that everything can be made public when the matter has been finally adjusted. The main point is the car-mile cost of operating these cars. The Cleveland Railway has been requested by the city to make some arrangement so that the people on the West Side streets will not have to pay two fares for a ride. As it is, the Cleveland, Southwestern & Columbus Railway owns a part of the track on Lorain Street and the Cleveland Railway will either be compelled to lease this or build another track, under the present plan.

The Cleveland Railway in its reply to the latest communication of the city stated that the formal letters enclosed with the city's communication and addressed to the members of the proposed committee to draft an invalidity clause had been signed and forwarded to them by messenger. The reply also expressed the hope that if this committee failed to agree upon the language of the clause or if any other questions were found impossible of settlement by the company and the city, all be submitted to Judge Tayler as final arbitrator.

The letters addressed to the members of the proposed committee on the invalidity clause request that the clause be so drafted as to make the safeguards to the city as good as the grant to the company in the ordinance. The request is also made that a clause be formulated giving the company substantial preferences over any other bidder at the end of eight years, without preventing competition, Judge Tayler, Judge Lawrence, S. H. Tolles and City Solicitor Baker are the members of this committee.

On the evening of Oct. 5, J. J. Stanley, vice-president of the Cleveland Railway, and Attorney Harry J. Crawford appeared before the Council of East Cleveland and requested that the existing contract between the company and the village be modified as insisted upon by Mayor Johnson, who refused to renew the franchise on Euclid Avenue if the company was forced to carry out the obligation to the village to carry East Cleveland passengers at the rate of fare existing on the Euclid Avenue line inside the city. Asked what he had to propose in return for the surrender of the contract, Attorney Crawford replied that he had no suggestions to make, but wished the Council to consider the matter. Mayor McQuigg stated that it would be taken under advisement and a special meeting was set for the evening of Oct. 7 when Mr. Andrews could be present.

The second meeting was productive of results in that a reply, declining to modify the contract, was made by resolution. Mr. Andrews proposed that, in return for an extension of the franchise 25 years from the present time, the company would be willing to make a cash fare of 5 cents or six tickets for 25 cents and to extend the Superior Street line to a connection with the Euclid Avenue line at Windermere or possibly through to the eastern limits of the village north of the Nickel Plate tracks, thus giving service on two lines instead of one. He said, however, that the service would probably not be as good on either line as at present on Euclid Avenue. Mr. Andrews declared that it embarrassed him to ask a change in the contract, and that only the stand of the administration in Cleveland had induced him to do so. He said that the company is ready to carry out its contract, but that the city administration has threatened to refuse a renewal of the franchise on Euclid Avenue if the company does not agree to a modification. The company, he said, could not accept a grant from the city with this line omitted, as it is one of the best owned by the company. In order to carry out its contract, Mr. Andrews stated that the people of the village may have to be taken down town over the Superior or Cedar lines, after the expiration of the Euclid Avenue franchise in 1913. Mayor McQuigg of East Cleveland said that people had built homes in East Cleveland on the assurance that the fare would always be the same as on other portions

of the Euclid Avenue line and that it would be a breach of faith on the part of the Council to consent to a modification of the contract. He said the old Cleveland Electric Railway had been the means of building up the village and that the people had the greatest faith in and respect for Mr. Andrews and his fellow officers. They do not ask a modification of their own accord, he said, but under pressure from the Cleveland city administration. He further stated that, notwithstanding the good intentions of the officers of the company, the present administration, if retained in power, will have much to do with the schedules and operation of cars and that any change might result in the service to East Cleveland being curtailed. Mr. McQuigg also said that he could not see why it was all-important that East Cleveland give up its contract and submit to a higher fare, when the haul is no longer than on the St. Clair Street and Broadway lines. The vote on a resolution refusing to entertain a proposition to modify the contract was unanimous.

Mr. Andrews made a verbal report of this matter to the City Council on Oct. 8. He stated that from his view of the temper of the people, the contract with the village could not be modified. The administration was asked to make a concession on this point and allow the contract to stand, as the company could not accept a grant that necessitated the breaking of a contract which it has been willing at all times to execute. Neither can it afford to accept a grant that does not include Euclid Avenue. He also made a verbal report on progress in the negotiations with the representatives of the interurban railways.

Mayor Johnson refused to say what would be done regarding the East Cleveland matter, but requested Mr. Andrews to put his report on both this question and the interurban negotiations in writing. Mr. Andrews agreed to do this, but said that he felt he should have some idea of the disposition of the question on the part of the city. The company desires that the matter be referred to Judge Taylor. In the draft for a grant made by Judge Taylor months ago Euclid Avenue was included without any conditions relating to the East Cleveland contract.

The report of Warren Bicknell, receiver of the Municipal Traction Company, for September shows a surplus of \$102,639.65, a sum smaller than the surplus for June, July or August.

Wage Increase in Detroit

The Detroit (Mich.) United Railways has announced an increase in the wages of its motormen and conductors, dating from Oct. 1. The men were apprised of the change in four bulletins applying to the different divisions of the company. These communications were signed by Henry Bullen, general superintendent, and F. W. Brooks, general manager. Each of the bulletins concluded with this statement: "In thus increasing the rates of pay the company, while under the burden of a constantly increasing cost of doing business, recognizes the increased cost of living, and particularly desires to aid those who, by their length of service, have demonstrated their capability and loyalty to the service. It is hoped that this action will be justified by greater effort on the part of the men to safeguard the property and interests entrusted to them."

The new rates of pay to conductors and motormen of the Detroit, Pontiac and Flint city lines and the Flint, Pontiac, Orchard Lake and Wyandotte divisions follows: First year, 23 cents an hour; second year, 25 cents an hour; third year and thereafter, 27 cents an hour. The former rate of pay was 23 cents, 24 cents and 25 cents an hour for the first, second and third years, respectively.

The new rates of pay to conductors and motormen of the Rapid Railway System, including the Shore Line division and the Port Huron and Mt. Clemens city lines, follows: First year, 23 cents an hour; second year, 25 cents an hour; third year and thereafter, 27 cents an hour. To conductors and motormen on city cars in Port Huron and Mt. Clemens, including baggage, mail, express and freight cars, the following scale applies: First year, 18 cents an hour; second year, 20 cents an hour; third year and thereafter, 22 cents an hour. The former rate of pay was 23 cents, 24 cents and 25 cents an hour on the interurban lines and 18 cents, 19 cents and 20 cents an hour on the city lines for the first, second and third years of service, respectively.

The rate of pay to conductors and motormen of the Detroit, Jackson & Chicago Railway, including baggage, mail, express and freight cars follows: First year, 23 cents an hour; second year, 25 cents an hour; third year and thereafter, 27 cents an hour. The rate of pay to conductors and motormen on city cars in Ypsilanti and Ann Arbor, including baggage, mail, express and freight cars on city lines, follows: First year, 18 cents an hour; second year,

20 cents an hour; third year and thereafter, 22 cents an hour. The former rate of pay was 23 cents, 24 cents and 25 cents an hour and 18, 19 and 20 cents an hour, respectively.

The rate of pay to conductors and motormen of the Detroit, Monroe & Toledo Short Line Railway follows: First year, 23 cents an hour; second year, 25 cents an hour; third year and thereafter, 27 cents an hour. The former rate of pay was 23 cents an hour, 24 cents an hour and 25 cents an hour.

The rate of pay for probationary, or first year, employees has not been changed. It is recognized that only a limited percentage of such employees qualify for continued service and accordingly do not earn any special reward. Those who do qualify are encouraged to look forward to an advance.

Proposal for Entrance of Radial Railway to Toronto

The question of the entrance of the cars of the Toronto & York Radial Railway to Toronto, Ont., is again receiving attention. At present passengers and freight on the Toronto & York Radial Railway are transferred at the outskirts of the city. A meeting of prominent merchants and city and county officials was held recently to consider this matter, and W. H. Moore, general manager of the Toronto & York Radial Railway, outlined a plan for the Toronto Railway to operate the cars of the Toronto & York Radial Railway within the city limits. Those present at the meeting expressed themselves as being in favor of the proposition. Mr. Moore has since submitted to the property commissioner of Toronto the following offer on behalf of his company:

"The position of the Toronto & York Radial Railway is that, up to the year 1921, the Toronto Railway should take possession of the Radial cars at connecting points between the lines of the two companies, carrying the cars into the center of the city, and, after discharging passengers and goods, return them to the Toronto & York Radial Railway, upon terms which can be arranged between the companies.

"The terms upon which these cars would be carried within the city of Toronto, so far as the city is concerned, is a matter which would require to be worked out with the Toronto Railway. Under this arrangement the Toronto & York Radial Railway would not secure any franchise in Toronto, nor would it have running rights in Toronto. It would possess simply the right to have its cars operated in and out of the city by the Toronto Railway.

"I have explained the position prior to 1921, in that it has a bearing on the position after that date. The Toronto & York Radial Railway expects an assurance that after 1921 whoever shall operate the street railway system of Toronto—whether it be the city, the Toronto Railway or another company—shall continue to operate the cars of the Toronto & York Radial Railway to and from the market, or such place as may now be agreed upon, not necessarily upon the same terms, but upon conditions to be then determined, and, if it be found impossible to agree to these conditions, the matter to be left to an arbitration tribunal—the Ontario Railway Commission would be acceptable—with provision for such periodical revisions as may be necessary."

Transit Affairs in New York

The resolution of the Public Service Commission for an additional issue of \$1,150,000 bonds by the Interborough Rapid Transit Company for the lengthening of the subway stations to permit the operation of 10, instead of eight-car trains has been adopted by the Board of Estimate and Apportionment on the recommendation of Controller Metz.

When the application of the Third Avenue Bridge Company for a franchise to construct a railway from Third Avenue and Fifty-seventh Street to and over the Queensboro Bridge came up, Controller Metz informed the board that it had been denied by the Public Service Commission, and the application was referred to a select committee.

New Road Opened in Portland.—The Kenton Traction Company, Portland, Ore., has opened its line between Kenton and the new Swift packing plant on Columbia Slough. The road is about 2½ miles long and connects with the Mississippi Avenue line of the Portland Railway, Light & Power Company at the city limits at Killingsworth Avenue.

Hearing on Heating Cars in New York.—The Public Service Commission of the First District of New York has adopted a resolution calling upon street railways to submit at the hearing to be held on Oct. 21 any objections to a peremptory order requiring that all street cars be equipped with an electric heating apparatus which shall maintain a temperature of not less than 45 and not more than 65 deg.

Fahr. between Oct. 15 and April 15 of each year. It is also proposed that a thermometer be kept in each car.

Meeting of American Society of Mechanical Engineers.—At the meeting of the American Society of Mechanical Engineers, to be held on Nov. 9 in the Engineering Societies Building, 29 West Thirty-ninth Street, New York, at 8.15 o'clock, Prof. Gaetano Lanza and Lawrence S. Smith of the Massachusetts Institute of Technology, will present a paper, "Reinforced Concrete Beams," and Prof. Walter Rautenstrauch of Columbia University, will present a paper, "Stresses in Curved Machine Members."

Hearing on Elevated Extension in Boston Continued.—The Railroad Commission of Massachusetts and the Boston Transit Commission, sitting as a joint board under authority of the Legislature of 1909, continued the hearing on Oct. 5 on the proposed extension of the elevated lines of the Boston (Mass.) Elevated Railway from Sullivan Square to Medford. The company was not heard, arguments being presented by representatives of each city for and against the project. The sentiment expressed from Somerville favored the construction of a subway or a new surface line along Mystic Avenue, while the need of an elevated service was voiced by the representatives of Medford.

Terre Haute Franchise Suit Concluded.—On page 635 of the ELECTRIC RAILWAY JOURNAL of Oct. 2, 1909, mention was made of the injunction suit of the city of Terre Haute against the Terre Haute, Indianapolis & Eastern Traction Company. The argument in the suit was concluded at the State House in Indianapolis on Oct. 9. The case was tried at Rockport before Judge Robinson and then transferred to Indianapolis for argument. The company claimed that the city remained passive for six years while it expended \$4,500,000 in buildings and equipment to enter the city only to attempt to exact an excessive price for a franchise permitting the operation of interurban cars for passenger and freight service, thus indicating conspiracy. Judge Robinson promised a decision by Nov. 1.

Milton J. Foreman on Transportation Abroad.—Milton J. Foreman, chairman of the transportation committee of the Chicago City Council, has returned to Chicago after several months spent in Europe. He was asked for an expression of opinion regarding conditions abroad, and is reported to have said: "I have heard a great deal about the transportation systems of European cities, but no city that I visited, either in England or on the Continent, has as adequate transportation facilities as we have in Chicago. There is no comparison between us in that respect. In some respects, however, I think European cities are far ahead of us. They centralize their governing powers and do not have a lot of boards working at cross purposes, as we do. Every improvement they make is made with a knowledge of its relation to some other improvement. They do not have a West Park board and a South Park board and a board of education and a library board and a sanitary district and others too numerous to mention. With a central authority it is easy to fix responsibility and get the best results. We have some things to learn from them, although not in the way of transportation."

Franchise Ordinance Introduced in Kansas City.—The ordinance extending the franchise of the Metropolitan Street Railway, Kansas City, Mo., has been introduced in the upper house of the Council. It was read by title and referred to the committee on streets, alleys and grades. The ordinance was accompanied by the report of the Traffic Way Commission made last July, which recommends the passage of the ordinance in the form in which it has since been printed and circulated by the Metropolitan Street Railway. In that form the ordinance was also given the Mayor's approval in a speech at the time the report was agreed upon. After the ordinance had been introduced five Republican members of the upper house offered 22 amendments which had been agreed upon by them all. These were supplemented by eight more offered by Alderman Edwards which had not been agreed to by the other four Republicans. Both sets of amendments were referred to the committee with the ordinance without reading. The 22 amendments seek to eliminate the partnership and reduce the rate of fare, but do not remove the company's valuation of \$33,500,000. One of the amendments offered by Mr. Edwards demands a physical valuation of the system when the franchise is to expire, another provides for the payment of 2 per cent of the gross receipts to the city and the reduction of fares to six for a quarter, and another removes the restrictions on extensions south of Forty-eighth Street. One of the principal amendments offered in the name of the five Republicans reduces fares after three years, the company in the meantime to build the Twelfth Street Traffic Way at a cost not to exceed \$1,315,000.

Financial and Corporate

New York Stock and Money Market

October 12, 1909.

The stock market was closed to-day, on account of the new Columbus Day holiday. On Oct. 11 the market was weak and lower, after several days of liquidation and declining prices. The sudden advance in the price of money has caused an absolute check to the upward movement and has forced the closing out of many speculative accounts. The long period of cheap money encouraged speculation and made stock carrying easy. The tractions suffered slightly, along with the balance of the list.

The money market has tightened both at home and abroad. The discount rate of the Bank of England has been advanced to 3 per cent and that of the German Imperial Bank to 5 per cent. Money was quoted here yesterday: Call, 4 @ 5 per cent; 90 days, 4¾ @ 5 per cent.

Other Markets

Continued selling and weakness in subway stock was the feature of the Chicago market during the past week. The low mark reached was 4¾, and there has been less than one point recovery since.

In the Boston market, Massachusetts Electric and Boston Elevated Railway have each displayed some activity, although there is no significance in the movement of either. Other tractions were not in the market.

There continues to be some trading in Rapid Transit and Union Traction in Philadelphia, but the volume is small. The price of the former has remained about stationary while the latter has shown a slight decline.

There is nothing doing in the Baltimore market save in the bonds of the United Railways Company. These are still active at unchanged prices.

At an auction of securities in New York last week, \$3,000 of the 5 per cent bonds of the Lexington Avenue & Pavyonia Ferry Railroad were sold at 94½.

Quotations of various traction securities as compared with last week follow:

	Oct. 4.	Oct. 11.
American Railways Company.....	a46	a46
Aurora, Elgin & Chicago Railroad (common).....	a48	*48
Aurora, Elgin & Chicago Railroad (preferred).....	a92	*92
Boston Elevated Railway.....	124½	130
Boston & Suburban Electric Companies.....	*15	a17½
Boston & Suburban Electric Companies (preferred).....	*72	a73
Boston & Worcester Electric Companies (common).....	10	10½
Boston & Worcester Electric Companies (preferred).....	a54	a55
Brooklyn Rapid Transit Company.....	80¾	77¾
Brooklyn Rapid Transit Company, 1st pref., conv. 4s.....	88½	87
Capital Traction Company, Washington.....	a140	a140
Chicago City Railway.....	a180	180
Chicago & Oak Park Elevated Railroad (common).....	*3	*1¾
Chicago & Oak Park Elevated Railroad (preferred).....	*10	*7
Chicago Railways, pteptg, ctf. 1.....	a110	109¾
Chicago Railways, pteptg, ctf. 2.....	a36½	36½
Chicago Railways, pteptg, ctf. 3.....	a25	24½
Chicago Railways, pteptg, ctf. 4s.....	a10	9
Cleveland Railways.....	*78	*78
Consolidated Traction of New Jersey.....	77	a78
Consolidated Traction of N. J., 5 per cent bonds.....	105½	a107
Detroit United Railway.....	a72	69
General Electric Company.....	167	163
Georgia Railway & Electric Company (common).....	a97	a98
Georgia Railway & Electric Company (preferred).....	a88½	*88½
Interborough-Metropolitan Company (common).....	16	15½
Interborough-Metropolitan Company (preferred).....	49	47½
Interborough-Metropolitan Company (4½s).....	84½	82¾
Kansas City Railway & Light Company (common).....	a44	41
Kansas City Railway & Light Company (preferred).....	a83	82
Manhattan Railway.....	a143	a144
Massachusetts Electric Companies (common).....	a18½	a18
Massachusetts Electric Companies (preferred).....	a82½	80
Metropolitan West Side, Chicago (common).....	a19	17¾
Metropolitan West Side, Chicago (preferred).....	a51	52
Metropolitan Street Railway.....	a24	a24
Milwaukee Electric Railway & Light (preferred).....	*110	*110
North American Company.....	82	78
Northwestern Elevated Railroad (common).....	a20	20
Northwestern Elevated Railroad (preferred).....	a71	70
Philadelphia Company, Pittsburg (common).....	a48¾	48
Philadelphia Company, Pittsburg (preferred).....	a41½	41
Philadelphia Rapid Transit Company.....	a29	28
Philadelphia Traction Company.....	a91½	90
Public Service Corporation, 5 per cent col. notes.....	100	a101
Public Service Corporation, cfs.....	94½	a95½
Seattle Electric Company (common).....	114	a114
Seattle Electric Company (preferred).....	105	105
South Side Elevated Railroad (Chicago).....	52½	51
Toledo Railways & Light Company.....	99¾	9¾
Third Avenue Railroad, New York.....	21¾	19¾
Twin City Rapid Transit, Minneapolis (common).....	110¾	a109½
Union Traction Company, Philadelphia.....	a53¾	52½
United Rys. & Electric Company, Baltimore.....	a14¾	14¾
United Rys. Inv. Co., San Francisco (common).....	43¾	41
United Rys. Inv. Co., San Francisco (preferred).....	74¾	70¾
Washington Ry. & Electric Company (common).....	a17¾	a17¾
Washington Ry. & Electric Company (preferred).....	a93½	a94
West End Street Railway, Boston (common).....	94	95
West End Street Railway, Boston (preferred).....	a106	104
Westinghouse Electric & Manufacturing Company.....	87¾	85¾
Westinghouse Elec. & Mfg. Company (1st pref.).....	144	a140

aAsked.

*Last sale.

Hearing on Proposed Expansion of Boston Elevated System

The Massachusetts Railroad Commission and the Boston Transit Commission gave a joint hearing on Oct. 8 upon the terms of consolidation proposed in the Massachusetts Legislature of 1909 between the Boston Elevated Railway and the West End Street Railway. Frederic E. Snow, counsel for the Boston Elevated Railway, made a brief statement urging the necessity for the consolidation and the willingness of the company to meet any reasonable conditions. For the West End Street Railway H. Heustis Newton and F. S. Mead emphasized the financial strength of the company, which owns the surface lines in Boston, the latter being operated by the Boston Elevated Railway under a lease. They urged the right of the stockholders of the West End Street Railway to good returns from the consolidation, and claimed that the Boston Elevated Railway is not in as strong a position financially as when the West End Street Railway was in direct control. It is probable that the Boston Elevated Railway will present its side of the question at a later hearing. Since the acceptance of the lease of the West End Street Railway the cost of operation has increased greatly; the free transfer privilege has grown far beyond the bounds originally anticipated; the average length of haul per passenger has risen without fare increase, and large burdens of fixed charges have been entailed by committals to subway, elevated and tunnel construction in Boston and its suburbs. The joint board will consider these points and will report to the next Legislature its conclusions regarding the desirable terms of consolidation. The proposed terms now before the joint board have already been abstracted in the *ELECTRIC RAILWAY JOURNAL*.

American Light & Traction Company, New York, N. Y.—The directors of the American Light & Traction Company have declared the regular quarterly dividends of 1½ per cent on the preferred stock and 2 per cent on the common stock of the company, payable Nov. 1 to stock of record Oct. 20, and also an extra stock dividend of 2½ per cent on the common, payable on or before Nov. 15 to stockholders of record Oct. 20.

Albany & Hudson Railroad, Hudson, N. Y.—On application of counsel for the Trust Company of America, Supreme Court Justice Betts has appointed John W. Searing, New York, receiver of the Albany & Hudson Railroad, which formerly operated an electric railway between Albany and Hudson, and which was recently sold under a mortgage foreclosure. The property recently was taken over by a reorganization committee, and now is owned by the Albany Southern Railroad.

Capital Traction Company, Washington, D. C.—Shareholders of the Capital Traction Company of record Nov. 1 are offered the right to subscribe at par for a block of \$1,440,000 of 5 per cent bonds of the company, part of the first mortgage issue of 1907 (of which \$2,520,000 is outstanding), to the extent of 12 per cent of their holdings of stock.

Cleveland & Chagrin Falls Railroad, Cleveland, Ohio.—An agreement has been reached, it is announced, whereby the Cleveland & Chagrin Falls Railroad, part of the property held by the Eastern Ohio Traction Company, will be disposed of at foreclosure sale. It is said further that a reorganization will take place after the sale and that this line may be permanently disassociated from the Eastern Ohio Traction Company.

Connecticut Valley Street Railway, Greenfield, Mass.—The Massachusetts Railroad Commission on Oct. 4 issued an order approving an issue of coupon or registered 5 per cent bonds by the Connecticut Valley Street Railway to an amount not exceeding at par value \$700,000, payable not more than 20 years from date thereof for the following purposes: 1. The proceeds of bonds amounting to \$500,000 shall be applied exclusively to the payment and refunding of bonds of the Greenfield & Turners Falls Street Railway, \$130,000 of the Greenfield Deerfield & Northampton Street Railway \$150,000, of the Northampton & Amherst Street Railway \$180,000, severally assumed in the consolidation and of bonds of the Connecticut Valley Street Railway to the amount of \$40,000. 2. The proceeds of bonds amounting to \$200,000 shall be applied to the payment of floating debt properly incurred in making certain permanent additions and improvements.

Edmonton Radial Railway, Edmonton, Alberta, Can.—The Edmonton Radial Railway, operated by the Municipality, on Oct. 1 completed its first three months of operation. During this period 609,170 passengers were carried and the gross receipts were \$25,540.

Erie, Cambridge, Union & Corry Railway, Erie, Pa.—The property of the Erie, Cambridge, Union & Corry Railway

has been sold under foreclosure to A. O. Chapin, representing the bondholders, for \$300. The Erie Trust Company, Erie, Pa., was trustee under the mortgage securing the bonds.

Grand Junction & Grand River Valley Railway, Grand Junction, Col.—The Grand Junction & Grand River Valley Railway has filed for record a mortgage of \$2,000,000 in favor of the Colorado Title & Trust Company, Grand Junction, Col., as trustee.

Hornell Traction Company, Hornell, N. Y.—On Oct. 1 the Hornellville Electric Railway and the Hornellville & Canisteo Railway were consolidated as the Hornell Traction Company, with officers as follows: Charles Adsit, president; George T. Rehn, secretary, treasurer and general manager; D. J. Haren, superintendent; Charles Adsit, George T. Rehn, M. M. Acker, J. B. Day, F. E. Bronson, W. H. Walbridge, R. Page, Hornell, N. Y.; D. L. Magruder and M. E. Rehn, Philadelphia, directors.

Metropolitan Street Railway, New York, N. Y.—Adrian H. Joline and Douglass Robinson, receivers of the Metropolitan Street Railway, recently asked Judge Lacombe of the United States Circuit Court for instructions as to what action they should take on the petition of the Forty-second Street & Grand Street Ferry Railroad that they elect within a time to be fixed by the court whether or not they, as receivers, should adopt the lease of the road made April 6, 1893, by the Metropolitan Crosstown Railroad providing for a rental of \$134,640 and taxes and assessments. In the petition the Forty-second Street & Grand Street Ferry Railroad urged that the receivers have practically assumed the lease by their failure to reject it after having been in possession of the property for a period of two years. Replying to the request of the receivers, Judge Lacombe, in an opinion filed recently, said: "The rent reserved upon the lease, 18 per cent upon the outstanding capital stock, may have been reasonable when the lease was executed, but under existing conditions it is grossly exorbitant. The court is not without hope that before many months the property may pass out of the receivers' hands. Upon sale or otherwise it would seem very unwise to encumber it with any such burdens for the future. If petitioners think that they can show that there are some special reasons why they continue the stipulated rental without adopting the lease, even at a preposterous price they may take an order sending the matter to a special master to take testimony. The papers submitted on this motion are not convincing. In the interim between now and foreclosure sale and subsequent delivery the receivers may continue the stipulated rental without adopting the lease and without prejudice to any subsequent motion by any party interested."

Ottumwa Railway & Light Company, Ottumwa, Ia.—The directors of the Ottumwa Railway & Light Company have declared a quarterly dividend of 1¾ per cent upon the preferred stock, payable on Oct. 15, to stockholders of record on Oct. 5.

Tarrytown, White Plains & Mamaroneck Railway, White Plains, N. Y.—The sale under foreclosure of the property of the Tarrytown, White Plains & Mamaroneck Railway, which was to have been held on Oct. 8, has been postponed until Nov. 29.

Tri-City Railway & Light Company, Davenport, Ia.—G. Trowbridge Hollister, of Mackay & Company, New York, N. Y., has been elected a director of the Tri-City Railway & Light Company to succeed F. W. Kendrick, resigned.

Trenton, Bristol & Philadelphia Street Railway, Philadelphia, Pa.—The newly organized Trenton, Bristol & Philadelphia Street Railway has filed its acceptance of the Constitution of Pennsylvania in the State Department, also a record of the reorganization following the purchase of the property of the Philadelphia, Bristol & Trenton Street Railway at foreclosure sale in Doylestown on Aug. 2 by John Redwood and Carl N. Martin, the foreclosure proceedings having been instituted by the Union Trust Company of Maryland. The capital stock of the company is \$325,000 and the directors are Edward D. Toland, president, John Redwood, Carl N. Martin, George Blakestone, Grier Hursh, Jos. S. Clark, Wm. L. Chrisman.

United Railways, Portland, Ore.—It is stated that the control of the United Railways of Portland has passed to J. H. Hulburt, Fontanelle, Ia., and C. L. Dunbar, Vancouver, B. C.

Worcester & Holden Street Railway, Worcester, Mass.—Perry, Coffin & Burr, Boston, Mass., offer for subscription \$100,000 of the Worcester & Holden Street Railway's first mortgage 5 per cent gold bonds dated Oct. 1, 1903, and due Oct. 1, 1923. They are coupon bonds of the denomination of \$1,000 with interest, payable April 1 and Oct. 1 at the Worcester Trust Company, Worcester, Mass., trustee, and are redeemable at any coupon date at 105.

Traffic and Transportation

Handling Celebration Traffic in New York

The arrangements made in advance of the Hudson-Fulton celebration in New York, which extended from Sept. 25 to Oct. 2, by the railways in New York for handling traffic were all carried out and the very large volume of traffic offered was handled promptly and expeditiously. The Interborough Rapid Transit Company featured the events of the celebrations on a poster printed in colors which it displayed on its subway and elevated stations, and installed extra ticket sellers and choppers at stations where traffic was heaviest, as it announced previous to the celebration it would. The warship fleet was stretched along the Hudson River from Spuyten Duyvill to Fiftieth Street, and most of the traffic of the Interborough Rapid Transit Company was over the Broadway subway division and the Sixth and Ninth Avenue elevated lines, which parallel the river in the northern part of the city. The stations on the elevated lines and subway near the tomb were enclosed with canvas so as to prevent passengers from converting them into vantage points from which to view the fleet by day and the fireworks and the illuminated ships by night. The record of passengers carried on the subway and elevated divisions of the Interborough Rapid Transit Company during the celebration follows:

SATURDAY, SEPT. 25.	
Elevated	961,023
Subway	1,177,951
Total	2,138,974
SUNDAY, SEPT. 26.	
Elevated	666,750
Subway	667,938
Total	1,334,688
MONDAY, SEPT. 27.	
Elevated	978,645
Subway	882,866
Total	1,861,511
TUESDAY, SEPT. 28.	
Elevated	1,037,944
Subway	956,722
Total	1,994,666
WEDNESDAY, SEPT. 29.	
Elevated	892,484
Subway	867,553
Total	1,760,037
THURSDAY, SEPT. 30.	
Elevated	1,121,207
Subway	1,036,782
Total	2,157,989
FRIDAY, OCT. 1.	
Elevated	870,965
Subway	845,896
Total	1,716,861
SATURDAY, OCT. 2.	
Elevated	1,077,066
Subway	1,074,815
Total	2,151,881
Total Elevated	7,606,084
Total Subway	7,510,523
Grand total	15,116,607

The effect of the celebration on the surface lines was felt several days in advance of the ceremonies. For instance, the Metropolitan Street Railway experienced four days of heavy traffic immediately preceding the first day of the celebration, Sept. 25. On Sept. 21 this company carried 1,175,125 passengers; on Sept. 22, 1,204,337; on Sept. 23, 1,246,481, and on Sept. 24, 1,231,647. The total of passengers carried by the company from Sept. 21 to Oct. 2 was 15,660,526, and the total of passengers carried from Sept. 25 to Oct. 2 was 10,802,936. The Third Avenue Railroad and its branches for the period from Sept. 25 to Oct. 2 carried 4,312,261 passengers. Of this total 1,510,796 persons were transported over the Third Avenue Railroad, 1,119,967 over the Forty-Second Street, Manhattanville & St. Nicholas Avenue Railway, 324,468 over the Dry Dock, East Broadway & Battery Railroad, and 1,357,030 over the Union Railway, which operates largely in the Borough of the Bronx. The record of passengers carried by the Metropolitan Street Railway for four days preceding the celebration and for the celebration period from Sept. 25 to Oct. 2 follows:

Date.	Total Passengers.
September 21	1,175,125
September 22	1,204,337
September 23	1,246,481
September 24	1,231,647
September 25	1,526,169
September 26	916,381
September 27	1,320,526
September 28	1,467,682

September 29	1,298,487
September 30	1,519,372
October 1	1,251,161
October 2	1,503,158

Total, Sept. 21—Oct. 2	15,660,526
Total, Sept. 25—Oct. 2	10,802,936

The record of passengers carried during the celebration by days by the Third Avenue Railroad follows:

	3d Ave. R.R.	42d St.	Dry Dock.	Union.	Total.
Sept. 25	260,596	182,954	32,129	171,575	733,925
Sept. 26	19,166	16,420	9,336	41,755	518,168
Sept. 27	164,771	118,320	24,289	129,236	489,829
Sept. 28	16,515	16,139	8,682	40,216	508,471
Sept. 29	157,594	100,321	37,882	113,073	522,589
Sept. 30	16,347	16,291	9,304	39,017	516,047
Oct. 1	154,423	123,365	32,630	117,865	456,204
Oct. 2	16,729	16,305	8,530	38,624	567,028
Total	159,314	110,625	32,530	139,379	
Total	16,932	16,089	8,624	39,096	
Total	159,027	124,184	32,003	124,200	
Total	16,574	16,333	8,314	38,412	
Total	140,896	99,629	29,972	107,066	
Total	16,293	16,014	8,412	37,922	
Total	180,591	130,697	33,056	139,928	
Total	18,034	16,281	8,775	39,666	

Total	1,510,796	1,119,967	324,468	1,357,030	4,312,261
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Thus the total of passengers carried by the Interborough Rapid Transit Company, the Metropolitan Street Railway and the Third Avenue Railroad, operating practically all the lines in New York, for the period from Sept. 25 to Oct. 2 was 30,231,804. The totals by days for these three systems follow:

Sept. 25	4,399,068
Sept. 26	2,769,237
Sept. 27	3,671,866
Sept. 28	3,970,819
Sept. 29	3,581,113
Sept. 30	4,193,408
Oct. 1	3,424,226
Oct. 2	4,222,067
Total	30,231,804

The operation of the surface lines was not interfered with materially by the parades. The plan was adopted of holding cars at places where the parades crossed a line until there were 10 to 12 cars on either side of the line of march. Between divisions of the parade the police cleared away the crowd and cars would be permitted to cross the line of march. In order not to have people board the cars for the purpose of riding to the point of crossing of the car line with the parade so as to secure an advantageous place from which to view the parade, the gates of the closed cars were shut three or four blocks before the line of march was reached and the bars of the open cars were similarly lowered and no passengers were taken on. After crossing the line of march the cars were not stopped until they had covered a distance of two or three blocks, when the gates were opened and the bars raised again.

It was generally agreed that the police acquitted themselves very creditably. They exercised good judgment in handling both the crowds at the parades and the passengers on the railways. Extra men were assigned to the subway, and in conjunction with the regular employees of the Interborough Rapid Transit Company performed excellent service. In recognition of the assistance the police rendered this company in handling the crowds, it sent a check to the police commissioner for \$5,000 as a contribution toward the police pension fund. The letter accompanying this contribution was signed by Frank Hedley, vice-president and general manager, and approved by T. P. Shonts, president of the company. In addition, Mr. Shonts took occasion to thank the commissioner for the assistance which had been rendered the company. The letter signed by Mr. Hedley and Mr. Shonts, addressed to W. F. Baker as police commissioner, follows:

"The undersigned desire to express our appreciation to you as the Police Commissioner for the City of New York and to your assistants, officers and men, for the highly satisfactory manner in which you aided this company in transporting over 15,000,000 people during the Hudson-Fulton Celebration, from Sept. 25 to Oct. 2, inclusive.

"The accomplishment of safely handling on the subway and elevated an unparalleled number of passengers was in no small measure due to the untiring and intelligent efforts on the part of the City Police Department, and we assure you the directors and officers of this company, through you, would be glad to have our appreciation and thanks expressed to the men individually and collectively.

"As a further substantial appreciation of the creditable work done by New York City's Police Department, the board of directors authorized the officers of this company to forward you a check for five thousand (\$5,000) dollars, requesting that it be applied to the Police Pension Fund."

The letter from Mr. Shonts to the Police Commissioner follows:

"I want to express to you, and through you to Deputy Commissioner Bugher, who was especially assigned to this

work, and to all the officers and men of the Police Department of the City of New York, the sincere thanks of this company for the hearty and efficient co-operation rendered it in the handling of the tremendous passenger traffic on its lines during the Hudson-Fulton Celebration.

"We have handled on the subway and elevated lines of this company during the celebration more than 15,000,000 of passengers, and your prompt response to the request of this company for detail of officers and men to aid in this work contributed in no small way to making possible the meeting of the tremendous strain upon the transportation facilities of the city in the safe and satisfactory manner in which it has been accomplished."

Besides contributing \$5,000 to the Police Pension Fund, the Interborough Rapid Transit Company took occasion formally to thank its own employees for the faithful way in which they performed their duties and the board of directors of the company voted its thanks to the men and set aside \$25,000 which had been distributed pro-rate among the employees who were directly in charge of handling the extra traffic. The communication from the company to its employees, follows:

"The management takes this means of expressing to the employees of this company its high appreciation of the efficient and faithful manner in which the employees performed, individually and collectively, their work during the Hudson-Fulton Celebration from Sept. 25 to Oct. 2, inclusive. During this period we transported 15,124,141 passengers without a single accident of any consequence. The management appreciates that this unparalleled accomplishment in the transportation of passengers is due very largely to your untiring and intelligent efforts, which made possible the safe transporting of such large numbers of passengers under the most trying circumstances.

"The board of directors of this company are heartily in accord with the management's expression of its thanks to the employees, and as a further expression of their appreciation, authorized the payment of one day's extra pay to all employees who participated in any wise in aiding and making possible the safe transporting of passengers on the elevated and subway during the Hudson-Fulton Celebration."

As stated in the ELECTRIC RAILWAY JOURNAL of Sept. 25, the principal ceremonies in Brooklyn occurred on Friday, Oct. 1, Saturday afternoon, Oct. 2, and Saturday, Oct. 9. On Oct. 1 the parade with floats was held on Eastern Parkway, and was the principal event of the celebration in Brooklyn. It was intended that this parade should duplicate the land pageant held on Sept. 28 in New York, but through a misunderstanding some of the floats which were to have participated in the parade were not on hand and the spectacle therefore was not as brilliant as the one in New York. Despite this, however, the Brooklyn Rapid Transit Company and the Coney Island & Brooklyn Railroad were called upon to carry a very large number of people to the line at the parade. For the parade on Oct. 1 and the carnival on Oct. 9 the Brooklyn Rapid Transit Company had to cut its wire at 10 places, and this work required the almost constant attention of 10 emergency crews and nine construction gangs. A record by days of the passengers carried by the Brooklyn Rapid Transit Company during the celebration is not available, but the total of passengers carried from Sept. 25 to Oct. 2, inclusive, has been furnished. This record shows that 13,285,000 passengers were carried during this period, or an average of 1,660,000 a day. This is between 7 per cent and 8 per cent above the normal number of passengers transported by the company, but does not approach the high record established by the company on Aug. 8, 1909, when 2,220,000 passengers were transported. In recognition of the work done by its employees during the celebration and especially during the parades in Brooklyn, the Brooklyn Rapid Transit Company has contributed \$5,000 to the benefit fund of the Brooklyn Rapid Transit Employees' Association.

Reasons for Fare Increase of the Philadelphia & West Chester Traction Company

A. M. Taylor, president of the Philadelphia & West Chester Traction Company, has addressed the following letter to the patrons of the company:

"In January, 1899, the West Chester division of the Philadelphia & West Chester Traction Company began operations between Sixty-third and Market Streets, Philadelphia, and West Chester. At that time a very low rate of fare was established, because it was the desire of the management of this company to offer every advantage which might result in building up the territory along the line. Though this low rate of fare has been maintained up to the present time, there has been practically no new development along

the West Chester division, west of the Eagle Hotel, since it was opened for traffic, and the increase in population of the Borough of West Chester has been very slight. The result has been that while the company has during this period steadily improved its service with regard to the safety, comfort and convenience of its patrons, it has not secured the necessary annual increase in gross earnings on its West Chester division to yield a reasonable return on the actual amount of capital invested.

"It has been our policy to maintain the property in a high state of efficiency and to render punctual, frequent and satisfactory service. The cost of maintenance and operation of the line between Philadelphia and West Chester has increased greatly since the line was opened, and is far beyond the cost of operation of similarly located interurban lines, owing to the high grade of service which has been rendered. In 1899 the wage rate paid to motormen and conductors was 12.5 cents per hour; to-day the average rate paid is 22.127 cents per hour, an increase of over 77 per cent. In 1899 the cars used by the company cost \$4,658 and weighed 26,000 lb.; the new standard cars of the company cost \$11,111 and weigh 68,000 lb. The new standard type of car was adopted after very careful investigation and consideration, notwithstanding the fact that the cost thereof is about double the cost of the standard cars used on similarly located interurban lines, and the amount of current consumed thereby is 100 per cent greater than the amount of current consumed by the double-truck cars which were in operation in 1899. It is built with heavy longitudinal steel 'I' beams in the under-frame, and is so solidly and substantially built as to render the possibility of a serious smashup extremely remote. In several instances these cars have collided with obstructions without resulting in injury to passengers, while a serious list of casualties would have been inevitable with cars of the old type.

"Numerous other improvements have been added to the property of the company, and in the method of operation thereof, many of which have been costly, but nevertheless necessary to the safety and comfort of our patrons.

"The roadbed has been rock-ballasted from end to end of the line; the dangerous curve at Ridley Creek has been eliminated by the construction of a costly viaduct, and with the modification of several grades and curves at other points the safety of our passengers has been materially increased.

"We have abandoned the sub-station which was formerly maintained at Ridley Creek and substituted therefor a new power plant at that location. The operation of the sub-station was unsatisfactory, as the high potential current for the operation of the same was drawn from the power house at Llanerch and was subject to frequent interruptions owing to the falling of small twigs across the three wires from the large number of trees along the line and consequent short-circuiting. The cost of this new power plant, which was erected in the interest of punctual service free from interruption on the West Chester division, was \$114,586.

"Furthermore, in the interest of punctual service, and to minimize the possibilities of delay, the sidings have been lengthened and cars are enabled to pass without stopping, and the entire West Chester division has been equipped with telephones. An instrument is maintained in the box at each siding, and an instrument is carried on each car. Facilities have been provided at points 1500 ft. along the entire line to connect the instruments carried on the cars with the telephone system; therefore, if a car becomes disabled in the middle of a block, the conductor always has telephone facilities within 750 ft. A regular dispatcher is always on duty during all hours when the road is in operation, and the cause of any delay is reported to him immediately and he issues the necessary instructions to relieve the same.

"An unusually comfortable, commodious terminal station has been erected at Sixty-ninth Street, where passengers pass conveniently to and from the Market Street elevated trains without exposure and whence passengers are carried directly into the great department stores along Market Street and to the eastern end of Market Street and to South Street for 5 cents, without exposure, including the privilege of free transfer on the Sixty-third, Sixtieth, Fifty-second and Fortieth Streets cross-town lines. Costly yards and automatic signal devices, operated from the tower, have been established at Sixty-ninth Street terminal, and the comfort and safety of the traveling public has been greatly increased thereby.

"It has been our policy to operate the road accurately and scientifically, and the cost of our operation along these lines has been high, and the increase in the efficiency of the service rendered has more than justified this policy.

"Taking into consideration the fact that the par value of every share of stock of the Philadelphia & West Chester Traction Company represents actual investment of capital in equal amount, and as the stock and securities are not 'watered' and represent the true value of the property, we

feel that our stockholders are entitled to a reasonable return on the capital invested, which they have not secured up to the present time.

"Our first aim has been to give our patrons good and safe service, as we considered this to be our primary duty. We had hoped that the increase in traffic on the West Chester division, resulting from development along the line, and from the travel originating on the interurban lines extending beyond West Chester, would prove sufficient to yield a reasonable return on the capital invested, without increasing the present rate of fare, and in this hope our stockholders have waived a reasonable return on their capital invested in stock for many years. This hope, however, has not been realized and for this reason we are confronted with two alternatives:

"1. To cheapen the character of service rendered and to operate a less frequent schedule, thereby decreasing the cost of operation.

"2. To increase the rate of fare on the West Chester division by making six 5-cent fare collections between Sixty-third and Market Streets and West Chester, instead of five.

"The board of directors has determined upon the latter alternative, believing that with the cordial support of our patrons it will produce results which will obviate the necessity of a reduction in the efficiency and frequency of service rendered between Philadelphia and West Chester, the maintenance of which is of the greatest importance to the welfare of our patrons and this increase in the rate of fare on the West Chester division will be effective on and after Sept. 27, 1909, until further notice.

"We ask our patrons to lend their hearty support to this readjustment of fare rates, which is entirely reasonable, and we particularly request our patrons to compare this new rate with rates of fare charged by other interurban lines similarly located and operated. Only one logical conclusion can be reached, namely, that the Philadelphia & West Chester Traction Company will give more proportionately in the way of accommodation and service to its patrons at the new rate of fare than any other company operating a similar railway in this section of the country.

"We have, in no instance, shirked our duty in furnishing to our patrons the best possible facilities, even though this policy has resulted in depriving our stockholders of a reasonable return upon their money for many years. And now, having given the old rate of fare a long trial, we ask our patrons to see that it is to their interest to support this readjustment of rates, which will result in the continued maintenance of the present high standard of service rendered and in the stockholders of our company receiving a reasonable return upon their investment."

Hearing on Full Vestibules in New York

A hearing was held before Commissioner Bassett, of the Public Service Commission of the First District of New York, Oct. 12, on the petition asking the commission to compel the full vestibuling of the street cars operated in the boroughs of Brooklyn and Queens. At the present time, a one-third vestibule is in use on the cars operated in these boroughs. Thomas Surpless represented the complainants as attorney; A. M. Williams, the Brooklyn Rapid Transit Company; A. G. Peacock, the New York & Queens County Railway; Francis L. Durk, of Dykman, Oeland & Kuhn, the Coney Island & Brooklyn Railroad.

In introducing the case, Mr. Surpless referred to the passage of the law compelling the companies to adopt the present type of vestibule, and said that the Public Service Commission of the Second District of New York had entered a general order requiring the full vestibuling of cars throughout the territory within its jurisdiction. John J. Wilton, who was a motorman for 12 years, was called as a witness by Mr. Surpless for the complainants. Mr. Wilton said that he considered the unprotected platform better than the vestibule now in use, which encloses the front of the car but leaves the sides exposed, as with a car without a vestibule the motorman is exposed on all sides, whereas with the one-third vestibule he is subjected to drafts from either side of the car which affect his back and subject him to frequent colds. Mr. Wilton had never operated a full vestibule car, but said that he did not think such a car would be any more dangerous than one merely protected at the front and not on the sides. He had operated one-third vestibule cars on the Coney Island & Brooklyn Railroad, and said that he had suffered frequently from colds and had experienced considerable distress in inclement weather when running cars so equipped. Mr. Surpless said that he had expected other witnesses to be present in the interest of his case, but that their testimony would be introduced at the next hearing.

W. S. Menden, assistant general manager of the Brooklyn Rapid Transit Company, said that ordinarily his company operates about 1600 cars a day in the winter. The work of equipping the rolling stock of his company to comply with the act of the Legislature requiring partial vestibuling of cars, Mr. Menden said, was completed in 1908 at a cost of approximately \$250,000. He said that he had not estimated the cost of changing the cars to meet the ideas about vestibuling advanced by the complainants, but that the expenditure for such a change would be very great and would require the withdrawal of a considerable number of cars from service. Subsequently Mr. Menden said that estimates of the cost of converting the present equipment of the Brooklyn Rapid Transit Company for operation with the pay-as-you-enter system with full vestibules placed the expenditure at \$600 a car. A photograph of a car of the Hudson Valley Railway, Glens Falls, N. Y., fully vestibuled, was offered as evidence by Mr. Surpless, but Mr. Menden said that he could form no idea of the cost of applying such a vestibule to his cars.

Mr. Menden said that with the cars equipped with a vestibule with either double doors or a door that would slide into the car or into the hood, it would be quite a tax on the motorman to go into the street to turn switches. He also said that the present vestibule on the Brooklyn Rapid Transit Company's cars had been especially designed to overcome the objection to which Mr. Wilton had called attention. They overhang the dash at the center several inches thus forming a recess in which the motorman stands, and no complaints have been entered from the employees regarding the vestibule. Mr. Menden said that accidents on the lines of the Brooklyn Rapid Transit Company decreased the last few years, but that no special cause could be assigned for this. He expressed the opinion that traffic in lower Fulton Street, Brooklyn, is equally as congested as many thoroughfares in Manhattan.

Mr. Bassett asked Mr. Menden if latitude governed in vestibuling cars. Mr. Menden said that so far as he knew it did not; but, coming from the South, where no vestibules are required, it seemed to be the practice of the companies to vestibule cars according to the local climatic conditions, and that no line of demarkation could be drawn between the territory in which cars are vestibuled and that in which cars are not vestibuled. Mr. Bassett asked Mr. Menden to prepare drawings of the most inexpensive vestibule which would comply with the complaint and furnish an estimate in detail of the cost of such a vestibule. He also asked the representatives of the other companies to do the same, and suggested that Mr. Surpless have someone prepare an estimate of the most inexpensive vestibule which he thought would meet the requirements of his client. Mr. Menden promised to give Mr. Surpless access to the cars of his company for this purpose. As there are four different types of cars in operation on the lines of the New York & Queens County Railroad, and considerable expense would be entailed in preparing plans and estimates of vestibules for all of these different cars, it was suggested by Mr. Bassett that W. O. Wood, president of the New York & Queens County Railroad, consult with E. G. Connette, transportation engineer of the commission, with the view to preparing a plan and estimate of one type of vestibule which might be applicable to all of the cars, thus lessening the labor and expense to the company.

Mr. Bassett suggested to Mr. Surpless that he introduce before the commission as many experts and street railway men holding positions as possible, stating that while he prejudged the case in no way, the fact that cars were vestibuled throughout New York State and on suburban lines generally and in the smaller cities, furnished no criterion for practice in New York City. The hearing was then adjourned until Nov. 16, as Mr. Surpless said that he realized it would be a physical impossibility for the companies to do anything in the matter this winter, even if an order was entered by the commission in his favor. Another thing, it was desired to give the companies sufficient time before the next hearing to prepare the estimates of the cost of fully vestibuling their cars.

Freight Service in Memphis.—In accordance with its plan to transport freight in Memphis the Memphis (Tenn.) Street Railway has placed the first of its freight cars in operation. Permission was secured from the city to operate the car during the Tri-State Fair for the benefit of exhibitors.

Directors to Study Transfers in Philadelphia.—At a meeting of the directors of the Philadelphia (Pa.) Rapid Transit Company on Oct. 4 the transportation committee, composed of J. J. Sullivan, George H. Earle, Jr., and George D. Widener, was authorized to make a thorough study of the transfer system now in use on the various lines of the company.

Winter Schedule on Spokane & Inland Empire Railroad.—The Spokane & Inland Empire Railroad, Spokane, Wash., put the winter schedule in force on its Coeur d'Alene division on Sept. 19. Two trains each way to Coeur d'Alene and five trains each way to Liberty Lake have been discontinued. One more train is provided for the winter business than has been operated on the division heretofore. No changes have been made on the Palouse division.

Omaha Strike Ended.—The employees of the Omaha & Council Bluffs Street Railway, Omaha, Neb., who recently went on strike are being received back into the employ of the company as individuals at the same pay they received before the strike was called. A majority of the men have already returned to work and others are coming back daily. The strike has not been officially declared off, but complete service has been restored on all of the company's lines; in fact, service was interrupted only for about one week, during which time a partial service was maintained.

Public Service Commission Questions Authority of Board of Estimate.—The Public Service Commission of the First District of New York has summoned the officials of the New York & Queens County Electric Railway to appear before the board to show cause why they should not be fined \$5,000 for running cars across Queensboro bridge without first obtaining the consent of the commission. The company is running its cars over the bridge on a permit granted by the Board of Estimate. The commission has contended that the Board of Estimate has no right to grant such permits without the approval of the commission, and in case a fine is imposed on the company to-day there will undoubtedly be an appeal to the courts.

Transfers Ordered as an Experiment in Boston.—The Massachusetts Railroad Commission has issued an order establishing an experimental free transfer service between Park Street and the South Station, via Boylston Street subway station, on the lines of the Boston Elevated Railway. The service is to last until March 1, 1910, and the company is to submit a record to the commission showing the volume of traffic which developed. This service is regarded as a temporary expedient and it is probable that legislation will be enacted in the near future extending the Cambridge subway from Park Street to the vicinity of the South Station, and then by furnishing direct and rapid transit from points on the westerly side of Boston to the railroad terminal.

Advertising Tunnel Facilities in Boston.—The Boston (Mass.) Elevated Railway has begun the publication of a series of newspaper advertisements with the object of educating its tributary population to utilize the Washington Street Tunnel to a larger degree than heretofore. This tunnel was opened to traffic about 11 months ago, and it supplements the previous facilities much more completely than has been wholly appreciated. The advertisement of the company emphasizes the nearness of the 30 entrances and exits of the tunnel to points of importance in the business center, stating that the tunnel practically amounts to a continuous station under the busiest street of the city. In the first advertisement of the series a map is given of the territory tributary to the so-called "Milk Station," with tabulations of the distances in yards of important hotels, newspaper offices, clubs, department stores, and public buildings from the exits of this particular station, with a brief statement of the sources of travel to these points. The locations of entrances to this station and the points served by connecting trains are also described. Similar advertisements illustrating the use of the other stations of the tunnel will follow.

Freight Service in Pittsburgh.—The Pittsburgh (Pa.) Railway maintains freight and express service on only two of its suburban lines—that connecting Pittsburgh and Charleroi, 36 miles distant, and that connecting Pittsburgh, Cannonsburg and Washington, 30 miles distant. One freight car is being used on each line at present, each car making two round trips daily. Milk is brought in on the first trip in the morning and freight of all sorts is sent out on the return trips. On one of the trips the company handles bundles of afternoon newspapers for suburban points. A freight station has been established in downtown Pittsburgh, to which deliveries are made by wagon, and the deliveries to merchants in the suburban towns are made in front of their business places. The business is in its infancy and permanent freight stations at various points are not yet required. The company's freight rate schedule has not been completed and at present a temporary rate sheet is in use. The freight service was established largely for the convenience of the merchants and farmers along the routes, as in many sections the residents of the districts served are without steam railroad connections. So far the service has proved satisfactory and merchants are able to secure quick deliveries of perishable freight.

Personal Mention

Mr. W. M. Graham has been appointed auditor of the Honolulu Rapid Transit & Land Company, Honolulu, Hawaii.

Mr. George W. Whysall and **Mr. Eli M. West** have retired as receivers of the Columbus, Delaware & Marion Railway, Columbus, Ohio.

Mr. T. P. Gallagher has been appointed traveling freight and passenger agent of the Illinois Traction System, with headquarters at Urbana, Ill.

Mr. A. L. Castle has been elected secretary of the Honolulu Rapid Transit & Land Company, Honolulu, Hawaii, to succeed Mr. W. Williamson.

Mr. J. B. Castle has resigned as second vice-president of the Honolulu Rapid Transit & Land Company, Honolulu, Hawaii, and that office has been abolished.

Mr. Fred E. Guthery has been appointed receiver of the Columbus, Delaware & Marion Railway, Columbus, Ohio, to succeed Mr. Geo. W. Whysall and Mr. Eli M. West.

Mr. F. A. Tilton has resigned as auditor of the Chicago, Lake Shore & South Bend Railway, Michigan City, Ind., to become connected with the Security Trust Company, Detroit, Mich.

Mr. Frederick L. Pantel has been appointed auditor of the Chicago, Lake Shore & South Bend Railway, Michigan City, Ind., to succeed Mr. F. A. Tilton, who has become connected with the Security Trust Company, Detroit.

Mr. W. C. Cram has been appointed superintendent of the Aurora, DeKalb & Rockford Electric Traction Company, Aurora, Ill. Mr. Cram is an engineer and will supervise the civil engineering and construction work on the line.

Mr. M. C. Carpender has resigned as general manager of the Plattsburgh (N. Y.) Traction Company to become mechanical engineer of the Hudson Valley Railway at Glens Falls, N. Y. Mr. Carpender was appointed general manager of the Plattsburgh Traction Company in June, 1909.

Mr. John A. Glover has been appointed division freight and passenger agent of the Illinois Traction System, with headquarters at Urbana, Ill., in charge of all freight, passenger and express traffic, and matters pertaining thereto, with jurisdiction over all lines east of Decatur, vice Mr. J. D. White, assigned to other duties.

Mr. A. Von Schrenk has been appointed general manager of the Plattsburgh (N. Y.) Traction Company, to succeed Mr. M. C. Carpender, who has become connected with the Hudson Valley Railway. Mr. Von Schrenk was graduated from Columbia University, New York, in June, 1901, and in August, 1901, he entered the testing department of the General Electric Company, Schenectady, N. Y. He was transferred to the construction department of the company in July, 1903, and engaged in construction work at the Fiske Street station of the Commonwealth Electric Company, Chicago, Ill., and the Waterside station of the New York Edison Company, New York, N. Y. Mr. Von Schrenk became connected with the New York Central & Hudson River Railroad in July, 1905, as draftsman and inspector, and was promoted to chief draftsman in December, 1906, and to assistant engineer in December, 1907. His work with the New York Central & Hudson River Railroad was in connection with the electrification of the company's lines in New York City and vicinity. Mr. Von Schrenk spent the summer of 1908 in Europe studying the leading foreign railway systems and other examples of foreign engineering. In the spring of 1909 he entered the engineering department of the United Traction Company, Albany, N. Y., where he engaged in general work until his recent appointment as general manager of the Plattsburgh Traction Company.

OBITUARY

G. W. Dickinson, a former manager of the Seattle (Wash.) Electric Company, is dead.

Martin Wulstein, superintendent of the surface lines of the Brooklyn (N. Y.) Rapid Transit Company for its eastern division, died suddenly on Oct. 2 as the result of a paralytic stroke. Mr. Wulstein was 36 years of age. He began his career with the Brooklyn Rapid Transit Company 12 years ago as a conductor. In a very little time he was made an inspector. From inspector he was advanced to depotmaster at Ridgewood and subsequently was made assistant superintendent of the Eastern division. When Mr. William Seibert was appointed superintendent of surface lines of the company three years ago, Mr. Wulstein was appointed district superintendent to succeed Mr. Seibert.

Construction News

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

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

RECENT INCORPORATIONS

***Tidewater Northern Railway, Los Angeles, Cal.**—Incorporated to build an electric railway from Santa Monica along the coast to Ventura. Capital stock, \$800,000. Incorporators: R. N. Hart, R. H. Barr and J. S. Wallace.

Macon (Ga.) Traction Company.—Application for a charter has been made by this company to build an electric railway from East Macon to Recreation Club, 5 miles distant. The charter includes the right to operate electric plants also steam-heating plants. Capital stock, \$150,000, of which amount \$140,000 will be preferred stock. Incorporators: Frederick Kauffmann, Jesse B. Hart, C. C. Foor, H. V. Napier, Jr., Roland Ellis, N. J. Ethridge, H. M. Smith, L. S. Dure, J. F. Hart and J. J. Quinlan. [E. R. J., Oct. 9, '09.]

***Delphi, Flora & Burlington Traction Company, Delphi, Ind.**—Incorporated to construct an electric railway from Delphi to Burlington via Flora, 24 miles distant. Headquarters, Delphi. Capital stock, \$125,000. Incorporators: E. W. Bowers, president; J. C. Smock, secretary, and others.

Louisville, Blue River & French Lick Traction Company, New Albany, Ind.—Incorporated to construct an interurban railway to connect New Albany, Mooresville, Galena, Greenville, Palmyra, Fredericksburg, Hardinsburg, Chambersburg, Paoli, West Baden and French Lick. Headquarters, New Albany. Capital stock, \$10,000, preliminary. Incorporators: Jacob H. Fawcett, Charles D. Kelso and Walter A. Gadiant. [E. R. J., Oct. 2, '09.]

***St. Joseph & Savannah Railway, St. Joseph, Mo.**—Incorporated to build an electric railway from St. Joseph to Savannah, a distance of 15 miles. This company is said to be an auxiliary of the St. Joseph Railway, Light, Heat & Power Company. Capital stock, \$350,000. Incorporators: J. H. Van Brunt, C. E. Foster, Jas. N. Burnes, J. I. McDonald, Chas. Pasche, John Donovan, G. G. Lacy, J. G. Schneider, and R. A. Brown.

***Texas, New Mexico & Pacific Railway, Las Cruces, N. Mex.**—Incorporated to build a street railway, 3 miles long from Mesilla Park to Sunny Slope, and passing through Las Cruces. Headquarters, Las Cruces. Capital stock, \$50,000. Incorporators: James T. Smith, Edward Ehle, Charles K. Atkinson, Allen J. Papen and Frank A. Jones, all of Las Cruces.

***Columbus & Cincinnati Air Line Traction Company, Columbus, Ohio.**—Incorporated to build an electric railway between Columbus and Cincinnati, via Washington C. H., and Wilmington. Capital stock, \$10,000. Incorporators: Frank E. Ruth, E. B. Thompkins, Randolph W. Walton, W. L. McVey and M. B. Recob.

New Castle & Beaver Valley Street Railways, Beaver Falls, Pa.—Application for a charter has been made by Stewart S. Neff, Gerald Holsman, Hiram G. Miller, Robt. W. Cunningham, John H. Norris, Leonard M. Uber and Jos. V. Cunningham to construct an electric railway from New Castle to Beaver Falls. [E. R. J., Sept. 18, '09.]

Bedford, Fulton & Franklin Street Railway, Bedford, Pa.—Incorporated to build an electric railway through Bedford, Fulton and Franklin Counties to connect Bedford and Chambersburg, 50 miles distant. Capital stock, \$300,000. Incorporators: M. J. Murphy, Pittsburgh, president; H. D. Tate, George W. Rook, John B. Fay, M. H. Sheats and J. Y. Daly. [E. R. J., Oct. 2, '09.]

Center County Traction Company, Bellefonte, Pa.—Incorporated to build an electric railway from Bellefonte to State College, a distance of 15 miles. Capital stock, \$100,000. Incorporators: W. C. Hagan, Pittsburgh, president; Wm. H. Furey and L. T. Munson. [E. R. J., Oct. 2, '09.]

***Hanover & Warrior Run Street Railway, Hanover, Pa.**—Incorporated to build an electric railway from Hanover, through Wilkesbarre to Warrior Run, 6 miles distant. Capital stock, \$100,000. Incorporators: J. R. Scouton, Wilkesbarre, president; L. F. Camp, H. H. Davenport and M. T. Rees.

***Royersford Interurban Traction Company, Royersford, Pa.**—Incorporated to build a 4-mile electric railway in Royersford. Capital stock, \$25,000. Incorporators: Joseph A. Buckwalter and R. S. Raiser, Royersford; A. B. Eddowes, W. W. Levering and W. H. Houston, Philadelphia.

Slippery Rock & Grove City Street Railway, Slippery Rock, Pa.—Incorporated to build an electric railway from Slippery Rock to Grove City, connecting with the Buffalo

& Lake Erie Railroad, a distance of 9 miles. Capital stock, \$55,000. Incorporators: John P. Barr, Grove City, president; W. Henry Wilson, James A. Jolliffe, S. L. McClure, C. S. Shrubbs, John Carruthers and W. M. Graham. [E. R. J., May 1, '09.]

Glen Rose & Walnut Springs Railway, Walnut Springs, Tex.—Incorporated to build an electric railway from Glen Rose to Walnut Springs, a distance of 15 miles. Capital stock, \$100,000. Incorporators: Judge Sadler, J. H. Farr and others. [E. R. J., Sept. 18, '09.]

Skagit, Cascade & Chelan Railway, Tacoma, Wash.—Incorporated to build an electric railway from Rockport via Lake Chelan to Spokane with branch routes from Rockport. Power will be generated on Thunder Creek. Headquarters, Banker's Trust Building, Tacoma. Capital stock, \$25,000,000. Incorporators: W. W. Shenk, W. E. Everett, A. M. Richards, George Senior and C. E. Phoenix, Tacoma; J. W. Shenk, Los Angeles, Cal.; Thomas Armitage and Giles Shaw, Huddersfield, England. [E. R. J., Jan. 9, '09.]

FRANCHISES

San Bernardino, Cal.—It is said that the Northwestern Street Railway, which proposes to build a railway from San Bernardino to Rialto, has notified the City Council that it will drop the project entirely. The application for a franchise was denied by the Council. [E. R. J., Sept. 11, '09.]

San Diego, Cal.—The City Council has sold to G. W. Purcell, general manager of the San Diego, El Cajon & Escondido Electric Railway, the franchise granting the right to enter San Diego, the amount paid being \$5,100. The company is to commence work within six months from the time the franchise is granted, and the railway is to be completed to El Cajon in one year and to Escondido within two years. [E. R. J., Sept. 25, '09.]

San Diego, Cal.—The City Council has sold four franchises to the San Diego Electric Railway, granting rights to extend and to change the route of its electric railway over certain streets of San Diego. The company paid \$2,850 for the franchises.

Macon, Ga.—The County Commissioners have granted a 50-year franchise to the Macon Traction Company to build an electric railway from East Macon to Recreation Club, 5 miles. Frederick Kauffmann, Macon, is said to be interested. [E. R. J., Oct. 9, '09.]

Champaign, Ill.—The City Council has granted a 25-year franchise to the Illinois Traction System to extend its electric railway in Champaign. The franchise provides that \$10,000 is to be paid by the company.

Lexington, Ill.—The City Council has granted a 50-year franchise to the Bloomington, Pontiac & Joliet Electric Railway to extend its railway through Lexington. The extension runs from Pontiac to Chenoa.

Madison, Ind.—The City Council of Madison and the Town Board of Hanover have each granted a franchise to the Cincinnati, Madison & Western Traction Company to construct an electric railway through those towns and for terminal facilities. Surveyors began work on Oct. 4 on the line from Madison to Scottsburg, via Hanover and Lexington. [E. R. J., Sept. 4, '09.]

Marshfield, Ore.—The City Council has approved the petition of J. M. Blake for a franchise to build an electric railway in Marshfield and it will be voted upon by the people in December. [E. R. J., June 19, '09.]

Charleroi, Pa.—The West Side Electric Street Railway has applied for a franchise to change the route of its electric railway in Charleroi. The company contemplates an extension to Bentleyville.

Chambersburg, Pa.—The Town Council has granted an extension of time to the Chambersburg, Greencastle & Waynesburg Street Railway for the completion of its extension to Shippensburg.

***Greensburg, Pa.**—John B. Brunot, Frank Good and H. J. Brunot, Greensburg, have applied to the City Council for a franchise to build an electric railway in Greensburg.

Lebanon, Pa.—The City Council has granted a franchise to the Ephrata & Lebanon Street Railway. The company will construct a 23-mile railway from Ephrata to Lebanon. S. D. Erb, Ephrata, president. [E. R. J., Sept. 11, '09.]

***Quanah, Tex.**—W. R. Du Puy and associates have applied for an extension of their franchise granting them the right to build an electric railway in Quanah.

Mannington, W. Va.—A franchise has been granted the Morgantown & Dunkard Valley Electric Railway to extend its railway from Blackville, W. Va., to Mannington. Work to be started at once and to be completed in two years.

TRACK AND ROADWAY

Heber Light & Power Company, Heber, Ark.—This company advises that it has completed the survey and estimates for the proposed street railway in Heber. The route will be about 1½ miles in length. W. H. Horton, secretary. [E. R. J., Nov. 28, '08.]

Denver, Colorado Springs & Pueblo Interurban Electric Railroad, Denver, Col.—This company has completed its permanent line survey between Denver and Colorado Springs, a distance of 73 miles, for the proposed railway. Arrangements with the Denver City Tramway and the Colorado Springs & Interurban Railway have been completed, the company operating over the terminal tracks from the city limits both of Denver and Colorado Springs. L. E. Briggs, Cooper Building, Denver, chief engineer. [E. R. J., June 12, '09.]

Rome, Ga.—Wright Willingham, Rome, denies the report of a plan to build an electric railway to extend from Rome to Chattanooga, Tenn. [E. R. J., Aug. 28, '09.]

Bluffton, Geneva & Celina Traction Company, Bluffton, Ind.—Grading on this railway between Bluffton and Geneva has been completed as also the bridge at Linn Grove. The track will be laid at once. Bears, Brown & Company, contractors. [E. R. J., Aug. 7, '09.]

***Greensburg, Ind.**—It is said that Mayor Thompson, George Little, Edward Day, William Fleming, Greensburg, are promoting the construction of an electric railway from Greensburg to Batesville, a distance of 16 miles.

Cincinnati, Madison & Western Traction Company, Indianapolis, Ind.—Subsidies aggregating \$67,000 have been voted for this company in Madison, Hanover and Republican Townships. This added to the amount previously voted will total \$110,000. The proposed railway will connect Madison and Scottsburg. [E. R. J., Sept. 4, '09.]

Winona Interurban Railway, Winona Lake, Ind.—This company advises that the extension between Mentone and Chili, a distance of 23 miles, is under construction, with grade work and bridging nearly completed. C. O. Johnson, vice-president and general manager.

Tri-City Railway, Davenport, Ia.—This company contemplates building approximately 5 miles of new line in Moline, Ill. F. W. Reimers, electrical engineer, Moline.

Iowa Light & Traction Company, Eldora, Ia.—It is announced that this company has withdrawn, through its representative, J. H. McBride, the proposition made to the City Council of Marshalltown, to build an interurban railway from Marshalltown to Grundy Center and from Marshalltown to Ames, Ia. The company, however, expects to construct a railway between Waterloo and Des Moines as originally planned. [E. R. J., Sept. 18, '09.]

Fitchburg & Leominster Street Railway, Fitchburg, Mass.—The Massachusetts Railroad Commission has approved the location of a line of this company over Daniels Street and Clarendon Street, Fitchburg.

Springfield (Mass.) Street Railway.—The Railroad Commissioners have granted a certificate of operation to this company to connect its railway with the Western Massachusetts Street Railway in West Springfield.

***St. Joseph & Savannah Railway, St. Joseph, Mo.**—It is stated that the preliminary surveys for this proposed electric railway between St. Joseph and Savannah are under way. J. H. Van Brunt, of the St. Joseph Railway, Light, Heat & Power Company, is interested.

Albany Southern Railroad, Albany, N. Y.—It is announced that this company, which is a reorganization of the Albany & Hudson Railroad, will let contracts at once for double-tracking and straightening of 13 miles of its railway. Headquarters, Rensselaer. A. C. Smith, 100 Broadway, New York, N. Y., president.

Brooklyn Rapid Transit Company, Brooklyn, N. Y.—This company has agreed to reconstruct the Nostrand Avenue bridge over the Long Island Railroad near Avenue H, so as to extend its railway to Avenue Q and Avenue U. The improvement will cost approximately \$10,000.

New York Central & Hudson River Railroad, New York, N. Y.—The New York & Harlem Railroad, a subsidiary company of the New York Central & Hudson River Railroad, has begun laying the third-rail between Mt. Vernon and White Plains for the extension of its electric zone out of New York.

Hickory (N. C.) Railway.—This company has secured practically all the right of way for its electric railway, which will connect Catawba Springs, Newton, Brookford, Hildebran and Cliffs, a distance of about 83 miles. The survey over the route is well under way. M. E. Thornton, Box 443, Hickory, president and general manager. [E. R. J., May 15, '09.]

Wheeling, Cadiz & Tuscarawas Traction Company, Cadiz, Ohio.—This company is said to have commenced grading near Cadiz on its electric railway from Uhrichsville to Wheeling, W. Va., via Cadiz, 55 miles distant. A. Evans Townsend, president. [E. R. J., Aug. 28, '09.]

***Columbus & Cincinnati Air Line Traction Company, Columbus, Ohio.**—This company, which was recently incorporated to build an electric railway between the two cities named in the title, has awarded the contract for the preliminary engineering work to Riggs & Sherman Company, Toledo. The survey has been started.

Muskogee (Okla.) Electric Traction Company.—This company expects to place contract during the next week for constructing 2½ miles of track. The company has purchased 500 ties, and also 60-lb. rails from the Illinois Steel Company.

***Barrie, Ont.**—John W. Moyes, Toronto, Ont., has made a proposition to the City Council to construct an electric railway in Barrie and to the suburbs. He also proposes to build several suburban lines.

Coos Bay & Inland Railroad, Portland, Ore.—This company, which was recently incorporated to build an electric railway from Roseburg to Marshfield and Coos Bay, has effected an organization with Jacob Haas, president; Chas. Ringler, secretary and treasurer, and Frederick D. Kuettner, Headquarters, McKay Building, Portland. [E. R. J., July 10, '09.]

Columbia Power, Light & Railways Company, Bloomsburg, Pa.—Announcement has been made that work would soon be started on the extension of the Columbia & Montour Electric Railway from Berwick to Wilkesbarre, a distance of 32 miles, and the Dansville & Bloomsburg Street Railway, from Danville to Sunbury, 14 miles, both of which railways are controlled by the Columbia Power, Light & Railways Company. It is probable that further extensions will be made to Shamokin and then throughout the West Branch.

Greensburg & Southern Electric Street Railway, Greensburg, Pa.—This company has been given permission to extend its railway from Arch Street, Greensburg, to Hannastown, Shieldsburg and New Alexandria, 8 miles; also 1½ miles in Greensburg.

Latrobe (Pa.) Street Railway.—This company is authorized to extend its electric railway from Latrobe to the line of Unity and Salem Townships, a distance of 5½ miles, doubling the mileage of its system.

West Penn Railways, Pittsburgh, Pa.—This company has been authorized to extend its railway from Hempfield to Mill Grove, West Newton, Gratztown, Suterville and Blythesdale, a distance of 15 miles; from Dunbar Township to Uniontown, a distance of 9 miles, and about Uniontown for 3 miles distant, making a total of 27 miles.

Pan Handle Electric Railway & Power Company, Spokane, Wash.—It is reported that this company, which proposes to build an electric railway from Priest River, Idaho, to Priest Lake, 30 miles, has secured all right-of-way except through the Raniksu reserve. It is also stated that a contract has been let calling for the completion of the grade by Oct. 1, 1910. Vernon M. Smith, Spokane, president. [E. R. J., May 22, '09.]

Spokane, Walla Walla & Western Railroad, Walla Walla, Wash.—It is stated that this company, which proposes to build an electric railway from Dayton to Wallula, 63 miles distant, has completed the preliminary surveys. E. S. Keating, engineer. [E. R. J., Aug. 28, '09.]

***Cameron, W. Va.**—T. B. Cox, Sherrard, is said to be promoting a plan for an electric railway between Cameron and Wheeling, 20 miles distant.

Fairmont & Northern Traction Company, Fairmont, W. Va.—This company has awarded the contract for constructing 12 miles of electric railway between Fairmont and Fairview, to Robert & D. F. Talbot, Fairmont. Construction has been started at Fairview.

Parkersburg, Marietta & Interurban Railway, Parkersburg, W. Va.—This company, which is to extend its railway across the Little Kanawha River in Parkersburg and from Marietta past Lowell and Coal Run to Beverly, Ohio, has awarded the contracts on the railway between Lowell and Beverly as follows: Grading, to R. T. Martin; concrete to Canner & Battersby; steel to McClintic-Marshall Construction Company, Pittsburgh, Pa.

Chicago & Wisconsin Valley Railway, Portage, Wis.—This company has been organized to construct an electric railway from Janesville to Merrill, through Madison, Lodi, Briggsville, Friendship, Grand Rapids, Stevens Point and Wausau. Capital stock, \$40,000. Officers elected are: E. G. Frost, Stevens Point, president; J. W. Powers, Friendship, first vice-president; J. P. Barnes, Waupaca, second vice-

president; A. J. Bermeyer, Indianapolis, Ind., secretary; J. E. Jones, Portage, treasurer; F. G. Tyndoll, Briggsville, assistant treasurer, and Allen P. Russell, Baltimore, Md., general manager. [E. R. J., Sept. 11, '09.]

Sheboygan Light, Power & Railway Company, Sheboygan, Wis.—This company is relaying the track on its railway between Sheboygan and a point about 2 miles north of Riverside with 60-lb. rails, in place of 45-lb. rails. The Lackawanna Steel Works, Buffalo, N. Y., was given the contract for the steel, which amounted to 500 tons.

SHOPS AND BUILDINGS

Birmingham Railway, Light & Power Company, Birmingham, Ala.—This company will erect a brick building 140 ft. x 30 ft. at Bessemer. Plans are being prepared by D. O. Whildin, 711 Title Guarantee Building, Birmingham. G. C. Estill, engineer.

Mason City & Clear Lake Railway, Mason City, Ia.—This company is reported to have awarded the contract for the construction of its car house, at Emery, to Fred Lippert, Mason City. The building will be built of concrete, 210 ft. x 55 ft. [E. R. J., Sept. 18, '09.]

Topeka (Kan.) Railway.—This company has been given permission to build an addition to its car house on Jackson Street, Topeka. The new building will be 75 ft. x 104 ft., and will cost about \$8,000. [E. R. J., Aug. 7, '09.]

Hudson & Manhattan Railroad, New York, N. Y.—This company has commenced work on the car house to be located at Henderson Street and Steuben Street, Jersey City, N. J. The plan is to connect this structure with the tunnel at Henderson Street and Railroad Avenue, where the cars come to the surface from the tunnel.

Oklahoma (Okla.) Railway.—This company, it is reported, will start construction on a 6-story terminal building at Grand Street and Hudson Street on Nov. 1. The building will be 50 ft. x 100 ft., fronting on Harvey Street, and will cost approximately \$200,000. The first floor will be composed of store rooms, a general waiting room and ticket office. One entire floor, probably the second, will be occupied by the Oklahoma Railway, and the remaining floors by office tenants. A smaller building will be erected opposite the train sheds for the use of the transportation department of the railway, and for employees' rooms. For the present the first wing of the building only is being considered.

POWER HOUSES AND SUBSTATIONS

Illinois Traction System, Champaign, Ill.—It is stated that this company is to install a substation at Harristown.

Metropolitan Street Railway, Kansas City, Mo.—This company has constructed a new substation, 100 ft. x 34 ft., at Tenth Street and State Avenue, adjoining the car house at Tenth Street and Minnesota Avenue, Kansas City, Kan. The building is equipped with a transformer and converter. Room has been provided for two more converters and two generators.

Utah Light & Railway Company, Salt Lake City, Utah.—This company has commenced work on its new power house, on the Davis and Weber Counties Canal, in Weber Canyon. The building, which will be constructed on concrete with a structure of steel and brick, is to be 53 ft. x 73 ft. The plant and equipment will involve an expenditure of nearly \$400,000. One 2500-kw generator, directly connected to a 5000-hp Pelton turbine, will be installed, and sufficient space will be allowed for another generator, which can be installed later. The plant will be fully fitted with traveling cranes and other equipment. It is estimated that the building will be completed within the next 60 days. The water supply for the plant will be through a 9000-ft. pipe line, 2000 ft. being of 84-in. concrete pipe, and 7000 ft. of 74-in. wood-stave pipe. The plant will be operated under a head of 180 ft. The dam, which is to be constructed of reinforced concrete, will be 14 ft. high and 125 ft. wide, causing a backwater of approximately three-quarters of a mile. The power generated at this plant will be carried, by means of a steel tower line, a distance of about 5 miles to the present transmission line from Ogden to Salt Lake City. P. J. Moran, Salt Lake City, contractor.

Winchester & Washington City Railway, Winchester, Va.—It is stated that this company will build a large auxiliary steam power plant at Millville. The new plant will have a capacity of 1500 hp and will supplement the current generated by the water power furnished by the Shenandoah River. D. M. Swink, superintendent. [E. R. J., Feb. 13, '09.]

Spokane, Walla Walla & Western Railway, Walla Walla, Wash.—It is announced that this company has located a power site on the Tucannon River, 33 miles from Dayton, capable of developing 4000 hp. The proposed route of the railway is from Dayton to Wallula, 63 miles. [E. R. J., Aug. 28, '09.]

Manufactures & Supplies

ROLLING STOCK

Yakima Valley Transportation Company, North Yakima, Wash., has ordered two 20-ft. closed cars from the Danville Car Company.

Connecticut Valley Street Railway, Greenfield, Mass., has ordered two 30-ft. closed cars from the Wason Manufacturing Company for November delivery. These cars will have a seating capacity of 44, have wooden bodies with metal underframes and will be finished inside with mahogany. National AA-1 air brakes, Peacock hand brakes, Smith hot-water heaters, Crouse-Hinds headlights, four Westinghouse 101-B motors, New Haven registers, Murphy sanders, Heywood Brothers & Wakefield plush seats, Sterling-Meaker trolley bases and Taylor trucks and journal boxes were specified.

Interborough Rapid Transit Company, New York, N. Y., Manhattan Division, has drawn up the following specifications for the 20 trailers ordered from both the St. Louis Car Co. and Wason Manufacturing Company, the 20 motor cars from Jewett Car Company and the 40 motor cars from Barney & Smith Car Company, as reported in the ELECTRIC RAILWAY JOURNAL of June 5, 1909:

Seating capacity.....48	Curtain material...Pantasote
Weight.....21,000 lb.	Gears and pinions.....West
Bolster centers...33 ft. 2 in.	Heating system.Consolidated
Length of body...39 ft. 8 in.	Journal boxes...Symington
Length over vestibule47 ft. ½ in.	Motors...Westinghouse 302
Width over sills... 8 ft. 6 in.	Sash fixtures,
Width over posts at	Forsythe Bros. Co.
belt 8 ft. 8 in.	Seats....Heywood Bros. &
Sill to upper deck 9 ft. 6¾ in.	Wakefield Co.
Height rail to sills...40¾ in.	Seating material.....rattan
Body.....Wood, with metal	Springs.....Union Spring &
posts and sash	Mfg. Co.
Interior trim....Mahogany	Trucks, type..Hedley patent
UnderframeWood	under St. Louis cars; Man-
Air brakes....Westinghouse	hattan standard under
Axles...Cambria & Midvale	others built by St. Louis
Brakeshoes..National Brake-	Car Company, Wason
shoe Company	Manufacturing Company
Control system..GE & West	and Standard Motor Truck
Couplers.....Van Dorn	Company
Curtain fix....Curtain S. Co.	Wheels..Midvale, steel-tired

The company has called for the following details on the 110 cars ordered for its subway division from American Car & Foundry Company, the 40 from Standard Steel Car Company and the 100 from the Pressed Steel Car Company, as mentioned in the ELECTRIC RAILWAY JOURNAL of June 12, 1909:

Type of car....Center door	Couplers.....Van Dorn
Seating capacity.....48	Curtain fix....Curtain S. Co.
Bolster centers.....36 ft.	Curtain material...Pantasote
Length of body...39 ft. 4 in.	Gears and pinions.....GE
Length over vestibule51 ft. ½ in.	Heating system.Consolidated
Width over sills... 8 ft. 7 in.	Journal boxes...Symington
Width over posts at	Motors.....GE 212
belt 8 ft. 7 in.	Seats....Heywood Bros. &
Sill to upper deck 8 ft. 8¾ in.	Wakefield Co.
Height rail to sills 3 ft. 2½ in.	Seating material.....rattan
Bodysteel	SpringsUnion
Interior trim.....steel	Trucks.Hedley patent motor,
Underframesteel	Hedley patent trailer,
Air brakes....Westinghouse	American Locomotive
Axles...Cambria & Midvale	Company and Standard
Brakeshoes..National Brake-	Motor Truck Company
shoe Company	Wheels...Schoen solid rolled
Control system..GE Type M	steel

TRADE NOTES

M. L. Newman & Company, New York, N. Y., announce that they have moved their office from 25 Broad Street to the United States Express Building at 2 Rector Street, New York City.

Perry Ventilator Corporation, New Bedford, Mass., announces the receipt of an order from The J. G. Brill Company, Philadelphia, Pa., for ventilators for the equipment of the 80 cars now building for the Pittsburgh (Pa.) Railway.

Hill Clutch Company, Cleveland, Ohio, which manufactures power transmission machinery, announces the appointment of G. W. Hoffman as sales engineer in charge of the company's Chicago office, which is located at room 610, Marquette Building.

H. H. Gerhard, manager of the C. A. Wood Preserver Company, Austin, Tex., and Dr. E. P. Schoch, chemist

of the company, have returned from a trip through Europe, during which arrangements were made to double the output of the C. A. Wood Preserver Company to meet the increasing demands of electric railway companies for this product. Mrs. Gerhard accompanied her husband on his tour.

S. E. Bastow, of Bruce, Peebles & Company, Ltd., was entertained at dinner recently by a number of his friends in Edinburgh, preparatory to leaving for a tour around the world on behalf of Bruce, Peebles & Company. Mr. Bastow left by the "Tunisian" from Liverpool for Canada, and will proceed to Australia, New Zealand and South Africa. He expects to be away for at least six months.

National Railroad Trolley Guard Company, 37 Wall Street, New York, N. Y., advises that it has closed the following contracts recently: Buffalo & Lake Erie Traction Company, 1000 ft.; Utica & Mohawk Valley Railway, 200 ft.; Cortlandt County Traction Company, 400 ft.; Middlesex & Boston Street Railway, 100 ft.; York Railway, 600 ft., and the Philadelphia & West Chester Traction Company, 250 ft.

Power Specialty Company, New York, N. Y., announces that it has removed its St. Louis office to Chicago, Ill., and that R. D. Nutting has been made manager at Chicago and Robert H. Wyld, who was with the company in St. Louis, has been made assistant manager. Alexander Bradley, Chicago, has been transferred to the works of the company at Dansville, N. Y. All correspondence heretofore addressed to the company at St. Louis should now be addressed to the company at 450 The Rookery, Chicago, Ill.

Western Electric Company, New York, N. Y., reports that gross sales for September show little variation from the July and August totals. Compared with a year ago, however, September orders increased 50 per cent, and were practically identical with those for September, 1907. The Western Electric Company has now completed 10 months of its current fiscal year. During this period orders have been running at the rate of \$47,000,000 per annum, compared with \$33,000,000 of gross business for the fiscal year ended Nov. 30, 1908, an increase of about 45 per cent.

Sheffield Gas Power Company, Kansas City, Mo., has purchased the entire assets, factory and good will of the former Weber Gas Engine Company. The factory of the Weber Gas Engine Company was operated throughout the term of the receivership, and has been operated by the Sheffield Gas Power Company without interruption, with the result that the company is in position to furnish the entire line of Weber gas engines and gas producers without delay to any customer. The management of the business, as well as the sales and factory departments, are in new hands. George M. Hawes, the president of the company, is a graduate of the Massachusetts Institute of Technology and has been interested in machinery and electrical work for a number of years, giving particular attention to central station power plants. He has also devoted much time to gas engine and producer design. Freeman Field, vice-president and treasurer of the company, has devoted the past 12 years exclusively to the gas engine business, both in the manufacturing and selling branches, and for the last seven years has been connected with the Olds Gas Power Company as general sales manager and Western manager. W. H. Spiller, assistant manager of the company, studied engineering at Harvard and Brown University and is well informed on power-plant work, having installed both steam and gas power in many industries. During the past six years he has been affiliated with gas power interests in both the selling and manufacturing lines.

ADVERTISING LITERATURE

Pacific Electric Heating Company, Ontario, Cal., is mailing an illustrated booklet entitled "Hot Points," which contains facts about its line of electrical cooking utensils.

Enterprise Supply Company, Chicago, Ill., has printed a folder containing directions for applying Enterprise varnish renovator. The company is also distributing circular matter on its vestibule curtain rod rubber tips.

Nelson Valve Company, Philadelphia, Pa., has issued a 12-page catalog which contains an article entitled "Gate Valve Design" by Carlisle Mason, in which the subject "Solid Wedge versus Double Disk Valves" is considered. The publication is illustrated.

Pettingell-Andrews Company, Boston, Mass., has issued the October number of *Juice*. It contains notes on opalux reflectors, tungsten lamps for sign and decorative lighting, a new type of conulet and an article entitled "Transformer Bushings," by H. W. Young.

American Vulcanized Fiber Company, Wilmington, Del., is distributing a catalog and price list on vulcanized fiber. Illustrations are presented of the different forms of vulcan-

ized fiber, accompanied by a complete description and price list. Two views of the company's plants at Wilmington and Newark are also shown.

American Blower Company, Detroit, Mich., has just issued a little folder called "A Little Noise," showing a number of its engines which have been installed in different parts of the country. Accompanying the illustrations are presented letters and reports received by the company as the result of its system of following up periodically every engine shipped from its plant.

Electric Storage Battery Company, Philadelphia, Pa., has issued bulletin No. 110, dated October, which contains a reprint of the paper entitled "Some Points on the Operation and Care of Exide Vehicle Batteries," read by H. M. Beck, engineer operating department of the Electric Storage Battery Company, at the convention of the Society of Automobile Engineers, held in Chicago on Aug. 5, 6 and 7, 1909.

Dearborn Drug & Chemical Works, Chicago, Ill., have issued a souvenir booklet entitled "Water Treatment." The publication is a very artistic one and, besides illustrating and describing the facilities of the company for the work which it does in treating water so as to prevent boiler scale, it takes up separately the questions of the treatment of water for locomotive boilers, stationary boilers and marine boilers, and shows by the reproduction of photographs the corrosion and destruction which are caused by untreated boiler water. A section of the publication is devoted to the work of the department which handles lubricants.

Henry W. Brooks, Jr., & Company, 15 Wall Street, New York, N. Y., are distributing a pamphlet on the Corporation Tax Law passed by Congress with the Tariff Law containing a full text of the Act. The Corporation Tax Law is applicable to practically all corporations earning \$5,000 a year, net. The method of arriving at the so-called "net income" under the law is complex and not in accordance with the manner in which corporation books are generally kept. The first tax report for the year ended Dec. 31, 1909, will soon be due and corporation officers will find the pamphlet by Brooks & Company of considerable interest.

Fairbanks, Morse & Company, Chicago, Ill., have issued a very complete catalog on windmills, tanks and pumps. The theory and details of construction are analyzed and published completely for the first time in this publication. Pumping systems and the new Femco underground force pump are described in detail. Fairbanks, Morse & Company have also issued a new catalog of their small engines from 1 to 12 hp, in which they describe for the first time their new 1-hp engine "Jack Junior." The cover is printed in colors and is illustrated with a view of a model farm equipped with up-to-date machinery.

Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., has issued a booklet entitled "How the Telephone Helps the Farmers," a short story in which one of the characters is without telephone service being used to impress readers with the necessity of the telephone. A model constitution and by-laws for a rural telephone company are also published. A few pages are devoted to a description of telephone lines and their construction. The rest of the booklet contains description of the different types of telephones and switchboards manufactured by the company. It is profusely illustrated with views of the company's buildings and of different departments in which the apparatus is manufactured.

The J. G. Brill Company, Philadelphia, Pa., in the September issue of *Brill's Magazine* published the ninth of a series of articles on conditions which govern the type of car used in large cities. The articles in the current issue describe the conditions in Boston, Mass. Among the other articles are descriptions of new cars for the Illinois Traction System, the Pittsburgh & Kansas City Railway and the Geneva, Waterloo, Seneca Falls & Cayuga Lake Traction Company, also an article entitled "Something About Snow Removing." The company has also printed a 24-page catalog devoted to single trucks. The principles of design and operation of the different types of these trucks are fully described and illustrated. The publication also contains a number of half-tones showing the recent types of cars mounted on Brill single trucks and line drawings accompanied by dimensions for the Brill single trucks Nos. 22, 22E, 22 Special and No. 39E. The company has also issued a catalog descriptive of its half-ball brake hangers. In connection with the descriptive matter there are a number of illustrations showing the hanger adjusted to different types of Brill trucks with inside and outside-hung shoes. A drawing gives the details of the half-ball brake hanger and method of attaching it. The parts of this hanger and shoe holder for Brill trucks are also illustrated.