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CONTENTS.

Pensions in Brooklyn

The Brooklyn Rapid Transit Company has just announced that it has established a pension system for its aged and incapacitated employees. Certain conditions are attached to those who are entitled to receive the pension, but the rules for eligibility are so broad as to include practically every employee now on the system when he reaches the required age. In adopting this policy the company has excellent precedent in the case of several of the important steam railroads and of several electric roads, for without some system of this kind the question of the aged employee who has grown gray in the company's service is a problem. Usually, such veterans are assigned to some easy work that is available, such as attending switches or as night watchman, but the number of these posts is usually limited, and a period is finally reached when a man cannot perform even these duties; then his case has to come up for individual attention on the part of the company. It is understood that the Brooklyn Rapid Transit Company for some time has taken care of these superannuated cases individually by pensions, but such a plan cannot be as satisfactory to the employees as a general policy, even if there is practical certainty that every case will receive favorable treatment. According to President Winter, the cost will not be large in proportion to the company's aggregate payroll, and the plan, of course, was adopted not entirely because of its philanthropic aspects but because it was considered good business.

The Manufacturer and Home Production

When an electric railway company manufactures part of its own supplies rather than buys from a manufacturer, especially when the parts manufactured are repair parts for equipment originally purchased from outside manufacturers, it is pertinent to ask the reasons. In some cases a direct saving can be made in freight charges or custom duties, but where this is not the case it seems at first sight as if something must be wrong either in the practice of the manufacturer or that the railway company is deceiving itself as to the cost of manufacturing these parts. For many reasons the manufacturer should be able to manufacture all parts of which he makes a specialty so much more cheaply than an isolated customer as far to overbalance all selling expenses and transportation charges, except those for very long distances. He possesses elaborate means of production, buys his raw material under favorable conditions, produces the equipment in large quantities and can determine its cost to a nicety. On the other hand, the consumer who wishes to produce these same parts must duplicate the drawings and patterns, not only of one manufacturer, but usually of several to make the completed product;

must install a variety of tools to secure a comparatively small output and must work under those unfavorable conditions which always surround the small producer. Everything seems in favor of the manufacturer, yet not a few companies do manufacture a great many miscellaneous repair parts on a small or on a large scale and some have gone into the manufacture of larger equipment. The situation is one which can safely bear analysis.

One factor, probably the principal one in inducing companies to engage in this work, is that of cost, but this is a matter of comparative figures for individual case. They can easily be determined in each instance, but no universal law can be laid down. Another factor, however, which is capable of general consideration is that of delivery. In prosperous times the manufacturer is so busy turning out complete equipment that he is often tempted to neglect orders for detail parts of his own apparatus and so leaves them to be filled by smaller local manufacturers or else to be made by the company itself. The local manufacturers have been quick to see the possibilities presented by this situation and have obtained the business, in many cases, where the railway companies themselves have not taken up the manufacture of these parts. This condition is detrimental to the original manufacturer in two ways. In the first place the quality of the detail parts so constructed may not be equal to that which he would have supplied and the performance and consequently the reputation of his apparatus will suffer. In the second place when orders for new and complete equipments are scarce and he would like to engage in the sale of supply parts or detail equipment, he finds large sums invested in their production and active competition. Necessarily he must offer very low prices if he wishes to regain the ground lost.

Another reason why companies have been induced to take up the home manufacture of detail equipment is the absence of standard parts in like apparatus from different makers. A railway company which has been in operation for some time, even if it is a small one, very rarely has purchased all of its equipment from one set or group of manufacturers of cars, motors, trucks and other parts. Consequently it finds many slight and seemingly unimportant differences in the detail parts which, if it manufactures them itself, could be made standard for its particular road. That is, by a few modifications it is often possible to reduce greatly the variety of bolts, nuts, washers and screws, and other parts needed, so the company establishes its own standards and builds to them. Another reason which occasionally is an incentive for home manufacture is that, owing to the development of traffic, railway equipment has often to be applied to different conditions and usually to more severe conditions than when it is first installed or for which it was designed. As this harder work is placed on the apparatus, it is strengthened in the shops of the company until finally it is stronger and better than it was originally. After this has been done, if the company has to buy new apparatus of the same kind it is often disappointed if the manufacturer of the original equipment has not improved his detail parts in the same way so that the company clings to its own methods.

Summing up the situation, it may be stated that it is for the interest of both the manufacturer and the consumer for the apparatus to be constructed under the most economical conditions possible. These, in most cases, are logically those where the original apparatus was built, but the burden of proof that this is the case is on the manufacturer. He can only retain his trade in detail parts if he treats his orders for them as carefully as he does those for new equipment, if he introduces interchangeable parts as far as practicable and if he pays close attention to the behavior of his products after their sale.

Our Semi-Annual Index

This number completes Vol. XXXIV of the Electric Railway Journal and contains the usual semi-annual index. Considerable attention has been directed during the past year to different methods of filing and classifying technical literature, particularly electric railway data, and we have published descriptions of several elaborate plans and schemes followed by different persons. Such methods of individual files and indices are very valuable for those who have the time to keep them up, such as large companies or firms who have frequent occasion to refer to the periodical literature on certain topics. Undoubtedly in most, if not every case, the file is worth all of the time required to maintain it. But we believe that these expensive systems are beyond the needs of most of our subscribers, and consequently that they will depend upon the indices prepared by the publisher for finding articles on particular topics in their bound volumes of the Electric Railway Journal. Hence, a short discussion of the best method of using our indices and the principles on which they are based may be of interest.

A reader is apt to search for an article in one or two ways; either by the subject of the article or by the place where the event of which he is trying to find a record occurred. For this reason each entry in the index published in the Electric Railway Journal is given both a subject and a geographical designation where this is possible. The geographical plan followed is to index each road under the name of the city in which its principal office is located, as given in our Electric Railways Directory. After careful thought it was decided that this would be more convenient than indexing them alphabetically under the name of the company. One reason is that this plan allows of the grouping together of all articles in regard to events which occur in any one city. Another is that the titles of companies are apt to change and it would be confusing, especially when using indices several years old, to search for an entry now under one main heading and now under another. The corporate names have been retained, however, as subheadings where there are several companies in any city. To assist in finding references to interurban companies whose main office is often not in the principal city traversed, cross-references under the corporate name of the company have been introduced liberally into the index.

The second basis upon which the index has been compiled is that of subjects. In preparing these entries a very careful effort has been made to include in the index information whether given in an article devoted exclusively to that topic or if published as part of a longer article. Thus the description of a new car house or of a system of catenary construction would be indexed under car house or

catenary construction, whether it originally appeared as a separate article or was included in a general description of some railway system. This plan has been followed even in reports of conventions, so that the user of the index is able to find in one place all of the references of any considerable length to any particular topic which have been published in the paper during the past six months, no matter what the form was in which the articles appeared in the paper.

No index is perfect and no one perhaps realizes this better than those who compile it. The reader also should not expect to find the index a concordance of the paper, and where it is made broader than an index of titles there is always a difference of opinion as to the relative importance of the entries to be included. Finally, in such a rapidly developing field as that of electric railroading, where the nomenclature of different parts has not been entirely standardized, there is always further opportunity for differences of opinion as to the standard code word to use. In this latter case, however, the name most generally employed in the trade has been adopted and as large a number of cross-references under other possible designations has been inserted as the commercial limits of the index permitted. Every compilation of this kind must reflect the individuality of one or of several persons, but we feel confident that the more our indices are used the more familiar one will become with them and the easier it will be to locate the articles for which he is searching.

Only one change has been made in the general character of the index in this issue as compared with previous issues. Formerly only the longer personals were indexed; this year all of the items which appear under the heading of "Personal Mention" are indexed separately.

Municipal Regulation Limited

The right of a municipality to require the stoppage of electric cars at every street crossing has recently been denied in a case of more than ordinary interest (Village of Excelsior versus Minneapolis & St. Paul Suburban Ry. Co., 122 N. W., 486). Under an ordinance the railway company had been authorized to operate within the village limits under a 5-cent fare proviso, every passenger to be entitled to one continuous ride from any point in the village to any other point along the lines of the railway. After the railway had been built a village ordinance was passed which required the stoppage of cars "at any and all of the intersections and crossings of streets when any person or persons require to enter or alight from such cars, provided such crossings are grade crossings." One of these crossings was at a point where the line was built on a private right-of-way, and the court held that while the village had the right to pass reasonable ordinances regulating, *inter alia* the speed or traffic and the stoppage of cars, ordinances incidentally conducive to the comfort and convenience of the community, it did not follow that an ordinance designed entirely for the comfort and convenience of the inhabitants was a valid exercise of the police power. Continuing, the court said:

> An ordinance may require under given conditions that a street car must stop at the end of any block, or at the middle of long blocks, or at railroad crossings, or at places where fire engines may suddenly emerge. But a requirement that a car must stop at every point at which a passenger may wish to enter or alight would be destructive not only of the purpose for which the corporation was authorized to transact business, but would also completely demoralize traffic, and would be, the authorities generally agree, without legal force.

Several considerations of public policy very properly entered into the court's decision. The first was that the company was not a mere street railway, but had been held to have been organized to construct and operate interurban railroads from place to place and to exercise the power of eminent domain. Another consideration was that the company had the competition of steam roads, and if the principle for which the village contended were adopted, it might be compelled to stop at so many street crossings as seriously to hamper, and possibly to destroy, its competitive power. Authority for this consideration was found in an Ohio case, in which it was said:

> If every city and village through which such a railway passes may require its cars to be stopped at every street intersection to take on or to discharge passengers, and to serve the purposes of a street railway, then its usefulness as a means of interurban transportation may be very much limited, because so much time will be consumed in passing through cities and villages that it will not longer be practicable for many to travel in that way.

The final consideration was that the ordinance did not subserve the public convenience in the village.

Brief mention of a few recent cases on the exercise of the police power with regard to the operation of railways is of interest in this connection.

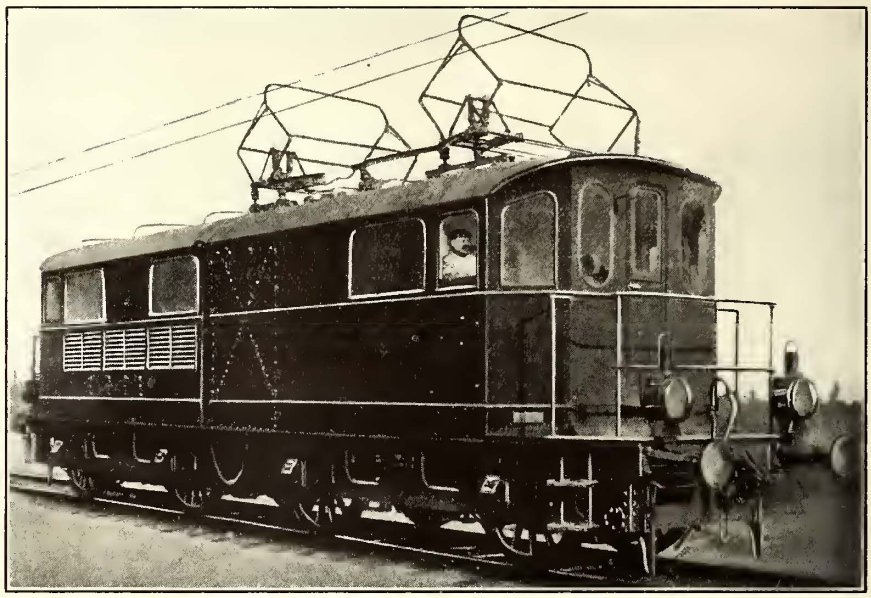
In Texas it was held last year that a statute requiring railway companies to keep their waiting rooms open before and after the arrival and departure of trains was for the convenience of passengers beginning or completing a journey, and did not apply to through passengers stopping at junction points. But as far back as 1870 the Supreme Court of Illinois, in the case of Pittsburgh, etc., Railway Company vs. Thompson (122 N. W., 486), held that the company could not be compelled, for the sake of making travel upon the road absolutely free from peril, to incur a degree of expense in the construction of its track and right-of-way which would render operation impracticable.

In Kansas it was held in 1907 (State vs. Missouri, etc., Ry. Co., 90 Pac., 606) that where a general statute providing that every railroad in the State engaged in the transportation of passengers shall furnish sufficient accommodation for their transportation, an order requiring the defendant company to operate separate passenger trains on a branch of its road, instead of mixed trains, was not unreasonable, though the receipts of revenues from passenger traffic alone was insufficient, where the combined revenues of freight and passenger traffic justified the expense of separate passenger trains. The same court held last year, however, while a street railway is not required to furnish separate compartments for white and colored passengers, an interurban road may be obliged to do so.

The gist of all these recent decisions is that the courts will often interfere to prevent the enforcement against the interests of railway companies of ordinances which are often considered to be within the "police power," and will do so not only for the benefit of the company, but of citizens who would be seriously incommoded if the regulations were enforced.

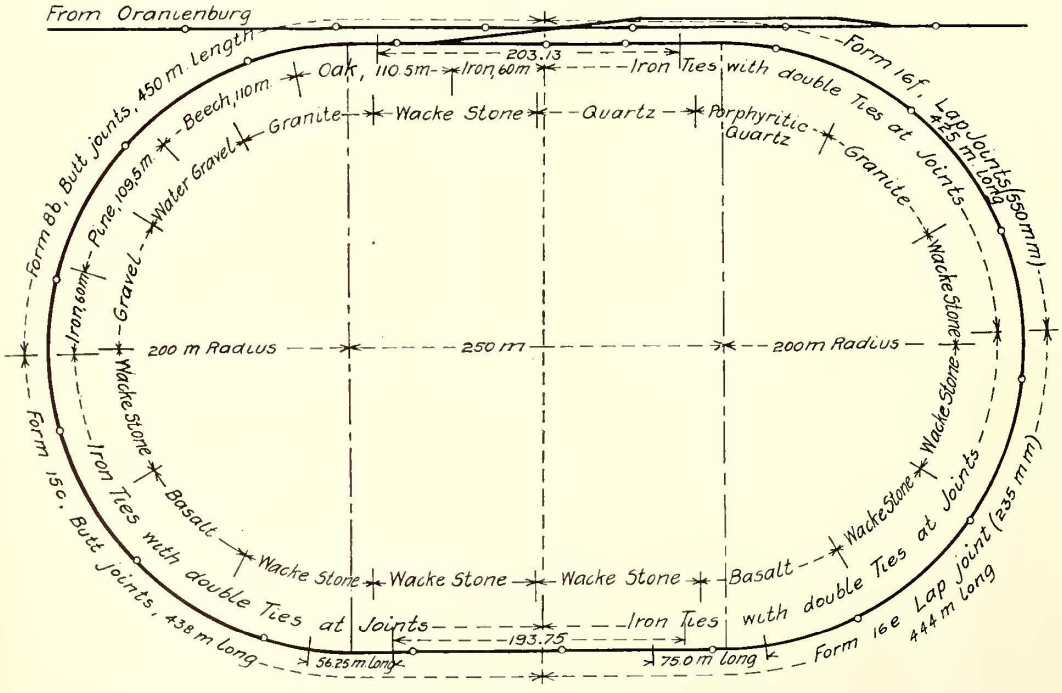
THE ORANIENBURG EXPERIMENTAL LINE OF THE PRUSSIAN GOVERNMENT RAILWAYS

For several years past the Prussian Government Railways have been operating an oval-shaped experimental railway in a forest between Sachsenhausen and Oranienburg, about 33 km (20.5 miles) from Berlin. The principal purposes of this line are to serve as a proving ground for different types of roadbeds and for electrical overhead construction, but it has also been of value in showing the power consumption and running characteristics of the single-phase apparatus tested from time to time. The test road is built in the form of a single-track ellipse having a perimeter of 1.75 km (1.09 miles), made up of two tangents of 250 m (about 770 ft.) each and two semicircles of 200 m (about 617 ft.) radius each. The whole stretch is practically level. The direction of running is reversed from time to time to prevent uneven wear of the guard rails and tires, and plaster casts of both are made at frequent intervals to study the character of wear.



Oranienburg Test Line—Single-Phase Locomotive Now in Service

The roadbed consists partly of wooden ties and partly of steel ties, both laid with varying spacings and in different kinds of rock ballast. Instead of placing two ties close together under the joints, the steel tie sections have been fitted with a double or siamese tie under every joint. No detailed data have yet been given out on the results of the roadbed trials, but in general the object is to determine how much each type of track construction has deteriorated after a certain number of train-miles has been operated.



Oranienburg Test Line—Plan of Track, Showing the Variety in Joints, Ties and Ballast

The overhead construction consists of two catenary designs installed by the Allgemeine Elektricitäts Gesellschaft. One of these is of the simple catenary suspension; the other, which was installed during the past year, has a third wire to equalize the effects of expansion and contraction in the rest of the system. Both overhead systems are installed for 6000-volt, single-phase current, and have proved satisfactory in every detail. Power for the operation of this line is transmitted from Oranienburg, 2.5 km (1.55 miles) distant, to a small control building near the test track.

The first experiments on the line were started early in 1906, with one of the original Spindlersfeld single-phase motor cars, and were continued for nearly two years. The trials are now being conducted with a locomotive and a train of freight cars, the whole constituting a weight of 350 to 380 metric tons. At first the total train weight was only 250 metric tons, pulled by two motors, but now three 250-hp motors are used. The average power consumption, including acceleration, is 17 watt-hours per metric ton-km (30 kw-hours per ton-mile). The locomotive and cars are run for about 20 hours a day, except for short stops to make roadway repairs, etc.

There is no attendant on the train, as the motorman jumps off as soon as he accelerates the motors, and the train is stopped simply by cutting off the current supply at the control station. Excluding Sundays, the train runs about 620 miles a day, and averages over 12,400 miles a month. Every trip made around the circuit by the train is recorded by a perforating machine.

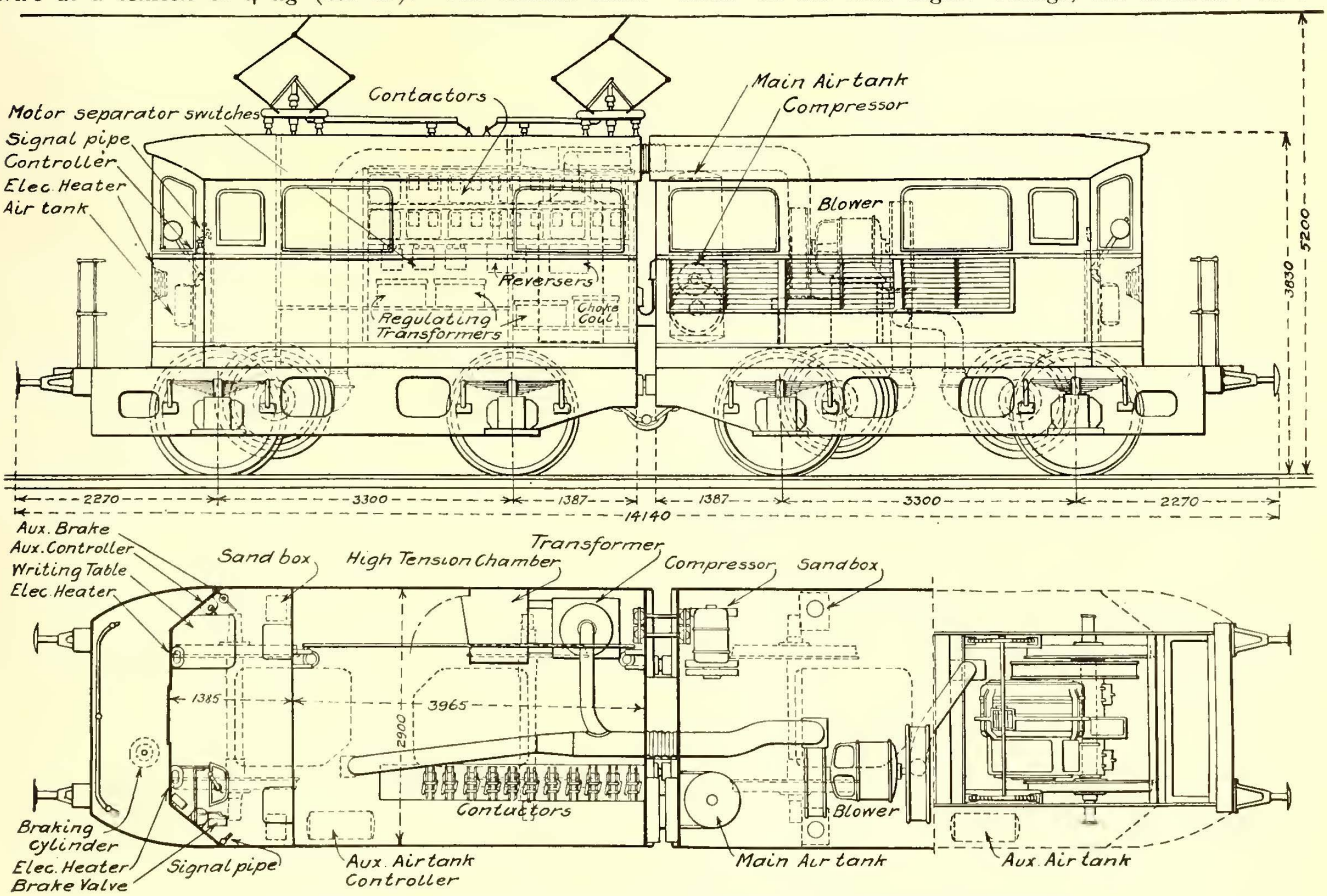
The locomotive consists of two short coupled units, and weighs 59.47 metric tons. Three of its four axles are now driven by Winter-Eichberg 25-cycle, single-phase motors, each of which has an hourly rating of 350 hp at 450 r.p.m., and a continuous rating of 250 hp at 500 r.p.m. when artificially cooled. The motor gearing has the ratio of 1:4.21, and drives wheels of 1400 mm (55 in.) diameter. When the motors are operated at their continuous rating or total of 750 hp the speed is 31.3 km an hour (19.4 m.p.h.), and the tractive effort 6480 kg (14.256 lb.). The highest operating speed is usually 50 km (31 miles), but a maximum of 60 km an hour (37.2 m.p.h.) is attainable. It has been found that after a train of 510 metric tons is once under way, a single motor is capable of pulling it over 30 km (18.6 miles) in 30 minutes.

The two current collectors are mounted on one unit of the locomotive, and by air pressure are kept on the overhead wire at a tension of 4 kg (8.8 lb.). The contact shoes themselves have shown a life of over 47,000 km (29,140 miles). As is customary in the Allgemeine company's design, the collectors adjust themselves automatically to changes in direction, and cannot be raised unless the high-tension compartment is closed. This compartment contains the lightning arresters, oil circuit breaker and the measuring instrument transformers. The adjoining section contains the single load transformer, which steps down the trolley potential to 1000 volts. This transformer has two secondaries, with seven taps each, for making different running combinations through the contactors. The same locomotive unit contains the reverser, contactors, regulating transformers, separator switches and fuses.

Both the load transformer and the motors are cooled by a Sirocco blower which is driven by a 30-hp motor. This installation is mounted in the other half of the locomotive, which is built with louvres, as shown. These louvres are filled with powdered charcoal, to make a filter for all the air drawn in for ventilation. The same section contains a 7-hp motor-compressor outfit, which supplies air for the collectors, brakes, sanders and signals. Each half of the locomotive has a front compartment, one side of which is arranged for the motorman and the other for any one making observations. The motorman's corner contains the usual apparatus, but the opposite corner has, simply for switching purposes, an apparatus which affects only the first control step and permits the necessary braking. This feature, however, is not in use at Oranienburg.

The three motors now in service are operated in two groups through a control circuit of 300 volts. An interesting feature is the use of choke coils for starting. Through the contactors the ends of a choke coil are connected to successive transformer taps, while the middle of the coil is connected to the motor. If it is desired to operate the motor on the next higher voltage, the contactor on the lower voltage tap is opened. Hence one end of the choke coil is freed for connection to the contactor which corresponds to the higher potential. The employment of choke coils in this way prevents interruptions in the motor circuit when moving the controller from step to step. The contactors are so interlocked through auxiliary contacts in the control circuit that a short-circuit is impossible, even if a contactor should stick after the control current has been cut out. The contactors are also interlocked with the reverser in such a way that the latter can be turned only when the motors are on open circuit and the reversing movement must be completed before the motors receive current again.

The Prussian Government Railways is also planning to experiment elsewhere with single-phase locomotives in which the motors will be mounted above the floor and will drive the axles through cranks and side rods.



Oranienburg Test Line—Elevation and Plan of Single-Phase Locomotive

COMPARISON OF GASOLINE CAR, SINGLE-PHASE AND STEAM LOCOMOTIVE COSTS

BY W. E. HARRINGTON, B.S.

For several years past the writer has given a great deal of attention to the subject of gasoline railroad operation, and during this time more than 100 gasoline cars have been put into regular service on branches of several steam railroads and on a number of interurban lines in different parts of the United States. The results attained with these cars indicate that the time has arrived for the introduction of self-contained motor coaches, both upon the lightly patronized interurban railways and on the less important steam railroad feeders. On the latter lines the operating expenses, now as high as 45 cents per car-mile, could be cut down to 14 cents per car mile with gasoline cars, and these branches thus be made self-sustaining.

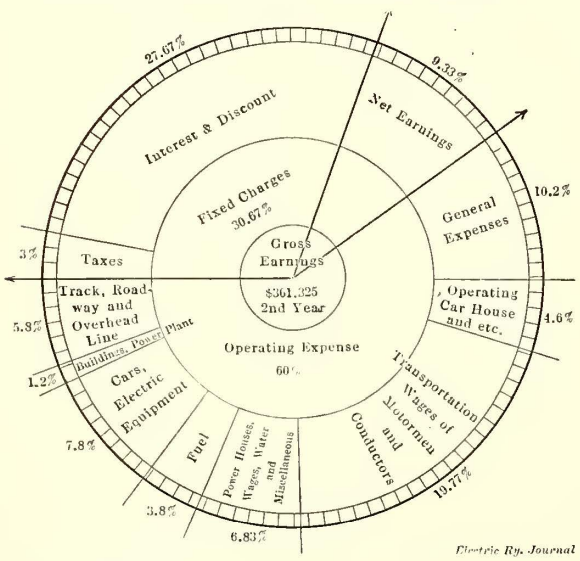
Through the courtesy of W. W. Cole, of Dodge & Day, Philadelphia, some valuable comparisons of cost have been obtained on steam, alternating current and gasoline car practice. These figures were prepared by Mr. Cole in accordance with actual service conditions, and were embodied

COMPARATIVE COSTS PER CAR-MILE OF D.C., A.C., AND GASOLINE CAR INTERURBAN SERVICE.

	D.C.*	A.C.*	Gasoline.†
General expenses	$.0330	$.0330	$.0310
Maintenance of way and buildings	.0127	.0127	.0111
Maintenance and equipment	.0249	.0459	.0265
Transportation expenses	.0625	.0679	.0589
Cost of power	.0385	.0458	.0145
Total	$.1717	$.2023	$.1420

*Average daily mileage, 150 miles to 210 miles.
†Average daily mileage, 180 miles to 198 miles on 34-mile lines.

in a report made by him on a railroad project. Mr. Cole found that on a certain line a steam locomotive with one car, seating 60 passengers, was operated for 45.43 cents per car mile; a direct-current interurban motor car, seating 44 people, for 17.17 cents per car-mile; an alternating-current interurban motor car, seating 40 people, for 20.23 cents per car-mile; and a gasoline car, seating 25 people, for 14.2



Operation of 44-Passenger Electric Car with Alternating-Current System

cents per car-mile. The distribution of the expenses in each case is shown in the accompanying tables.

It should be stated, of course, that the seating capacities of the cars mentioned vary greatly. However, this is not an important point, for in many instances the traffic factor, or the ratio of seats to passengers, is too low to justify the larger cars. Unless the traffic factor, by which I mean the average percentage of car seats occupied per day, is at least 42 per cent, it is cheaper to operate smaller cars during the day and use extras for the hours of heavy service.

According to the figures given in the tables, it is apparent that gasoline cars are the most desirable from the standpoint of lower costs for the initial investment, maintenance

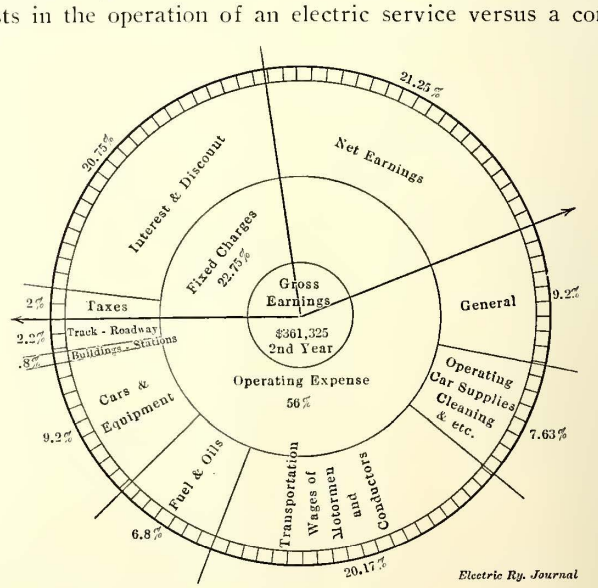
OPERATING COST PER CAR-MILE OF STEAM LOCOMOTIVE AND ONE CAR.

Fuel for locomotive	$.1037
Repairs to locomotive	.0270
Water for locomotive	.0030
Oil waste and supplies	.0035
Round house expenses	.0218
Coach maintenance	.0071
	$.1661
Wages of engineer	$0.370
Wages of fireman	.0220
Wages of conductor	.0245
Wages of brakeman	.0145
	$.0980
General expense, maintenance of way and buildings	$.1902
Total cost per car-mile	$.4543

and operation. Besides this, another advantage of the self-contained units is that they can be operated in any desired combination to suit the traffic, whereas an electric railway is obliged to carry the permanent fixed charges of power stations and power distribution equipment, which are just as onerous whether the traffic is light or heavy. The figures given by Mr. Cole on gasoline service were taken from the actual operation of six railroads which had been running cars of this type from six months to one year.

Mr. Cole figured that if a road with a given amount of business were equipped with alternating current transmission and motors, the overhead work would cost about $5,000 a mile and the passenger cars $18,000 each. A good steam locomotive for freight service on such a line could be obtained for $12,000. As this particular railway would not start with a heavy passenger travel, it was considered wise to recommend gasoline cars.

As a part of his report, Mr. Cole also prepared the two circular diagrams reproduced to show the distribution of costs in the operation of an electric service versus a com-



Operation of 35-Passenger Gasoline Car and Steam Locomotive Service Combined

bination of eight 30-passenger gasoline cars for an hourly schedule and one steam locomotive with two passenger cars for an express service of two daily trains each way. It will be seen from these diagrams that the combination service would prove much more effective than the all-electric operation, because of the lower operating costs and the smaller fixed charges.

APPROXIMATE VALUE PLACED ON PHYSICAL PROPERTY OF BROOKLYN TRANSIT SYSTEM

Testimony as to the physical value of the property of the Brooklyn Rapid Transit Company was given on Dec. 15 before the New York Public Service Commission by Bion J. Arnold, consulting engineer of the commission. Commissioner McCarroll presided at the hearing. The cases at which this testimony was presented were those involving the fare to Coney Island, which the commission has been asked to reduce to 5 cents.

Grosvenor H. Backus, assistant counsel of the commission, said that it seemed desirable in presenting the case properly to have evidence introduced as to the value of the properties of the companies.

Mr. Arnold testified that as director of appraisals for the commission he placed a number of assistants in the office of the Brooklyn Rapid Transit Company and upon the property and examined certain schedules which the company submitted. The examination of the property occupied about three months, but did not constitute a complete examination. Certain schedules were examined and an idea formed therefrom as to the value of the property.

When Mr. Backus asked Mr. Arnold to state the figure at which he had arrived as a result of the examination objection was raised by Charles A. Collin, of counsel for the company, on the ground that the Legislature had declared, in section 38 of the railroad law, the basis for estimating the profit which a railroad company was entitled to make. That basis was controlling upon the commission and was 10 per cent of the capital actually expended. Therefore evidence as to the present value of the property as it now stands was immaterial and irrelevant, and not the proper basis upon which the commission should make an estimate of the amount or percentage of earnings the company was entitled to earn from that investment as its reasonable profit therefrom. On the witness's own statement he had not completed his examination of the property for the purpose of determining the value, and the result must necessarily be insufficient, inadequate and not form any practical basis for the estimate to be made by the commission of the amount the company was entitled to earn, even if that were the true or proper basis.

Commissioner McCarroll overruled the objection, but there was further discussion of the point raised by Mr. Collin.

Mr. Backus said the section of the railroad law to which Mr. Collin referred had been repealed by the passage of the Public Service Commission's act.

Commissioner McCarroll said there was some question as to the status of the railroad law at the present time, and it was not regarded usually as in force. He also overruled the point as to the extent of the examination made by the witness.

Mr. Arnold, continuing, said that perhaps he would have been more correct if he had said he had arrived at an idea as to the cost to reproduce the present physical property. The figure which he would give was not necessarily a figure which might not be changed on further examination. But from the best information that he had at hand, the amount of time that was spent upon the work and his general knowledge of railroad work and railroad construction he was willing to say that he found physical property there which, after adding certain percentages to the actual cash cost as of to-day of the elements entering into the physical property to take care of contractor's profits and incidental construction expenses, brought the cost to reproduce the present physical property of the entire system to approximately $100,000,000.

The values of real estate in this estimate were the assessed values. It was probably proper to add certain other figures to take care of development expense, discount on securities, and many other expenses incidental to the development and organization of a railroad company, so that if certain values were added to this figure of $100,000,000 it was not improbable that the amount for these items might bring the figure up so as to approximate the capitalization of the company. The questions as to what items were to be added and the values of them were for the Public Service Commission to pass upon after he had had more time to go into them and after the commissioner had had more time to analyze them.

Mr. Backus asked whether Mr. Arnold would have an analysis made of the estimate of $100,000,000, apportioning it among the different roads in the Brooklyn Rapid Transit system, and submit it at a later hearing, either personally or through his first assistant, George A. Damon.

Mr. Arnold said that would involve a great deal of work. It probably could be done if necessary. It would be a difficult problem to value the property and then segregate it properly into the constituent elements.

The hearing was adjourned subject to the call of the commission.

IMPORTANT POWER DEVELOPMENT FORESHADOWED IN BOSTON

The Boston Elevated Railway Company has purchased a site of 25 acres in South Boston, on the edge of the harbor, for the erection of a great generating station which will largely, if not entirely, do away with the present system of scattered plants producing direct current at 600 volts, and has for a long time operated the company's transportation service. The erection of this station presupposes the installation of alternating-current generating equipment, with transmission to substations for conversion into direct-current for trolley and third-rail service. The company already has under construction at Egleston Square a substation of the rotary converter type for the supplying of power more advantageously to its recently opened Forest Hills extension. Alternating current for this substation is to be secured from the company's power plant in Dorchester, where a steam turbine unit of the direct-current type is being changed over into an alternating-current machine. During the past few years the company has purchased small amounts of power in some of its outlying districts beyond the economical reach of its chain of steam generating plants. Under the arrangement now indicated by the South Boston purchase it is probable that an extensive remodeling of the system of distribution will take place, including the construction of new substations and the more or less complete dismantling of existing stations, although it is not yet known to what extent the larger and more efficient stations of the company may be retained in service. It is probable that wide modifications in the feeder and return system will be necessary when the plans outlined are carried to completion.

The Boston system has been interesting from the power generating point of view on account of the success which the company has attained in the economical operation of its steam plants, scattered though they have been with relation to one another. By the operation of tie lines and the transfer of loads from one station to another as they

have shifted on the system, high load factors have been maintained in the majority of the stations, and in the better installations the manufacturing cost has frequently been carried as low as 0.6 to 0.7 cent per kw-hour delivered at the switchboard. In a single large station of the most efficient design it is certain that substantial reductions can be made from these figures, and the benefits of improved distribution secured.

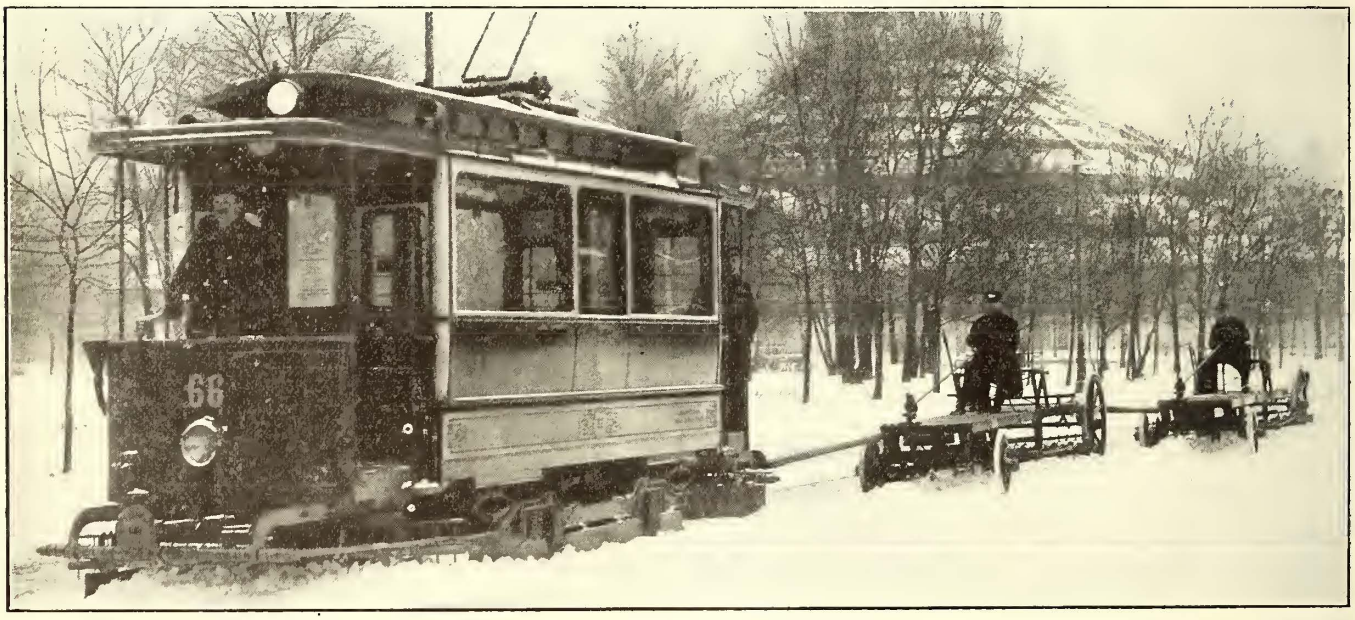
Within recent years the power plant work of the Boston Elevated has been chiefly along the lines of expansion of facilities in order to meet the growth of the system, including the construction of a large plant at Lincoln Wharf in connection with the opening of the elevated division and the subsequent enlargement of this installation to a capacity of 13,500 kw; the installation of large units at Central, Charlestown and Harvard power plants; a trial equipment of the Dorchester station with a 2000-kw d.c. turbine, and the establishment of two gas engine stations in the suburban communities of Somerville and Medford. Steam-driven machinery forms the backbone of the company's system, and it is unlikely that the new source of motive power will be anything else, although the details of the equipment to be installed in the large station have not yet been made public.

Recently the company appeared before the Railroad and Transit Commissions at Boston in connection with a plan to acquire operating control of all the important suburban trolley lines in the vicinity of Boston, thus forming a co-ordinated transportation system of some 1500 miles of track. If such an organization is completed, it is probable that the Boston Elevated generating plant in South Boston would be capable of providing power for outlying lines extending to the most remote suburban areas, in the same manner that the present Boston Edison station at L Street, South Boston, furnishes electricity to points situated many miles distant in the interior of the State. Whatever the capacity of plant required in the future, the change of the system from a simple d.c. to an a.c.-d.c. basis will present many problems of economic and engineering interest to the management, and their solution will doubtless call for the expenditure of many millions of dollars. The present cost of electric motive power on the Boston Elevated system is about one and three-quarter millions of dollars per year.

SNOW SWEEPING IN VIENNA

An effective method of snow sweeping is used in Vienna by means of motor cars. Formerly, the municipal government had horse-driven wagons to which iron-blade snow scrapers were fastened. This system, however, did not prove very satisfactory, because it was found difficult to get the horses ready fast enough to cope with sudden snowfalls. Further disadvantages of the old way were the slowness of the horses and the high rental expenses for so many animals. To overcome these troubles it was decided to use motor cars on all streets provided with tracks. A number of motor cars were therefore adapted for this service. The new snow scrapers were attached to them in such a way that if one is used to clean the left-hand side of the street, the fixed point of each scraper must be in the right-hand front corner of the car. While the motor car equipment only removes the snow from the tracks, the two trailing scrapers have to clean the remaining part of the street, as shown in the illustration.

Under each platform of the motor car there is carried a set of scrapers which extend about 5 in. over the sides of the track, making the space cleared of snow by a motor car about 5½ ft. wide. The trailers follow at a distance of about 10 ft. each. According to the depth of the snow, the cars run at a speed of 5 m.p.h. to 10 m.p.h.



Vienna Snow-Fighting—Motor Car and Two Trailing Snow Scrapers

Each trailer is attended by one man whose duty it is to direct it properly. This control is exercised through a steering wheel geared to the front axle, as on automobiles. Another hand wheel is used to permit the scrapers to be raised or lowered. In the lowest position they slide over the pavement, scraping all snow and piling it together at the curb with the snow pushed aside by the motor car and the first trailer. In case a trailer attendant notices any obstacles which the motorman may have overlooked, he can stop the trailer immediately simply by opening the coupler with a hand lever.

A Swedish engineer has drawn up plans for the construction of an electric railway from Malmos, Sweden, to Copenhagen, Denmark, passing through a 10-mile tunnel under the intervening sound. The line as projected is 147 miles long.

HEARING ON VALUATION OF CONEY ISLAND & BROOKLYN RAILROAD

At the hearing before the New York Public Service Commission, First District, on Dec. 9, in the case involving the valuation of the Coney Island & Brooklyn Railroad, Frank R. Ford, of Ford, Bacon & Davis, testified that he had made a study as to the methods that should be pursued in valuing the property and franchises. Commissioner Bassett presided at the hearing.

Mr. Ford thought the methods of valuation which should be considered in a rate-making case should comprise a full consideration of the subject and should embrace the various methods which have hitherto been used, together with such modifications as may be necessitated by local conditions. The value of the property of the Coney Island & Brooklyn Railroad was evidenced in two ways; first, as a commercial or profit-earning enterprise, and, second, by the investment required to produce these returns and give such service to the public.

METHODS OF COMMERCIAL VALUATION

Two methods for commercial valuation were suggested by Mr. Ford, as follows:

A. Value of the Earning Power.—This was the basis which in the long run determined the value of a street railway property to the investing public. The valuation of net earnings for a period of from 5 to 10 years was usually taken. The method which the witness had adopted for estimating the present value of the net earning power of the Coney Island & Brooklyn Railroad had been suggested partly by Prof. H. C. Adams in connection with his appraisals for the Michigan Board of Tax Commissioners. Mr. Ford used the period of 10 years for the same reason which induced Professor Adams to use a similar period, "that under existing commercial conditions it is likely that the corporation whose property is appraised would during that period pass through years of both prosperity and adversity."

B. Market Value of Securities.—This was the basis which Prof. H. C. Adams largely employed in his report for the U. S. Census on the "Commercial Value of Railway Operating Property in the United States: 1904." The market quotations on the bonds and stock of the Coney Island & Brooklyn Railroad were averaged for a period of six months ending Aug. 31, 1909, and the result shown in a statement which Mr. Ford presented as an exhibit, together with a comparison with the market value as of Aug. 31, 1909, and the average market value for one year.

VALUATIONS BASED ON INVESTMENT

Three methods of valuations based on investment were suggested by Mr. Ford, as follows:

C. Approved Capitalization Issued.—This valuation was based upon the total securities the issue of which in New York State had to be approved under the law by the proper State commission. This was formerly the Railroad Commission, and for the past two years the Public Service Commission. All of the outstanding securities of the Coney Island & Brooklyn Railroad had been issued with such approval, and the statement presented as an exhibit gave a list of such securities as of Aug. 31, 1909.

D. Cash Investment in the Property.—This was the first cost of the property, or equivalent to its cost of production through the period of development. If the books of account of the company had been properly kept, the cost of property stated therein would equal the cash investment, on the basis that the securities issued for service or property were at cash value. A statement was presented as an exhibit by Mr. Ford which showed the cost of property of the Coney Island & Brooklyn Railroad as per its books on Aug. 31, 1909. The fact that this total value was approximately the same as the amount of securities authorized by State authority would tend to prove the correctness of this basis of valuation. An inventory of general classes of items for which, in the case of this company, a cash investment had been made, was also shown in a statement. This inventory was arranged partly in chronological order, and was in practically the same form as that appearing in the ELECTRIC RAILWAY JOURNAL of June 19, 1909.

E. Cost of Reproduction New To-day.—In the so-called physical valuation of a street railway property the material portions of the property, such as real estate, ties, pavement, cars, buildings and machinery were easily inventoried and priced. The labor and miscellaneous expenses of installation on these materials were matters of more difficult estimate, although usually included more or less accurately. The cash cost of labor and expenses of the company's own organization and of its legal and technical advisers in this construction being less evident, were never carefully inventoried and priced, and were usually included in one or more small perfunctory percentages; and finally, until this case was heard, Mr. Ford believed that no adequate attempt had been made to inventory and price adequately the cash cost of labor and expenses of organizing the corporation, of obtaining its rights to construct and operate and of developing its business and technical standard. In this method it was assumed that the present street railway system of the company did not exist, and it was desired to reproduce not only such present system, but to add the necessary additions and betterments to serve the public adequately. This was the basis which a competing company must use, and upon which a rate of return must be estimated in fixing the rate for its service. In New York City the conditions surrounding the obtaining of rights for the construction of a surface street railway were more complex and difficult than was the case usually in other cities. In addition to this, the system was competitive with that of the Brooklyn Rapid Transit Company, and the cost of reproduction of its rights as a new system would thereby be considerably increased. In the estimate presented as an exhibit by Mr. Ford the value of the physical property was stated at the figures which the expert of the commission presented. An endeavor was made to inventory and price the development expenses and overhead charges during the promotion and construction periods.

ESTIMATES OF VALUATION

The "Estimates of valuation" submitted by Mr. Ford may be summarized as follows:

Method of valuation.	Amount of valuation.
Commercial Valuations—	
A. Earning power	$8,584,245
B. Market value of securities	7,868,162
Valuations Based on Investment—	
C. Approved capitalization issued	8,641,962
D. Cash investment	8,941,227
E. Cost of reproduction, new (not less than)	9,299,898

Commissioner Bassett thought the value of the earning power and the value as indicated by quotations of securities would not be very helpful in a rate case, because if it was right that the rate should be altered, then the earning power would be altered, and also the quotations, presumably; so, in a sense, it was going about in a circle.

Mr. Ford suggested that consideration should be given to the fact that average earnings for a period as long as 10 years and the market values of securities represented to

an extent the vested interest, which might have some effect in fixing a rate. For instance, it would scarcely be assumed that a rate would be established which would reduce by 50 per cent the average net earnings obtained by such property over a period of 10 years, or which would cut in half the market value of securities, some of which were bonds that did not fluctuate very much.

William N. Dykman, of counsel for the company, thought that if the securities were quoted at 200 or 300 there would be a good deal of force in the argument suggested by Commissioner Bassett, but where the valuation was based on a price for the stock of less than par due to discontinuance of dividends, as in this case, it would be rather a serious matter to reduce it still further.

TIME OF REPRODUCTION NEW

Mr. Ford submitted a chart [see page 1269—Eds.] showing the estimated time of reproduction new of the Coney Island & Brooklyn road. The promotion period, as indicated, would require three and one-half years, up to the time of securing the capital. The actual construction would take about 2 years and 10 months additional, or a total of 6 years and 4 months. Of the three and one-half years' promotion period Mr. Ford estimated it would take six months for preliminary work and the organization of the promotion syndicate, which would expend $699,700 before the construction capital was obtained. The promoter would employ engineering assistants and general counsel, and after organization of the promotion syndicate obtain a charter from the State. Thereupon application would be made to the board of estimate and apportionment for a franchise, and from the history of such proceedings in other recent cases it was estimated that approximately two years would be required before the franchise would be granted. Similarly, it was estimated that the certificate of convenience and necessity from the Public Service Commission would require five months additional, and the approval by this commission of the company's proposed capitalization three months additional. These figures were also based on actual experiences in similar proceedings before the commission.

During the promotion period the construction expenditures would be financed and the capital definitely secured immediately after the approval of the proposed capitalization. Property owners' consents, approval of other municipal officials, and trackage and other agreements with operating companies would also be obtained, although these were often deferred until after the commission's certificate and the municipal franchise were obtained, thus delaying the construction still longer. It was estimated that the beginning of partial operation would take place one year before the actual completion of construction, or within five years and four months from the inception of the project.

Mr. Ford stated that the next step was to make an inventory of work and expense items of reproduction new of intangible property in accordance with the schedule shown on the time chart. This inventory was placed in evidence and is reproduced on page 1266. The inventory thus made was priced in detail in the same manner as the inventory of physical property was priced. The summary of the resulting appraised value was presented by Mr. Ford as "Valuation E," the estimated cost of reproduction new of the property of the Coney Island & Brooklyn Railroad Company as an adequate, modern system as of Aug. 31, 1909. The details of this valuation are shown herewith.

The expenses of the promotion period comprised the cost of promoter's organization, legal department and technical department and the additional cost of property owners' consents, and aggregated $699,700. During the construction period the cost of the company's permanent organization was estimated at $195,640. The sales values placed upon the sites for power house, substations, etc., were those fixed by an appraisal made by seven of the leading real estate agents of Brooklyn. The additional sales value and cost of acquiring the company's right-of-way on Coney Island Avenue, 20 ft. in width by approximately 5 miles long, was obtained by adding 150 per cent to the assessed value of this strip. The witness stated that he was guided largely in that percentage by the investigation of the value of this "contiguity factor" made by the engineers of the Railroad Commission of Minnesota. The cost of acquiring land (sites only), $45,400, represented 10 per cent of the sales value of these sites, 5 per cent of which was added for brokerage, legal expenses and insurance, etc., while the other 5 per cent represented the purchase price of the buildings that had to be removed from the land which was purchased.

The cost of the physical construction and equipment as of Feb. 1, 1909, was assumed at the prices presented by the experts of the Public Service Commission, although the item of incidentals, $276,460, was prepared from detailed estimates of each department of construction and equipment. Expenses for interest and taxes during construction, amounting to $561,345, were determined from a detailed estimate based on the length of time taken by each department for the work. Working capital, estimated at $250,000, was based on the estimated necessities of the company at Aug. 31, 1909.

The first total shown represented the cost of reproduction new at Feb. 1, 1909, and to this was added the cost of additions and betterments actually made between that date and Aug. 31, 1909, amounting to $39,549, together with the estimated cost of $569,696 for additions and betterments necessary to produce an adequate, modern system.

ESTIMATED COST OF REPRODUCTION NEW

The resulting total cost of reproduction new at Aug. 31, 1909, of an adequate, modern system was $9,299,898. Under existing conditions Mr. Ford thought this total cost of reproduction would be at least this amount, and might be much larger. In other words, this estimate was based upon the most favorable conditions which he could find had obtained for the recent promotion and construction of street railways in New York City.

Of the total figure $2,354,964 was represented by intangible property and $6,944,934 by tangible property. Mr. Ford then submitted a comparison between the estimates of experts of the Public Service Commission and of his firm, which is reproduced herewith. This showed a maximum and minimum estimate by the experts of the commission upon items included in their estimate and in that of the company's experts, and also items included by one side and not by the other, together with additional items of value or expense for which no estimates had been made.

In Mr. Ford's opinion land and buildings not used in operation should be included in working capital, as some provision must be made for a reasonable amount of excess real estate which was always present in an operating property.

The witness thought that the rate of return on a valuation based on the cost of reproduction should be more than the interest rate, as his estimate of value on this basis did not include profits of promotion, discounts and commissions on sale of securities, and features of the franchises

owned by the present company which could not be reproduced, such as freedom from municipal tax of 5 per cent of the gross earnings now required by statute. The latter item alone, he stated, would amount to about $75,000 per year, which, if capitalized at 6 per cent would equal $1,250,000. He had not included the cost of development of the business, such as the deficit of early operation, and the cost of development of technical standards representing the obsolescence of the horse system and the early electric system.

In view of the fact that all of these items had been excluded an allowance should be made of more than the interest rate on this basis of valuation. If the interest rate was taken at 6 per cent a rate of 10 per cent should be applied, Mr. Ford thought, to his estimate of the valuation on the reproduction basis in order to give a fair return on such capital. If, however, the rate of return should be fixed at 6 per cent these additional items of value or expense for which he had presented no estimates, should be capitalized.

The proportion of intangible to tangible property in the estimate of Mr. Ford was 34 per cent, as compared with 36.8 per cent to 53.8 per cent as shown by the experts of the commission, although if the rate of return was held at 6 per cent and a large additional amount of intangible property capitalized, as suggested by the witness, the proportion of intangible property would be increased to considerably more than 34 per cent.

ESTIMATED COST OF REPRODUCTION NEW OF THE PROPERTY OF THE CONEY ISLAND & BROOKLYN RAILROAD COMPANY AS AN ADEQUATE, MODERN SYSTEM AT AUG. 31, 1909, AS SUBMITTED BY MR. FORD.

Item.	Method of estimate.	Tangible property.	Intangible property.	Total estimate.
PROMOTION PERIOD. (Obtaining rights and capital.)				
1. Promotion expense:				
a. Promoter's organization—time and expenses	Inventory priced	.....	$231,100	
b. Legal department—time and expenses	Inventory priced	.....	103,500	
c. Technical department—time and expenses	Inventory priced	.....	86,600	$421,200
2. Property owners' consents	Estimated	.....	278,500	278,500
Total, promotion period		.....	$699,700	$699,700
CONSTRUCTION PERIOD. (Expenditure of capital to completion of construction.)				
3. Permanent organization—time and expenses	Inventory priced	.....	195,640	195,640
4. Cost of land:				
a. Sites for power house, substations, car barns, shops, yards and terminals:				
Assessed value		$187,800	.....	
Additional sales value (including contract for Coney Island terminal)	Appraisal	266,300	.....	454,100
b. Right of way on Coney Island Avenue:				
Assessed value		290,000	.....	
Additional sales value and cost of acquiring	Add 150 per cent	435,000	.....	725,000
5. Cost of acquiring land (sites only)	10 per cent of 4 a.	.....	45,400	45,400
6. Cost of construction and equipment (sub-contracts), as of Feb. 1, 1909:				
a. Track (including construction on bridges and fill on Coney Island Ave. right-of-way	Estimate of Public Service Commission's experts	829,325	.....	
b. Track, special work	"	219,893	.....	
c. Paving	"	383,159	.....	
d. Overhead trolley construction	"	132,696	.....	
e. Overhead feeders	"	100,575	.....	
f. Underground conduits and cables	"	305,750	.....	
g. Power plants and substations (including power house cribbing and old intake)	"	733,721	.....	
h. Buildings	"	527,258	.....	
i. Rolling stock	"	1,383,461	.....	
j. Incidentals	Detailed estimate	276,460	.....	4,892,298
7. General contractor's overhead charges and profit	10 per cent of Item 6	.....	489,230	489,230
8. Engineering	5 per cent of 6-7	.....	269,076	269,076
9. Interest and taxes during construction	Detailed estimate	.....	561,345	561,345
10. Miscellaneous stock, tools and fixtures:				
a. Inventory	Estimate of Public Service Commission's experts	103,680	.....	
b. Incidentals	5 per cent of 10 a.	5,184	.....	108,864
11. Working capital	Estimated	250,000	.....	250,000
Total, construction period		$6,430,262	$1,560,691	$7,990,953
Total cost of reproduction new at Feb. 1, 1909		$6,430,262	$2,260,391	$8,690,653
12. Additions and betterments from Feb. 1, 1909, to Aug. 31, 1909	Actual cost	39,549	.....	39,549
13. Additions and betterments necessary to produce an adequate, modern system	Detailed estimate	475,123	94,573	569,696
Total cost of reproduction new at Aug. 31, 1909, of an adequate, modern system		$6,944,934	$2,354,964	$9,299,898

COMPARISON BETWEEN ESTIMATES OF EXPERTS OF PUBLIC SERVICE COMMISSION AND THAT OF FORD, BACON & DAVIS.

	Experts of Public Service Commission. Maximum.	Minimum.	Ford, Bacon & Davis.
A. Items included in estimate of both commission's and company's experts as of Feb. 1, 1909	$7,897,256	$6,777,426	$8,690,653
B. Items included by Ford, Bacon & Davis, and while no values are estimated by commission's experts yet agreed to in principle by them.			
12. Additions and betterments from Feb. 1, 1909, to Aug. 31, 1909	.....	.....	39,549
13. Additions and betterments necessary to produce an adequate modern system	.....	.....	569,696
C. Items included by commission's experts, but for which no values are estimated by Ford, Bacon & Davis.			
14. Leases, trackage and power agreements	40,000	10,000	Should be included in promotion expense.
15. Regrading Coney Island Avenue	96,400	96,400	Not a part of reproduction cost.
16. Land not used in operation, assessed value	27,400	.....	Should be included
17. Buildings not used in operation	70,048	.....	in working capital.
18. Profits of promotion	870,000	435,000	Should be allowed for
19. Discounts and commissions on sale of securities	870,000	435,000	in rate of return.
D. Additional items of value or expense for which no estimates have been made.	.....	.....	
20. Features of franchise that cannot be reproduced	.....	.....	
a. Unlimited duration	.....	.....	
b. Freedom from municipal tax of 5 per cent of gross earnings	.....	.....	
c. Freedom from other present restrictions and burdens	.....	.....	Should be allowed for
21. Cost of development of business	.....	.....	in rate of return.
Deficiency below reasonable return 1861 1909 due to deficits of early operation	.....	.....	
22. Cost of development of technical standards	.....	.....	
a. Obsolescense of horse system	.....	.....	
b. Obsolescence of early electric system	.....	.....	
Total cost of reproduction new (without Group D)	$9,871,194	$7,753,916	$9,299,898
Proportion intangible to tangible property, per cent	53.8	36.8	34.0

CONEY ISLAND & BROOKLYN RAILROAD COMPANY.

INVENTORY OF WORK AND EXPENSE ITEMS OF REPRODUCTION NEW AS OF AUG. 31, 1909, OF INTANGIBLE PROPERTY ACQUIRED DURING PROMOTION PERIOD, SUBMITTED BY MR. FORD

PROMOTER'S ORGANIZATION.	*LEGAL DEPARTMENT*	*TECHNICAL DEPARTMENT*
PRELIMINARY		
Study of situation. Preparation of general data. General investigation of laws. Interesting other parties. Meetings and correspondence.	Conferences and correspondence with promoter covering generally State and local transportation laws.	Conferences and correspondence with promoter. General examination and memorandum on situation.
PROMOTER'S SYNDICATE		
Formation. Meetings. Consultations with attorneys and engineers as to general plans and procedure. Conferences and correspondence with engineers on report, revision of plans, supplementary reports, etc. Conferences and correspondence with attorneys on legal procedure, etc. Plans and estimates for early financing. Outline of financial plans.	Conferences and correspondence with promoter as to plans for syndicate, proposed agreement, etc. Draft of agreement and revision. Attendance at meetings of syndicate. Examination of and report on statutes, ordinances, etc., relating to street railways. Consultations with promoter as to plans and legal procedure.	Formal report, involving: Study of population, its growth, density and direction of movement, etc. Study of traffic; other companies, competing and non-competing, and for this situation; possibility of development, etc. Selection of route, with alternatives. Selection of power house and car barn sites. Estimates of cost of construction and equipment under different plans. Estimates of gross earnings and operating expenses under different plans for a period of years. Study of operating agreements with other companies. Maps, profiles, plans, etc.
ARTICLES OF ASSOCIATION AND CERTIFICATE OF INCORPORATION		
Consultations with attorneys. Consultations with engineers. Meetings of incorporators. Meetings of directors. Preparation of papers for filing with Secretary of State. Collection of subscriptions of not less than $1,000 per mile and affidavits thereto.	Examination of statutes. Consultations with promoter and engineers. Organizing and conducting meeting of subscribers to articles of association. Preparation of papers for filing with Secretary of State. Preparation of minutes, by-laws, etc., and conducting regular meetings of directors and stockholders. Attendance at Albany.	Conferences and correspondence with promoter and attorneys. Preparation of papers for filing with Secretary of State.
STATE AND LOCAL AUTHORITIES		
PREPARATORY		
Conferences and correspondence with attorneys and engineers on form and procedure. Planning campaign and organizing force.	Conferences and correspondence with promoter and engineers on form and procedure.	Conferences and correspondence with promoter and attorneys.
BOARD OF ESTIMATE AND APPORTIONMENT. (a) APPLICATION		
Conferences and correspondence, formal and informal, with members of Board and its engineers, other than at regular hearings. Preparation of data and reports on local companies and comparisons in other cities relative to franchises. Revision and amendments of application. Conferences and correspondence with attorneys and engineers relative thereto.	Preparation of application. Conferences and correspondence, formal and informal, with members of Board, etc., other than at regular hearings. Revision and amendments of application. Conferences with promoter and engineers relative thereto.	Conferences with promoter and attorneys.
(b) FIRST PUBLIC HEARINGS		
Publicity campaign, editing newspaper advertisements, circulars, etc.; attending meetings of property owners, commercial bodies and others. Attendance (reference to select committee). Preparation for further hearings, additional data, etc., to meet objections. Conferences and correspondence with attorneys and engineers relative thereto. (The above items for each hearing.) Securing attendance of experts for testimony.	Preparation. Attendance. Conferences and correspondence with promoter on results. Preparation for further hearings.	Preparation of data and papers. Attendance. Conferences and correspondence with Board's engineers. Preparation of additional data. Conferences and correspondence with promoter and attorneys.
(c) MEETINGS OF SELECT COMMITTEE		
Attendance. Preparation of data. Examination of proposed modifications and amendments to franchise, including: Revision of estimates and plans and preparation of counter proposals, etc. Conferences and correspondence with attorneys and engineers relative thereto. Securing attendance of experts for testimony.	Appearance. Preparation of data. Examination of proposed modifications and amendments, etc. Conferences and correspondence with promoter and engineers. Conferences and correspondence with Corporation Counsel.	Attendance. Revision of plans and estimates, maps, etc. Conferences with promoter and attorneys.
(d) FINAL HEARING		
(Same items as for first hearing.)	(Same items as for first hearing.)	(Same items as for first hearing.)
APPROVAL OF MAYOR.		
Attendance before Mayor.	Attendance before Mayor.	Attendance before Mayor.
CERTIFICATE OF PUBLIC SERVICE COMMISSION		
Preparation of petition and papers required. Preparation for hearing. Conferences and correspondence with attorneys and engineers relative thereto. (At this hearing applicant must prove necessity, bona fides of enterprise and financial ability to carry out enterprise.) Attendance at hearing. Attendance at subsequent hearings (adjournments). Preparation of further data and information. Conferences and correspondence with commission, formal and informal. Conferences and correspondence with attorneys and engineers relative thereto.	Preparation of petitions and papers required. Preparation for hearings. Conferences and correspondence with promoter and engineers. Appearances at hearings.	Preparation of data and estimates. Conferences and correspondence with promoter and attorneys. Testimony and attendance at hearings. Conferences and correspondence with commission's engineers.

PROMOTER'S ORGANIZATION.	LEGAL DEPARTMENT.	TECHNICAL DEPARTMENT.
APPROVAL OF CAPITALIZATION BY PUBLIC SERVICE COMMISSION		
Preparation of papers and data for hearing. Conferences and correspondence with attorneys and engineers relative thereto. Conferences and correspondence, formal and informal, with members of commission. Attendance at hearing. Examination of testimony and preparation of additional data and papers for further hearings. Conferences and correspondence with attorneys and engineers relative thereto. Attendance at subsequent hearings.	Preparation for hearing. Conferences and correspondence with promoter and engineers. Conferences and correspondence with members of Commission. Appearance at hearing. Examination of testimony and preparation of additional data. Conferences and correspondence with promoter and engineers. Attendance at subsequent hearings. Attendance in payment of capital stock tax.	Preparation for hearing. Conferences and correspondence with promoter and attorneys. Conferences and correspondence with Commission and its engineers. Attendance at hearing. Examination of testimony and preparation of additional data. Attendance at subsequent hearings.
PROPERTY OWNERS' CONSENTS AND OPTIONS		
PROPERTY OWNERS' CONSENTS		
Attending meetings of property owners. Conferences and correspondence with attorneys. Conferences and correspondence with chief solicitor. Personal attention to large property owners. General supervision of work. Preparation and inspection of tax lists. Conferences with attorneys relative to legal proceedings to secure consents. Preparation for and attendance at trials.	Preparation of petitions and releases. Conferences and correspondence with promoter. Tax lists and preparation, etc. Attending meetings. Preparation for legal proceedings to secure consents. Conferences and correspondence with promoter. Attendance at trials. Organizing solicitors.	General maps showing owners and frontage. Individual plans to accompany transfers.
RIGHT-OF-WAY OPTIONS		
Conferences with engineers and attorneys on recommended private right-of-way routes. Inspection of properties, investigation as to availability, names and location of present property owners, prices of real estate, etc. Conferences and correspondence with attorneys and real estate brokers covering form and securing of options, etc.	Conferences and correspondence with promoter. Form of options, etc. Meetings with vendors' attorneys.	Conferences and correspondence with promoter, inspection of recommended properties, etc.
REAL ESTATE OPTIONS		
Inspection of recommended car barn and power house, etc., sites. Conferences and correspondence with engineers. Conferences and correspondence with real estate brokers. Conferences and correspondence with attorneys on form of options. Meetings with vendors. (Option would probably be obtained on property not used in final design.)	(Same as for right-of-way.)	Surveys to determine availability. Estimates of comparative economy.
OTHER RIGHTS AND CONSENTS		
COMMISSIONER OF BRIDGES		
(The general right to operate over the East River bridges would be covered by Board of Estimate and Apportionment, but details of operation would be arranged and directed by the Commissioner of Bridges.) Application to commissioner, with outline of proposed operation, type and weights of equipment, track and overhead construction. Conferences and correspondence with attorneys and engineers relative thereto. Meetings with commissioner. Conferences and correspondence with other companies using bridges. Examination of contracts.	Conferences and correspondence with promoter and engineers relative thereto. Meetings with commissioner and his attorneys. Conferences and correspondence with other companies using the bridges. Examination and approval of contracts.	Study of bridge operating conditions, with recommended plans for operation, estimates of earnings, maps, plans, etc. Conferences and correspondence with promoter and attorneys. Meetings with commissioner or his engineers. Conferences and correspondence with other companies using bridges. Examination and report on contracts.
COMMISSIONER OF PARKS		
Conferences and correspondence with commissioner to obtain consent to franchise, approval of proposed type of track construction, design and location of poles, paving, grades, etc. Conferences and correspondence with attorneys and engineers relative thereto.	Conferences and correspondence with commissioner and his attorneys. Conferences and correspondence with promoter and engineers.	Conferences and correspondence with commissioner and his engineers. Conferences and correspondence with promoter and attorneys. Plans and estimates.
BOROUGH PRESIDENT		
Conferences and correspondence with borough president and his engineers to obtain approval of proposed type of construction, location of poles, paving, grades, etc., including submission of plans and specifications. Conferences and correspondence with attorneys and engineers relative thereto.	Conferences and correspondence with borough president and his attorneys. Conferences and correspondence with promoter and engineers.	Conferences and correspondence with borough president and his engineers regarding proposed construction, grades, paving, etc. Conferences with promoter and engineers. Maps, plans and estimates.
TRACKAGE AND OTHER AGREEMENTS WITH CORPORATIONS		
Meetings with officials. Conferences and correspondence with attorneys and engineers. Consent of Public Service Commission and Board of Estimate and Apportionment. Estimates of costs, rentals, etc. Preparation and examination of agreements.	Attendance at meetings with officials of other corporations. Conferences and correspondence with promoter and engineers. Consent of Public Service Commission and Board of Estimate and Apportionment. Tentative agreements. Final agreements. Attendance at execution of agreements.	Attendance at meetings with officials of other corporations. Conferences and correspondence with promoter and attorneys. Opinion on form of proposed agreements. Preparation of data for use before Public Service Commission and Board of Estimate and Apportionment. Attendance at hearings. Estimates on equity agreements.
FINANCING		
PROSPECTUS		
Preparation of and editing. Conferences and correspondence with attorneys and engineers relative thereto.	Conferences and correspondence with promoter and engineers. Preparation of condensed opinion for use prospectus.	Conferences and correspondence with promoter and attorneys. Preparation of letter for use in prospectus.
NEGOTIATIONS WITH BANKERS AND INVESTORS		
Detailed plans for financing. Conferences and correspondence with attorneys and engineers relative thereto.	Detailed plans for financing. Conferences and correspondence with promoter and bankers.	Conferences and correspondence with promoter and attorneys as to plans.

PROMOTER'S ORGANIZATION.	*LEGAL DEPARTMENT.*	*TECHNICAL DEPARTMENT.*
(a) STOCK UNDERWRITING SYNDICATE		
Interesting investors. Tentative agreement. Meetings and conferences working toward final agreement. Plans for carrying out provisions of agreement, collection of subscriptions, voting trusts, interim and participation certificates, etc. Conferences and correspondence with attorneys and syndicate relative thereto.	Conferences and correspondence with promoter. Preparation of tentative agreement. Attendance at meetings between promoter and syndicate. Final agreement. Conferences and correspondence on form of certificate and preparation of form. Attendance in execution of agreement. Participation certificates, interim certificates, etc.	Attendance with promoter at meetings. Special estimates.
(b) BOND UNDERWRITING SYNDICATE		
Interesting bankers. Conferences and correspondence with their engineers. Tentative agreement. Meetings and conferences working toward final agreement. Plans for carrying out provision of agreement, collection of subscriptions, voting trust, interim and participation certificates, etc. Conferences and correspondence with attorneys and syndicate relative thereto.	Conferences and correspondence with promoter and engineers. Preparation of mortgage and trust deed. Search of titles. Preparation of tentative agreement. Attendance at meetings between promoter and syndicate. Final agreement; interim certificates, participation certificates, agreements. Attendance in execution of agreement.	Attendance with promoter at meetings. Conferences and correspondence with promoter and attorneys in regard to mortgage and trust deed. Preparation of data for use therein. Special estimates.
FORMAL ENDING OF PROMOTION PERIOD		
Transfer of papers and documents. Execution of releases, assignments, etc.	Transfer of papers and documents, execution of releases, assignments, etc.	

Inventory of Expenses During Promotion Period.

PROMOTER'S ORGANIZATION.	*LEGAL DEPARTMENT.*	*TECHNICAL DEPARTMENT.*
PRELIMINARY		
Assistants' time. Stenographers' time. General office expenses: Rent, light, etc. Postage, telephone and telegrams. Books—record, statistical, legal, etc. Files and office furniture. Miscellaneous. Traveling.	Typewriting. Notary fees. Recording fees. Certified copies. Traveling expenses. Directors' fees. Printing. Miscellaneous. Fees to State. Copies of consents, decrees, etc. Transcripts of minutes. Tax lists. Trustees' legal expenses. Retainers in special suits. Directors' and executive committee fees.	Time and expenses of engineers, draftsmen and other assistants. Typewriting and other expenses.
PROMOTER'S SYNDICATE		
Chief assistant to promoter. Assistant as to engineering. Assistant as to accounting and statistics. Record clerks (including bookkeeping). Stenographers (including filing). Chief consent solicitor. Assistants. Allowance to other members of promoter's syndicate for time and expenses. General office expenses: Rent, light, etc. Postage, telephone and telegrams. Books—record (minutes, etc.; accounts, etc.). Filing system. Office furniture (including typewriters, adding machine, etc.). Printing and stationery. Miscellaneous. Publicity expenses. Traveling. Expenses of promotion syndicate, including their attorneys and engineers. Interest on money raised by promoters. Premium on security bonds, employes and for franchise, etc.		
	FRANCHISES AND OPTIONS.	
	Payments to property owners for consents. Lump sum payments for franchise. Payments for options on real estate. Commission and expenses of real estate broker in securing options. Payments to title company for lists of property owners and details in connection with properties. Publication required by law.	

Inventory of Cost of Reproduction New, of Intangible Property Acquired During Construction Period. (Except Technical Department and Contractor.)

PERMANENT ORGANIZATION.	*LEGAL DEPARTMENT.*	*TECHNICAL DEPARTMENT.*
STOCKHOLDERS' MEETINGS	GENERAL COUNSEL	
Election of directors and officers; approval of stock and bond issues, agreements, by-laws, seal, etc.	Examination and approval of contracts. Preparation of resolutions, etc., for meetings. Advice and direction in matter of securing permits from authorities. Conferences and correspondence with city officials in regard to permits. Conferences and correspondence with other companies regarding construction, etc. Temporary injunctions and other legal proceedings against interference with construction, etc., by City officials and departments. Other corporations, street railway, steam railway, telephone, electric, gas. Unions on strike. Property owners. Hearings and orders in the above. Defending and instituting suits for damges to property. Conferences and correspondence relative thereto. Suits and other legal proceedings against contractors and others for non-fulfilment of obligations to company. Conferences and correspondence relative thereto. Suits and other legal proceedings in matters of disputed accounts, etc.	(Usual details.)
DIRECTORS' MEETINGS		
Reports of committees and officers; approval of contracts, specifications, etc.; considering and directing in matters affecting the company's plans, etc.		
EXECUTIVE COMMITTEE MEETINGS		
Practically same as above, but with greater detail and more frequent meetings.		
PRESIDENT		
Supervision and direction of all matters in connection with construction, such as: Examination and approval of plans and specifications. Execution of contracts. Conferences and correspondence with city officials in securing permits and removing obstructions to company's plans. Conferences and correspondence with officials of other companies regarding crossings and other matters of mutual interest (grade crossings, etc.). Trips to other cities to examine types of construction, method of operation, etc.		

PERMANENT ORGANIZATION.	*LEGAL DEPARTMENT.*	*TECHNICAL DEPARTMENT.*
Conferences and correspondence with financial syndicates. (Unfavorable markets for securities might necessitate issuance of short-term obligations with attendant expense of Public Service Commission approval, selling, etc.) Conferences and correspondence with attorneys and engineers on matters of construction. Securing modifications of franchises, certificate of convenience and necessity and permits, such as extensions of time, alterations of layout and design, etc., including the approval of various city officials and departments. Signing securities, checks, etc. Hearing and investigating complaints.	Conferences and correspondence relative thereto. Preparation of certificates of expenditures for trustee, etc. Personal injury suits; employees; public. Preparation for and appearances in securing modifications of franchises and permits. Crossing and track elevation controversies and litigation with steam railroads.	(Usual Details.)

SECRETARY-TREASURER

All duties usual to the office of secretary-treasurer.

AUDITOR

All duties usual to the office of auditor.

Inventory of Expenses During Construction Period.

PERMANENT ORGANIZATION.	*LEGAL DEPARTMENT.*	*TECHNICAL DEPARTMENT.*
GENERAL Fees to directors and executive committee. Salaries of general officers. Salaries of clerks. Rent of offices, light, etc. Consulting auditor developing accounting system. General books and records. Printing and stationery. Filing system. Traveling expenses. Recording fees. Traveling and other expenses in connection with securing appointive officers. Traveling and other expenses of appointive officers. Miscellaneous. FINANCIAL Engraving stock certificates, including interim certificates and all expenses of delivery and storage. Engraving bonds, including interim certificates and all expenses of delivery and storage. Services of trustee in certification. Obtaining subscriptions. Registration books and records (in duplicate in company's and transfer agent's offices). Issuing certificates. Listing on stock exchanges. Discount on securities (to be covered by rate of return). Commissions to syndicates. Cost of temporary loans. Cost of short-term loans. Exchange. CITY PERMITS AND INSPECTION Fees. Inspectors' salaries. Water charges. Payments for special privileges.	Retainers and fees to special counsel. Fees to experts for testimony. Court costs and witness fees. Notary services. Expenses of special counsel and experts, including traveling. Payments for damages.	(Usual details.)

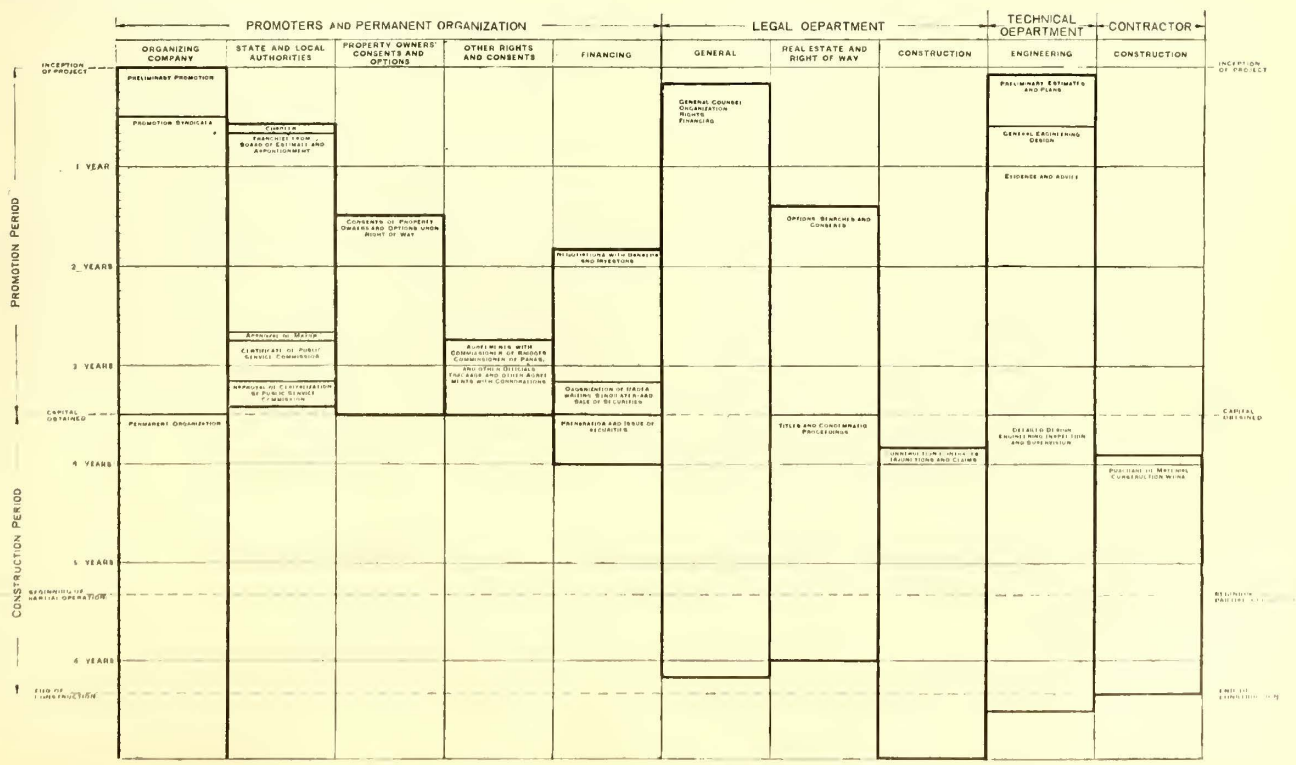
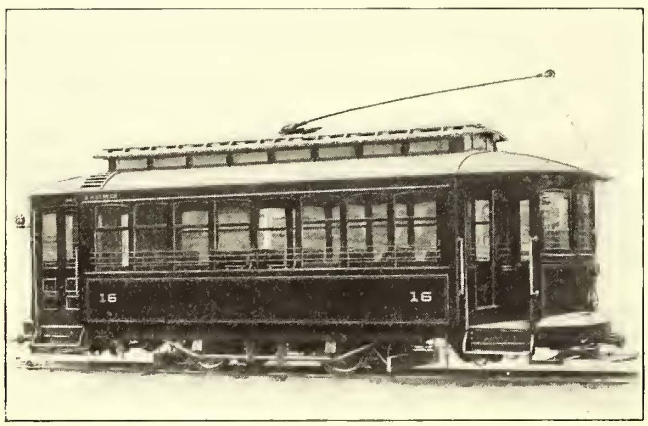


Chart of Estimated Time of Reproduction New of Coney Island & Brooklyn Railroad System as Submitted by Mr. Ford

MEETING OF THE MASSACHUSETTS STREET RAILWAY ASSOCIATION

The regular monthly meeting of the Massachusetts Street Railway Association was held at Young's Hotel, Boston, on Dec. 8, with L. S. Storrs, vice-president, in the chair. The principal speaker was Howard F. Eaton, local manager of the Brockton & Plymouth Street Railway, his subject being the "Rehabilitation of the Blue Hill Street Railway," one of the Stone & Webster properties in the suburban district outside of Boston. Mr. Eaton explained that the Blue Hill Street Railway serves the territory be-



Semi-Convertible Car for Blue Hill Street Railway

tween Mattapan and Stoughton, connecting with the lines of the Boston Elevated Railway at Mattapan and with the Old Colony Street Railway Company at Stoughton. The line was built about 10 years ago at heavy expense for a partially private right-of-way. Through cars were operated over the Boston Elevated system to Dudley Street, and to maintain this service the company was obliged to keep two cars on the Boston lines all the time. The territory served by the company is thinly settled, and the earnings were insufficient up to very recently to prevent a loss in the operation of the property. In February, 1909, the company suffered from a serious fire at its car house, and all the rolling stock except six cars was destroyed. The car house and the shops, with all tools, were a total loss. During the year previous to the fire a 6-cent fare had been charged on the road. This helped the earnings somewhat, but the recent law requiring the New York, New Haven & Hartford Railroad to issue 12-ride ticket books at 15 cents per ride between Canton Junction and Boston reduced the earnings of the Blue Hill Street Railway about 10 per cent. The cost of traveling from Canton Junction to Boston via the street railway lines is 17 cents.

Mr. Eaton said that to meet this situation it became apparent that every possible means must be taken to reduce operating expenses. It was decided first to purchase single-truck cars, with two large motors on each, to replace those destroyed in the fire, and the best possible construction was insisted upon. The old car house was located on a side track, and the entire time of one man was required in shifting cars to and from the main line. The new car house, built after the fire, was therefore located on the main line. The company had not had much chance as yet to obtain extensive comparisons of the power consumption of the new single-truck cars and the double-truck cars formerly operated, but in November single-truck cars were operated exclusively on the line, with the result that the power consumption per car-mile dropped about 1.22 kw-hours. The old double-truck cars were equipped with four motors each.

The new single-truck cars carry the traffic on 350 days of the year without overloading. Seven of these cars were purchased of the semi-convertible type, without air brakes. They were built by the Wason Manufacturing Company, of Springfield, Mass. Five cars are needed to maintain the ordinary schedule. The company also purchased five single-truck, 10-bench open cars. The semi-convertible cars are equipped with two GE-80 motors each, the control being equipped with an auxiliary contactor under the floor, which relieves the controller of arcing. These cars are mounted on Standard trucks, and weigh about 29,000 lb. each, complete. The body length is 21 ft. and the cars have a double floor, which adds somewhat to the weight, but reduces the amount of heating required in the winter season. The semi-convertible cars have a 7-ft. 6-in. wheelbase and steel wheels with 4½-in. axles. The seating capacity is 32 passengers. A schedule speed of about 10 m.p.h. is maintained, with a maximum speed of 30 m.p.h. The aisles are wide and the seats comfortable, and on account of the room inside the cars the conductors have better success in getting all the fares than in the old cars. The open cars are wide enough so that six persons can be seated with reasonable comfort on each seat. All the cars are finished inside with mahogany, which the company found to be the best wood for the purpose, considering both first cost and cost of maintenance. The cars are painted the standard green of the surface cars on the Boston Elevated system, with plain lettering and simple finish. Little side sway is noted in the operation of the single-truck cars, and there is no objectionable amount of galloping.

Before the new cars were put in service the track was overhauled and guard rails were installed on all curves. Many of the joints were rebuilt. The new cars appear to

Interior of Semi-Convertible Car for Blue Hill Street Railway

run as safely as the double-truck cars, and the company has had fewer derailments with them than with the old cars.

The new car house was specially designed for economical operation. It was located on a side hill where the drainage was good, and all the pits were built slanting toward one end, so that water would not accumulate in them, even in very wet weather. The car house proper is 150 ft. long and 100 ft. wide, with a storage house on one side, 200

ft. long and 24 ft. wide. Fifty feet beyond the car house is located the paint shop, 50 ft. long and 23 ft. wide. There is a number of skylights, and artificial light is required only on very dark days. The storage house was put on the north side of the property in order to protect the car house and shop from the north winds and thus reduce the amount of heat required. Three men handle the repair and inspection work in the winter in the shops, compared with a force of seven men in the old shops. There are three pits, and every car on the line can be placed over the pits at night, necessitating no moving of rolling stock in the shop. Among the shop tools are a car body jack, which enables bodies to be handled with ease and speed; a pit jack for wheel renewals, and a trolley carrier above the pits which affords easy and rapid connection with the shop when handling armatures and trucks. One man can handle an armature with this carrier without assistance. The wash room for the cars is well heated.

The office is located in the extreme southwestern part of the building, and is equipped with a fireproof vault for the storage of records. The old house did not have this provision. A special feature is the provision of separate lavatories for conductors and motormen and for shop employees. It was found that the operating men preferred their own lavatory accommodations, and the establishment of separate facilities has resulted in mutual satisfaction. In the new car house stock room material can be handled by the carrier system mentioned above, which serves the blacksmith shop as well as the machine shop.

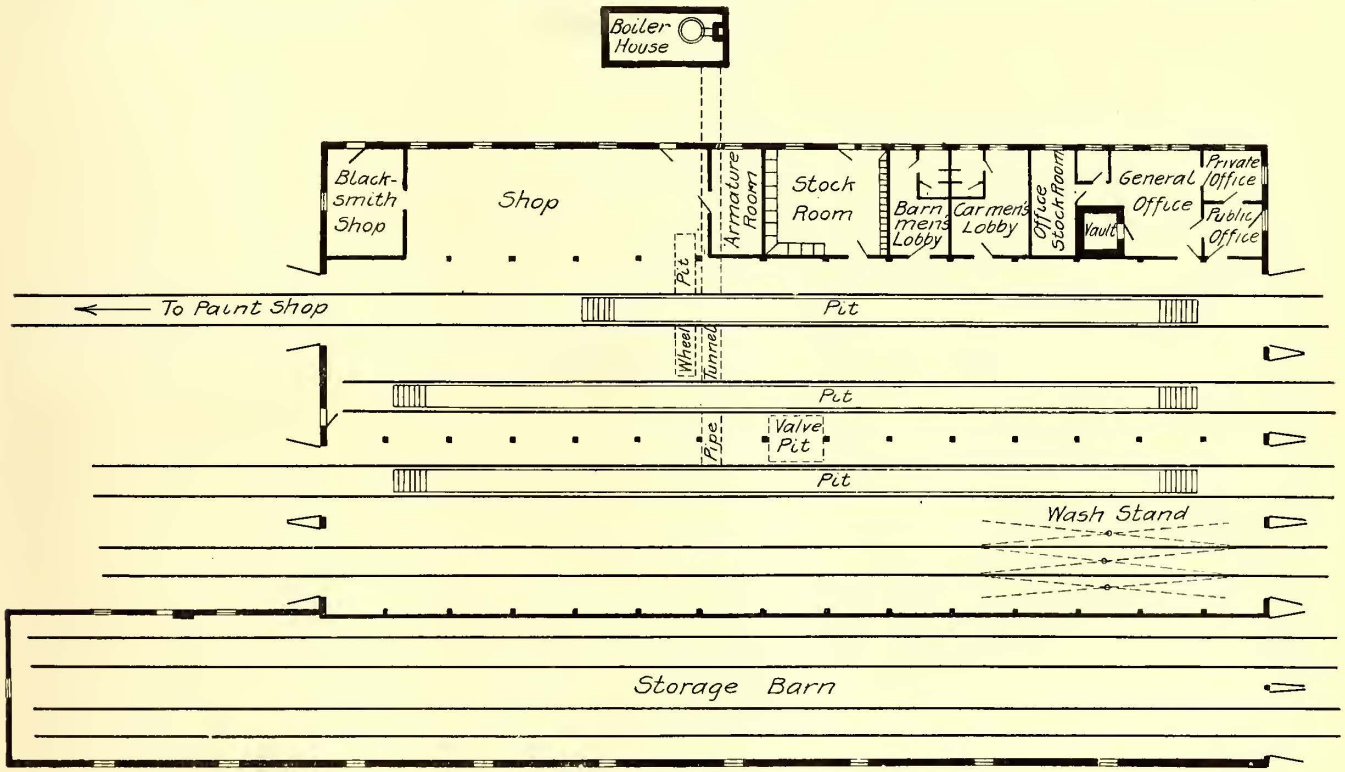
The paint shop is a cheap building, costing only a few hundred dollars. The separation of the paint shop from the other buildings by 50 ft. enabled the company to insure the rest of the property against fire without regard to the paint shop, and thus save a good deal of money. A track is run through to the paint shop, and the latter is readily accessible for the entrance and exit of cars. The paint shop has windows on all sides, a decided contrast to a property which Mr. Eaton once visited, in which the paint shop had windows on one side only, so that in order to paint the second side of the car it was necessary while it was still wet to run it out of the shop to a switch, 4 miles away, turn it around and run it back into the shop for the final work. The car house proper has a capacity of 16 cars, and the storage house a capacity of 12 cars.

The new cars are very popular, and the riding has increased, notably on the Milton end of the line. As a result of the economies instituted, the operating expenses have been reduced from $6,000 to $4,000 for the month of September, 1909, compared with a year ago. The company hopes to more than meet its expenses and fixed charges during the present year. The maximum grade on the road is 8 per cent, and a mile long.

General Superintendent Buchanan spoke briefly of the steam heating system installed in the car house, which has gravity returns from the pits, and which is without traps. An old upright boiler which was not seriously damaged at the time of the fire was used to supply steam.

Mr. Storrs said he believed that the electric railway industry has reached the limit on large cars, and commended the Blue Hill rolling stock as the logical development for suburban line traffic.

Charles C. Peirce, of the General Electric Company, Boston, emphasized the importance of ton-mileage on street railways. He stated that the dead weight per passenger is at present about 1175 lb. in Boston, 1850 lb. in San Francisco and 1350 lb. in Chicago. The electric railway manager has followed the practice of the steam roads too closely in this respect. Touching upon the value of the light car units used in Denver in the daytime, with trailers between 5 p. m. and 7 p. m., Mr. Peirce suggested that the possibilities of trailer operation were by no means reached. The question of speed was also important. Many motors were not properly selected for their work, some being underloaded and others overloaded. The art of electric traction is 30 years old, and yet many of the fundamental points were frequently overlooked. Greater speed means



Plan of New Shops and Car House of Blue Hill Street Railway

greater mileage and reduced platform expense. Lay-over periods were a source of heavy expense.

J. W. Dozier, superintendent, Lynn & Nahant Street Railway, paid a tribute to the management of the Boston & Northern Street Railway Company for its co-operation in the lending of cars for Sunday travel. He suggested that pleasure traffic must be carried in comfort if its volume is to be satisfactory. On the Lynn & Nahant Railway every possible effort is made to seat the passengers in order to secure safe operation and promote pleasure business.

H. S. Knowlton, Boston, reviewed the subject of street railway and steam railroad competition in the suburban field from the standpoint of eliminating all needless stops. If this was done the schedule time on runs over 4 or 5 miles long could be improved greatly. Aside from the increase in revenue, there was a saving in current consumption and physical wear and tear on the cars every time a stop was eliminated. If the advantages of decreased stops were made plain to the public, regular passengers would in most cases co-operate and appreciate the improved service thus made possible. The longest distance that a passenger has to walk to take a car is only half the distance between successive stopping places. By placing neat, pithy placards in the cars, stating the reasons for cutting out stops, the public would soon come to see that the improvement of the service was worth the reduction in stopping places. Among over 200 stops that were cut out on the surface lines of the Boston Elevated system, only a few led to complaints to the public authorities, and in practically every case the Railroad Commission sustained the company in the interests of improved service and shortened time of transit.

TRANSPORTATION OF UNITED STATES MAIL

At the meeting of the Street Railway Association of the State of New York in Albany on Dec. 8 the subject of the transportation of United States mail in closed pouches was discussed by C. Loomis Allen, vice-president and general manager, and J. E. Duffy, superintendent of the Syracuse Rapid Transit Railway Company. This company was requested recently by the United States postmaster at Syracuse to submit a statement showing the amount which would be charged for carrying mails from the main post office in Syracuse to a new substation. Under the conditions named, the mail was to be delivered to and taken from the station by employees of the company. Four round trips were to be made on working days, with one trip on Sundays and holidays. The trips from the main post office were to be made at the hours of about 6 a. m., 11 a. m., 1 p. m. and 6 p. m. About 16 sacks and pouches were to be carried on the 6 a. m. trip and the same number on the 1 p. m. trip, with about four pieces on each of the other two trips. The trips from the substation to the main office were to be made about 7:30 a. m., 11:30 a. m., 1:45 p. m. and 6:30 p. m., and on each of these trips about four pieces were to be carried.

In reply to the request, Mr. Allen wrote to the postmaster at Syracuse that the service would extend over a period of 14 hours per day. Based upon the earnings and expenses of the company for the year ended June 30, 1909, and furnishing a car and necessary crew, the service would be provided for $10,220 per annum. This sum was computed on the basis of car-hour earnings of $2, or at the rate of $28 per day of 14 hours.

No action has been taken by the Post Office Department in relation to this matter.

PENSIONS FOR EMPLOYEES OF BROOKLYN RAPID TRANSIT COMPANY

The board of directors of the Brooklyn Rapid Transit Company on Dec. 14 established a pension department which will be administered in accordance with the following rules and regulations:

I. The administration of the pension department shall be by a board of officers to be known as the "board of pensions." Such board, until otherwise ordered, shall consist of:

Vice-president and general manager of the Brooklyn Rapid Transit System, chairman; secretary and treasurer of the Brooklyn Rapid Transit System, secretary; president of Brooklyn Rapid Transit Employees' Benefit Association.

II. All communications shall be addressed to the secretary of the board of pensions.

III. The board of pensions shall, subject to the approval of the president of the Brooklyn Rapid Transit Company, have power to make and enforce rules and regulations for the efficient operation of the pension department; to determine the eligibility of employees to receive pension allowances; to fix the amount of such allowances, and to prescribe the conditions under which such allowances may inure. They shall make rules for their own government, not inconsistent with these regulations, or the general regulations governing the operation of the system.

IV. No employee in the service of the system Jan. 1, 1910, and no employee who shall enter the service of the system after Jan. 1, 1910 (except as noted below), shall be eligible for retirement and a pension allowance, unless he shall have become a member of the Employees' Benefit Association within one year after that date, or within one year after he shall have become eligible to such membership, nor unless said membership shall have been continuous thereafter. Any employee in the service of the system prior to Jan. 1, 1910, who shall have attained the age of 50 years, and who shall not then be a member of said association, shall nevertheless be eligible to a pension allowance, when he shall have served the company in all other respects as herein provided.

V. The terms "service" and "in the service" will mean employment in the service of any company forming part of the Brooklyn Rapid Transit System, and the service of any employee shall be considered as continuous from the date from which he has become continuously employed in the service of any of the said companies.

VI. In computing service, it shall be reckoned from the date since which the person has been continuously in the service to the date of retirement.

Leave of absence, suspension, dismissal or resignation followed by reappointment within six months, is not to be considered a break in the continuity of service.

VII. The following employees shall be retired and received a pension under the following conditions:

Any employee who has reached the age of 70 years, whether incapacitated or not, and any employee who has reached the age of 65 to 69 years (both inclusive) and who has become incapacitated, and who has made application or has been recommended for retirement, and who has submitted himself to a physical examination by a physician or physicians designated by the board of pensions, and shall be thereafter retired by said board, shall be entitled to a pension as follows:

(A) If in the continuous service of the system for a period of 35 years or more, 50 per cent of the average monthly pay received during the 10 years immediately preceding retirement.

(B) If in the continuous service of the system for a period of 30 years, and less than 35 years, 40 per cent of the average monthly pay received for the 10 years immediately preceding retirement.

(C) If in the service of the system for 25 years and less than 30 years, 30 per cent of the average monthly pay received during the 10 years immediately preceding retirement.

Any employee who has not reached the age of 65 years, but who has been in the continuous service of the system for at least 30 years, and who has become incapacitated, may be

recommended for retirement, and be retired by a vote of the board of pensions upon such examination and conditions as may be imposed by said board and with the amount of pension as fixed by paragraphs A and B of this section.

VIII. When pension allowances shall be authorized by the pension board, they shall be paid monthly during the life of the beneficiary, providing, however, that any such allowance may be revoked for misconduct on the part of the beneficiary, of which misconduct the pension board shall be the sole judge, and providing further that in order that the companies may keep in close touch with its retired employees and be assured that they are enjoying the full benefit of the allowance, no assignment of pension will be permitted or recognized.

IX. Nothing herein provided, nor any action hereafter taken by the pension board, shall be construed as giving to any employee of any company of the system a right to be retained in its service or any legal right or claim to a pension allowance, and the company expressly reserves its right and privilege to discharge, at any time, any employee when the interests of the company in its judgment may require such discharge, without liability for any claim for pension or other allowance other than salary or wages due and unpaid.

X. At the close of each month a payroll showing the names of those to whom allowances have been made and the amounts of such allowances shall be prepared by the secretary of the board of pensions, who shall certify to its correctness. After this payroll has received the approval of the vice-president and general manager, voucher checks shall be prepared, which shall pass through the usual channels for payment.

XI. The secretary of the board of pensions shall keep himself advised as to the whereabouts of those entitled to pension allowances. When any such employee does not reside within the limits of Greater New York, the secretary shall require satisfactory evidence once a month showing that said employee is entitled to such allowance.

XII. No employee whose maximum wages have exceeded $1,500 per annum for a period of more than five years shall be eligible for retirement or consideration under the above regulations.

XIII. The above conditions may be modified from time to time only by and with the consent of the board of directors of the Brooklyn Rapid Transit Company.

XIV. The pension department may be discontinued at the option of the board of directors of the Brooklyn Rapid Transit Company, but in case the department is discontinued, notice of such discontinuance shall be sent to each member receiving a pension under the terms and conditions of the pension board, and the discontinuance of such payment shall not become effective until one year from date of such notice.

XV. These rules and regulations shall take effect and be in full force on and after Jan. 1, 1910.

The following notice to employees was issued by the newly created pension board advising them of the plan:

The board of directors of the Brooklyn Rapid Transit Company has approved a plan of pensioning employees who have rendered long and faithful service to any of the companies comprising the system, on a basis of an apportionment of their wage according to length of service at time of retirement.

The pension thus allowed ranges from 50 per cent of the average monthly wage during the 10 years preceding retirement of those who have served continuously for 35 or more years, to 30 per cent of the average 10 years wage for those who have served continuously for less than 30 and more than 25 years. Under this arrangement many employees upon retirement will receive an income equivalent to 4 per cent per annum upon an investment of $10,000.

The company has from time to time recommended to its employees to take membership in the Employees' Benefit Association, because this association secures to its members for a small yearly outlay a number of privileges in addition to the insurance in case of sickness or death. It is for these reasons that the allowance of pension upon retirement is made contingent upon membership in the Employees' Benefit Association, after specified date, where the employee is eligible to such membership. The enjoyment of the pension does not deprive one of any of the advantages, pecuniary or otherwise, secured by membership in the association, and employees are advised to continue their connection with this organization after being placed on the pension roll.

Such of the employees of the system who are not eligible to membership in the benefit association by reason of age or physical condition, and who shall have been in service with one or more of the companies in the system as in all other respects provided in the pension regulations, will be put in a special class and receive the same pension allowance as if they had been members of the association.

We suggest that those employees who are not members of the benefit association, or familiar with its affairs, communicate with George W. Edwards, president of the benefit association, who will be very glad to furnish them with information as to the workings and advantages of the association.

J. F. CALDERWOOD,
C. D. MENEELY,
G. W. EDWARDS.

DECISION OF ARBITRATOR IN CLEVELAND CONTROVERSY

Judge R. W. Tayler, of the United States Circuit Court, as arbitrator in the Cleveland street railway controversy, rendered his decision on Dec. 18 on the various points involved. The total valuation is slightly over $1,000,000 lower than that found by the Goff-Johnson appraisement, but the physical value is about $3,000,000 higher.

The finding of Judge Tayler is as follows:

FINDING OF THE ARBITRATOR.

First—The value of the physical property of the Cleveland Electric Railway Company, as of Jan. 1, 1908, was $17,511,305.64.

Second—The franchise value of the company's franchises, as of that date, was $3,615,843.89.

Third—The total value of all of the property of the Cleveland Electric Railway Company I find, therefore, to be $21,127,149.53, being something more than $1,000,000 less than that which was found by the Goff-Johnson appraisal.

Fourth—I allow nothing for good will. A street railway company which has a monopoly, and especially if it has a franchise value remaining, can have no good will value.

Fifth—I allow nothing for going value, except in so far as that is the result of the necessary expenditure of money in building the road, acquiring its land, power houses and equipment and putting them into successful operation. The expenditures for these purposes are, and necessarily must be, included in the valuation of the physical property.

Sixth—I offset the franchise value of suburban grants, whatever they may amount to, against the burdens of suburban contracts, to whatever extent they may exist, for the reason that all the territory covered by the Cleveland Electric lines is one homogeneous community, destined soon to become one municipality in which a zone system will be intolerable.

Seventh—I am of opinion that there is a moral, and, perhaps, a legal obligation on the community in connection with the guarantee by the Municipal Traction Company of stock of the Forest City Railway Company and of stock of the Cleveland Railway Company sold by the Municipal Traction Company. In view of the fact that the settlement recommended by me, should it become operative, will make the stock of the Cleveland Railway Company, in my opinion, intrinsically worth par, I recommend that the obligation created by the guarantee be adjusted by the payment, to the persons who originally purchased the same on the faith of the guarantee, of an amount equal to 7½ per cent of the par value of such guaranteed stock so owned, and that the principle be applied to fractional shares according to the actual amounts paid thereon; such payments to be in full satisfaction of all liability under the guarantee.

I fix the amount at 7½ per cent, because, prior to Oct. 1, 1908, all such stockholders had received interest or dividends at the rate of 6 per cent per annum.

Something less than 10 per cent of the guaranteed stock has been sold by the original purchasers. To what extent,

if any, these former owners of such stock may be entitled to any reinbursement under the guarantee I am willing to consider hereafter. The amount involved can in no event be a very large sum, as less than 10 per cent of all the guaranteed stock has changed hands.

The practical result of the reduction in the value of the Cleveland Railway Company property will be to make the stock of that company not having an origin in the Municipal Traction Company's guarantee worth, as of Jan. 1, 1910, par and 1½ per cent, being the amount accruing to such stockholders for the quarter ending Oct. 1, 1908, and thus equalizing for that period those stockholders with the stockholders whose stock came under the guarantee.

As to the guaranteed stock still in the hands of the original purchasers, it will be worth, as of Jan. 1, 1910, par and 7½ per cent.

Eighth—The initial rate of fare should be 3 cents and 1 cent for a transfer, without rebate, and the maximum rate should be 4 cents for a single fare, seven tickets for 25 cents and 1 cent for a transfer, without rebate.

Ninth—I approve the suggestion that, if consents of abutting property owners are secured, the company be required to extend its line on Lorain Avenue to the city limits, if no fair arrangement can be made with the interurban company for the use of its tracks.

REASONS FOR THE CONCLUSIONS

In discussing the physical valuation, Judge Tayler stated that he took the Goff-Johnson value as a basis. He considered overhead charges as money spent in the necessary production of the physical property and putting it in operation. Not much was to be allowed afterward for development, he said. He divided overhead charges into two classes, those that applied to specific items and those which applied to the whole. Under the first class he allowed 10 per cent on track, 3 per cent on pavement and 5 per cent on cars, land, buildings, power stations, miscellaneous rolling stock and equipment. This brought the value up to $15,175,565.27. Under the head of a general overhead charge, applicable to the whole investment, including financing, engineering, supervision, insurance, interest during construction, litigation with property owners and incidentals, he allowed 15 per cent. This brought the physical value up to $17,511,305.64.

In discussing the pavement item, Judge Tayler said that argument for its elimination rested upon a purely technical reason at best; that its construction represented money expended, and that the cost should go into the capital account. Incidentally, he asserted that if all the mass of testimony before him counted for anything, the system of the Cleveland Railway could not be reproduced as of Jan. 1, 1908, for the amount which he had allowed.

He stated that the going value was included in the physical value, and that he could allow nothing directly for that, or for good will, as that term was generally defined. A street railway company had a monopoly and could not properly be said to have any good will value, he thought.

A franchise value was based upon the money the company was able to earn over 5¾ per cent on the physical value. The representatives of the city, he said, had insisted that the value of the franchises within the city limits was about $3,000,000, while the company estimated the amount at over $4,000,000. He had considered the lines separately and together, he said, and had fixed the value as given in the foregoing.

The franchises outside the city limits, Judge Tayler said, ought to be offset by the burdens brought upon the company by contracts which were not profitable. He did not attempt to say which contracts were profitable or which were not, nor did he name a value for any of the outlying franchises. He said the system should be treated as serving one community, because all the suburbs would some time be a portion of the city, and under such circumstances a zone system would be intolerable. The settlement now should be broad enough to cover such conditions, because the future could not be foretold.

In discussing the rate of fare, Judge Tayler said that some arrangement should be made to use the tracks of the Cleveland, Southwestern & Columbus Railway to the city limits on Lorain Avenue, or, if this could not be done, the company should build parallel tracks in order to serve the people at one fare.

Concerning his statement that the community was under a certain moral obligation to the holders of guaranteed stock, Judge Tayler said that some of the features of this arrangement did not meet with his approval, and the whole idea was unbusiness-like. But the stockholders put their money into the enterprise, and when the Forest City Railway secured a franchise on Woodlawn Avenue and the West Side it gave a real service, from which the public secured certain benefits. These rights were valuable and the lines had earned money at 3-cent fare, he continued, according to the reports of the receivers. The success of the lines was due to the co-operation of the Cleveland Railway in furnishing power and track connections, tracks in free territory, and all that, but at the same time the rights were valuable. Under the circumstances he thought that the guarantee should be made good to the extent of paying a sum equal to the five dividends which the stockholders had not received.

In discussing the so-called gentlemen's agreement, entered into at the time the Goff-Johnson appraisal was made, Judge Tayler said that the stockholders of the Forest City Railway had become so closely associated with those of the Cleveland Electric Railway when the properties were merged that their interests could not be separated. The agreement could not be carried out, no matter what the will or intention of those interested might be. The interests could not be restored to their original status under any circumstances.

Under agreement the value of the Forest City property will remain as fixed by the Goff-Johnson appraisal, $1,805,500.

NEW ORDINANCE PASSED

At a special session of the city council on Dec. 18 an ordinance embodying the views of Judge Tayler was passed. In addition to containing the matter presented by him in his decision, the ordinance provides for a street railway commissioner who shall represent the city and to whom the books and records of the company shall be open at all times. He is to make reports to the city council, with such recommendations as he sees fit. The salary of $12,000 a year must be paid by the company. The ordinance was signed by Vice-Mayor Lapp and was accepted by the Cleveland Railway Company on Dec. 20. It must also be accepted by the Forest City Railway Company, Low Fare Railway Company and Neutral Traction Company.

Under the ordinance the company must have in use 450 pay-as-you-enter cars within five months after the grant takes effect, and within 18 months all cars, with the exception of 100 trailers, must be of this type. As the ordinance will probably not go into effect until after referendum vote has been taken, the date for securing these cars is uncertain. Petitions for a referendum were put into circulation as soon as the ordinance was passed, but Mayor Johnson favors delaying the vote until April 15.

It is the intention of the company to spend $2,500,000 in

the rehabilitation of the system as soon after the ordinance goes into effect as the money can be secured. The funds may be obtained either by selling stock at par or issuing bonds; the latter method is preferable so far as length of time to sell is concerned. In addition to rebuilding the tracks, more power will be required as the plants are operated to their full capacity now. At first additional units will be installed in the present power houses, but later a new power station will be constructed. When sufficient power is provided a few extensions will be made and one or two more cross-town lines built, but it is believed that these improvements will not be carried out for some time.

Mayor Johnson has made no public comment upon the decision of Judge Tayler, and some people believe he will oppose the approval of the new franchise by the people.

THE ACCIDENT AT THE WINNIPEG WATER PLANT

A short account of the recent accident at the Lac Du Bonnet water-power plant of the Winnipeg Electric Railway was published on page 1163 of the ELECTRIC RAILWAY JOURNAL for Dec. 4. The accident was interesting as showing (1) the rapidity with which normal conditions were restored in the face of the damage done, and (2) as illustrating the extreme dependence of modern cities upon electric current, not only for mechanical and manufacturing energy, but for the comforts of civilized life.

The Lac Du Bonnet plant is situated on the Winnipeg River, about 64 miles from Winnipeg. On the evening of Nov. 23, the bursting of No. 7 penstock just as the load was reaching its peak for lighting and extra car service during the rush hours, resulted in a tieup of the system and considerable damage to the apparatus. The water made a huge breach through the wall of the building between wheel units 7 and 8, and its rush was so great that it was impossible for the employees to reach the governor hand wheels to close down the turbines by way of the floor. They were then lowered by ropes from the windows from the wheelhouse roof and, in about 4 or 5 ft. of water, managed to stop all wheels except units 8 and 9, which could not be reached, owing to the great volume of water. These two machines ran under water for a couple of days. An attempt was then made to lower the headgates, but the flow of water made such a pressure against the gates that they refused to budge.

Meanwhile at Winnipeg the power went off the circuit, and for some time Manager Wilford Phillips was as much in the dark as any one else as to the cause of the trouble. The company has a private telephone to Lac Du Bonnet, but as the entire staff there was at work trying to stop the flow of water, there was no one left to answer the telephone. As soon as it was realized that the interruption of the service was more than trifling the manager issued instructions to have the old steam plant, used to generate power before the Lac Du Bonnet was built, put into commission at once. Three years previously this plant had worked up to an overload of 8000 hp, but although the precaution had been taken of keeping up steam sufficient to turn the wheels over once a day, things there were naturally not in condition to get back to former efficiency, and in any case the power at full capacity was far below the present requirements of Winnipeg. The best that could be done that night was to furnish a partial lighting service, and in the early hours of the morning to take in the cars.

Two hours after the news of the serious nature of the accident reached him, Manager Phillips, C. R. Ross and Donald Ross, the chief electrician and civil engineer of the company, were on their way to the scene of the disaster in a special train. The condition of affairs was found on arrival to be most serious, the attempts to shut off the water having entirely failed. The only means which could be devised for stopping it was driving piles in front of the headgates and sheeting these in front with brush and canvas and bags of sand, by which means the water was eventually checked sufficiently to enable the headgates to be lowered.

On Friday evening an examination was made of the machinery, and work was at once started to get some of the generators again in operation. On the evening of Nov. 29, less than six days after the accident, one generator was sufficiently dried out so that, with temporary winding which was arranged, about 1500 kw was supplied to Winnipeg to assist the overburdened steam plant.

The system followed in the city was to furnish as full a car service as possible from 6 to 8:30 a. m. and light service on as many circuits as possible. From 8:30 to 4:30 the available current was placed at the disposition of users of commercial power. From 4:30 p. m. to 7:30 p. m. cars and light; from 7 p. m. to midnight a full lighting service, and from midnight to 5 a. m. commercial power. This system was adopted at the request of the Board of Trade and City Council, and it was represented that this would allow the factories to run on practically full time. The public generally took the accident most good humoredly, and appeared to realize that the company was doing its best under the circumstances.

At Lac Du Bonnet Manager Phillips stayed with the work of repairs. In inspecting and testing the generators it was found that the most serious damage was near the point where the break occurred. One generator had to be partially rewound on one side, where it took the full force of the water and tore up the insulation. It was not until a fortnight after the trouble occurred that Manager Phillips thought it wise to return to Winnipeg.

Great credit is due to every one concerned for the remarkable recovery which they effected under very adverse conditions in an isolated district, where everything had to be brought in by special train. Particular credit is due to J. H. Smeaton, the superintendent of the plant, and C. R. Ross, chief electrician, for the rapidity with which they got the plant into operation, considering that the cables on the floor were soaked with water and lying under water for three or four days. One generator was started delivering power to Winnipeg on the sixth day after the accident, two inside of a week, and after that the progress was at the rate of one a day. Both from experts and business men Wilford Phillips, the manager, also received deservedly high praise for the energy and perseverance he showed in the emergency. The officials also had the valuable assistance of G. W. Watts, of the Canadian General Electric Company, to make tests and advise as to the generators before they were put into operation again.

The Lac Du Bonnet plant has a somewhat unique record, as with this single exception its previous record was that there had been only a total shutdown of 25 minutes' duration in the three years since it commenced operations. As to the cause of the accident, an examination of the gate rigging of No. 7 turbine showed that five teeth had been stripped from the hand-wheel pinion on the governor, and, in the opinion of experts, when these teeth stripped the turbine gates were allowed to close very suddenly, and this caused the bursting of the penstock.

News of Electric Railways

Results of Detroit Investigation

The Committee of Fifty of Detroit has received reports of sub-committees which have been investigating various features of the railway situation.

The sub-committee on the cost of service, through W. D. Gridley, public accountant, presented figures purporting to show that the cost of carrying a passenger in 1908 was 2.62 cents. Prof. Henry C. Adams stated the present value of the unexpired franchises of the Detroit United Railway as $2,810,615. The present value, assuming an annual net increase of 6 per cent in future net revenue, however, was stated by Professor Adams as $4,246,207.56. The value of the physical property was reported recently by the committee at $11,284,596.09. Reports of the sub-commitees on schedules, taxation and municipal ownership were also presented. A minority report of the last-named sub-committee was presented by W. D. Mahon, favoring municipal ownership.

J. C. Hutchins, president of the Detroit United Railway, gave a letter to the Detroit *Free Press* and the Detroit *News*, in which he said in relation to the reports as published:

"Possibly the people of Detroit may find some food for reflection in the following observations.

"According to published reports, Mr. Barcroft and Professor Adams have submitted to the committee of appraisals their reports—the first claiming that the present physical value of this company's property in Detroit, excluding paving, subways, certain lands, etc., is $11,284,536.88, the latter that its franchise value amount to $2,810,615.24—the two reports combined making a total of $14,095,152.12. Ten years ago such properties as then existed in Detroit were appraised by Governor Pingree's appraisers, including Professor Cooley, Professor Bemis, Mr. Hawke and others, as having a physical value of $7,806,737.42 and a franchise value of $8,478,563.86, or a total value of $16,285,301.28.

"There has been expended for cars, power, track extensions, subways, etc., on capital account, as distinguished from operating expenses, upon these properties since the Pingree appraisal was made, as shown by our records, $6,298,615.49. It is difficult to draw a perfectly straight line between operating expenditures and capital expenditures, but such expenditures have got to be accounted in one or the other.

"Adding $6,298,615.49 to the Pingree appraisal, the sum of $22,583,916.77 results. Take from that sum the amount of the Barcroft-Adams appraisal ($14,095,152.12), and there appears to have melted away into thin air in 10 years the quite considerable sum of $8,488,764.65, not considering the difference between the low values of materials 10 years ago and their 30 per cent higher values of to-day.

"Mr. Gridley's report as an expert accountant to the cost of service committee and as informally published, shows that the cost of carrying a passenger in Detroit last year, without considering depreciation, was 2.62, as deduced from the company's records. Mr. Gridley's figures, not having been checked by other accountants, are erroneous in the particular—first, that he made the mistake of including 854,238 Grosse Pointe passengers paying extra fare outside of the city as city passengers, and the further mistake of deducting as operating expenses the entire gross earnings of the company from freight, express, advertising and mail. This cost for last year, as shown by F. H. Macpherson & Company, public accountants, who have made a very complete study of our records, was 2.70, and not 2.62, as shown by Mr. Gridley.

"The company has carried in Detroit since the Pingree appraisal was made to the end of the year 1908, 773,933,009 passengers. Divide the difference of appraisals referred to above, $8,488,764.65, by the total number of passengers carried, and the added cost is 1.097 per passenger. This cost, added to the cost shown by the Gridley report, makes 3.717, or to the Macpherson report of 2.70, makes 3.797 as the cost of carrying passengers. Should you add to this cost 6 per cent interest upon the $14.095,152.12, as reported by Messrs. Barcroft and Adams, it will be seen it is shown to cost 4.584, or nearly 5 cents, to carry a passenger in Detroit.

"But study the subject with all franchise values left out. Between the Pingree appraisal of $7,806,737.42, plus the $6,298,615.49 expended for betterments, as above stated, and the Barcroft appraisal of $11,284,536.88, there is a difference of $2,820,816.03, not to speak of the difference between the present and the former value of all materials and appurtenances. This difference, $2,820,816.03, must be called 'depreciation.' Applied to each of the 773,933,009 passengers carried, it would represent a cost on depreciation account of .365 per passenger, which added to the Gridley report of cost, would show 2.985 per passenger, or to the Macpherson report of cost 3.065 per passenger, before coming to the question of capital. Add .63 per passenger to the 2.985 in the one case and 3.065 in the other, to pay 6 per cent upon the $11,284,536.88 of the Barcroft appraisal, and you have 3.615 in the one case and 3.695 in the other as the first cost of carrying a passenger, including depreciation and including interest upon the basis of the Barcroft appraisal, but without allowing anything for the millions of dollars that have been expended for bringing the properties up from the beginning of the art to their present standard.

"The increased wages now in effect, and the added taxes now being borne, together with the present higher cost of materials, considered only in connection with the above figures, will make the cost of carrying a passenger something in excess of 4 cents for the year 1910.

"Criticisms have been expressed because the experts of the Committee of Fifty have gotten much of their data from the company's books. We have turned over to the committee or its experts every book, voucher and scrap of paper in our possession, and all of the information in our possession, without reservation of any kind whatever. We could do no more. But the art of electric transportation is not local. It is shown in the annual report upon the railways in Chicago, as produced under the auspices of the government of that city, where the fare is 5 cents, that the first cost of carrying a passenger in Chicago, before coming to the question of capital or profit, is 3.54 per passenger. The difference between that first cost and our first cost—3.54 in the one case and 2.70 in the other—is due in part to the fact that Chicago is a very much larger city than Detroit. This fact proves that the cost will not decrease as Detroit grows larger, and it further proves that if passengers are carried at a loss, the loss will be greater as the number increases.

"The foregoing is a statistical and a very dry statement, but I trust those who have read thus far will see that the studies of the Committee of Fifty are leading in the direction of enlightenment at least, because they deal with the logic of cold mathematics."

The committee on franchises of the City Council of Detroit has decided to recommend that the Council purchase the Barcroft appraisal reports of the Committee of Fifty for $17,500.

Transit Affairs in New York

The new subway system planned by E. J. Farrell and J. J. Hopper provides for an East Side line, starting at Whitehall and Water Streets and running under the latter street to Peck Slip. Thence the route is to New Bowery and under that thoroughfare to Division Street. It will continue under Division Street to Chrystie where the up and downtown local and express tracks will separate. The downtown tracks will be under Chrystie Street and the uptown under Forsythe Street. The Chrystie Street Branch will turn into East First Street at the intersection of Second Avenue and the Forsythe Street branch will turn easterly through East Houston Street and meet the Chrystie Street line at First Avenue and First Street. Then all four tracks continue north under First Avenue to 126th Street where they will pass under the Harlem River in two or four separate tunnels. The tracks for northbound trains will go under Willis Avenue to East 138th Street and thence east under 138th Street to 140th Street and Southern Boulevard, where they join again to the tracks for southbound trains. The line for southbound trains runs from the Harlem River under Alexander Avenue to East 139th Street, and under that street to 140th Street and Southern Boulevard, where they meet the northbound tracks. Continuing, the route is through Southern Boulevard to Westchester Avenue and thence to Cottage Grove Avenue. Through the latter the route is to White Plains Road, thence to Gun Hill Road and through the latter to Jerome Avenue, where the subway takes a southerly direction to the Battery.

The West Side subway is to run under Jerome Avenue and under the Harlem River near the Central Bridge, then under Bradhurst Avenue to Edgecomb Avenue and under the latter to St. Nicholas Avenue, thence to Eighth Avenue, thence to Central Park West and under that thoroughfare to Eighth Avenue again. Under Eighth Avenue, the subway continues to Hudson Street and on under Hudson Street to

West Broadway. Under the latter street the route is to Greenwich Street, under that to Washington Street and on to Battery Park, where it joins the East Side line.

There are five crosstown lines of two tracks each, under Liberty, Fifty-ninth, Eighty-sixth, 125th Streets and Tremont Avenue and Morris Park Avenue, each of which forms a loop connection with the East and West Side subways except that under Eighty-sixth Street, which is a shuttle line. The Fifty-ninth Street line joins only the Eighth Avenue subway line as it has to go under the First Avenue Line to get under the East River, but will be connected with the First Avenue line by elevators and stairways. This line continues under the East River in two tubes following the line of the Blackwell's Island Bridge and passing under Long Island City and through Jackson Avenue to Flushing with stations at Long Island City, Woodside, Winfield, Elmhurst, Corona, Flushing and Broadway, Flushing.

The building of the Brooklyn Extension from Battery Park under the East River, then along Atlantic Avenue where it joins the Fourth Avenue subway would give the Fourth Avenue subway an independent subway entrance into Manhattan Island. An extension from Battery Place to Staten Island via the Fourth Avenue subway, Brooklyn, and Fort Hamilton is provided for and can be built as soon as practicable.

The Board of Estimate and Apportionment has approved the plan of the Coney Island & Brooklyn Railroad to park Coney Island Avenue from the Park Circle, Brooklyn, to Coney Island, a distance of about 5 miles. The tracks of the company are now at the side of the street. The cost of the work is estimated at $300,000.

On Dec. 17, 1909, the Court of Appeals handed down a decision in the case of the subway built by the City of New York under Joralemon Street, Brooklyn, embracing appeals by the City of New York and the Board of Rapid Transit Commissioners from an order of the Appellate Division, which reversed an order of the Special Term as to certain awards of damages. There are also questions as to the allowance to the abutting owners of disbursements, costs, counsel fees and extra allowances. It is held that the commissioners should have received and considered evidence of all physical injuries inflicted upon the property by the proper construction of the work so far as that could be ascertained at the date of the trial, and that the Rapid Transit Act does not authorize the allowance to the abutters "of their disbursements, costs, counsel fees and extra allowances."

A committee of taxpayers has presented informally to the Public Service Commission a plan for a subway from Long Island Sound, at a point slightly above Fort Schuyler, extending across the borough along the route of Tremont Avenue to the Harlem River and thence to the Hudson River.

Chicago Traction Affairs

The ordinance under which the Chicago City Railway and the Chicago Railways are rehabilitating and operating their properties designated that the cars should be rerouted so that at the completion of the rehabilitation period 22 through routes would be in operation between opposite sides of the city. Elevated railway columns, low railroad subways, inadequate capacity over viaducts and the work of reconstructing the several tunnels under the Chicago River have made it impossible to establish more than one through route so far, and the Board of Supervising Engineers of Chicago Traction has been asked by the committee on local transportation of the Chicago City Council to state what action is necessary to bring about the final routing as laid down in the ordinance, including any suggestions of departure from the plans as laid down by the ordinances that would hasten the operation of the through routes. The Chicago Railways has announced that with the sanction of the Board of Supervising Engineers it can operate two through routes between the West and North sides of the city via the business district, substituting them for routes specified in the ordinances.

The cost of rehabilitating the property of the Chicago Railways up to Dec. 1, 1909, was $22,000,000. This expenditure was entailed largely for the following work: Miles of track constructed, 177.23; new pay-as-you-enter cars in operation, 650; other double-truck cars which are being remodeled into pay-as-you-enter cars, 328; new pay-as-you-enter cars under construction, 350; miles of conduit laid, 620; miles of cable installed in ducts, 248; miles of poles set back of street curb, 210.

Senator Samuel A. Ettelson, of Chicago, has introduced in the State Legislature a bill which provides for an amendment of the Cities and Villages Act granting power to incorporated municipalities to "acquire, own, construct, maintain and operate subways, wharves, docks, levees, fix rates and charges for the service rendered by means of such utilities, and to lease the said utilities to any person or corporations authorized under the laws of Illinois to operate the same for any period not longer than 20 years, upon such terms and conditions as the City Council or the president and board of trustees shall deem for the best interests of the public." The bill has been referred to the legislative committee on municipalities for consideration and report.

The discussion regarding obstructions which were said to prevent the operation of through routes on the surface lines has resulted in the announcement that the engineers of the elevated railways in Chicago will report on the feasibility of separating the grades at the northwest corner of the Union Elevated Loop, where the downtown trains of the South Side Elevated Railroad and the Metropolitan Elevated Railway round a sharp curve from Lake Street to Fifth Avenue, and the northbound trains of the Northwestern Elevated Railroad intersect the eastbound trains of the Chicago & Oak Park Elevated Railroad. It is necessary to interlock this intersection because the westbound trains of the Chicago & Oak Park Elevated Railroad branch off from the northbound route of the Northwestern Elevated Railroad and the southbound trains of the latter come onto the Loop on the eastbound track jointly used with the Chicago & Oak Park Elevated Railroad. The separation of grades at this complicated intersection will reduce the time required for the trains of the Northwestern Elevated Railroad and the Chicago & Oak Park Elevated Railroad to encircle the Loop.

The Chicago, Joliet & East St. Louis Electric Railway has been incorporated in Illinois by H. A. Fisher, F. E. Fisher and L. D. Fisher, of the Joliet & Southern Traction Company; S. A. Spray, Chicago, and T. B. Steward, John A. Raymond and John K. Newhall, Aurora, Ill., with offices in the Woman's Temple Building, Chicago, Ill., to build and acquire electric railways over which cars may be operated from Chicago through Joliet to East St. Louis. H. A. Fisher has announced that the company will take over the operating lines of the Joliet & Southern Traction Company, Joliet, Plainfield & Aurora Railroad, Bloomington, Pontiac & Joliet Electric Railway and the Chicago, Joliet & Central Illinois Railway. An article descriptive of these roads and a map of the line of the Joliet & Southern Traction Company were published in the ELECTRIC RAILWAY JOURNAL of March 6, 1909, page 402. With tracks connecting Chicago Heights, near the Illinois-Indiana State line south of Chicago, Joliet and Aurora, it is planned to add a line south from Joliet to Dwight and there connect with the Bloomington, Pontiac & Joliet Electric Railway in operation between Dwight and Pontiac and extend the latter south from Pontiac to Bloomington, where connection will be made with the Illinois Traction System, extending west to Peoria, east to Decatur and Danville and from Decatur to Springfield and St. Louis. Mr. Fisher is quoted as saying that the line from Joliet into Chicago will soon be constructed and that arrangements have been made to use the tracks of the Metropolitan West Side Elevated Railway for entrance to the business district of Chicago. It is also planned to construct an interurban railway from Chicago Heights to Hammond, Ind., thus making possible through electric service from Aurora and Joliet to South Bend and other cities in Northern Indiana without passing through Chicago.

Progress of New York Central Suburban Electrification

The electric service of the Harlem Railroad Division of the New York Central & Hudson River Railroad, which now extends from the Grand Central Station to Mount Vernon, will probably be opened to White Plains by March, 1910. Plans have been approved for new stations at Mount Vernon and White Plains, but they will not be erected until the track changes under way south of Mount Vernon are completed. Later the electric zone will be extended on the Hudson River line north of Yonkers. In anticipation of these extensions the shops at North White Plains and at Harmon and a new suburban station above Ossining have been completed. Two new substations for transforming the 11,000-volt current generated at Port Morris are being built at Tuckahoe and White Plains, and six circuit-breaker houses are practically completed at points where the low-tension line is tapped to feed the third rail.

On the Hudson division the work of eliminating grade crossings at Yonkers is under way and the retaining walls on the west side of the tracks are nearly completed. The work of raising the tracks to the new grade and constructing a new passenger station at Yonkers will be carried out during 1910. At Hastings the work of extending the four tracks and eliminating the grade crossing is well advanced,

and the construction of a new passenger station and freight house will soon be begun.

In the enlarged train yard at the Grand Central Station, New York, the excavation is more than half completed. Twenty-two terminal tracks have been finished on the main level at the Grand Central Station out of a total of 42, and 10 tracks on the suburban level out of a total of 24. The four tracks that remain on the old station level will probably be removed by the spring of 1910.

The Public Service Commission has ordered a hearing to be held on Dec. 24, 1909, on the application of the New York Central & Hudson River Railroad for an extension of the time from Dec. 31, 1909, to June 30, 1911, for depressing its tracks and building the new terminal at the Grand Central Station. The Board of Estimate and Apportionment of New York has already approved the increase in time for completing the work.

Question of Franchise Renewals in Toledo.—It is said that the subject of the renewal of the franchises of the Toledo Railways & Light Company, Toledo, Ohio, will be taken up at the annual meeting of the directors on Jan. 20, 1910.

Blanket Franchise Desired in Richmond.—The Virginia Railway & Power Company has applied to the City Council of Richmond, Va., to change some of its routes and consolidate the franchises of the Richmond Passenger & Power Company and the Richmond Traction Company, under which it operates, and a committee was appointed by the City Council on Dec. 16, 1909, to open negotiations with the company. If a new franchise is granted additional improvements and changes will be made, but their exact nature cannot be defined until the new franchise is acted upon by the Council.

Progress of Pennsylvania Commission.—The State Railroad Commission of Pennsylvania has adjourned until after Christmas when the appointment of a new secretary will be announced and railway and telephone matters will be taken up. The commission has dismissed the complaint in which negligence of the rolling stock of the Schuylkill Valley Traction Company was alleged. The DuBois Traction Company has been instructed not to permit passengers to ride on the front platform of its cars. The complaint of C. H. Lefever, Lancaster, Pa., against the Conestoga Traction company for alleged excessive rates for hauling household goods has been dismissed. The commission is having prepared lists of railroads and street railways in Pennsylvania.

Meeting of the New England Street Railway Club.—The regular monthly meeting of the New England Street Railway Club will be held at the American House, Boston, Mass., on Dec. 30, 1909. Dinner will be served at 6:45 p. m., and at 8 o'clock the regular business meeting will be held. At the conclusion of the business meeting James H. McGraw, president of the McGraw Publishing Company and publisher of the Electric Railway Journal, will address the club on the subject of "Educating the Public in Relation to Electric Railways." Those who propose to attend the dinner are requested to notify John J. Lane, secretary of the club, 12 Pearl Street, Boston, Mass., as early as they can conveniently do so.

Line Between Rochester and Syracuse Opened.—The Rochester, Syracuse & Eastern Electric Railroad, which was opened between Rochester and Port Byron in July, 1908, a distance of 58 miles, was placed in operation between Port Byron and Syracuse, a distance of 23 miles, on Dec. 16, 1909. Twenty regular trains a day each way and 10 limited trains are in operation between Rochester and Syracuse. The running time of the regular trains between the terminals follows: Syracuse to Warner, 25 min.; to Jordan, 35 min.; to Weedsport, 43 min.; to Port Byron, 48 min.; to Savannah, 1 hr.; to Clyde, 1 hr. 9 min.; to Lyons, 1 hr. 23 min.; to Newark, 1 hr. 38 min.; to Palmyra, 1 hr. 55 min.; to Rochester Four Corners, 2 hrs. 50 min.

Electrification of National Transcontinental Railway Discussed.—The electrification of the National Transcontinental Railway in Quebec and New Brunswick, to eliminate forest fires, was discussed at a conference on Dec. 16, 1909, between Sydney Fisher, Minister of Agriculture for the Dominion; Mr. Grimmer, New Brunswick; Jule Allard and Messrs. Tache and Hall, Quebec, and W. S. Calvert, one of the Transcontinental Railway Commissioners. Mr. Grimmer favored electrifying the railway, stating that New Brunswick's greatest asset was in the forests, which produced an annual revenue of $400,000. Sydney Fisher said that the Dominion Government and the commissioners realized the importance of saving the forest wealth of the provinces, and promised that he and his colleagues would consider the question with the National Railway Commissioners.

Kansas City Franchise Extension Ordinance Defeated.—At the referendum in Kansas City, Mo., on Dec. 16, 1909, the proposal to extend the franchise of the Metropolitan Street Railway in accordance with the terms of the ordinance abstracted in the Electric Railway Journal of Dec. 11, 1909, page 1199, was defeated. The total number of votes cast was 30,673, of which 18,917 were against the ordinance. Bernard Corrigan, president of the company, made the following statement after the election: "The result of the franchise is a disappointment to the management of the company. For the purpose of securing money to pay maturing bonds, build extensions, buy new cars and improve the service it became necessary to have an extension of its franchise and the company frankly so stated to the people of Kansas City. The voters did not appreciate the necessities of the company. The company can never make a more favorable proposition than the one defeated. It will have to meet its obligations. What effect this will have on the service cannot be forecasted at this time. The problem of refinancing still confronts us."

Fender Ordinance Passed in San Francisco.—The Board of Supervisors of San Francisco has passed an ordinance prescribing the use of fenders in San Francisco, which says: "Said fender shall be placed upon and attached to the front end of each such car and not attached to the frame of the wheels or truck thereof, and shall be so placed and maintained that the space between the bottom of the front part of the fender and the roadbed or rails shall not exceed 3 in. Each such fender shall extend across the front end of such car and shall be of a width of not less than 68 in. The front edge of the fender shall extend ahead of and beyond the front of the car and the farthest projection thereof. Such fender shall be of such height that it shall extend upward from the rails or roadbed to at least the floor level of the car. Such fender shall form a scoop not less than 3 ft. from front to back, which, upon striking a person, will tilt back and thereby form a cradle or receptacle capable of receiving and securely retaining such person; and its upper portion shall form a shield extending across the entire front of the car to protect persons falling into or upon it from injuries from contact with the rigid projecting portions of the car, such as the bumpers, bumper-beams or drawbars, and such fender shall be constructed of material that will afford ample strength for the purpose for which it is intended, and of yielding or a resilient character so as to cushion or break the impact of a person falling into or struck by it."

Regulation Said to Have Discouraged Construction.—In replying to a committee of 25 business men from Northern New York who visited him in New York to urge the construction of new lines in the territory which they represent, E. R. Thomas, president of the Lehigh Valley Railroad, is quoted as stating that while the territory was attractive he doubted whether it would be advisable to build the new lines in view of the attitude of the Public Service Commission, which has made profits precarious and new railroad enterprises unattractive to capital. Mr. Thomas is reported to have said: "The extension that you ask will entail an outlay of at least $2,500,000. You know, of course, that any investor who puts his money into it must be first assured that the capital invested will earn a fair income. The burden of the cost of this new road cannot be put upon the shoulders of the parent company. Unfortunately, as I have said, capital is not tempted into railroad building these days. It is not that capital fears proper regulation, for it does not. Regulation has been supplanted by administration, and we now have the Federal and State Governments not only regulating but managing the railroads. These commissions, no doubt with the best intentions, are confusing and complicating the work of railroad management. The men who run American railroads have built up a system which transports a ton of freight a mile at a smaller cost than in any other country in the world. The result is proof enough of the ability of the men who have brought it about. There have been many mistakes and occasional deviations from the narrow path of uprightness, as there are in every business; if there had not been, the only suitable place for the railroad manager of this country would be in a land where man's only transportation is by means of wings. I shall be pleased to put your petition before our board, and will see that it is acquainted with the advantages which you claim would follow the extension." Thomas H. Osborne of the commission has declared that despite the recent disturbed financial condition of the country the commission had authorized $250,000,000 of stocks, bonds and other securities to be issued by public service corporations, of which more than $195,000,000 was for steam railroads. He said that applications had been approved for constructing 128 miles of steam railroad and 132 miles of street railway.

Financial and Corporate

New York Stock and Money Market

December 21, 1909.

The stock market during the past week has been irregular and comparatively dull. While the general tone of the market has been good the trading has been confined largely to the professionals, who are buying for quick sales at a profit. The traction stocks continue active and fairly strong.

The condition of the money market is unchanged at home, although there is some evidence of stringency abroad. Quotations to-day were: Call, 4 to 5½ per cent; 90 days, 4½ per cent.

Other Markets

Sales of Philadelphia Rapid Transit have been made at a slightly lower figure than a week ago, but there seems to be little pressure to sell. Storage Battery has been active and has advanced 2 points.

In the Chicago market there has been considerable trading in Series 1 and 2 of the Chicago Railways. Both of these issues have advanced handsomely during the week. There has been little trading in Subway stock and the price remains about 4½.

The chief traction feature of the Boston market has been the activity and strength of Massachusetts Electric. The common stock especially has been traded in. Some small blocks of Boston Elevated and Boston Suburban preferred have also been sold.

In addition to the regular trading in the bonds of the United Railways Company in Baltimore, there has been some transactions in the stock of the same company and also in the stock of the Virginia Railway & Power Company. The latter has been selling around 22½.

In the regular auction of securities in New York last week the following sales were made: 13 shares Sixth Avenue Railroad Company at 123, and $10,000 South Shore Traction Company 5 per cent bonds, at 96⅞.

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

	Dec. 14	Dec. 21
American Railways Company	a47¼	a47¼
Aurora, Elgin & Chicago Railroad (common)	a57	*57
Aurora, Elgin & Chicago Railroad (preferred)	a92	*92
Boston Elevated Railway	a131	a131½
Boston & Suburban Electric Companies	a16	a16
Boston & Suburban Electric Companies (preferred)	75	75
Boston & Worcester Electric Companies (common)	a12	a12
Boston & Worcester Electric Companies (preferred)	a49	a49
Brooklyn Rapid Transit Company	80	80¾
Brooklyn Rapid Transit Company, 1st pref., conv. 4s	86¾	86¾
Capital Traction Company, Washington	a132½	a133
Chicago City Railway	a185	a190
Chicago & Oak Park Elevated Railroad (common)	*2	*2
Chicago & Oak Park Elevated Railroad (preferred)	*10	*10
Chicago Railways, ptcptg., ctf. 1	a105	a110
Chicago Railways, ptcptg., ctf. 2	a31	a34
Chicago Railways, ptcptg., ctf. 3	a15	a16
Chicago Railways, ptcptg., ctf. 4s	a10	*10
Cleveland Railways	*84	*84
Consolidated Traction of New Jersey	a76½	a76½
Consolidated Traction of New Jersey, 5 per cent bonds	a106	a106
Detroit United Railway	*63	*63
General Electric Company	160¼	160½
Georgia Railway & Electric Company (common)	101	a105
Georgia Railway & Electric Company (preferred)	87	*87
Interborough-Metropolitan Company (common)	24	24½
Interborough-Metropolitan Company (preferred)	64¾	61⅛
Interborough-Metropolitan Company (4½s)	83⅞	83¾
Kansas City Railway & Light Company (common)	a42	a34
Kansas City Railway & Light Company (preferred)	a79	*79
Manhattan Railway	*140½	139
Massachusetts Electric Companies (common)	a16	a16½
Massachusetts Electric Companies (preferred)	a78½	a76½
Metropolitan West Side, Chicago (common)	a18½	a19½
Metropolitan West Side, Chicago (preferred)	a56½	a58
Metropolitan Street Railway	*20	*20
Milwaukee Electric Railway & Light (preferred)	*110	*110
North American Company	85⅜	85
Northwestern Elevated Railroad (common)	a17½	a18
Northwestern Elevated Railroad (preferred)	a70	a68
Philadelphia Company, Pittsburg (common)	a50¾	a50¼
Philadelphia Company, Pittsburg (preferred)	a45	a45¼
Philadelphia Rapid Transit Company	a28¼	a27⅞
Philadelphia Traction Company	a89½	a90
Public Service Corporation, 5 per cent col. notes	*100⅛	*100⅛
Public Service Corporation, ctfs.	a100¼	a100¼
Seattle Electric Company (common)	a116½	a115¼
Seattle Electric Company (preferred)	104	104
South Side Elevated Railroad (Chicago)	a53	a55
Third Avenue Railroad, New York	13	16⅝
Toledo Railways & Light Company	*8	9⅝
Twin City Rapid Transit, Minneapolis (common)	111⅛	114
Union Traction Company, Philadelphia	a52¾	a52½
United Rys. & Electric Company, Baltimore	a14	a14½
United Rys. Inv. Co. (common)	42¾	*42¾
United Rys. Inv. Co. (preferred)	73¾	*73¾
Washington Ry. & Electric Company (common)	a44½	42
Washington Ry. & Electric Company (preferred)	a91¾	a91¼
West End Street Railway, Boston (common)	93	a94
West End Street Railway, Boston (preferred)	106	a106
Westinghouse Electric & Mfg. Company	83¾	81½
Westinghouse Elec. & Mfg. Company (1st pref.)	*135	*135

a Asked. * Last Sale.

Decision Defining Powers of Public Service Commission in Delaware & Hudson Case

Reference was made in the ELECTRIC RAILWAY JOURNAL of Dec. 11, 1909, page 1201, to the decision handed down on Dec. 7, 1909, by the Court of Appeals of New York in which it was held that the Legislature did not intend that the Public Service Commission should substitute its judgment and discretion for that of the directors and stockholders of a company as to the wisdom of a transaction and expressing the opinion that in the cases under review the commission should have approved the transactions. An abstract of that part of the decision which relates to the purchase of the securities of the Hudson Valley Railway by the Delaware & Hudson Company follows:

"We do not think the public service legislation was designed to make the commissioners the financial managers of the corporation or that it empowered them to substitute their judgment for that of the board of directors or stockholders of the corporation as to the wisdom of a transaction, but that it was designed to make the commissioners the guardians of the public by enabling them to prevent the issue of stock and bonds for other than the statutory purposes.

"In regard to the notes issued for the purpose of acquiring the stock and securities of the Hudson Valley Railway the learned commission reaches the conclusion that notwithstanding the fact that the transaction was lawful and that the notes were the valid obligations of the corporation, the purchase of the securities of the Hudson Valley Railway was an unfortunate one for the company; that it paid for the securities more than they were worth, and that the property so acquired has not been included in the mortgage. It consequently withheld its consent to the issuing of the bonds, but suggested that a mortgage might be executed by the United Traction Company (owned by the Delaware & Hudson Company), the present owner of the Hudson Valley Railway, upon the property acquired from that company for the retirement of such obligations.

"This, we think, would be substituting the judgment and discretion of the commissioners for that of the directors and stockholders of the corporation. If such was the purpose and intent of the statute a doubt might arise with reference to its constitutionality, for ordinarily the ownership of property carries with it the right of occupancy and management, and should a statute deprive the owner of the right to manage it would, under ordinary circumstances, undermine his right to protect and make his property remunerative. (Lord vs. Equitable Life Ass. Soc., 194 N. Y., 212.)

"Assuming that the purchase was unfortunate and that the company has lost heavily thereby, still the commissioners concede that it was made at a time when no consent of the Railroad Commissioners or of the Public Service Commission was required, and that, therefore, the purchase was legal and one which the company had the right to make.

"The notes which the company had issued bear interest at a high rate. They were given for the acquisition of property, which is one of the four purposes designated by the statute for which bonds may be authorized to issue. Having been given for the acquiring of the property of another railroad they are properly classified as capital and therefore brought within the express provisions of the statute under which the application was made. While, as we have stated, the ownership of property ordinarily carries with it the right of management, the duty devolves upon the owner to so manage as not to have it become a nuisance or unnecessarily infringe upon the rights of others.

"It was therefore evidently the legislative intent in the enactment of this provision that the Commissioners should have supervision over the issuing of long-term bonds to the extent of determining whether they were issued under and in conformity with the provisions of the statute for the purposes mentioned therein; whether they were issued for the discharge of the actual and not the fictitious debts of the company or whether they were issued for the refunding of its actual obligations and not for the inflation of its stock or bonds. Beyond this it appears to us that the power of the Commissioners does not extend, unless it may pertain to the power to determine whether an obligation should be classified as operating expenses and as to whether such expenses should be paid by obligations running beyond a year. We therefore conclude that as to the Hudson Valley Railway securities, so called, the application should have been granted."

The decision is concluded with the opinion of the court regarding the purchase by the Delaware & Hudson Company of coal lands, which purchase the court also upholds, stating that the question in this instance was the same as that presented with reference to the Hudson Valley Railway.

Suggested Segregation of Fourth Avenue Line in New York City

The directors of the New York & Harlem Railroad have applied to the United States Court for a cancellation of the lease of its property known as the Fourth and Madison Avenue line to the Metropolitan Street Railway. The managers of the Metropolitan Street Railway say that the net earnings of the line have not been more than $200,000, while the annual rentals paid to the New York & Harlem Railroad have been $400,000. Since the improvement of the property and the introduction of "pay-as-you-enter" cars, however, the receipts have steadily increased. The Fourth and Madison Avenue line is a most important part of its general scheme of transportation, and Judge Lacombe throughout the various proceedings resultant from the passing of the Metropolitan Street Railway into the hands of a receiver has constantly dwelt on the necessity, so far as it might be possible, of keeping the system intact.

The New York & Harlem Railroad owns no surface cars or power stations, and the Metropolitan Street Railway has spent large amounts of money in laying new tracks. The terms of the 999-year lease of the Fourth and Madison Avenue line to the Metropolitan Street Railway call for the turning back of the property or its equivalent at the expiration of the lease or when it is given up. A director of the New York & Harlem Railroad has expressed himself as confident that if the company should take back the property it would be able to arrange for cars and would have no trouble about adjusting the differences over the cost of laying the new tracks. If the Fourth and Madison Avenue line should be operated separately it would probably mean the abolishment of the transfers now issued between this line and other lines of the Metropolitan Street Railway at Eighth Street, Fourteenth Street, Twenty-third Street, Thirty-fourth Street, Astor Place and Broadway.

Merger of Public Service Corporations in Quebec

An official announcement of the consolidation of the Quebec Railway, Light & Power Company, Quebec Gas Company, Frontenac Gas Company, Quebec Jacques Cartier Electric Company and the Canadian Electric Light Company as the Quebec Railway, Light, Heat & Power Company, Ltd., Quebec, Que., chartered on Nov. 19, 1909, was made in Montreal on Dec. 14, 1909. The company has an authorized capital of $10,000,000 of stock and $10,000,000 of bonds. Of the stock it is intended to issue $9,500,000 and of the bonds $8,654,600. The bonds to be issued will include the amount necessary to retire $2,500,000 of 5 per cent bonds of the Quebec Railway, Light & Power Company due in 1923; $849,000 of 5 per cent bonds of the Quebec Jacques Cartier Electric Company due Dec. 1, 1931, and $310,000 of bonds of the Canadian Electric Light Company. The securities issued will pay for all the properties taken over and provide ample working capital. The bonds are dated Dec. 1, 1909. The Montreal Trust Company will serve as trustee for the bondholders. The following directors have been announced conditionally: W. G. Ross, president; Wm. Price, vice-president; R. Forget, J. N. Greenshields, A. H. Sims, Hon. Dubord, Neuville, Belleau, Lorne C. Webster, L. P. Pelletier, E. H. Ewing and J. W. McConnell.

American Railways, Philadelphia, Pa.—Arrangements have been made by the American Railways to sell a new issue of $1,425,000 of 20-year 5 per cent collateral trust bonds to a syndicate composed of Bioren & Company and Newburger, Henderson & Loeb, the bonds to be a direct obligation of the company secured by the deposit of stock of the Johnstown (Pa.) Passenger Railway, the proceeds of the sale of the bonds to provide funds for paying in cash for such stock of the Johnstown Passenger Railway as is not exchanged for stock of the American Railways in accordance with a plan announced elsewhere in this column.

Cedar Rapids & Iowa City Railway & Light Company, Cedar Rapids, Ia.—The Cedar Rapids & Iowa City Railway & Light Company has recently retired an issue of $300,000 of 5 per cent non-accumulative preferred stock on which dividends of 5 per cent yearly were paid in 1908 and 1909, and authorized in its stead $600,000 of 6 per cent accumulative preferred stock, of which $375,000 is outstanding. A semi-annual dividend of 3 per cent on this new preferred stock will be distributed on Dec. 31, 1909. No dividends have been paid on $1,700,000 of common stock.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa.—The stockholders of the Chambersburg, Greencastle & Waynesboro Street Railway will be called upon to vote on Jan. 10, 1910, to increase the bonded indebtedness of the company from $600,000 to $1,000,000, for the purpose of building extensions to Shippensburg and Blue Ridge Summit.

Chicago (Ill.) City Railway.—The voting trust which controls more than 95 per cent of the stock of the Chicago City Railway will expire by limitation on Dec. 31, 1909. The trustees are John J. Mitchell, P. A. Valentine and Chauncey Keep, and the trust was created when J. P. Morgan in 1905 organized a syndicate which took over the stock of the company at $200 a share. It is said that the trust may be continued in view of the possible merger of all the surface railways, a deal which will be simplified considerably by the reorganization of the Chicago Consolidated Traction Company, plans for which were referred to in the Electric Railway Journal of Dec. 18, 1909, page 1246.

Columbus, Marion & Bucyrus Railroad, Columbus, Ohio.—The receivers of the Columbus, Marion & Bucyrus Railroad have applied to the court for permission to issue certificates for $65,000, proceeds of which are to be used in ballasting the line, to buy new equipment and complete the road according to contract. The application was heard on Dec. 16, 1909.

Denver (Col.) City Tramway.—The $1,219,000 of first mortgage 6 per cent gold bonds of the Denver Tramway, dated Jan. 1, 1890, and due Jan. 1, 1910, will be paid principal and interest at maturity at the Mercantile Trust Company, New York, N. Y. Clark, Dodge & Company, New York, N. Y., and the International Trust Company, Denver, Col., have purchased $1,219,000 of first and refunding sinking fund mortgage bonds of the Denver City Tramway dated Nov. 1, 1908, and issued for the purpose of refunding the 6 per cent bonds previously mentioned. Clark, Dodge & Company offer to exchange the new issue for the maturing bonds on the basis of $1,000 first and refunding 5 per cent bonds and $61.67 in cash for each $1,000 6 per cent maturing bond deposited.

Farmington Street Railway, Hartford, Conn.—The stockholders of the Farmington Street Railway voted to sell the property of the company to the New York, New Haven & Hartford Railroad at a special meeting on Dec. 20, 1909.

International Traction Company, Buffalo, N. Y.—Nine second mortgage bonds of the Buffalo & Niagara Falls Electric Railway, dated July 1, 1896, have been drawn by lot for redemption on Jan. 1, 1910, by the Mercantile Trust Company, New York, N. Y., at 105 and interest.

Interstate Railways, Philadelphia, Pa.—The reorganization committee of the Interstate Railways of which Edward B. Smith & Company, Philadelphia, Pa., were the managers, has ordered the release of the bonds deposited with it, amounting to $7,195,600 upon payment of an assessment of $6 per $1,000 bond. Most of the bonds will be redeposited with the Earle committee.

Johnstown (Pa.) Passenger Railway.—The American Railways, Philadelphia, Pa., has exercised the option given recently by T. C. duPont, Wilmington, Del., president of the Johnstown Passenger Railway, on 25,000 shares of stock of the company, owned by himself and members of the duPont family, of which mention was made in the Electric Railway Journal of Dec. 18, 1909, page 1246. It is stated that the holders of the remaining stock will be permitted to participate in the sale, receiving either cash or stock of the American Railways on a basis of share for share.

Kingston (N. Y.) Consolidated Railroad.—The Public Service Commission, of the Second District of New York, has authorized the Kingston Consolidated Railroad to issue a second mortgage on its property and franchises to secure an issue of $250,000 of 5 per cent, 30-year bonds and to issue $56,000 in bonds to net the company not less than 80 per cent of the par value. The company has also been authorized to issue its corporate notes in the sum of $17,360, the proceeds to be realized from the sale of bonds and notes to be used for reconstruction.

Metropolitan Street Railway, New York, N. Y.—Under a special order of the United States Circuit Court, Otto H. Kahn, as a member of the firm of Kuhn, Loeb & Company, was examined on Dec. 17, 1909, in the hearing on the suit of the Farmers' Loan & Trust Company to foreclose on the property of the Central Park, North & East River Railroad on a mortgage made in 1872 to secure the issue of $1,200,000 bonds. On June 14, 1897, the Metropolitan Street Railway made a general mortgage to the Guarantee Trust Company as trustee, and on March 21, 1902, made a refunding mortgage to the Morton Trust Company as trustee. The lease of the Central Park, North & East River Railroad, which had come into the hands of the Metropolitan Street Railway, was pledged by it as part of the security under these two mortgages. The refunding mortgage provided for the acquisition by the Morton Trust Company, as trustee there-

under, of the $1,200,000 bonds of the Central Park, North & East River Railroad, which became due in 1902, as well as a number of other collateral bonds which, under the provision of the refunding mortgages, were, when deposited with the Morton Trust Company, to remain alive as part of the security for the refunding bonds. Shortly before the maturity of the bonds of the Central Park, North & East River Railroad in 1902 the Morton Trust Company, through the issue of the requisite proportion of the refunding bonds, was placed in funds with which to acquire the bonds of the Central Park, North & East River Railroad in conformity with the procedure prescribed in the refunding mortgage. Mr. Dykman, as counsel for the Central Park, North & East River Railroad, holds that the Morton Trust Company, having bought up the bonds for the Metropolitan Street Railway, really cancelled them legally, if not actually, on the theory that a person cannot hold a debt against himself. The Farmers' Loan & Trust Company contends that the bonds were simply acquired in accordance with the terms of the lease, which required the Metropolitan Street Railway to keep them alive for the protection of the holders of the refunding bonds

New York, West Chester & Boston Railway, New York, N. Y.—The Public Service Commission of the Second District of New York has authorized the New York, West Chester & Boston Railway and the New York & Port Chester Railroad to consolidate as the New York, West Chester & Boston Railway, the capital stock of the consolidated company not to exceed $5,000,000 and the final agreement of consolidation to be submitted to the commission for approval. The company is authorized to abandon such portion of the routes of the companies which are consolidating as are not necessary to form one continuous route from the Harlem River at New York City to Port Chester, with a branch from about 177th Street, New York, to Throgg's Neck and with a branch from Mount Vernon to White Plains or Elmwood, in case the application to abandon that portion of the line extending from White Plains to Elmsford is denied.

Philadelphia (Pa.) Rapid Transit Company.—The stockholders of the Philadelphia City Passenger Railway have approved the proposal to extend the $200,000 of first mortgage 5 per cent bonds of the company which mature on Jan. 1, 1910, to Jan. 1, 1960, without option of prior redemption. These bonds were originally dated May 1, 1861, and were extended in 1880.

Southwestern Traction Company, London, Ont.—The sale of the property of the Southwestern Traction Company under foreclosure to J. E. McDougall and T. H. Purdom having been confirmed by the court, the London & Lake Erie Railway & Transportation Company succeeded the Southwestern Traction Company on Dec. 15, 1909. The London & Lake Erie Railway & Transportation Company has elected the following directors: Murray A. Verner, Pittsburgh; W. S. Dinnick, W. K. George, George B. Woods and S. C. Smoke, Toronto, and T. H. Purdom and John Milne, London, Eng. Reference to the sale of the property of the Southwestern Traction Company was made in the ELECTRIC RAILWAY JOURNAL of Nov. 13, 1909, page 1038.

Spokane & Inland Empire Railroad, Spokane, Wash.—James J. Hill, chairman of the board of directors of the Great Northern Railroad, has announced that the Great Northern Railroad has obtained a controlling interest in the Spokane & Inland Empire Railroad. Mention of negotiation with this end in view was made in the ELECTRIC RAILWAY JOURNAL of Nov. 13, 1909, page 1038.

Third Avenue Railroad, New York, N. Y.—The first of a series of hearings on the modified plan for the reorganization of the Third Avenue Railroad in accordance with the terms outlined in the ELECTRIC RAILWAY JOURNAL of Dec. 11, 1909, page 1203, was held by the Public Service Commission of the First District of New York on Dec. 15, 1909. John M. Bowers, of counsel for the bondholders, said that it was proposed to carry out the reorganization under a section of the general railroad law, and expressed the opinion that as long as the proposed issue of new securities was not inflated as contrasted with the total of securities now outstanding, the commission act did not affect the case of the company. The second hearing was held on Dec. 20. Frederick W. Whitridge was the principal witness. His testimony concerned the earnings of the property and the betterments already carried out.

Toledo, Urban & Interurban Railway, Toledo, Ohio.—An order confirming the sale of the property of the Toledo, Urban & Interurban Railway to the Toledo & Findlay Railway has been issued. It was purchased in August, 1909, by George W. Harvey for $400,000 and was turned over by him to the Toledo & Findlay Railway.

Traffic and Transportation

Decision by Interstate Commission in Omaha Fare Case

In the complaint of the West End Improvement Club against the Omaha & Council Bluffs Railway & Bridge Company, Omaha, Neb., submitted to the Interstate Commerce Commission on June 5, 1908, and decided on Nov. 27, 1909, in which it was alleged that the 10-cent fare charged by the company from Council Bluffs over the bridge to Omaha was unreasonable and unjustly discriminative because longer rides for 5 cents are given on lines which do not cross the bridge, and in which the defendant alleged that as a street railway it was not amenable to the terms of the act under which the Interstate Commerce Commission was created, the commission has held that as the defendant is engaged in interstate transportation of persons it is amenable to the terms and jurisdiction of the Interstate Act; that the record does not disclose justification for ordering the reduction, but that it is unreasonable to charge more than 10 cents for a trip between any point on the company's lines in Council Bluffs and its lines in Omaha, and has entered an order in accordance with these views effective on Feb. 1, 1910. An abstract of the conclusions of the commission follows:

"In the debates in the Congress the paramount questions discussed were abuses in connection with freight transportation; unjust discrimination, unreasonable rates, etc. But this fact does not furnish an argument for excluding from the provisions of the law common carriers engaged solely in the interstate transportation of passengers. It was stated in the debates that the law was not intended to apply to 'street railways.' We must, however, assume that the street railways of that day, and not the interurban lines of this day, were in mind when that statement was made. Some of the largest railroads bear the corporate title 'railway company.' Other roads of identical character and kind use the title 'railroad' or 'railroad company.' The words 'railway' and 'railroad' are completely synonymous of each other and no significance can be attached to the choice of either name or to the use of either word in a statute, decision, or discussion. The words of the act 'any common carrier or carriers engaged in the transportation of passengers or property wholly by railroad' indicate that a common carrier engaged in the interstate transportation of either and not necessarily of both is subject thereto. The relative importance of freight and passenger transportation necessarily increased the attention given to the former and minimized the discussion of the latter.

"With general uniformity throughout the act the use of the words 'passengers or property' clearly denotes that carriers of either the one or the other or both are subject to its provisions. Certainly the words of the statute are broad and comprehensive enough to include interstate interurban railroads, and there is nothing in the law which indicates an intent to exclude them. No one questions the jurisdiction of the act over interurban lines which enter Washington and transport persons to and from adjoining States. The street railways which do not extend beyond the limits of the District of Columbia are governed by other laws. Interurban lines are becoming more and more an important factor in the transportation of freight as well as passengers. It can not be said that the act controls as to the transportation of property but does not apply to the transportation of persons. If interurban lines were to be exempted from the requirements of the act on the ground that they are street railways it would be impossible to so administer the law as to correct the evils and the mischief at which it was aimed.

"It would be a narrow, strained, and illiberal construction to hold that designating an interurban railroad a 'street railway' was sufficient to excuse such railroad, when engaged in interstate transportation, from the operation of the law. So far as the practices of common carriers of passengers are concerned, interurban railroads might as certainly to the same extent and in the same manner as any other carrier or railroad, cause the abuses denounced by the law; they might discriminate as unjustly and charge as unreasonable fares as the railroads denominated as commercial. It follows that they are within the 'mischief felt and the object and remedy in view.' If interstate, they are clearly outside the jurisdiction of the individual state, and where they are 'common carriers engaged in the transportation of passengers or property,' as specified in the act, we entertain no doubt of their amenability to its provisions.

"Defendants argue that for Council Bluffs, a municipality of Iowa, to fix by ordinance or franchise the maximum rate of fare to be charged for a continuous trip from that city to

points in Nebraska would be a regulation of interstate commerce and that such an ordinance could have no extraterritorial effect. Granted; but if the contention is correct that defendants are not subject to the act to regulate commerce, the reasonableness of the fares could be determined only by the common law or by Congress. It is not conceivable that Congress intended to leave the great number of interurban railway companies engaged in the interstate transportation of passengers to regulation by the inadequate remedies of the common law.

"In this particular case, the charter granted March 3, 1887, to the bridge company provides 'and Congress reserves the right, at any time, to regulate, by appropriate legislation, the charges for freight and passengers over said bridge.' Section 26 of the amended act provides 'that all laws and parts of laws in conflict with the provisions of this act are hereby repealed.' The question naturally arises whether this section operates as a repeal of the charter provision.

"Congress reserved the right to regulate the charges of the bridge company by appropriate legislation. Instead of specifically fixing those charges by statute the Congress 'by appropriate legislation,' delegated that function and authority to the commission. So that whether or not it be held that technically the act to regulate commerce repealed the reservation in the act which granted the charter of the bridge company, the present jurisdiction of the commission over the interstate transportation charges of the defendants is clear.

"We now come to a consideration of the reasonableness of the fare. The petition attacks the reasonableness of the fare from Omaha to Council Bluffs or from Council Bluffs to Omaha. The local fare in Omaha and in Council Bluffs is 5 cents. From the west end of the bridge the line in Omaha passes westward on Douglas to Fourteenth Street, south upon that street to Howard, east to Eleventh, north to Douglas, and eastward back to the bridge. The fare from Council Bluffs to any point on this loop is 10 cents, and the fare from any point on the loop to any other point in Omaha is 5 cents. The fare from any point on the loop, across the bridge and to any point in Council Bluffs (with the exception of Courtland Beach, which, on account of the Missouri River changing its course, is on the west side of the river, but within Council Bluffs), is 10 cents. The reasonableness of the 10-cent fare and the reasonableness of confining it to points on the loop are put in issue in these proceedings.

"The complainant contends that the unreasonableness and discriminatory nature of the fare of 10 cents is shown by the fact that for materially greater distances than that from Fourteenth and Farnam Streets in Omaha to any point in Council Bluffs, or the reverse, the fare is but 5 cents; that it is only when the bridge is crossed that the 10-cent fare is charged. It is also contended that at other points of crossing of the Missouri or Mississippi Rivers, where conditions are similar to those involved in this case, a fare of 10 cents entitles passengers to transfer to any point in either city.

"Defendants argue that to reduce the fare to 5 cents would have the effect of abolishing the bridge toll in favor of persons riding in the cars and leave it in force as to the man who elected to walk over the bridge; that along the line from the east bank of the Missouri River to the city of Council Bluffs for a distance of about 3 miles there is a large territory which is but sparsely settled and from which but little revenue is derived; that a reduction of the fare to 5 cents would result in a great reduction of revenue; that notwithstanding the profit for the year 1907 of $49,844.35 on the bridge company's property a reduction of the fare to 5 cents would be disastrous and would result in a net loss of $53,056.55, there being no evidence that a reduction of the fare would be followed by increased travel; that there is greater hazard in the operation of the lines over the bridge than upon the surface; that the commutation tickets are sold on a plan sufficiently liberal to answer the demands of the community; that it is the prevailing custom to charge 10 cents single fare on street-railway lines between cities on the opposite sides of the Mississippi and Missouri Rivers, including bridge fare; that the right to charge a 10-cent fare, including the bridge toll, has been recognized by Council Bluffs in the charters granted to the respective street-railway companies whose franchises and lines compose the present lines operated in Council Bluffs by the defendants, and that the fare across the river on railway bridges between Omaha and Council Bluffs is 25 cents.

"It appears that prior to leasing the bridge company's properties to the street railway company the bridge company was operated at a loss, and that it was operated at a loss during the first two years under the lease. Beginning with 1905, however, the bridge company yielded an annual profit from operation, and that profit increased each year. This is accounted for by economies in management, such as maintenance of one central power house, central shops, one executive organization, etc., and the development of profitable business.

"Comparisons are introduced showing the relative conditions of operation, travel, fares, and service in the instant case and at other places where bridge lines connect cities on opposite banks of the Missouri or Mississippi Rivers. Statements of defendant's capitalization, earnings, and expenses have also been submitted, which show, on the whole, liberally profitable returns.

"The capitalization of the bridge company is entirely separate and distinct from that of the street railway company. If the properties were operated separately neither of them would be expected to charge less than a 5-cent fare. Such combination fare of 10 cents would doubtless, however, entitle passenger to transportation to or from points in Omaha other than those located upon the loop.

"A full hearing has been had in this cause; we have carefully considered the testimony and the record in the case, and we are of the opinion that a reduction of defendants' fare of 10 cents to 5 cents would not be justified, but that limiting the 10-cent fare to points on the loop in Omaha is unjust and unreasonable, and that the fare from Council Bluffs, not including Cortland Beach, to any point on defendants' lines in Omaha or from any point on defendants' lines in Omaha to Council Bluffs, not including Cortland Beach, should not exceed 10 cents for a continuous trip or for a trip upon which passenger conforms to proper and reasonable regulations governing use of transfer tickets if transfer is required."

Accidents on Electric Railways of Indiana for Quarter

The Railroad Commission of Indiana has issued accident Bulletin No. 9, which contains a record of the accidents on railroads and electric railways in Indiana during July, August and September, 1909. Three passengers were killed on the electric railways during this period, as compared with none for the same period in 1908; otherwise, there was a falling off in the number of casualties, the total being 45 as compared with 88 during the preceding three months. The summary of casualties on the interurban railways during July, August and September, 1909, as contained in the report of the commission follows:

PASSENGERS.

WHERE—	1908.	1909.
On passenger trains	51	42
On station grounds	5	1
CAUSES—		
Collisions	12	21
Derailments	0	1
Getting on and off moving trains	27	7
Getting on and off trains after stops are made	1	2
Miscellaneous	16	7
RESULTS—		
Deaths	0	3
Fractures or dislocations	4	4
Sprains	12	10
Cuts and bruises	35	22
Miscellaneous	5	6

TRAVELERS ON HIGHWAYS.

WHERE—	1908.	1909.
Travelers on highways in vehicles	12	11
On foot	2	2
CAUSE—		
Struck on crossings	10	13
Teams frightened	3	0
Miscellaneous	1	0
RESULTS—		
Deaths	5	6
Sprains	1	1
Cuts and bruises	8	6
Miscellaneous	0	0

EMPLOYEES.

EMPLOYMENT—	1908.	1909.
Conductors	3	6
Motormen	5	4
Laborers	6	2
CAUSES—		
Collisions	5	2
Miscellaneous	9	10
RESULTS—		
Deaths	1	2
Fractures or dislocations	1	0
Sprains	1	4
Cuts and bruises	10	5
Miscellaneous	1	1

TRESPASSERS.

WHERE—	1908.	1909.
Trespassers on tracks	4	10
Miscellaneous	0	3
RESULTS—		
Deaths	2	9
Fractions or dislocations	2	4

Collisions, 2. Damage, $750.00.

TOTAL CASUALTIES.

Deaths	8	20
Injured	80	63

The report also contains the following summary of the cost of property of the railroads destroyed or injured in

railway accidents for the two years ended September, 1909:

Date—	Steam	Interurban
July, August, September, 1907	$42,863	$50
October, November, December, 1907	55,384	3,242
January, February, March, 1908	65,973	4,650
April, May, June, 1908	42,074	3,000
July, August, September, 1908	45,597	1,746
October, November, December, 1908	32,824	1,865
January, February, March, 1909	34,176	3,800
April, May, June, 1909	40,569	....
July, August, September, 1909	42,967	....
Total for 27 months	$400,427	$18,353
Grand total	418,780	

A list of 16 steam railroads and electric railways not reporting any accidents for July, August and September, 1909, contains the names of the following electric railways: Southern Michigan Railway; Angola Railway & Power Company; Chicago, South Bend & Northern Indiana Railway; Dayton & Xenia Transit Company; Evansville & Mt. Vernon Electric Railway; Evansville & Southern Indiana Traction Company; Evansville & Eastern Electric Railroad; Kokomo, Marion & Western Electric Railroad; Marion, Bluffton & Eastern Electric Railway; Muncie & Portland Traction Company, and Lima & Toledo Traction Company.

Grade Crossings Authorized and Expenses Fixed by Wisconsin Commission

The Railroad Commission of Wisconsin has recently handed down decisions in two cases in which the apportionment of the expense of constructing, operating and maintaining grade crossings is fixed. The cases are known as No. R-186, covering the petition of the Eastern Wisconsin Railway & Light Company from an order to determine the grade of crossing of its tracks over those of the Chicago, Milwaukee & St. Paul Railway in Fond du Lac and apportioning the expense, and No. R-187, covering the petition of the same company for an order to determine the grade of crossing of its tracks over those of the Chicago & Northwestern Railway in Fond du Lac and apportion the expense. In both cases the commission held that the crossing should be constructed at grade, the cost of construction paid by the petitioner and the cost of maintenance borne equally by both companies. The engineer of the commission studied both cases, and reported that the situation did not demand or justify an attempt to avoid crossings at common grade, the crossings being in a very level section of the city, and recommended that the commission authorize the crossings.

The conclusions of the commission in the petition against the Chicago, Milwaukee & St. Paul Railway, which are substantially the same as those in the case of the Chicago & Northwestern Railway, follow:

"It is obvious from the foregoing report that the crossing in question must be at grade. The cost of the construction of the crossing will be imposed upon the petitioner in accordance with the rule adopted by the commission In re Application of the Wisconsin & Northern Minnesota Railway for approval of its plans and specifications for the construction of its proposed railroad in Douglas County, Wis., 2 W. R. C. R., 362. As one-half the cost of maintaining the crossing will not, in our judgment, impose upon the Chicago, Milwaukee & St. Paul Railway any greater burden than the maintenance of its track at the point of crossing if the crossing had not been constructed, we see no reason for departing in any respect from the rule laid down in the case cited.

"Now, therefore, it is ordered that all the expense of constructing the crossing of the tracks of the Chicago, Milwaukee & St. Paul Railway on Main Street, between McWilliams Street and South Sibley Street in Fond du Lac, Wis., by the double tracks of the Eastern Wisconsin Railway & Light Company, including the necessary grading, rails, frogs, switches and other appurtenances for ordinary grade crossing as well as labor and all material used in constructing the same, be supplied and furnished by the said Eastern Wisconsin Railway & Light Company and that after the construction of such crossing the said Eastern Wisconsin Railway & Light Company and the said Chicago, Milwaukee & St. Paul Railway shall each bear one-half of the expense of maintaining the same.

"It is further ordered that said crossing be constructed at the surface and grade of Main Street, as established by the said city of Fond du Lac, if the said city shall so desire it."

New Express Service in Maine.—The Lewiston, Augusta & Waterville Street Railway, Lewiston, Maine, has established a freight service over its Lewiston-Waterville line.

Gray Uniforms in St. Joseph.—The St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., has adopted gray as the standard color of the uniforms of its employees.

Strike in Pennsylvania.—The employees of the Schuylkill & Dauphin Traction Company, Lykens, Pa., are on strike. They demand 20 cents an hour regardless of the length of service. The company has offered a sliding scale of wages.

Through Service Between Columbus and Lima.—The Ohio Electric Railway has decided on through service between Columbus, Ohio, and Lima, Ohio. A two and one-half hour schedule will be established, but it has not yet been decided how many cars will be used in the service.

Baltimore Company Helps Red Cross Movement.—William A. House, president of the United Railways & Electric Company, Baltimore, Md., has ordered a Red Cross placard placed on the front of each car which bears the inscription "Everybody Helps," and below this is a picture of the Red Cross stamp itself.

Commission Has All-Night Service Under Consideration for Washington.—The District Electric Railway Commission has under consideration the question of issuing an order to require the Washington Railway & Electric Company to maintain an all-night service on its lines in the north east section of the city.

Accidents in Canada.—The Department of Railways and Canals of the Dominion of Canada has made public the following summary of accidents on the electric railways in Canada for August, September, October and November, 1909: August, 3 killed and none injured; September, 7 killed and 32 injured; October, 2 killed and 28 injured; November, 18 killed and 7 injured.

Complaint About Fare Between Dunkirk and Fredonia.—The Public Service Commission of the Second District of New York has served upon the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., the complaint of residents of Dunkirk and Fredonia, against that company, as to rate of fare between Dunkirk and Fredonia. The complainants ask that the present charge of 10 cents be reduced to 5 cents.

New Passenger Tariff of Columbus, Delaware & Marion Railway.—The Columbus, Delaware & Marion Railway, Columbus, Ohio, has filed with the Ohio Railroad Commission a new passenger tariff which reduces the commuter's rates from several points but does not change the passenger rate as a whole. The tariff also provides for a new half-hourly service between Columbus and Worthington, Ohio.

Special Holiday Rates on Interurban Lines.—A number of interurban railways which are members of the Central Electric Traffic Association have reduced the rates on interline business for the Christmas and New Year holidays, based upon a one and one-half first-class one-way fare as shown in Joint Passenger Tariff No. 3. Tickets will be sold on Dec. 24, 25 and on 31, 1909, and on Jan. 1, 1910, good returning until Jan. 3, 1910.

Inquiry Into Necessity for Trolley Guards.—In reply to a letter by the Indiana Railroad Commission inquiring about trolley guards where interurban railways cross steam railroads, the commission has learned that there are about 120 places in Indiana where steam railroads and electric railways cross at grade, only six or seven of which are protected by guards. The commission will investigate the necessity of instructing the electric railways to install guards at all such crossings.

Illuminated Display Signs on Cars.—The Tucson (Ariz.) Rapid Transit Company is obtaining revenue from two illuminated display signs, one of which is carried on each side of the monitor deck of its cars. The lamps forming these signs are of 16 cp and are controlled by a three-way switch, so that they may be thrown into circuit in place of the regular headlight resistance. The signs, therefore, are operated without cost for current and are rented for advertising purposes. Customers endorse the plan as a means of obtaining local publicity.

Continuous Service Rewarded in Augusta.—James R. League, general manager of the Augusta-Aiken Railway & Electric Company, Augusta, Ga., has announced that effective Jan. 1, 1910, the pay of the motormen and conductors who have been in the employ of the company for more than three consecutive years will be increased 1 cent an hour, making the wages 18 cents per hour. The wages of the employees of the company under the new schedule follow: Four months at 13 cents an hour; after eight months, 15 cents an hour; for the second year, 16 cents an hour; third year, 17 cents an hour; fourth year, 18 cents an hour.

Veteran Carmen of Quincy, Ill.—The local daily paper of Quincy, Ill., recently published a complimentary article

in which was presented an account of the careers of several carmen who have been in the service of the Quincy Horse Railway & Carrying Company for more than 25 years. This company employs 60 carmen, five of whom entered the service of the company as drivers of mule cars on the main street of the city. In the early days these men worked 16 hours a day six days a week and reported for relief work on their off days. The veteran is Hobart Dinkheller, who has been employed by the company for 34 years. Five other men have been connected with the company for more than 20 years.

Hearings on Side Doors and Platforms for Long Island Railroad Trains.—The Public Service Commission of the First District of New York has adopted two orders calling for hearings, to be held before Commissioner Bassett, beginning Dec. 29, 1909, to determine whether the Long Island Railroad shall be directed to provide station platforms as long as the trains on all lines operated by electricity, or whether the company shall be directed to provide the cars of its electric trains with side doors, platforms, gates, vestibule doors and trap doors, the trap doors to be used to bridge the gap between the car platform and the station platform. At the hearing the commission will determine which of the two orders it finds to be the best.

Fare Complaint Against Westchester Street Railroad Heard.—The complaint against the increase in fare from 5 cents to 10 cents by the Westchester Street Railroad, the successor to the Tarrytown, White Plains & Mamaroneck Railway, between White Plains and Mamaroneck, was heard by Martin S. Decker of the Public Service Commission of the Second District of New York on Dec. 17, 1909. The company has also increased the fare on its line between White Plains and Tarrytown from 5 cents to 10 cents, making the through fare between Tarrytown and Mamaroneck 20 cents instead of 10 cents as previously. Mr. Decker refused the motion of counsel for the company to dismiss the complaint and ordered both sides to file briefs.

Decision by Massachusetts Commission Regarding Transportation of Drunkards.—The Railroad Commission of Massachusetts has issued the following order relative to the transportation of drunkards on the street railways of the State, in connection with a complaint originating in Worcester: "In the cities the police are of sufficient number to preserve order and make arrests when occasion requires; but on long interurban lines a territory is covered where local officers are frequently beyond the call of the employees of the companies. While local officers should be relied upon in town centers to co-operate with the employees of the company to prevent intoxicated persons from boarding the car, the managements of the companies ought themselves at all times to afford protection to their passengers. This does not appear to have been accomplished, and we therefore direct the attention of street railway companies to the provisions of the statute and recommend that reasonable and efficient measures be taken to secure to their patrons the protection to which they are entitled by law."

Circular Outlining Benefits of Improvements.—The new business department of the Albany Southern Railroad, Hudson, N. Y., under date of Dec. 6, 1909, issued a special circular about the improvements being made by the company, particularly the double tracking of the line between Rensselaer and Electric Park, which will greatly increase the efficiency of the service by eliminating delays at turnouts. The contents of the circular follow: "For the past several years there has been talk of double tracking between Rensselaer and Electric Park. This talk has now been replaced by reality. Work was actually begun on Nov. 8, 1909, and the double tracking will be completed by May 1, 1910. No newspaper talk this time. The advantages of the double tracking are clear. Waiting at turnouts will be avoided, and the operation of the cars will be rendered absolutely safe. The roadbed is being generally overhauled, sharp curves are to be eliminated and the facilities of the company for handling passengers are being generally increased. Electric Park is to be improved and will provide attractions which will merit a continuance of the splendid reputation already established. We want your business for the summer season of 1910. All we ask is that you give our representative an opportunity to talk with you before making arrangements for your summer outing. He will arrive early in the season. While it is somewhat unseasonable to talk park business, our action in writing you at this time simply indicates that we are full of good red blood and are going to make the summer season of 1910 the best in the history of the company."

Personal Mention

Mr. C. F. Crane, general passenger agent of the Eastern Pennslyvania Railways, Pottsville, Pa., has just returned from an eight weeks' trip to Italy.

Mr. W. F. Towne, heretofore general agent of the freight department of the Pacific Electric Railway Company, Los Angeles, Cal., now has the title of general freight agent.

Mr. D. A. Munger, heretofore general agent of the passenger department of the Pacific Electric Railway Company, Los Angeles, Cal., has been given the title of general passenger agent of the company.

Mr. G. A. Richardson, superintendent of the Houghton County Traction Company, Houghton, Mich., has been appointed assistant superintendent of transportation of the Seattle (Wash.) Electric Company.

Mr. H. S. Dickey, formerly superintendent of the Winona Interurban Railway, Warsaw, Ind., has been appointed traffic manager of the Chicago, South Bend & Northern Indiana Railway, Michigan City, Ind.

Mr. S. Walter Mower will be retained as general manager of the London & Lake Erie Railway & Transportation Company, London, Ont., which has succeeded to the property of the Southwestern Traction Company.

Mr. John Ralph, Jr., assistant superintendent of the Houghton County Traction Company, Houghton, Mich., has been appointed superintendent of the company, to succeed Mr. G. A. Richardson, who has been appointed assistant superintendent of transportation of the Seattle (Wash.) Electric Company.

Mr. Clarence Wolf, first vice-president of the Philadelphia (Pa.) Rapid Transit Company, will retire on Jan. 1, 1910, as a member of Wolf Brothers & Company, Philadelphia, bankers, and thereafter will devote more of his time to the duties of his office with the Philadelphia Rapid Transit Company.

Mr. G. Louis Boissevain, of Kean, Van Cortlandt & Company, New York, N. Y., has been elected president of the Netherlands Tramways Corporation, New York, N. Y., to succeed Mr. Henry J. Pierce, resigned, and Mr. W. Barklie Henry, Philadelphia, Pa., has been elected vice-president of the company to succeed Mr. Boissevain.

Mr. Clinton E. Palmer, who has been superintendent of railways of the Eastern Pennsylvania Railways, Pottsville, Pa., for two years, has resigned to become general superintendent of the Chicago, Lake Shore & South Bend Railway, Michigan City, Ind. Prior to his connection with the Eastern Pennsylvania Railway, Mr. Palmer was associated with the Ohio Electric Railway.

Mr. H. B. Twyford has recently resigned as purchasing agent for the Underground Electric Railways Company of London and the tube lines controlled by that corporation, and is now in this country, where he expects to remain. Mr. Twyford has been purchasing agent for the London corporations for seven years and went to London from Chicago. His future plans have not yet been announced.

Mr. L. C. Nichols has resigned as chief electrician of the Lehigh Valley Transit Company, Allentown, Pa., to become connected with Herrick & Stebbins, New York, N. Y., for whom he will devote his time to investigation and testing work. Prior to his connection with the Lehigh Valley Transit Company, Mr. Nichols was employed by the Utica & Mohawk Valley Railway, Utica, N. Y.

Mr. Robert Robinson has been appointed to the newly created position of chief of transportation of the Houghton County Traction Company, Houghton, Mich., in which he will succeed to the duties of Mr. John Ralph, Jr., as assistant superintendent of the company, a position which was abolished with the advancement of Mr. Ralph to succeed Mr. G. A. Richardson as superintendent of the company.

Mr. A. C. Kennedy has been appointed purchasing agent for the receivers of the Municipal Traction Company, Cleveland, Ohio, vice Mr. F. L. Stockberger, resigned. Mr. Kennedy was formerly chief clerk to Mr. George A. Stanley, purchasing agent of the Cleveland Electric Railway. He began his connection with the purchasing department of the Cleveland Electric Railway under Mr. Chas. W. Wason when the property was controlled by the Everett-Moore syndicate.

Mr. Terrance Scullin, who has been connected with the Rochester (N. Y.) Railway for a year as master mechanic, has been appointed master mechanic of the Cleveland (Ohio) Railway to succeed Mr. Frank R. Phillips, whose resignation was announced in the Electric Railway Journal of Dec. 18, 1909. Mr. Scullin has been connected with the

Andrews-Stanley interests for many years. His success as master mechanic of the Cleveland Electric Railway was marked, but after the Municipal Traction Company took over the Cleveland Electric Railway Mr. Scullin became connected with the Rochester Railway.

Mr. F. F. Espenchied, who has been connected with the West Penn Railways, Pittsburgh, Pa., as consulting engineer and assistant to Mr. W. E. Moore, general manager of the company, has resigned from the company to become general manager of the Interstate Light & Power Company, which is completing a modern steam-driven central station and 60-cycle, three-phase, 33,000-volt transmission system to serve Galena, Ill., and Plattville, Wis., and the intervening mining region. Mr. Espenchied was graduated from Cornell with the degrees of electrical engineer and mechanical engineer. The office which Mr. Espenchied occupied with the West Penn Railways has been abolished.

Mr. Fred H. Lincoln has resigned as assistant general manager of the Philadelphia Rapid Transit Company, to take effect Jan. 1, 1910. He has occupied his present office for the last five years and has been connected with the Philadelphia Rapid Transit Company for the last 17 years. During this time he has served in both the electrical and transportation departments and has also invented a number of improvements, particularly in rolling stock, which have been made standard by the company. Mr. Lincoln has always taken a prominent part in the work of the American Street & Interurban Railway Engineering Association, and at the Denver convention was elected president of the association. His future plans have not yet been announced.

Mr. J. G. Baukat has resigned as assistant superintendent of electrical equipment with the New York Central & Hudson River Railroad, New York, N. Y., to accept the position of consulting engineer of the Miami Valley Construction Company, New York, N. Y., and chief engineer of the Wabash & Northern Railway. Mr. Baukat's connection of four years with the New York Central & Hudson River Railroad covers the period of electric installation, and he was in direct charge of the maintenance of electrical equipment and repair shops. Previous to entering the service of the New York Central & Hudson River Railroad Mr. Baukat was engineer of the Schenectady (N. Y.) Railway, in charge of car equipment, track work, line work, construction work, in which capacity he planned and supervised the building of the Saratoga extension to Ballston. Before accepting the position with the Schenectady Railway Mr. Baukat was connected for three years with the railway department of the General Electric Company at Schenectady. Mr. Baukat was presented a diamond scarf pin as a token of the esteem in which he was held by his associates in the New York Central & Hudson River Railroad.

Mr. Joseph E. Wayne was appointed superintendent of the York (Pa.) Railways on Dec. 15, 1909, to succeed Mr. F. P. Newman, whose appointment to the position of general manager of the Southern Cambria Electric Railway, Johnstown, Pa., was announced in the ELECTRIC RAILWAY JOURNAL of Dec. 4, 1909. Mr. Wayne was born in Philadelphia, Pa. His railway experience was acquired during his connection with several of the large street railways in different parts of the country. He served for three years in the repair shops and power house of the Public Service Corporation of New Jersey and resigned from that company to become connected with the United Railroads, which controls all the lines in San Francisco, and remained in the service of the United Railroads for three years. When Mr. David Young became general manager of the York Railways, Mr. Wayne accepted the position of superintendent of the company, but resigned after two years of service to become superintendent of the Waynesboro, Chambersburg & Greencastle Street Railway. Mr. Wayne resigned from the Waynesboro, Chambersburg & Greencastle Street Railway to take charge of the commercial department of the Edison Electric Light Company, York, Pa., from which position he retired to become connected with the York Railways.

J. E. Wayne

Construction News

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

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

RECENT INCORPORATIONS

Chicago, Joliet & East St. Louis Electric Railway, Chicago, Ill.—Incorporated in Illinois to build and acquire electric lines over which electric cars may be operated from Chicago through Joliet to East St. Louis, with branches to Aurora, Ill., and Hammond, Ind. H. A. Fisher has announced that the company will take over the operating lines of the Joliet & Southern Traction Company, the Joliet, Plainfield & Aurora Railroad, the Bloomington, Pontiac & Joliet Electric Railway and the Chicago, Joliet & Central Illinois Railway. With existing tracks connecting Chicago Heights, near the Illinois-Indiana State line south of Chicago, Joliet and Aurora, it is planned to add a line south from Joliet to Dwight and there connect with the Bloomington, Pontiac & Jolict line in operation between Dwight and Pontiac. Also this latter line will be extended south from Pontiac to Bloomington, where connection will be made with the Illinois Traction System, extending west to Peoria, east to Decatur and Danville, and from Decatur through Springfield to St. Louis. Mr. Fisher is quoted as saying that the line from Joliet into Chicago will soon be constructed, and that arrangements have been made for the use of the tracks of the Metropolitan West Side Elevated Railway for entrance to the business district. Capital stock, $100,000. Headquarters, Woman's Temple Building, Chicago. Incorporators: H. A. Fisher, F. E. Fisher and L. D. Fisher; S. A. Spray, Chicago, and T. B. Steward, John A. Raymond and John K. Newhall, Aurora, Ill.

Shore Line Electric Railway, New Rochelle, N. Y.—Incorporated with a capital of $300,000 as a reorganization of the 2-mile Larchmont-Mamaroneck branch of the Tarrytown, White Plains & Mamaroneck Railway, which was sold several weeks ago under foreclosure to Franklin L. Babcock for $100,000. Directors: Franklin L. Babcock, Edward A. Maher, Reune Martin, Dudley Olcott and E. Francis Hyde, all of New York.

Ephrata & Lebanon Street Railway, Ephrata, Pa.—Chartered to build a 22½-mile gasoline motor railway from Lebanon to Ephrata, via Iowa, Reistville, Schaefferstown, Kleinfeltersville, Hopeland, Clay and Lincoln. All the rights-of-way and franchises in Ephrata and Lebanon have been secured. Final location surveys will be made during the winter and construction will be started early in the spring. Capital stock, $425,000. Incorporators: S. D. Erb, Ephrata, president; M. Kinport, Henry Westerhoff, M. H. Shirk, H. B. Hollinger and A. E. Lane. F. H. Shaw, Lancaster, chief engineer. [E. R. J., Oct. 16, '09.]

Phœnixville, Valley Forge & Stafford Street Railway, Phœnixville, Pa.—Chartered to construct an electric railway from Phœnixville to Stafford, via Valley Forge, a distance of 10 miles. Capital stock, $60,000. Incorporators: Thomas E. O'Connell, West Chester, president; O. E. Thomson, John A. Dusmant, C. F. Boden, S. W. Deninger, A. W. Kley, H. H. Gilkyson, E. C. Meir and S. E. Miller. [E. R. J., Dec. 11, '09.]

***Uvalde & Leona Valley Interurban Railway, Uvalde, Tex.**—Chartered in Texas to build a 25-mile interurban railway from Uvalde to Batesville. Capital stock, $50,000. Officers and incorporators: Charles Peterson, president; A. M. Avant, vice-president, San Antonio, Tex.; M. M. McFarland, vice-president and general manager; F. J. Rhiner, secretary and treasurer, Uvalde, Tex.

FRANCHISES

Ashton, Ill.—The City Council has granted a 50-year electric railway franchise to the Chicago, De Kalb & Western Railway, Chicago. This is part of the plan to build an electric railway from Chicago to Rock Island. [E. R. J., Nov. 20, '09.]

Port Byron, Ill.—The Tri-Cities & Northeastern Interurban Railway has been granted a 20-year franchise to build an electric railway on Main Street, Port Byron. J. W. Simonson, Port Byron, president. [E. R. J., Oct. 2, '09.]

Greenfield, Ind.—The City Council has granted a franchise to Perry Fredman, Richmond, and associates, to build an electric railway over certain streets of Greenfield. A company, to be known as the Greenfield & Northern Railway, will be organized to build the line which is also to be extended to Pendleton, a distance of 16 miles. [E. R. J., Nov. 27, '09.]

Monticello, Ind.—A petition has been filed with the County Commissioners for an election to be held in Jack-

son, Honey Creek, Princeton and Union Townships of White County to vote on the proposition of a subsidy in aid of the construction of the Indiana & Northwest Traction Company's line from the Battle Ground to Reynolds. [E. R. J., Dec. 11, '09.]

Hartford, Mich.—William C. Plumb and H. H. Tucker, representing the Chicago, Benton Harbor & Grand Rapids Railroad, Chicago, have applied to the Town Council for an electric railway franchise. [E. R. J., Jan. 2, '09.]

Pittsfield, Mass.—The Board of Aldermen has granted to the Pittsfield Street Railway an extension of its franchise until May 1, 1910, in which to extend its tracks to the Hancock town line.

Kansas City, Mo.—At the election on Dec. 16, 1909, the proposal to extend the franchise of the Metropolitan Street Railway in accordance with the terms of the ordinance abstracted in the Electric Railway Journal of Dec 11, 1909, page 1199, was defeated by 11,756 votes.

East Bend, N. C.—The Yadkin River Valley Railway has been granted a franchise to build an electric railway in East Bend. The proposed line is to be built from East Bend to Donnaha, a distance of 5 miles. It is the ultimate intention to extend it from Donnaha to Winston-Salem. Among those interested are W. A. Martin, George Steelman and J. W. Marler, East Bend. [E. R. J., March 27, '09.]

Fostoria, Ohio.—The City Council has granted an electric railway franchise to the Fostoria & Fremont Railway, which proposes to build an electric railway from Fostoria to Fremont, via Havens, Burgoon, Kansas and Amsden. It will be about 21 miles long. J. D. McDonel, secretary. [E. R. J., Nov. 13, '09.]

Altoona, Pa.—The Johnstown & Gallitzin Railway has formally applied to the City Council for a franchise for an entrance into Altoona for its electric railway. Traffic arrangements will be made with the Altoona & Logan Valley Electric Railway, whereby this company's tracks will be used by the Johnstown & Gallitzin Railway to enter Altoona. U. G. U. Holman, general manager and electrical engineer. [E. R. J., Aug. 14, '09.]

Sherbrooke, Que.—The City Council has approved a by-law granting to the Sherbrooke Street Railway a 40-year franchise. The city will have the privilege of purchasing the property at the end of 20 years. The railway will be extended as soon as additional power is developed.

Montesano, Wash.—The County Commissioners have granted a 50-year franchise to Eldredge Wheeler for the construction of an electric railway from Moclips to Gate City. [E. R. J., Nov. 27, '09.]

La Crosse, Wis.—The Common Council has granted to the La Crosse & Winona Traction Company a 50-year franchise for an electric railway in La Crosse. The company proposes to build an electric railway from Winona to La Crosse, via Galesville. W. J. Ferris, president. [E. R. J., Nov. 13, '09.]

Wheeling, W. Va.—The County Commissioners have granted a franchise to the Rapid Transit Railway to construct an electric railway through Ohio County. A. M. Shenk, president. [E. R. J., July 31, '09.]

TRACK AND ROADWAY

Los Angeles (Cal.) Railway.—This company announces that during 1910 it will build about 80 miles of new track. H. E. Huntington, general manager.

Bakersfield & Ventura Railroad, Oxnard, Cal.—This company will build 5 miles of new track during 1910. T. B. Blackburn, general manager.

Grand Junction & Grand River Valley Railway, Colorado Springs, Col.—S. M. L. McSpadden, purchasing agent, advises that this company has surveyed the route for its proposed electric railway between Grand Junction and Fruita, 20 miles. Grading will begin early next spring. The track will be practically level and laid with 60-lb. rails. The curves on the line will be about 15 deg. Several short trestles will be built across irrigation canals and gulches. The pole bracket type of overhead construction will be installed. Contracts will be awarded within the next few days for material for the reconstruction of a power plant. Orders will also be placed in the near future for three interurban cars and possibly one electric locomotive. Headquarters, Mining Exchange Building, Colorado Springs. [E. R. J., Oct. 30, '09.]

New London & East Lyme Street Railway, New London, Conn.—It is stated that this company will build about 10 miles of new track during 1910. L. S. Rudd, superintendent.

***Tallulah Falls, Ga.**—Louis Magid, Tallulah Falls, is reported to be interested in a project to establish a 4-mile electric railway in the vicinity of Tallulah Falls.

Illinois Central Electric Railway, Canton, Ill.—During 1910 this company will construct 8 miles of new track from Norris to Fairview, Ill. L. W. Morton, purchasing agent.

Quincy Horse Railway & Carrying Company, Quincy, Ill.—During 1910, this company will build 5 miles of new local track. W. A. Martin, purchasing agent.

Gary & Southern Traction Company, Gary, Ind.—It is stated that this company will construct 12 miles of new track connecting Crown Point with Gary during the spring of 1910.

South Bend & Logansport Traction Company, South Bend, Ind.—This company, which proposes to build an electric railway between South Bend and Logansport has placed contracts for all the subgrading to three contracting firms, viz: Southern division, Trinidad Engineering & Construction Company; middle division to U. S. Leitgart; northern division terminating in South Bend, to Redd & Son, Mishawaka. David Pepper, Philadelphia, is the general contractor for building the line, the work being in charge of J. M. McCampbell. The Illinois Steel Company has been awarded the contract for the rails. [E. R. J., Dec. 11, '09.]

Davenport & Manchester Interurban Railway, Davenport, Ia.—The stockholders of this company, which proposes to construct an interurban line between Davenport and Manchester, have voted to increase the capital stock from $15,000 to $650,000. J. W. Cross, promoter. [E. R. J., Oct. 23, '09.]

Des Moines, Council Bluffs & Western Railway, Des Moines, Ia.—This company announces that preparations are being made to start construction of its interurban railway early next spring. It will extend from Des Moines to Council Bluffs, via Adel and Greenfield. Headquarters, 408 Flynn Block, Des Moines. Capital stock authorized, $7,500,000; issued, $100,000. Bonds authorized, $3,000,000. Officers: Robert Pilmer, Norwalk, president; H. A. Smith, Des Moines, secretary; T. F. Flynn, Des Moines, general manager; F. N. Carrs, Des Moines, chief engineer. [E. R. J., Nov. 13, '09.]

Waterloo, Cedar Falls & Northern Railway, Waterloo, Iowa.—It is officially announced that during 1910 this company will construct 25 miles of new track. T. E. Rust, purchasing agent.

Atchinson Railway Light & Power Company, Atchinson, Kan.—During 1910, this company will build 3½ miles of new track. J. W. Waggener, general manager.

Louisville, Lincoln Farm & Mammoth Cave Traction Company, Glasgow, Ky.—It is stated that this company has surveys partly made and has partly financed its line. The company proposes to build from Glasgow, via Buffalo, to Hodgenville, Ky., and from Glasgow to Mammoth Cave, a distance of 60 miles. Charles Van-Den-Burgh, promoter. [E. R. J., Oct. 9, '09.]

Frederick (Md.) Railway.—It is announced that this company, which is a consolidation of the Frederick & Middletown Railway, the Washington, Fredericksburg & Gettysburg Railway and the Jefferson & Braddock Heights Railway, will build a number of extensions. The first extension will probably be to Brunswick. A line from Jefferson to Brunswick has been surveyed, and the construction of this section, 7 miles long, may be commenced next season. The extension of the Washington, Frederick & Gettysburg Railway is also in view. This road is now in operation between Frederick and Thurmont, a distance of 17 miles, as a steam railway. Its extension through Emmitsburg to Gettysburg, Pa., is contemplated. At Gettysburg important connections with lines in southern Pennsylvania are in sight which may eventually connect Frederick with York, Lancaster and Harrisburg.

St. Louis, Webster & Valley Park Railway, St. Louis, Mo.—W. C. Riffert, Harrisburg, Pa., secretary, is quoted as saying that construction work on this 17-mile railway has been discontinued until spring. It will traverse the old World's Fair Grounds at St. Louis. Twelve miles of the line will be double tracked.

***Kalispell, Mont.**—E. F. Wheaton and George W. Mathews, Cleveland, Ohio, are said to be promoting a system of electric railways radiating through the Flathead Valley. It also is proposed to run a line from Kalispell into the Flathead Reservation.

Coney Island & Brooklyn Railroad, Brooklyn, N. Y.—The Board of Estimate and Apportionment has approved the plan of this company to park Coney Island Avenue from the Park Circle, Brooklyn, to Coney Island, a distance of about 5 miles. The tracks of the company are now at the side of the street. The cost of the work is estimated at $300,000.

Albany Southern Railroad, Hudson, N. Y.—This company is receiving bids through J. G. White & Company, 43 Exchange Place, New York, for 1800 tons of heavy section rails, deliveries to be made at Rensselaer. The company is also receiving bids for six small bridges requiring 150 tons of steel.

Lima & Honeoye Electric Light & Railroad Company, Lima, N. Y.—About 49 miles of new track will be built by this company during 1910. The new line will pass through Richmond Mills, Honeoye and Atlanta, Rush and Henrietta. E. D. Watkins, chief engineer.

Metropolitan Street Railway, New York, N. Y.—Judge Lacombe of the United States Circuit Court has authorized Receivers Joline and Robinson of this company to construct a double-track street railway on Canal Street between Centre Street and the Bowery. This permit gives the company access to the new Manhattan Bridge.

Toledo Urban & Interurban Railway, Toledo, Ohio.—It is announced that during 1910 this company will construct 32 miles of new line. C. F. Smith, purchasing agent.

Arbuckle & Western Railroad, Ardmore, Okla.—The ELECTRIC RAILWAY JOURNAL is advised that this company has been organized to build a railway, to be operated by steam and electricity, from Ardmore to Chickasha and Comanche. Incorporation papers will be filed within the next few weeks. It is the intention to begin the preliminary work about Jan. 1. Oscar Ayres, Ardmore, is interested. [E. R. J., Oct. 30, '09.]

Shawnee (Okla.) Electric Railway.—This company has awarded a contract to J. B. Taylor & Company, New York, N. Y., for the building of its proposed electric railway between Oklahoma City and Shawnee. The line will be about 38 miles long and will also connect Dale, McLoud, Harrah and Choctaw City. C. T. Edwards, president. [E. R. J., June 12, '09.]

Altoona & Logan Valley Electric Railway, Altoona, Pa.—It is stated that this company is about to begin the construction of a new line from Mineral Point to Ebensburg. The company is also preparing to rebuild the line between Bellwood and Tipton.

Delaware County & Philadelphia Electric Railroad, Clifton Heights, Pa.—This company proposes to construct 10 miles of new track during 1910. Fred Haas, purchasing agent.

Irwin-Herminie Traction Company, Herminie, Pa.—This company will construct a 350-ft. steel bridge on its line, which will soon be built, between Hahntown and Irwin, 1 mile. At present the company is operating from Herminie to Hahntown.

Phœnixville, Valley Forge & Stafford Street Railway, Phœnixville, Pa.—Thomas E. O'Connell writes that this company has been chartered for the purpose of building a 10-mile electric railway from Phœnixville to Strafford, which is the terminus of the Philadelphia & Western Railroad's third-rail system. By the completion of this new line direct electric connection will be possible from Phœnixville to Philadelphia. The line will also pass through Valley Forge, William's Corner and King of Prussia. Later it is planned to extend to Bridgeport and Norristown. Application has been made for a charter, and as soon as it is granted the company proposes to start construction. A power plant and repair shop will be built at Valley Forge. Power will be furnished to towns along the route. Capital stock authorized, $60,000; issued, $20,000. Officers: Thos. E. O'Connell, West Chester, president, general manager and purchasing agent; I. E. Miller, Phœnixville, secretary; A. W. Kley, Phœnixville, treasurer; Nathan R. Rambo, West Chester, chief engineer. [E. R. J., Dec. 11, '09.]

Scranton (Pa.) Railway.—About 5 miles of new track will be built by this company during 1910. W. J. Mulholland, purchasing agent.

Stroudsburg & Water Gap Street Railway, Stroudsburg, Pa.—It is officially stated that this company will build 5½ miles of new track in 1910. Frank McCoy, purchasing agent.

Memphis (Tenn.) Street Railway.—This company will build about 2 miles of new track during 1910. T. H. Tutwiler, general manager.

Richmond & Henrico Railway, Richmond, Va.—Application was made to the Law of Equity Court on Dec. 13 by certain creditors of the Richmond & Henrico Railway for the appointment of a receiver for the property. [E. R. J., Nov. 6, '09.]

Richmond & Chesapeake Bay Railway, Richmond, Va.—The State Corporation Commission has issued an amendment to the charter of this company, permitting it to extend its railway from its present terminns at Ashland to the south bank of the Potomac River.

Seattle-Tacoma Short Line Railway, Tacoma, Wash.—This company announces that it is preparing to begin work about Jan. 20 on its proposed interurban railway between Seattle and Tacoma, 65 miles. The company intends to install both the overhead trolley system and gasoline motor cars on its line. Power to operate the electric cars will be purchased. Contractors, Felt & Eastman, 6 Bowes Building, Tacoma, which is also the headquarters of the company. A. E. Rothermel, Tacoma, secretary. [E. R. J., June 12, '09.]

Thunder Creek Transportation & Smelting Company, Tacoma, Wash.—A. M. Richards, president, writes that work will be started next spring on its projected 150-mile electric railway which is to connect cities and towns of northern central Washington and Puget Sound. Plans are about complete for the consolidation of this company with the North Coast Mining & Milling Company, and the absorption of certain other properties, now under active development, into a new corporation known as the Skagit, Cascade & Chelan Railway, with offices in the Bankers' Trust Building, Tacoma, and with a capitalization of $25,000,000. Announcement of this new company and its amplified plans will be made during the next few weeks. [E. R. J., Oct. 16, '09.]

Milwaukee Western Electric Railway, Milwaukee, Wis.—This company is said to have awarded a contract to P. F. Murphy to grade the right of way for its proposed railway from Beaver Dam to Milwaukee, 76 miles.

SHOPS AND BUILDINGS

San Diego (Cal.) Electric Railway.—This company has awarded a contract to R. P. Shields & Son for the erection of a new car house to be located at M Street and Fifteenth Street. The building will be 195 ft. x 270 ft. and will have a capacity of 100 cars. It is estimated to cost $100,000. [E. R. J., Aug. 21, '09.]

Boise & Interurban Railroad, Boise, Idaho.—This company expects to begin work next year on a new passenger and freight station at Seventh Street and Bannock Street. It will cover an area of 122 ft. x 100 ft., will be two stories high and will be constructed of reinforced concrete, brick and stone. It is the intention to add two stories to the building later.

Chicago & Joliet Electric Railway, Joliet, Ill.—This company plans to erect a fire-proof car house at the southwest corner of Archer Avenue and Center Street, Summit. The company has not as yet prepared any plans, but it is probable that the building will be built of reinforced concrete. The storage capacity is to be from 15 to 20 cars.

Illinois Traction System, Peoria, Ill.—The freight house of this company, located in East St. Louis, was destroyed by fire on Dec. 10. The structure was one story high and 100 ft. x 100 ft. in size. The damage is said to have been $4,500.

Peoria Railway Terminal Company, Peoria, Ill.—This company is said to be considering the erection of a new car house and shops at South Bartonville to replace the buildings which were destroyed by fire in October. The new structure is estimated to cost about $20,000.

South Bethlehem & Saucon Street Railway, Bethlehem, Pa.—This company will build a new concrete and steel car house at Bethlehem. Benedict Birkel, South Bethlehem, contractor.

Pittsburgh (Pa.) Railways.—This company has let a contract to D. T. Riffle to erect a second-story addition to its present office building at Frankstown Avenue and Collier Street, near which is located the Homewood car house. This addition will be 20 ft. x 216 ft. in size and is being erected for the use of its employees. It will contain dressing rooms, shower baths and a gymnasium. The addition is estimated to cost about $12,000.

Port Arthur (Tex.) Traction Company.—This company is preparing plans for the erection of a new car house in Port Arthur, to be 113 ft. x 77 ft. in size.

POWER HOUSES AND SUBSTATIONS

Indianapolis, New Castle & Toledo Electric Railway, New Castle, Ind.—This company has purchased and is installing two 1500-kw horizontal G. E. turbines in its New Castle power station. The plant will be in operation Jan. 1. Machinery has also been delivered for installation in three substations along the company's line which is to be placed in operation on Jan. 1.

Mount Vernon Railway & Light Company, Mount Vernon, Ohio.—It is stated that this company is considering plans for the erection of a new power station and improvements to its present plant.

AMUSEMENT PARKS

A. L. Salisbury, Oriskany, N. Y., desires to purchase one second-hand miniature railroad.

Manufactures & Supplies

ROLLING STOCK

Rome Railway & Light Company, Rome, Ga., will order two closed cars next year.

Longview & Junction Street Railway, Longview, Tex., will order two small electric cars early next spring.

Oklahoma Union Traction Company, Tulsa, Okla., expects to buy several new cars during 1910.

Lynchburg Traction & Light Company, Lynchburg, Va., will probably buy four double-truck cars early next year.

Oxford, Cochranville & Parkersburg Electric Railway, Oxford, Pa., expects to buy an entire outfit of rolling stock next year.

Mexico, Santa Fé & Perry Traction Company, Mexico, Mo., expects to buy complete passenger and freight equipment during 1910.

Dayton & Troy Electric Railway, Dayton, Ohio, has purchased four flat cars from the Hicks Locomotive & Car Works, Chicago, Ill.

Ottumwa Railway & Light Company, Ottumwa, Ia., recently rebuilt in its own shops three of its single-truck closed cars for city service.

Hocking-Sunday Creek Traction Company, Nelsonville, Ohio, is considering the purchase next year of two 57-ft. double-truck McKeen motor cars.

Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn., expects to buy complete rolling stock equipment for a 109-mile road.

Honolulu Rapid Transit & Land Company, Honolulu, Hawaii, is contemplating the purchase before the end of this year of 10 open cars to have a seating capacity of 60.

Union Street Railway, New Bedford, Mass., has ordered 12 double-truck cars from the Bradley Car Works, Worcester, Mass., to be mounted on Standard Motor Truck Company's type 0-50 trucks.

Columbia Electric Street Railway, Light & Power Company, Columbia, S. C., reported in the Electric Railway Journal of Dec. 18, 1909, as having adopted the pay-as-you-enter system, will buy two pay-as-you-enter cars in the near future.

Indianapolis, New Castle & Toledo Electric Railway, New Castle, Ind., mentioned in the Electric Railway Journal of Oct. 23, 1909, as having purchased a number of cars from the Jewett Car Company, will have six new passenger and one motor freight car delivered to them very soon. The passenger cars are 65 ft. long and have three compartments for baggage, smokers and passengers.

Illinois Traction System, Peoria, Ill., has placed an order with the McGuire-Cummings Manufacturing Company, Chicago, Ill., for four combination express and smoking cars, four motor and 32 trail express cars, and one double-truck standard sweeper. The contemplated purchase of the above equipment was mentioned in the Electric Railway Journal of Oct. 30, 1909, and Nov. 27, 1909.

Saginaw & Flint Railway, Saginaw, Mich., mentioned in the Electric Railway Journal of Nov. 27, 1909, as being in the market for two passenger and one express cars, has placed an order with the Niles Car & Manufacturing Company for two 51-ft. interurban passenger cars and one 50-ft. interurban baggage car, all to be mounted on Baldwin Class 78-25 trucks.

TRADE NOTES

United States Electric Company, New York, N. Y., has moved from 95 William Street to 284 Pearl Street.

Power Specialty Company, New York, N. Y., announces the removal of its Boston office to 1031 State Mutual Building, 50 Congress Street.

Harrison Engineering Company, New York, N. Y., has installed a unique heating system in the Claire Avenue car house of the Toronto & York Radial Railway. It consists of an air-tube heater which resembles a sectional water-tube boiler and a fan for forcing the heated air through the distributing pipes.

H. W. Johns-Manville Company, New York, has appointed H. H. Seaman, assistant manager of its New York electrical department. For seven years, Mr. Seaman was associated with the Electric Storage Battery Company at Philadelphia, Detroit and Cleveland, and for the past two years has been manager of that company's Atlanta office.

Lord Electric Company, New York, N. Y., placed on the market only a few months ago a device known as Hydro-Ground, for grounding telephone and telegraph, electric light, power and railway circuits. One large company which tried a few of these grounding devices last summer has recently placed an order for several hundred more in order to equip all of its circuits.

Cameron Electrical Manufacturing Company, Ltd., Ansonia, Conn., has recently opened an office in Cleveland to take care of business in that city and adjoining territory. The office is in the Electric Building and is in charge of H. L. Schneider, whose long experience in this line of work and whose extensive acquaintance with electric railway men eminently fits him for this position.

W. C. Webster has resigned as sales manager of the New York office of the Westinghouse Electric & Manufacturing Company, and will be succeeded by Walter S. Rugg, who has been connected with the general engineering department of the company in charge of the sales department of large lighting interests. Mr. Webster has been with the Westinghouse Electric & Manufacturing Company for about 12 years.

Allis-Chalmers Company, Milwaukee, Wis., has moved its San Francisco office from 599 Mission Street to the Byron Jackson Building, 160 Second Street, corner Natoma Street. The territory is in charge of R. B. Elder, who has been engaged in engineering on the Pacific Coast for the past 14 years. A warehouse in San Francisco contains a complete assortment of small machinery such as brakers, motors, transformers and repair parts.

General Railway Signal Company, Rochester, N. Y., has appointed H. M. Sperry sales manager, with office in Rochester. The change is effective Jan. 1, 1910. Mr. Sperry has had wide experience in railway engineering and signal work. He was for 10 years connected with the Pennsylvania Railroad and later was appointed general agent of the Johnson Railroad Signal Company. From 1899 to 1905 he served as signal engineer and New York agent of the Union Switch & Signal Company, during which time he prepared the plans for the signal system installed in the New York subway. Later he acted in the capacity of consulting signal engineer for the Hudson & Manhattan Railroad and prepared plans for the entire signal system installed in the tunnels of that company. Since February, 1906, Mr. Sperry has been resident manager in New York for the General Railway Signal Company.

ADVERTISING LITERATURE

Ford & Johnson Company, Chicago, Ill., has issued an attractive folder illustrating and describing in detail the car seats which it makes.

Frank Ridlon Company, Boston, Mass., has issued its December list of new and second-hand electric motors, generators and miscellaneous power-house machinery.

Ohio Brass Company, Mansfield, Ohio, prints in its December *Bulletin* a description of the Cascade Tunnel electrification and a continuation of the articles on the plant of the company.

Chicago Concrete Machinery Company, Chicago, Ill., illustrates representative types of concrete mixing and handling machinery which it makes, in a small pamphlet entitled "Success Winning Machinery."

Cincinnati Milling Machine Company, Cincinnati, Ohio, has issued a handsome illustrated catalog of its complete line of horizontal and vertical plain and universal type milling machines and attachments.

General Electric Company, Schenectady, N. Y., in Bulletin 4705, discusses the application of Curtis turbines of the low and mixed pressure types to condensing and non-condensing installations of reciprocating engines.

Graphite Lubricating Company, Bound Brook, N. J., is distributing a circular containing an apt quotation from Sherlock Holmes which points out the value of specialized knowledge. Knowledge of machinery bearings as a result of 20 years' experience is the specialty of this company.

NEW PUBLICATION

Proceedings of the Master Car Builders' Association, Convention of 1909. J. W. Taylor, Secretary: Chicago, 390 Old Colony Building. Cloth, 674 pages.

This is the 43d volume of the Proceedings and is uniform with those issued in previous years. The sheets showing the standards and recommended practice of the association have been redrawn and rearranged in a more logical order. The complete text of the explanatory matter accompanying the drawings of the standards is printed in the body of the book, together with the rules of interchange as revised at the last convention.