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

Trolley Service at Summer Resorts

Surprise is sometimes expressed by electric railway patrons at summer resorts that the fare limits are often much shorter than in other parts of the system. The cars appear well patronized, so the careless observer overlooks the conditions which justify a higher rate than can be maintained to other points where the traffic is more continuous. The value of an electric railway service to a summer colony is difficult to over-estimate, even where many of the inhabitants depend largely upon private vehicles for their trans-

portation. The frequency of the trolley service contrasted with the usual number of steam railroad trains, or steamboat movements, per day through a given resort shows that electric traction is far more valuable in encouraging a general circulation of travel between adjacent communities than other agencies. In the winter season—for two-thirds of the year, in fact—the traffic on lines serving summer resorts is apt to be far below that required to pay operating expenses. Hence a rate as high as 2 or 3 cents per mile may be perfectly admissible in a summer resort district, so that a frequent, reliable, fast and, above all, a safe service can be rendered to the traveling public. Maintenance is more difficult in such territory; the cost of power and operating labor is apt to be relatively high, and depreciation is more rapid than on systems where the regular traffic supports a more complete organization. Where there are complaints against the rate per mile it will pay to emphasize these points publicly.

Beautifying the Grounds

The advantages of beautifying the grounds about the shops and other buildings, while no doubt fully appreciated by the majority of managers, have not been considered attainable in the early years of most electric railway enterprises. Steam railroads have devoted time and money to work of this description, and the Brooklyn Rapid Transit Company has effected notable improvement in the appearance of its properties. That more could be done by many roads in this direction, however, than has been accomplished in the past, and without the expenditure of an excessive amount of money, is evident from careful consideration of the subject. Presentation in this issue of the attractive results secured by the Indiana Union Traction Company affords testimony regarding the opportunities of this character of which interurban as well as urban properties may avail themselves. H. A. Nicholl, general manager of the company, describes the benefits arising from improvement of the property in this way as twofold: the influence extends to the public and to the employees. Similar gains may be obtained by other lines and the possibilities which are open are well worth investigation.

Color Scheme for New Types of Cars

The successful introduction of any innovation in street car service hinges largely on the campaign of education which is carried on prior to the change and as long afterward as is necessary for the general public to become thoroughly familiar with the new order of things. The prepayment system of fare collection when first begun in any city is a distinct novelty to the local population. Passengers must become accustomed to having their fares

ready when boarding the cars in order to avoid delays in loading and congestion on the rear platform. Signs are usually displayed prominently on the front of prepayment type cars to give some warning to passengers that such a car is approaching. One large street railway system in the East, which has introduced these cars in a limited way as an initial experiment, has painted its prepayment cars a color different from its long-established and well-known standard. This class of car can therefore be easily distinguished while still a long distance away, and the result is said to have been most satisfactory in avoiding confusion and facilitating prompt fare collection. The practice of painting cars running on different lines distinctive colors is not new, but it is open to the objection that confusion is created when, for any reason, it is necessary to change the cars in an emergency from one line to another. This objection does not apply to the practice of painting cars of different types distinctive colors, as the color signifies nothing which would prevent the car from being used anywhere on the system. If an entire line is to be operated with cars of a new type, the distinctive color scheme is not so advantageous perhaps, except when the old style cars of several other lines run over the same tracks for some distance in the congested centers. After a time, when the entire system has been equipped for prepayment fare collection, it is an easy matter to return gradually to the old standard color if desired.

Economies in Current Consumption

Viewed in a broad way, the cost of the energy required in railway operation is a minor factor in the final result. The major question is the acquisition of traffic and it is usually economy to subordinate every other factor to it. At the ordinary rates at which the energy used on an electric railway system is reckoned, one additional passenger per mile of run will more than compensate for a large waste of energy. It has, therefore, usually proved to be a sound policy to spend energy freely if by so doing the traffic can be increased. Large and comfortable cars, well lighted and well heated in winter, operated on a liberal schedule and making good time, have over and over again been proved to pay in increased earnings for what at first appeared lavish and even extravagant use of energy. Yet if energy can be saved in any material degree without foregoing any gain in traffic, the saving is worth trying for, because the total cost of energy on a large system reaches figures so large that even a small percentage of saving is well worth the trouble. One of the places where such a saving can be made by the use of current by the motorman is in car operation. Remarkable results along these lines are being secured in Berlin, Germany, and we shall probably refer again to this subject in an early issue. But there are other places where a company can make a saving in energy, which, while not large, is well worth while. Some of these possibilities will be considered this week.

One of them is in the lighting of cars. It seems a small item, but in fact it is a very perceptible fraction of the energy used for operating the car. Even a quarter or half a kilowatt amounts to something material when applied to several hundreds, or even scores, of cars for six or eight hours per day. Of late some effort has been directed toward the design of metallic filament lamps for car light-

ing. The main question here is that of renewals, depending on the strength of the lamp filaments which at present leaves much to be desired. Nevertheless, the metallic filament lamps made for 50 volts or so are still relatively strong, and, if supported with proper care in deadening vibration, seem to stand the strain quite well. They are also relatively insensitive to voltage changes, which improves the light. But at present it looks as if the best results in energy saving by this device would be obtained in train-lighting systems where lamps of as low as 30 volts can be conveniently used with corresponding increase in filament strength. A tungsten lamp at this pressure giving about 20 cp on about 1 amp is excellently strong and has a life long enough to more than make up for its first cost. So far as saving energy is concerned, the metallic filament lamps do the work on about half the consumption of ordinary carbon lamps, but the real net saving hinges on the replacement cost, which as yet is indeterminate.

Another very important source of saving can be the heating system, intelligent administration of which is singularly rare. We have referred to this subject before, but its seasonableness warrants another reference to it. Electric heaters should be in full use very seldom and then for brief periods only, either of very extreme cold or of preparation for a run. The waste caused by a careless use of the heaters is startling when reduced to dollars and cents, and is not only a loss, but is often a real discomfort to the passengers. There is no doubt that a car which has stood in a cold car house all night is often uncomfortably cool when put into service on a frosty morning. But if the heaters are applied at the full current strength for a short time to warm up the interior as a preliminary, the car can then be kept at a very comfortable temperature, except during very cold days, by a mild application of current. The question of temperature at which a car should be run is admitted to be one on which there are many diverse opinions among passengers. But, after all, it is a subject on which passengers can be educated, and at the beginning of the winter season it is well to try and do so. It is much better to utilize the reserve capacity of a railway power station to propel cars rather than to have it float out of open ventilators and doors in the form of heat.

Operating Difficulties and Publicity

There is no question that if the traveling public appreciated more generally the peculiar difficulties of operation which have to be overcome on the majority of local systems of electric railways there would be a notable reduction in the number and character of service complaints. The average seasoned operating man is used to criticism, just or unjust, passed upon the facilities which he supplies; but the advantages of eliminating all the unreasonable complaints that one can are none the less very great. The policy of meeting complaints fairly and squarely is not open to adverse criticism. Nevertheless, every complaint has the effect of a grain of sand in the smooth machinery of transportation, deflecting the attention of the men that it reaches from the broader phases of their work, and while wholesome when justified by the circumstances, it inevitably costs the company both time and money before a permanent disposition can be made of it.

Recognizing the value of educating the public to a definite appreciation of operating conditions, not a few managers

have turned the daily press to good account lately in explaining the causes of irregularities in the service, calling attention to changes brought about by construction conditions, emphasizing the safety of travel over lines equipped with automatic or semi-automatic signals, and in general making clear to the layman those practical aspects of car or train handling which are every-day matters to the company, but which are decidedly hazy to the majority of the patrons. Some of the matters treated in local publicity work of this kind may be utilized generally in other cities in the effort to prevent misconceptions of a company's efforts and working objects.

Delays in the car service, discourtesy on the part of employees, defects in the equipment or poor handling of the controller and braking apparatus, failures to reach the usual stopping place, loss of memory in fare collections and omission to notify passengers at the proper time for them to leave are all troublesome causes of complaint on the part of the public. Accidents, their prevention and minimizing, their reasonable explanation when necessary for the restoration of confidence and their relations to the quality of the general service comprise a basis for not a few complaints. Many of these factors in the quality of the service can be controlled by an operating company; others cannot, and the fact should be made clear in all cases wherever the company's most careful judgment could not obviate the source of the trouble. Not seldom are the causes of delay magnified. Actual records of intervals between car movements and of arrival and leaving times are worth much in cases of dispute. Intervals often seem longer to the waiting passenger than they actually measure by the watch. The exact statement of the elapsed time between cars after a breakdown, combined with a concise description in a few terse words of what the company did to restore the service, makes very useful reading matter in the daily press of a critical community. A thorough explanation of the influences of drawbridge openings, the provision of extras and setbacks to maintaining the regularity of the service, the precautions taken against accidents at crossings, junctions, sharp curves and on heavy grades; emphasis laid on the great complexity of an electric railway timetable in comparison with steam schedules; the organization and indicating equipment available, all furnish good subjects for the explanatory publicity of operating conditions which helps to make a tolerant and reasonable patronage and an unhampered service.

Interborough Annual Report

Operations of the Interborough Rapid Transit Company, of New York, during the year ended June 30, 1909, reflect some of the tendencies which have marked the development of the business of this company at other periods; the gross earnings of the subway division showed the satisfactory gain of 18.93 per cent as compared with the preceding year, while on the Manhattan elevated division the results are measured by a decline of 1.29 per cent. These percentages represent substantially the extent of the changes in the number of passengers carried by the subway and elevated divisions, respectively, although the actual decrease in the total of passengers hauled on the elevated lines was 2.33 per cent. T. P. Shonts, the president, states that the improvement on the subway lines was due to de-

velopment of new territory, which is progressing at a rapid rate in the thinly populated districts tributary to the subway's outlying terminals. Indications on the elevated division were considerably better at the end of the year than the report for the full 12 months indicates. In the first six months of 1909 the gross revenue of the elevated division increased \$186,441, overcoming more than one-half of the decrease of \$367,123 reported for the preceding half-year. No detailed figures of traffic are contained in the report.

While the result of combination of the large increase in subway earnings and the small decrease in revenue from the elevated properties was a net gain in gross earnings of 7.13 per cent, much more than this percentage was saved for the net earnings, owing to a material reduction in the percentage of gross required for operating expenses. The operating expenses are not divided in the report to show the proportions devoted to transportation and maintenance, respectively, but Mr. Shonts enumerates the principal factors to which he attributes the reduction. Among these are economies resulting from changes in the organization; the correction of defective design in subway equipment, lessening maintenance costs; and saving in the amount paid for injury and damage claims. The total accident cost during the year was \$327,505, which is equivalent to 1.3 per cent of gross earnings from operation, and represents a decrease of \$50,925, or 13.4 per cent, from the record of the previous year. This percentage of accident cost would be extremely low for a surface street railway, but no comparison of this character can be instituted with fairness to a subway and elevated property. As the report says that 347 cases were tried and settled in the year, it is evident that the aggregate expense on this account was incurred largely on account of petty claims.

Excluding taxes, the operating ratio was 41.69 per cent, as compared with 44.57 per cent in the previous year. With the addition of taxes, this ratio reached 48.68 per cent in 1909 and 51.16 per cent in the preceding year. Mr. Shonts calls attention to the three distinct forms of taxation to which the company is subject, including the Federal income tax imposed by a recent act of Congress, and says that the burden of taxation is a serious obstacle in the way of development of rapid transit facilities in New York.

The gain in net earnings from operation, which amounted to 12.68 per cent over the preceding year, was derived from an increase on the subway division that reached the high figure of 31.67 per cent and from a decrease of 1.05 per cent on the elevated division.

Among the most important features of the operation of the company during the year which Mr. Shonts discusses are the improvements effected in the property. Some, which were of a permanent nature, were charged to current earnings. The additions and betterments chargeable to capital account aggregated \$1,817,707, and include, among other noteworthy improvements, the installation of automatic speed control signals at express stations on the subway and additions to increase the power supply of the Fifty-ninth Street power house. In the expectation of further increase in traffic during the next winter, the purchase of 350 cars has been authorized, of which 250 are for the subway division.

FREIGHT SERVICE OF THE TOLEDO & WESTERN RAILROAD

The Toledo & Western Railroad is almost unique among electric railways in its consistent development of freight business by methods of management and operation that are substantially identical with those followed by steam railroads. Various articles in previous issues of the STREET RAILWAY JOURNAL have described the development of the

those of the interurban electric railway, is due to business appreciation of the traffic possibilities in the territory served. C. F. Franklin, president and general manager of the company, secured his railway training entirely with steam lines. At the time of his election to this office an investigation showed him the wisdom of encouraging the location of industries, particularly as part of the line traverses a district that is without any other railroad facilities. As a result of persistent work in this direction a



Toledo & Western—Grain Elevator at Metamora, Ohio



Toledo & Western—Grain Elevator at Pioneer, Ohio

freight traffic of this company, notably the following: Nov. 29, 1902, page 862; Dec. 20, 1902, page 978, and Sept. 2, 1905, page 326. Since the publication of these articles, the freight service has continued to increase in importance and it is still the principal feature of the business of the company.

number of industries have been located on property adjacent to the line of the railway.

Unlike most electric railways, the Toledo & Western Railroad has direct affiliations with connecting steam lines. Its position in these matters is that it is strictly a railroad which uses electricity instead of steam as motive power. It furnishes the industries which rely upon its service ex-

While the traffic possibilities open to the usual inter-



Toledo & Western—Standard Freight Train with Electric Locomotive

urban electric line have been utilized, the real development of this property has followed more closely the custom of steam railroads than the methods by which the usual electric railway is raised to a position where its traffic is sufficient to make the company successful.

actly the same facilities that are offered by any steam railroad to shippers. It has standard freight cars fitted with M.C.B. automatic couplers and equipped for the most part with air brakes. The company has 21 box cars, 36 gondola cars, 24 stock cars and 12 flat cars.

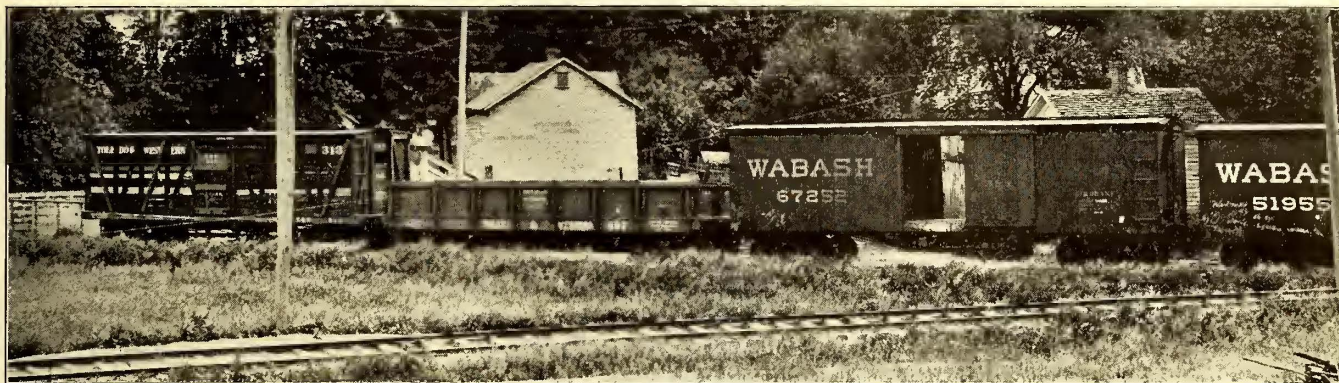
The adoption of steam methods in general, rather than

As indicating the preponderance of freight cars in the

equipment of the company, the passenger equipment comprises 15 motor and 2 trail cars. Four express cars owned by the company are used for handling package freight business, the volume of which is relatively light in comparison with the regular freight traffic. One car is fitted up as a United States railway post office, and is operated in precisely the same way as similar cars are operated by steam railroads. The equipment includes also five electric locomotives and one steam locomotive, which are used altogether in the freight service of the company. The com-

steam property, by which they are hauled to connections with other lines or to a terminal point, accessibly located in the city of Toledo.

In the calendar year 1908 the Toledo & Western Railroad handled a total of 6759 carloads of freight. To indicate the increase in business the record of 1904 may be given. In that year 3068 carloads were handled; the business, therefore, has been more than doubled in four years. Of the 1908 total, 1250 cars were loaded with merchandise and 1019 with sugar beets. The largest number of carloads



Toledo & Western—Side Track at Pioneer, Ohio

pany has 4-track Fairbanks-Morse scales for weighing cars and a 5-ton stock wagon scale at every station. The 22 station agents serve jointly the freight and passenger departments in each case.

In conformity with steam railroad custom, the Toledo & Western Railroad is a member of the American Railway Association, the Master Car Builders' Association, the Association of American Railway Accounting Officers and the Freight Claim Association.

Of the total freight business handled by the company a

of any one commodity handled in 1904 was 591, representing the sugar beet traffic of the company for the year. An accompanying statement, published on page 426, shows the carload business of the company during the years 1904, 1905 and 1908.

Making allowance for the small amount of mileage operated, the diversity of the character of the commodities handled in carloads will compare favorably with the corresponding statement of the average steam railroad, which, of course, has a much greater extent of territory and popu-



Toledo & Western—Freight Siding and Standard Freight and Passenger Station

large part is in carloads. Cars are interchanged freely between the company and the various steam lines with which physical connection has been made. Although the company operates its passenger, express and mail cars directly into the business district of Toledo, the carloads of freight are switched to the lines of the Toledo Terminal Railroad, a

lation upon which it draws for traffic. The business received from canning factories, a sugar refinery, coopeage factories and grain elevators is of special importance. The country through which the road operates afforded sufficient facilities to make the prospects for success in these industries reasonably good, and the railroad company has con-

stantly been, as indicated, an active force in soliciting and encouraging the location and development of plants and factories. The sugar refinery exists because of the production of sugar beets on farms which are accessible to the railroad. One grain elevator, having a capacity of 25,000 bushels, secures its power for operation from the railroad.

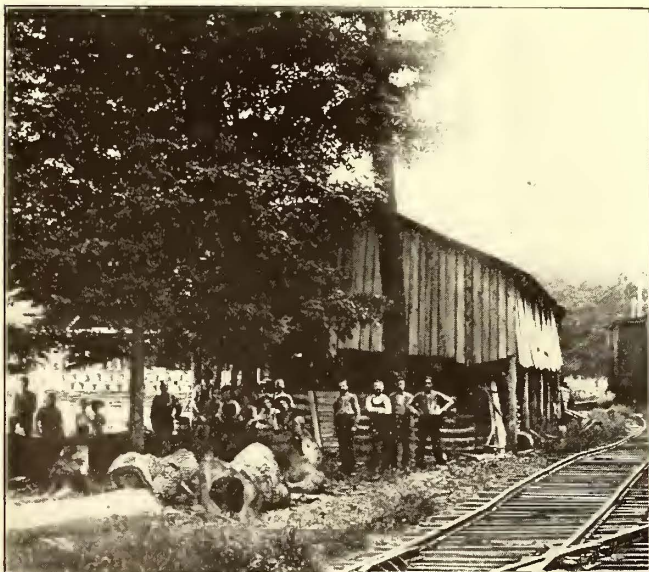
In the territory tributary to the line of the company



Toledo & Western—Connection with Steam Railroad

there are 18 cities and towns where substantial industries are located. In addition to the more pretentious industries, the company also secures considerable business in shipments of live stock and from creameries and cheese factories situated in various parts of the territory which are especially well adapted for dairy farming.

The experience of the company with the sugar business



Toledo & Western—Stave Mill at Pioneer, Ohio

is interesting. Low rates are received for the sugar beets, but the refined sugar is business of a more profitable character. The Toledo & Western Railroad secures not only the beet sugar business, but also carloads of refined sugar. During the season of 1908-09 there were hauled from

Blissfield, Mich., a total of 188 carloads of sugar, as compared with 157 carloads in the preceding season.

Formerly the freight rates of the Toledo & Western Railroad were on a somewhat lower average basis than those of existing steam railroads. A change was made recently, however, whereby the rates were increased generally, making them substantially equal to those of the steam roads. The company uses the classification of ac-

STATEMENT OF CARLOAD FREIGHT HANDLED BY THE TOLEDO & WESTERN RAILROAD IN 1904, 1905 AND 1908.

	1904:	1905.	1908.
Stone	458	725	587
Logs	365	261	211
Stock	139	555	618
Beets	591	720	1,019
Sugar .....	...	35	266
Hay and straw	195	130	426
Grain	235	308	352
Lumber	206	210	275
Coal and coke	337	421	710
Brick	53	286	...
Brick and tile .....	...	...	174
Staves, heading and listings	149	125	323
Sewer pipe and tile	49	25	...
Sewer pipe .....	...	...	45
Canned goods	17	25	28
Cement and plaster	55	99	85
Paper	8	15	6
Wood	24	22	31
Handles .....	...	17	7
Machinery	22	96	21
Miscellaneous	108	140	156
Household goods	21	16	42
Posts	24	27	39
Ties .....	...	15	2
Sand and gravel	12	200	37
Merchandise .....	...	...	1,250
Beet pulp .....	...	5	49
Total	3,068	4,478	6,759

counts prescribed by the Interstate Commerce Commission for steam roads. The method of accounting for the freight business is that followed by steam railroads, and the standard forms of local and interline waybills are used.

Freight trains are operated as second and third-class trains. The rules of the company provide:

Second class or freight trains will keep entirely out of the way of first class trains and must clear the first class trains five minutes. First class train will not wait at meeting points for second class trains unless ordered to do so by special orders.

Third class or local freight trains will keep entirely out of the way of first and second class trains and must clear all first and second class trains five minutes.

Two through freight trains are operated daily in each direction between Toledo and Pioneer, Ohio, and Toledo and Adrian, Mich.

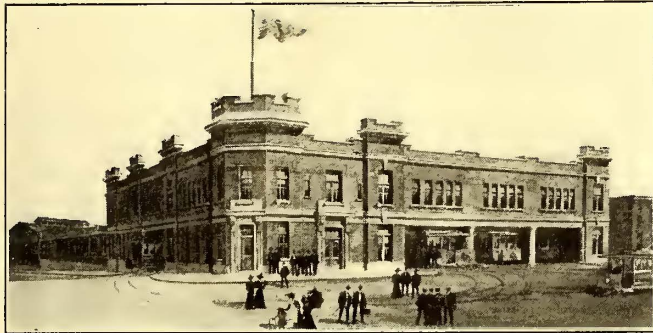
GAPS IN THE TROLLEY LINES BETWEEN HUDSON, N. Y., AND CHICAGO

Much interest has been manifested in the diary of J. S. Moulton, published in the ELECTRIC RAILWAY JOURNAL of Aug. 28, 1909, page 321, describing a trip from Hudson, N. Y., to Chicago by electric railway. A number of inquiries have been made as to the exact length and location of the gaps still existing. Between Fonda, N. Y., on the Fonda, Johnstown & Gloversville, and Little Falls, on the Utica & Mohawk Valley, a distance of 30 miles, no electric railway is in operation or under construction. The next and last gap is between Chili, Ind., 10 miles north of Peru, and Warsaw, a distance of about 25 miles. This link is nearly completed and will probably be opened for traffic in a few weeks. It is possible to travel by electric railway from Chicago north to Sheboygan, Wis., 135 miles, and west to Freeport, 121 miles. Between Paris, Ill., and Ridge Farm is a break of 20 miles in a through electric railway journey from New York State to St. Louis, Mo.

THE PARK TERMINAL CAR HOUSE, BALTIMORE

Recent car house construction of the United Railways & Electric Company, of Baltimore, has been described in the columns of this paper. The latest addition to the handsome and modern car houses of the company will be known as the Park Terminal Car House, for which ground was broken July 19. Owing to its location, opposite Druid Hill

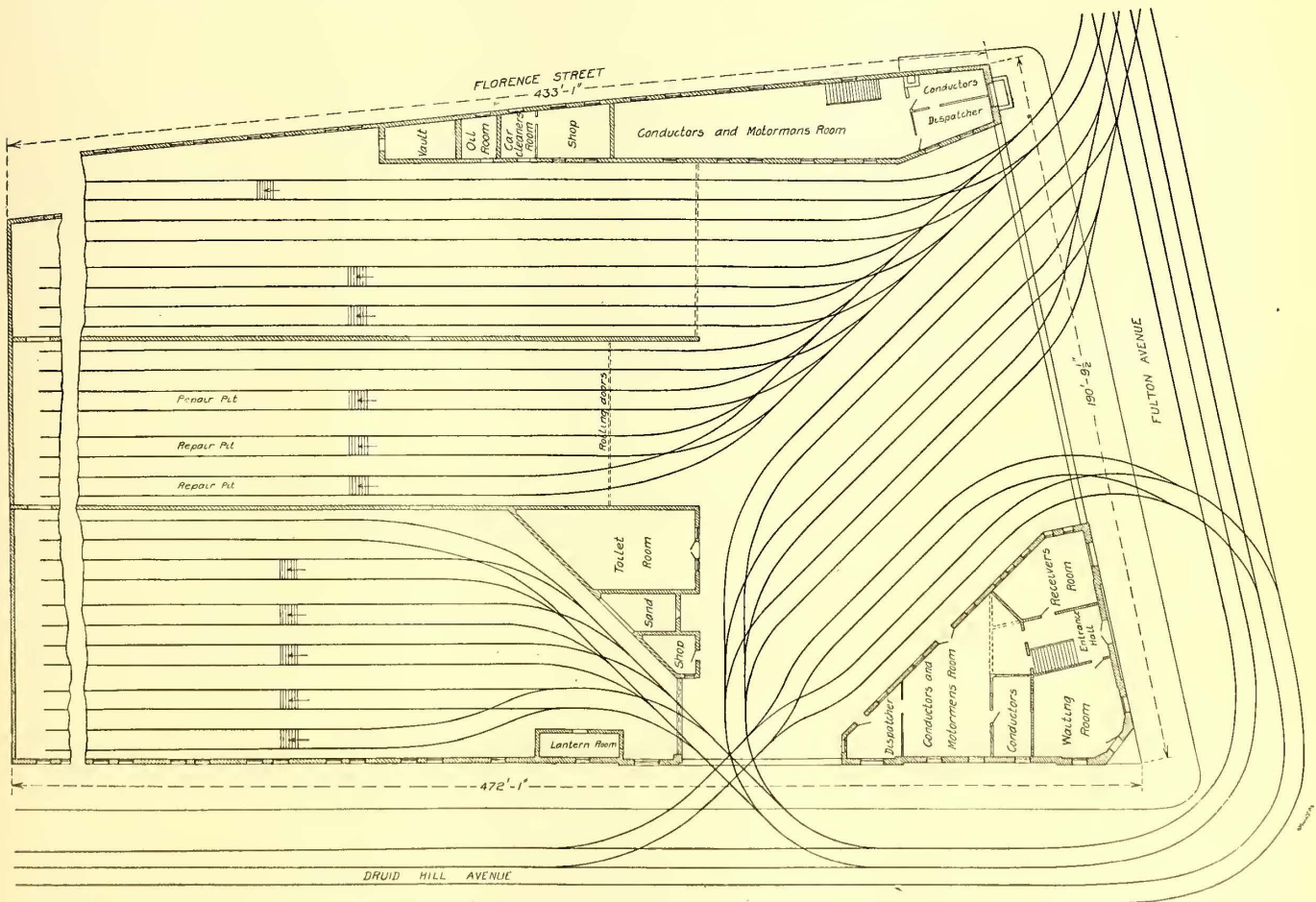
street car lines. This required a careful study of the operating conditions, which resulted in devoting approximately one-fourth of the floor area in the front portion of the house to terminal loop tracks. The track work has been so arranged that cars on the five different lines can pull in, be "trimmed" and have their "layover" entirely within the car house. At the same time the operation of no one line, in this respect, will interfere with the operation of any of the other lines.



Park Terminal Car House—Exterior View

Park, careful attention was given to its architectural features. The lot upon which it will be erected has a frontage on Fulton Avenue of 190 ft. 9½ in., and a depth of 433 ft. 1 in. on Florence Street, and 472 ft. 1 in. on Druid Hill Avenue. The exterior walls of the building will be of

The floor plan shows the general arrangement of the various car house features. By utilizing portions of the ground area resulting from the special track construction layout, three separate groups of rooms have been developed, each devoted to a different set of needs. Thus, as the car house is at the terminii of several lines, one room has been set apart to be used by the public as a waiting room. It has been arranged to cover the sidewalk in front of this room with an attractive awning, extending to the curb. The roof will be of corrugated metal and will be supported by I-beams projecting from the face of the wall and chains extending from the upper story wall to the outside of the awning. Adjoining the public waiting room is the main entrance and stairway leading to the second floor. Next, on the right as one enters the building, are quarters for five receivers, so that there can be a separate receiver for each line, if necessary. Directly behind the waiting room



Park Terminal Car House—Track Plan of First Floor

handsome brick set off with terra cotta trimmings. The division walls, columns, roof and ceilings are all to be reinforced concrete. The building will be one story in height, with the exception of the Fulton Avenue front, which will contain a second story, extending back 203 ft. 3 in.

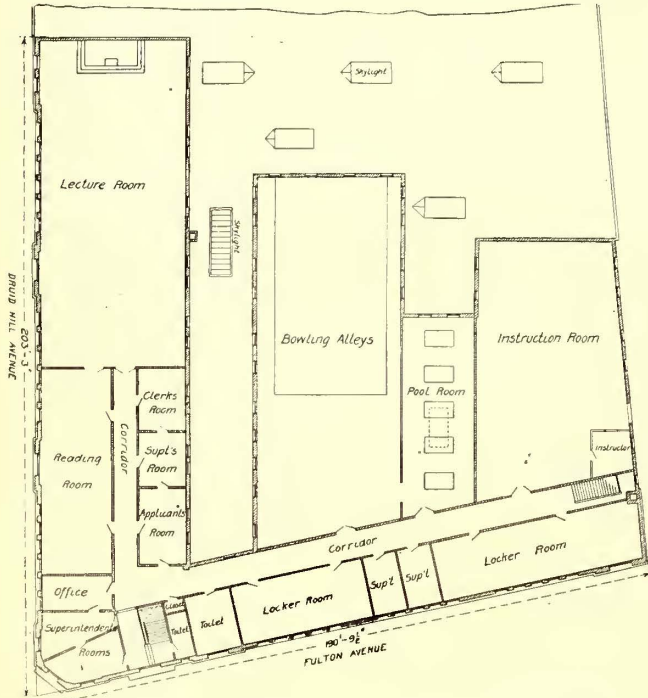
The car house is also the terminus of five important

is a large room for motormen and conductors, with a smaller room in which conductors can make their returns. Connected with the former room is the dispatcher's office.

In the second group of rooms on Florence Street are, first, the dispatcher's office, then a small room for conductors to make their returns; next a large room for mo-

tormen and conductors. A portion of this last room will be cut off by a partition extending from floor to ceiling, so that it can be used as a lunch room. Next is a room for shopmen, with the shop foreman's office, then a room for the car cleaners; then quarters for storage of oil and grease. The latter are equipped with automatic measuring tanks, which are located in the ground below the floor. Finally, there is the vault, the size of two-rooms, for the storage of transfers and other papers. To facilitate the handling of heavy boxes, etc., this vault will be equipped with an interior elevator of about 200 lb. capacity.

The third group of rooms occupies the middle of the front section and is devoted to a number of special car house needs. One room is used for the storage of sand; next is a shop room for the mechanical department; then a lantern room equipped with an automatic measuring tank



Park Terminal Car House—Plan of Trainmen's Quarters on Second Floor

set in the ground below the floor, so that the tank can be filled from the outside.

The car storage section is divided by fire walls into three sections; at the end of each section will be a roller steel door. Access between the different sections, when the roller steel doors are down, is provided by means of double automatic sliding doors. The car storage section is designed to hold 103 45-ft. double-truck cars. Each track is arranged with pits, all of which have radiators and drain pipe connections fitted with check valves.

The plan of the second floor shows the arrangement of the rooms there, one feature being the accommodation in the way of locker rooms, lecture room and bowling alleys for the men.

The building is equipped with sprinklers throughout, both roof and aisle, with a 50,000-gal. tank and two 7500-gal. pressure tanks. The company has not yet decided upon the type of sprinkler to be used.

The architects are Baldwin & Pennington; the general contractor is J. Henry Miller; the contractor for the rolling doors was the Kinnear Manufacturing Company, of Columbus, Ohio; the contractors for the granite work, terra cotta and other building materials are local Baltimore dealers.

BRUSH TENSION

BY C. W. SQUIER, ENGINEER OF MECHANICAL DEPARTMENT, BROOKLYN RAPID TRANSIT COMPANY

The question of brush tension and its relation to the life of brushes and the cost of maintaining railway motors is receiving more attention from railway engineers than ever before. The electric roads that have established a standard brush tension for motors, and instructed the repair men to be sure that it is maintained, are experiencing a marked reduction in commutator and brush troubles. The manufacturers of brushes are also finding that their brushes give better satisfaction when a uniform tension is maintained, and are advocating this wherever they find their brushes being used without some standard pressure.

There are three things which are chiefly affected by the amount of pressure placed on the brushes. These are: The wear of commutators and brushes, the heating of commutators and brushes, and the flashing of motors. The wear on the commutators and brushes is of two kinds—that due to the friction between the brushes and the commutator and that caused by the burning away of the brushes and commutator, due to sparking. Both are affected to a considerable extent by the chattering of the brushes and vibration of the motor parts. Thus, with the same brush tension, the wear will vary considerably, due to the condition of the roadbed, the frequency of cross-overs, etc., the type of motor suspension and whether the commutators are slotted or non-slotted. To obtain the best results, the pressure must be varied to meet these conditions. The wear due to friction is directly proportional to the pressure placed on the brush; that is, the greater the pressure, the greater will be the wear. The burning away of the brushes and commutator is inversely proportional to the pressure per square inch of contact surface. Heavy pressure produces better contact between the brushes and commutator bars, and so causes less sparking. Some recent tests have shown that in service the wear due to burning is much greater than that due to friction, and, as a result, the wear of the commutator and brushes follow each other; that is, the brush which wears most rapidly also produces the greatest commutator wear. Some figures taken from these tests may be of interest.

The following are average figures for five different types of brushes, a number of each type having been installed for test purposes. The brush tension was from 5.2 lb. to 6.4 lb. per square inch of brush contact surface:

Brush wear per motor per 1000 car-miles.	Reduction in circumference of commutator per 1000 car-miles.
.648 in.	.089 in.
.63 in.	.0817 in.
.54 in.	.0745 in.
.188 in.	.0084 in.
.111 in.	.0065 in.

To obtain the wear per brush divide the figures by six.

These figures indicate that the greatest wear of the commutators and brushes was due to the burning caused by sparking, as with the same pressure, smoothness and lubrication properties the brush wear due to friction alone is greater for soft brushes than for hard brushes, while the commutator wear is less with the soft brushes. The excess wear of brushes due to sparking is further shown by the average wear obtained by brushes when installed in an interpole motor as compared with the same quality of brush in a non-interpole motor under the same conditions of pressure per square inch of contact surface and amount of current commutated. A comparison of some figures obtained from three tests made under these conditions

shows the average brush wear for the interpole motor to be only one-quarter that of the non-interpole motor.

	Average wear per brush in inches per 1000 car-miles.
Interpole motor, non-slotted commutator.....	.01165
Non-interpole motor, non-slotted commutator.....	.0423
Non-interpole motor, slotted commutator.....	.05354

The problem of securing proper brush tension to give minimum wear consists in having sufficient pressure to produce a proper contact and prevent excessive burning, while at the same time the pressure should not be so great as to cause excessive wear due to friction.

The heating of commutators and brushes is due to four principal causes: First, the heat generated in overcoming the electrical resistance of the brushes and commutator bars. Second, the heat generated in overcoming the electrical resistance at the point of contact between the two. Third, the heat caused by sparking at the brushes. Fourth, the mechanical heating due to friction of the brushes.

The first of these is not affected by the pressure placed on the brushes and need not be considered here. The second and third are closely related. Heating due to these causes will be reduced somewhat by an increase of brush tension, but this will also increase the heating due to friction. So, to obtain the point of minimum heating, it is necessary to balance one against the other. It will be found that the tension for minimum heating will correspond with that for minimum wear of brushes and commutator.

Regarding flashing as affected by brush tension, several cases have come to the attention of the writer in which motors with a brush tension of 3.2 lb. per sq. in. ran satisfactorily during the shop test, but when placed in service immediately developed flat commutators and flashing. By increasing the tension on the brushes of these motors to 6 lb. per sq. in. of contact surface, no further trouble was experienced, although these motors have now been in service for over a year. It is evident that the low brush tension was not sufficient to keep the brushes in proper contact when subjected to the vibration caused by the cars running over the tracks under service conditions.

The following table shows the practice of some of the principal electric railways in the United States regarding brush tension per hammer:

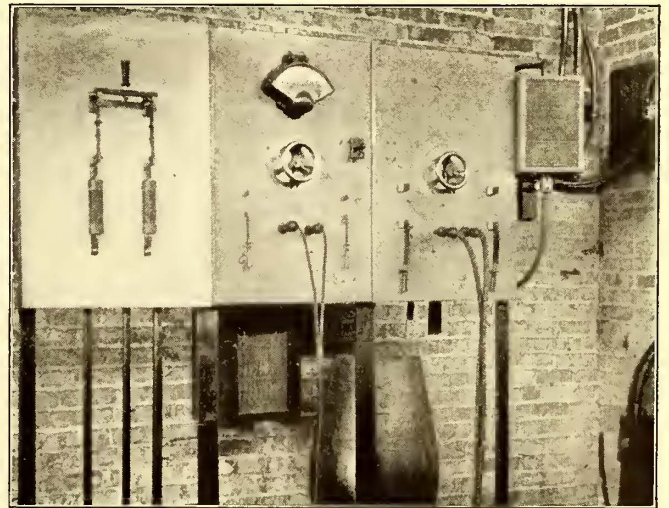
Boston Elevated Railway Company.....	6 to 7 lb.
Brooklyn Rapid Transit Company.....	6½ to 8 lb.
Capital Traction Company, Washington, D. C.....	4½ to 5½ lb.
Chicago City Railway Company.....	about 6 lb.
Chicago Railways Company.....	no standard
Cincinnati Traction Company.....	no standard
Hudson & Manhattan Railroad Company.....	4½ lb.
Interborough Rapid Transit—New York Subway.....	6 to 8 lb.
Interborough Rapid Transit—Manhattan Elevated.....	4 to 6 lb.
International Railway Company, Buffalo:	
General Electric 1000 motors.....	7 lb.
General Electric 64 motors.....	4 lb.
General Electric 74 motors.....	4 lb.
General Electric 57 motors.....	7 lb.
General Electric 800 motors.....	4 lb.
Long Island Railroad Company.....	no standard
Massachusetts Electric Company:	
General Electric 90 motors.....	9 lb.
All other motors.....	7 lb.
Metropolitan West Side Elevated Railway, Chicago.....	6 to 7 lb.
Milwaukee Electric Railway & Light Company.....	7 lb.
New York Central Railroad Company:	
Electric locomotives.....	8 lb.
Motor cars.....	6 lb.
Northwestern Elevated Railway Company, Chicago.....	4 lb.
Philadelphia Rapid Transit Company.....	8 lb.
Pittsburgh Railways Company.....	14 lb.
United Railways Company, St. Louis.....	no standard
United Railways & Electric Company, Baltimore:	
Westinghouse 3 motors.....	4½ lb.
Westinghouse 12A motors.....	4½ lb.
Westinghouse 49 motors.....	5 lb.
Westinghouse 38 motors.....	4 lb.
Westinghouse 56 motors.....	6 to 6½ lb.
Westinghouse 101B motors.....	5 lb.
Westinghouse 101D motors.....	5½ to 6 lb.
General Electric 80 motors.....	5 to 5½ lb.
General Electric 90 motors.....	5½ to 6 lb.
General Electric 1000 motors.....	5½ lb.
General Electric 800 motors.....	6 lb.
Municipal Traction Company, Cleveland.....	7 lb. per sq. in.
South Side Elevated Railroad Company, Chicago.....	4½ to 5 lb. per sq. in.

SIMPLE TEST BOARD AT WHEATON

A simple but complete motor testing board has just been installed at the Wheaton shops of the Aurora, Elgin & Chicago Railroad by E. P. Doyle, master mechanic. With this equipment it easily is possible to give railway motors very thorough heating and voltage tests. The good results to be obtained from making these tests are well known.

An accompanying engraving shows the control board. Current for testing is available from a lighting circuit at 2300 volts. A transformer lowers this potential to 110 before the current is delivered to the board. There are three panels on the board, as follows: No. 1, for fusing and switching the current supply; No. 2, for voltage tests; No. 3, for heating tests.

For the voltage tests which range up to 1500 volts the 110-volt current is stepped up by a transformer and regulated through resistance grids, the controller for which is mounted back of the middle panel of the board. In mounting the resistance controller the shaft was extended through the board and a new dial and wheel were placed in front. This dial is graduated to indicate the voltage across the



Test Board at the Wheaton Shops of the Aurora, Elgin & Chicago Railway

testing leads. The range of voltage is from 0 to 2300 volts. The voltage used in testing also is indicated by an a.c. voltmeter mounted on this voltage test-panel. Ordinary plug terminals with long cables are used to reach the work tested. Armatures are tested at 1000 volts and fields at 1500 volts.

For the a.c. load tests current is taken from the 2300-volt mains and transformed by two 20-kw transformers to 220 volts. At the latter pressure it is delivered to the terminal plugs of the heating test panel. In series with this circuit is a water-barrel resistance, placed on the shop floor directly behind the board. The movable electrode of the water barrel is regulated by a hand wheel on the front of the control board, and the amperage flowing is read directly from an ammeter mounted near one end of the panel.

When an armature is to be given a heat test it is placed in a special stand, on which is mounted a yoke with brush-holders. Brushes are set on the commutator and, for a GE-66 motor armature, a current of 150 amp is passed through the coils for 30 minutes, at which time operating load conditions are reached. Under this test a short-circuited coil will show in about 15 seconds.

**WORK OF THE INDIANA UNION TRACTION COMPANY
IN BEAUTIFYING GROUNDS**

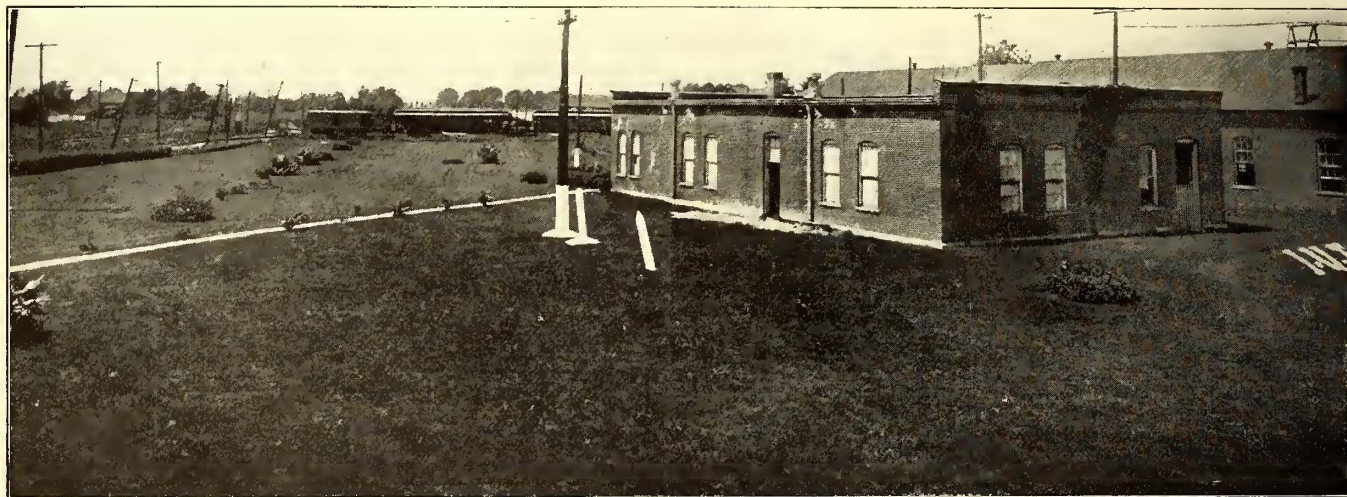
The Indiana Union Traction Company has effected improvement in the appearance of its grounds during the present year by planting grass and setting out flower beds, and also hedges, at various important points on the system.

Some of the results of the work which has been done on the lines of this company in this respect are shown in the accompanying photographs. These photographs do not represent by any means all of the work of this nature which has been done. At various other points on the system equally satisfactory results have been accomplished.

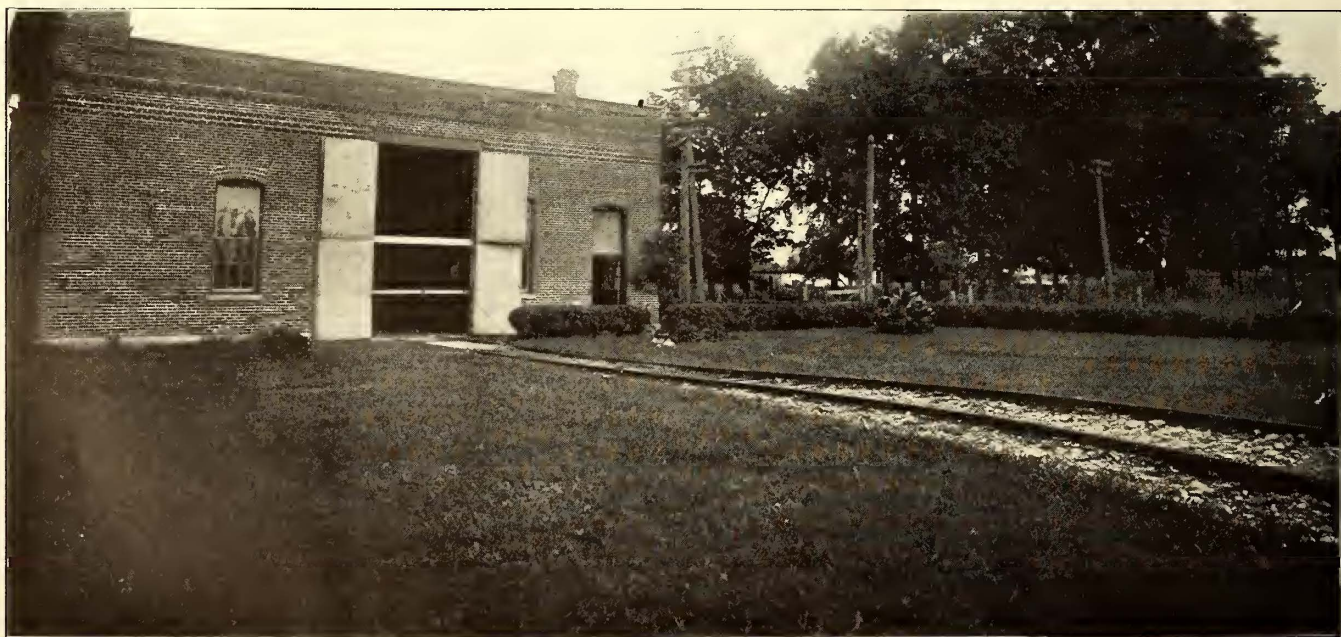
The photographs which are presented give some indication of the results attained at Anderson, Kokomo, Marion, Muncie and Eaton. The photographs illustrating these features of the development of the Indiana Union Traction Company, received through the courtesy of H. A. Nicholl, general manager, included also illustrations of satisfactory results at Broad Ripple and at Tipton. Mr. Nicholl, in writing of the advantages resulting from improvements of this character, states that, in his opinion, the beautifying of the shops, shop grounds, power houses and station prop-

erties raises the value of the property in the estimation of the people, and also increases the tendency of the men to be neat and careful in handling not only the buildings and grounds, but also the equipment that is intrusted to their care. Mr. Nicholl adds that the work of beautifying has been done through the heads of departments, who have been more than delighted to accomplish the desired results. The main work was carried on through W. C. Sparks, superintendent of roadway, who has charge of the beautifying of all the grounds of the company. R. C. Taylor, superintendent of motive power, and G. H. Kelsay, superintendent of power, have had their men give considerable help in the work, and they are also entitled to a great deal of credit, Mr. Nicholl states.

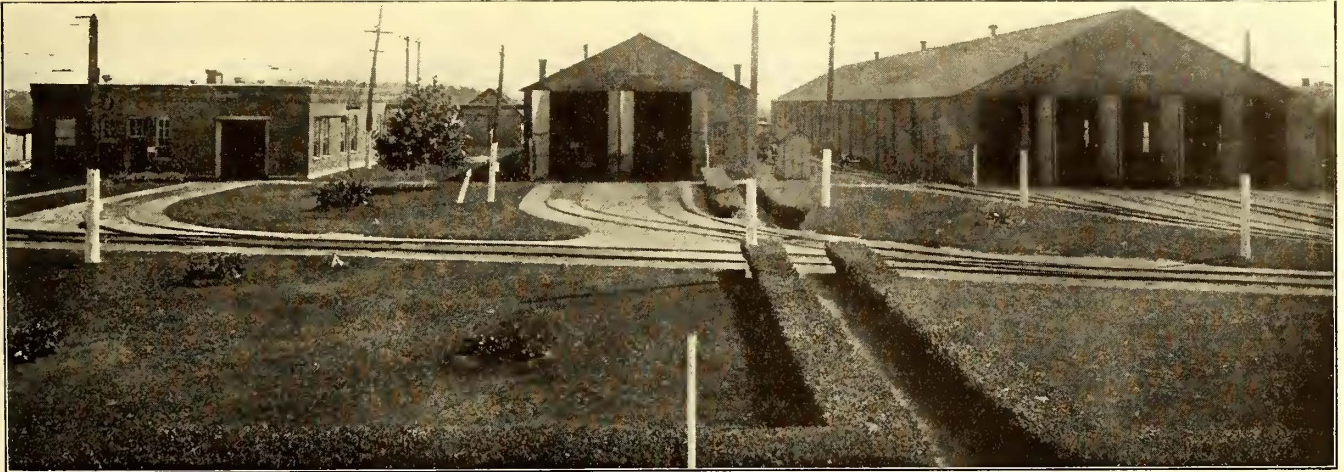
The Brooklyn Rapid Transit Company has done successful work of this character at its shops. Illustrations of the improvements effected in the appearance of the grounds about the shops of this company were published in the *ELECTRIC RAILWAY JOURNAL* of Sept. 12, 1908. In this connection, attention is called to communications from general managers of various urban and interurban companies on this subject published in the issue of Oct. 10, 1908, page 902.



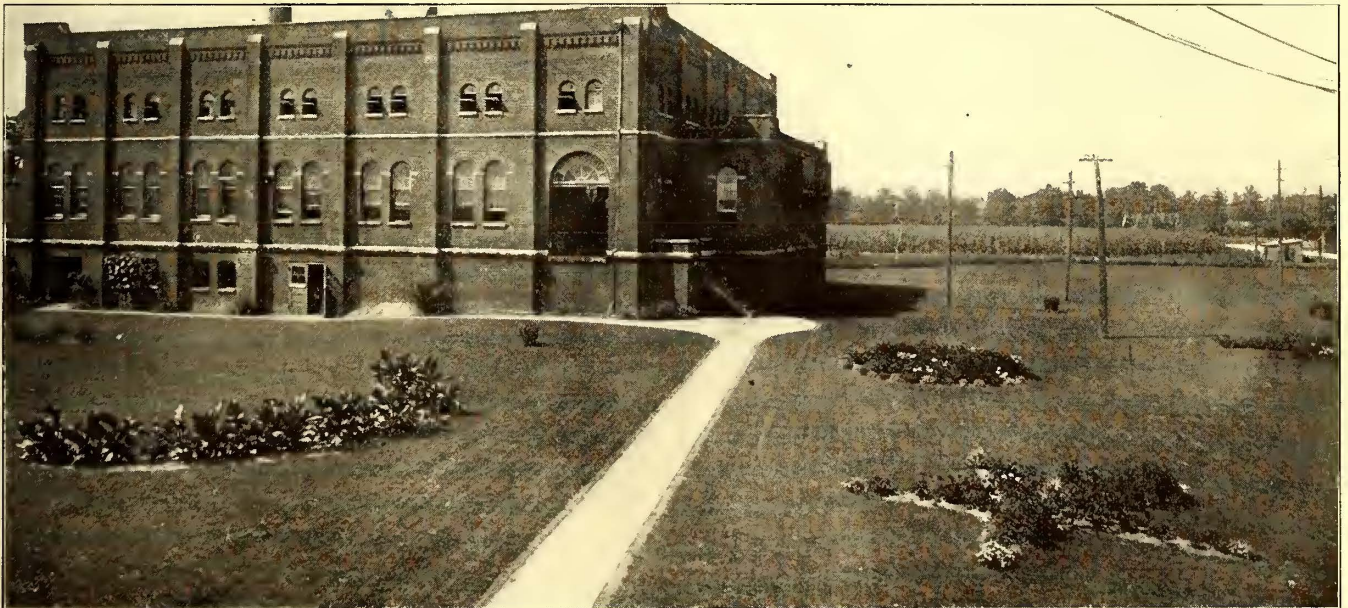
Indiana Union Traction—Substation at Muncie



Indiana Union Traction—Substation at Kokomo



Indiana Union Traction—Shops and Substation at Marion



Indiana Union Traction—Power House at Eaton



Indiana Union Traction—Improvement Beside Power House at Anderson

THE NEW SPECIFICATION FOR HARD DRAWN COPPER WIRE

BY EDWARD N. LAKE

While the result of the letter ballot of the American Society of Testing Materials upon the proposed standard specifications for hard drawn copper wire has not as yet been announced, it is quite probable that it will receive the requisite number of votes to make it the standard of the society for one year. In the meantime, it has been published and is, therefore, open to discussion and comment by those who are interested. The comments given herewith are intended to be suggestive rather than critical, and are from the standpoint of the purchaser's engineer, with special reference to wire and cable for electric railway use, and may easily be somewhat biased in favor of the purchaser.

Since eight of the ten members of the committee were manufacturers' representatives, it is certain that as a result of their wide experience the values and limits will be technically correct, but the requirements will be from the standpoint of the manufacturer, and may easily be a little biased on that side. Assuming that these two biases exist, it is perhaps their resultant which is the straight line of the standard requirements which will ultimately be found acceptable to both purchaser and manufacturer.

As a definition it may be stated that a specification is a part of a purchase contract, and defines that which is purchased. If it is not definite it is not, according to this definition, a specification.

The progressive stand of the committee in eliminating the twist tests, wrap tests and elastic limit tests, which have for years been a part of copper wire specifications, will, no doubt, be concurred in by a large majority of engineers interested in the purchase of hard drawn copper wire and cable. With a given tensile strength, conductivity and elongation, the characteristics of the wire are established, more definitely and positively than can be done by the uncertain and widely variable results of the above-mentioned tests. There are, however, some other features of the proposed specification, which, while they may represent an equally progressive stand on the part of the committee, will not, it is believed, be agreed to so readily at this time.

Taking the points in the order of the paragraphs as they appear, the comments and suggestions are as follows:

3. The wire, in all shapes, must be free from all surface imperfections not consistent with the best commercial practice.

Suppose that the purchaser's inspector is making a mill inspection of a lot of trolley wire and finds the wire is "die marked" to an extent which he believes will be objectionable to the purchaser's engineer to whom he reports. The mill superintendent tells him the wire is all right and in accordance with the specifications. Here is an honest difference of opinion, and if the specification requirement is sufficiently definite these two men should be able to settle this difference positively, on the spot and without delay. As the paragraph now stands, it is not sufficiently definite so that this can be done without the delay necessary to communicate with the higher authority to whom each man reports.

6. All testing and inspection shall be made at the place of manufacture. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities to enable him to satisfy himself that the material conforms to the requirements of these specifications.

The purchaser may wish to waive mill inspection, the

efficiency of which is often questioned. If he has the assurance that the tests will be made, and if he is provided with properly signed and approved copies of the results of the tests, it is believed that this will often be just as satisfactory both to purchaser and manufacturer as to send a man to the mills to see the making of the tests. A clause providing for the making of certain specific tests by the manufacturer's testing experts and for written reports of such tests would meet with the approval of a large number of purchasers.

7 (a). Size shall be expressed as the diameter of the wire in decimal fractions of an inch, using not more than three places of decimals; i.e., in mils.

The three place decimals for expressing the diameter are discussed under paragraph 8.

7 (b). Wire is expected to be accurate in diameter; permissible variations from nominal diameter shall be:

For wire 0.100 in. in diameter and larger, 1 per cent over or under.

For wire less than 0.100 in. in diameter, 1 mil over or under.

For power distribution uses it is believed that most purchasers would not object and would in many cases prefer that this be 1 per cent under and 2 per cent over.

Paragraph 8. Table. First five sizes only are given here:

Diameter, inches.	Area, circular mils.	Tensile strength, lbs. per sq. in.	Elongation in 10 ins. per cent.
0.460	211,600	49,000	2.7
0.410	168,100	51,000	2.6
0.365	133,200	53,000	2.4
0.325	105,600	54,500	2.3
0.289	83,520	56,000	2.1

The standard copper wire table of the committee on units and standards of the American Institute of Electrical Engineers has been in use now about 16 years, and is therefore very generally used by electrical and other engineers, has been printed in a large number of trade catalogs and handbooks in this country and abroad and is the present accepted standard in this country. The following shows the differences in five of the sizes between the proposed and present standards:

Diameter in Inches.		Area in Circular Mils.	
Proposed.	A.I.E.E.Std.	Proposed.	A.I.E.E.Std.
.460	.460	211,600	211,600
.410	.4096	168,100	167,800
.365	.3648	133,200	133,100
.325	.3249	105,600	105,500
.289	.2893	83,520	83,600

Any engineer, inspector or shop mechanic accustomed to the use of the ordinary micrometer or slide rule will, it is believed, find it easy to measure the fourth place decimals of the A. I. E. E. standard with an accuracy that is sufficient for all practical purposes.

It may be granted, however, for the present that the three place diameters are the most practical for commercial uses. Still, in view of the fact that these specifications are not only for the use and convenience of a limited number of factory men, but are also for the use of a large number of purchasers and purchasers' engineers, would it not be desirable, instead of adopting abruptly a new and arbitrary standard, to use for the present the existing standard, make a recommendation for a change and take steps to secure the co-operation and possibly the joint action of the American Institute of Electrical Engineers committee and the committee on power distribution of the American Street & Interurban Railway Engineering Association.

For the convenience of a very large number outside of wire manufacturers' organizations who are not constantly using the figures representing wire sizes, it would be highly desirable to include in this table the B. & S. nominal gage numbers. The term "0.365 trolley," for example, will not in the minds and usages of street railway men readily take

the place of the present "No. 00 trolley," nor will the "No. 0000 grooved trolley" readily give place to the recommended "211,600 circ. mil grooved trolley."

What is the use of making such minor changes in present practices for the convenience of a few men in the factory organizations, when the tens of thousands of men in the purchasers' organizations will either be obliged to revise their usages or, what is more likely, will add the old to the new, and out of it will come confusion instead of standardization.

It is also believed that the weights per 1000 ft. should be added, with a clause covering permissible variations over and under the standards for any coil or shipment.

9. Electric conductivity shall be determined upon fair samples by resistance measurements at a temperature of 20 deg. C. (68 deg. Fahr.). The wire shall not exceed the following limits:

For diameters 0.460 in. to 0.325 in., 900.77 lb. per mile-ohm at 20 deg. C.

For diameters 0.324 in. to 0.040 in., 910.15 lb. per mile-ohm at 20 deg. C.

The majority of the large manufacturers have in their testing laboratories conductivity apparatus graduated in conductivity, Matthiessen's standard. Here again is a long-recognized standard, to which practically the only objection which can be urged is that sometimes copper is found that will show 101 per cent or 102 per cent conductivity. It may be stated, however, that none of the manufacturers will contract to furnish any large lot of wire of 100 per cent conductivity, so that this objection is apparently based upon the deep-seated human objection to permitting anything to appear perfect or a little better than perfect. A rational and practical thing to do would be to place the two standards side by side for the present, and in a short time the less desirable one will be dropped automatically.

15. The wire entering into the construction of stranded cable shall, before stranding, meet all the requirements of round wire, hereinbefore stated.

If a purchaser has bought some hard drawn bare copper stranded conductors of, say, 400,000 circ. mils, and his inspector finds when he reaches the mill that it has been made up of 37 strands of .102 diameter, equal to 384,948 circ. mils, what in the proposed specification will be the definite basis for acceptance or rejection?

Would it not be advisable to include a statement of the relation and permissible variation between actual and nominal circular mils and a standard stranding table?

16. The tensile strength of stranded cable shall be at least 90 per cent of the total strength required of the wires forming the cable.

For hard drawn cables of 7, 19 and 37 strands of standard pitch this, it is believed, should be increased to 95 per cent.

17. Brazes, made in accordance with the best commercial practice, will be permitted in wire entering into cable; but no two brazes in wire in the cable may be closer together than 50 ft.

The term, "in accordance with the best commercial practice," is not a definite requirement. If it is stated that a given length of the brazed wire shall be equivalent to an equal length of the unjointed wire in electrical conductivity and mechanical strength, this would be a definite requirement.

It is suggested further that for trolley wire all brazes shall be made in the rod or wire at least two or three drawings larger than the finished size.

In several places in the specification the term "fair samples" is used, which is indefinite. It would, it is believed, be better to replace this expression by some definite state-

ment as to the number of samples per coil or per reel and how they shall be selected.

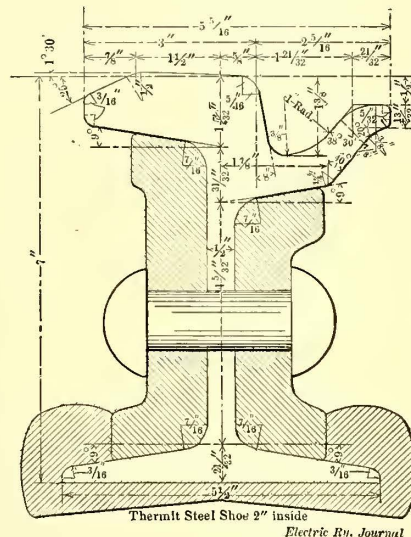
Since the interests of purchaser and manufacturer are identical in the one paramount consideration, viz., that of securing the best practicable standard commercial products at the lowest cost and usually in the shortest possible time, it will not be difficult to reach a basis for specification requirements and inspection that will be mutually satisfactory. In the meanwhile it is believed that more can be accomplished ultimately by the co-operation of the several societies than by independent and abrupt action on the part of one society.

NEW RAIL AND JOINT AT CLEVELAND

The Cleveland traction system has recently ordered 500 tons of the new section of rail illustrated. This rail and the joint illustrated therewith are to be standard for the future reconstruction and new work in the heavily traveled streets of Cleveland. The flangeway of the rail, it is noted, is 1 3/8 in. deep with a 1-in. radius near the root of the flange. Thus it will provide space for the accommodation of interurban car wheels of M.C.B. contour. The design of the rail is said closely to follow that of the 7-in. standard of the American Street & Interurban Railway Association, with

the exception that the Cleveland rail weighs 103 lb. per yard, while the No. 3 half - Trilby rail recommended by the association weighed 122 lb. per yard.

A new method of splicing rails of such weight, designed by Charles H. Clark engineer of maintenance of way, comprising the riveting of heavy plates at the joints and welding the bases of the rails with thermit, will be fol-



Cleveland Joint with Thermit Steel Shoe

lowed. As shown, the joint will comprise two channel-section plates 1 in. thick, drawn tightly together on either side of the 1/2-in. web by eight 1-in. rivets. The joint plates are 30 in. long and the rail ends are drilled 3-3-3. The rivet holes in the plates and rails are to be round and of such size that they can be reamed for drive-fitting the hot rivets. A special 18-in. crab riveter, manufactured by the Chester B. Albree Iron Works Company, Pittsburg, will be used in placing the rivets. This riveter will be hung from a work car, so that it may easily be swung over a joint. It will be operated by air at 100 lb. pressure.

After the track joints have thus been connected with the heavy plates and hot rivets, the rail ends will be bonded with a thermit shoe 2 in. wide extending around the base of the rail and close to the bottom of the joint plates. This method of bonding, known as the Clark joint, has been extensively used, fully 15,000 such joints having been installed within the last three years in several large cities in Western New York and in Cleveland. Mr. Clark states that up to the present time not one of these joints has broken in service.

the strongest inducements for the adoption of the pay-within type of car. The possibility of dropping the side, front and rear sash and thus completely opening the car from end to end was also considered a great advantage, as these cars are intended to take the place of cross-seat open cars in the summer. With both the front and rear platforms completely closed in when the doors are shut, it is perfectly safe for the conductor to leave his post and pass through the car, collecting the second fare while in the neutral zone.

The new cars, which are of the semi-convertible type, have the following general dimensions:

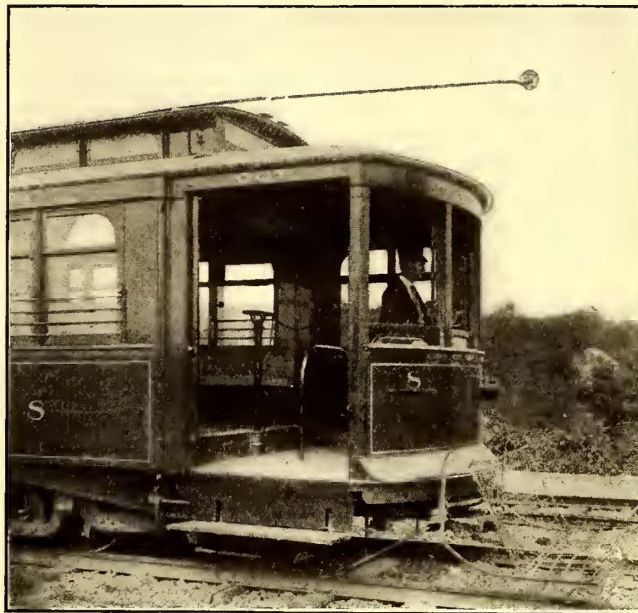
Length over corner posts.....	30 ft. 8 in.
Length over vestibule	42 ft. 8 in.
Length over bumpers	43 ft. 8 in.
Length of platform	6 ft. 0 in.
Width over posts	8 ft. 7 in.
Width over sills and side sheathing.....	8 ft. 7 in.
Height from floor to ceiling.....	8 ft. 2 in.
Height from bottom of sill to top of roof....	9 ft. 0 in.
Height from rail to bottom of sill.....	2 ft. 5 in.
Height from rail to top of step tread.....	15 in.
Height from first step to platform floor.....	14 in.
Height from platform floor to car floor.....	8 in.
Wheelbase of trucks, 33-in. wheels.....	4 ft. 6 in.
Truck centers	19 ft. 0 in.

The cars are very substantially constructed. The side sills are composed of long leaf yellow pine, 4 in. x 6 3/8 in., with a 3/8-in. x 20-in. steel plate bolted on the outside. This plate has a 4-in. x 3-in. x 3/8-in. angle riveted to the inside of the bottom edge and a 2-in. x 1 1/2-in. x 5/16-in. angle riveted to the outside of the bottom edge. This outside angle forms a seat for the poplar filler and vertical side sheathing. The end sills are composed of 4 3/4-in. x 8-in. oak plated on the outside with a 1/4-in. x 11-in. steel plate. The cross framing is composed of white oak timbers 3 3/4-in. x 6 3/8-in., plated with 6-in. x 3/16-in. steel plates.

The 6-ft. 0-in. platforms at each end of the car are supported on four knees, the two outside members being com-

The bumpers are of the angle-iron type, formed by 6-in. x 4-in. x 7/16-in. angles. They are covered on top with 16-gage sheet steel placed at an angle of about 45 deg. to keep passengers from standing on them.

The body truss rods are composed of steel bars 2 1/2-in. x 5/16-in., in section bent downward at each end of the car at an angle of about 40 deg. They have 1 1/8-in. round ends passing along the side sills and anchored to combination malleable iron truss rod seats and corner frame brackets,



Washington Pay-Within Cars—Front Platform with Door Open

posed of 1/4-in. steel plates, with 1 1/2-in. x 1 1/2-in. x 1/4-in. angles riveted to the bottom edge and 2-in. x 2-in. x 3/8-in. angles riveted to the top edge. These angles form stiffeners for the plates. The outside knees extend back to the body bolsters under the side sills and are securely anchored thereto. The two center knees are formed of 3-in. x 5-in. x 3/8-in. angles, which also extend back to the body bolsters and are anchored there. They are also secured to the end sills by hook bolts.

which are securely bolted to the side and end sills. The truss-rod struts are of malleable iron, placed so as to obtain maximum stiffness. The body bolsters are of the built-up steel truss pattern, both top and bottom members being composed of 7/8-in. x 9-in. steel plates. The sides of the cars are sheathed below the sash rest with 5/8-in. x 2-in. vertical poplar sheathing. The roof is of the monitor deck type, with detachable type hoods at each end. There are 11 windows on each side, divided in two parts. The upper part is arranged to raise in the roof and the lower part is arranged to drop into a pocket clear of the sash rail. The pockets are provided with dust caps hinged to the posts so that the opening is always covered, whether the sashes are up or down. The upper side sashes are embossed in a neat design.

The cars are finished throughout with Honduras mahogany, stained dark and rubbed with an oil finish.

There are seven Hale & Kilburn No. 199-A steel seats on each side of the car. These seats are 34 1/2-in. wide, giving an aisle 25-in. wide. There are also four longitudinal seats, one at each corner of the car, occupying the space of two side windows. All seats are upholstered with hard enameled canvas-lined rattan.

Each end of the car is equipped with Van Dorn No. 5 ball and socket type radial couplers. Hand brakes at each end of the car are fitted on the bottom with the Sterling brake mechanism, and on top with vertical brake wheels. Each end of the car is equipped with G. E. luminous arc dash headlights. A Hunter illuminated sign is placed in the end deck window. There is also a four-sided box sign on each side of the car on a level with the lower deck. Two International Type R-7 single registers are used, one for cash fares and one for tickets.



Washington Pay-Within Cars—Interior View

posed of 1/4-in. steel plates, with 1 1/2-in. x 1 1/2-in. x 1/4-in. angles riveted to the bottom edge and 2-in. x 2-in. x 3/8-in. angles riveted to the top edge. These angles form stiffeners for the plates. The outside knees extend back to the body bolsters under the side sills and are securely anchored thereto. The two center knees are formed of 3-in. x 5-in. x 3/8-in. angles, which also extend back to the body bolsters and are anchored there. They are also secured to the end sills by hook bolts.

These cars are arranged for pay-within double-end operation. The vestibules are equipped with single Hale & Kilburn steel sliding doors on each side, sliding into pockets in the sides of the car body, and are operated by compressed air. The engines operating the doors are located under the longitudinal corner seats and are readily accessible by lifting up the seat cushion. The register rod runs through the center of the car and is fitted with operating handles opposite each side window. At each end of the car the rods are provided with two knobs, so that the conductor can operate the register from his normal position in front of the door operating stand.

The cars are mounted on Standard Motor Truck Company's O-50-type trucks, having 4 ft. 6 in. wheel base and 33-in. steel wheels. The motor equipment consists of four Westinghouse 101-B motors with K-29 type control. All the power wiring under the car is in an armored-iron conduit, while the car cables, which are Roebing's solid waterproof type, are placed in transite-lined boxes under the seats. In addition, the underframe is thoroughly protected above the motors by $\frac{1}{4}$ in. of transite material. The air-brake equipment is of the Westinghouse semi-automatic type.

The cars were built by the Cincinnati Car Company, under the pay-within patents owned by the Pay-Within Car Company. The latter furnished the steel doors and pneumatic door and step-operating devices.

MEETING OF THE CENTRAL ELECTRIC ACCOUNTING CONFERENCE

The tenth meeting of the Central Electric Accounting Conference was held in Indianapolis, Ind., on Sept. 11, 1909. In the absence of the secretary, Walter Shroyer (Indiana Union Traction Company) was appointed acting secretary. The president, M. W. Glover (Ohio Electric Railway) presided.

The minutes of the last meeting were approved. W. H. Forse, Jr., treasurer, Indiana Union Traction Company, submitted the report of the executive committee, announcing the appointment of A. F. Elkins, auditor, Columbus, Delaware & Marion Railway, as a member of the committee to succeed R. J. Thompson, Indianapolis & Louisville Traction Company, resigned. He also reported that the treasurer had received from 29 roads remittances covering the assessment made at the last meeting, and a resolution was passed reimbursing the treasurer for expenses incurred, and authorizing the printing of the official list of members, the constitution, by-laws, rulings and recommendations as adopted at the first nine meetings of the conference. The report of the committee was adopted.

The report of the secretary and treasurer showed 35 active members on the official roll.

On motion of Mr. Forse, the president was authorized to appoint a committee to represent the Central Electric Accounting Conference at the meeting of the American Street & Interurban Railway Accountants' Association in Denver, Oct. 4 to 8, 1909, and to notify the secretary and president of that association accordingly.

The first subject listed for discussion, "The Advantages of Uniform Methods of Accounting," was taken up, and Mr. Forse addressed the conference on this subject and called attention to the work of the Accountants' Association and the conference to this end, citing the action taken by the conference at previous meetings and the good accomplished thereby. The subject was also discussed by S. C.

Rogers (Mahoning & Shenango Railway & Light Company), J. D. Maynes (Illinois Traction System), C. E. Thompson (Chicago & Milwaukee Electric Railroad) and others, the universal opinion being that the adoption of uniform blanks and uniform methods of settlement between lines in this conference had been of great benefit and had placed the lines in this section in a position to assist the Accountants' Association materially in accomplishing the end to which it is working—the promotion of uniformity in accounting methods throughout the United States.

The second subject discussed was, "Methods of Computing Car-Hours and Car-Mileage, with Especial Reference to Passenger and Freight Trailer Cars, Non-Revenue Miles, Mileage in Terminal Cities, Blockades and Lost Running Time." This subject was discussed by E. D. Gault, Mahoning & Shenango Railway & Light Company), L. T. Hixson (Terre Haute, Indianapolis & Eastern Traction Company), E. J. Skehan (Muncie & Portland Traction Company), Walter Shroyer, C. E. Thompson, S. C. Rogers and others, the discussion showing that the lack of uniformity in the methods of computing mileage statistics rendered them of little value for comparative purposes between lines. Mr. Glover stated that in his opinion this was one of the most important questions before the conference. The committee appointed to represent the conference at Denver was instructed to report to the next meeting of the conference the result of the discussion of this subject at the Denver convention, with a view to the adoption of any recommendations made by the American association. One feature brought out in this discussion was the diverse conditions existing on many lines regarding deadhead mileage, non-revenue service, etc., making uniformity difficult.

A. L. Neereamer, secretary of the Central Electric Railway Association and chairman of the Central Electric Traffic Association, was present by invitation, and addressed the conference on the relations between the traffic and accounting departments, laying stress on the importance of harmony between the two departments, particularly as to matters in which they are jointly interested. He suggested the appointment of a committee of the conference to meet a similar committee of the Traffic Association to discuss questions arising which affect both departments. His suggestion was adopted, and the auditing committee of the Central Electric Railway Association, consisting of Messrs. Shroyer, Elkins and Glover, was appointed to represent the conference.

Mr. Neereamer spoke of the good accomplished by the conference in adopting uniform blanks, and stated that he had received numerous calls for samples, which he was able to fill.

Messrs. Forse, Rogers and Glover urged all members who could possibly do so to attend the Denver convention in order that the lines in the central section should be well represented.

It was decided to hold the next meeting at Dayton, Ohio, on Dec. 11, 1909, when the annual election of officers will take place. The meeting then adjourned.

A Boston financial paper estimates that in the proposed new subway system for New York City a total of more than 100,000 tons of structural steel and steel rails will be required. This will involve an expenditure of upward of \$2,000,000 for the steel alone. The new subway will probably require 1200 cars, which will consume 18,000 tons of steel of various shapes, estimated to cost at the mills \$550,000.

HEARING ON VALUATION OF CONEY ISLAND & BROOKLYN RAILROAD

George A. Damon was the only witness at the hearing on Sept. 8 before the New York Public Service Commission, First District, in the case involving the valuation of the Coney Island & Brooklyn Railroad. Commissioner Bassett presided.

Mr. Damon testified that he was first assistant to Bion J. Arnold, consulting engineer for the commission, and was in charge of the work of the appraisal department. He represented Mr. Arnold in the absence of the latter, and was employed directly by him and not directly by the commission. He had been Mr. Arnold's assistant for 14 years, and for the last 10 years had been managing engineer of The Arnold Company. He was familiar with and had been connected with the work of reporting upon and appraising the street railway properties in Chicago.

Mr. Damon named the properties with the construction of which he had been identified, and said that in his capacity as managing engineer he had charge not only of the estimates but also of carrying out a large amount of construction work and checking the actual cost with the first estimates. He had had wide experience in that connection.

Testifying as to the report of the appraisal, an abstract of which was published in last week's issue of the *ELECTRIC RAILWAY JOURNAL*, page 398, Mr. Damon said that the details of the reproduction values of the buildings of the company were included in a record, part of which had been introduced in evidence. The figures showing the detailed estimates were not included in full in the exhibit that had been placed in evidence. These estimates were made by a corps of building experts, who went personally to each building and made up a complete bill of materials from the buildings themselves, with sketches to show each kind of material used in the construction. To these estimates of material or actual measurements of material unit prices had been applied on the basis of the prices for which it would be possible to get the material put in place by a sub-contractor. The totals were shown in recapitulation upon a sheet, showing in each case the cost of reproducing each part of each building by means of a sub-contract.

Mr. Damon then gave the details of the items comprising the total reproduction value of each building. Regarding one building he said that the structure was out of use and of course it had a scrap value, but whether or not it had any larger value would depend on whether or not it could be sold to advantage. It was not now used in the operation of the road. Behind the estimated values in detail as enumerated were the field notes of the men, but Mr. Damon had not introduced those as evidence because they would be too voluminous.

In response to a question from Commissioner Bassett, Mr. Damon said that he had thus placed figures of the estimated reproduction value on the tangible property of the company so far as he had been able to identify it. There were a number of other values that should be understood in considering the total. In the first place, there were added to all of the items of construction nature—such as track, track special work and bonding, overhead trolley construction, overhead feeders, underground conduit cables, power plants, substations and buildings and structures—a profit of 10 per cent, and this 10 per cent allowance was intended to include all of the general contractor's overhead charges, such as insurance, his office expenses and regular charges of a general contractor. In addition to that percentage to all

of the items that had been placed in the book, with the exception of the real estate and the miscellaneous items, there was added a percentage totaling 15 per cent.

This may be considered to be divided into three parts. One part covers incidentals, including contingencies, incomplete inventories and the loss and wastage of material during construction. Another part of the 15 per cent may be considered to cover the cost of the administrative expenses of the company shown in the book under the title "organization," which Mr. Damon thought might be better known as administrative cost, as it had nothing to do with the organization of the company. This part included the expenses of the company for rent, officers' salaries, State and city permits and fees, property owners' and local consents and the legal expenses in connection only with construction, superintendence and inspection, accounting department, printing and storeroom expenses. Another part of the 15 per cent was to cover engineering, including cost of designing and testing of all construction and equipment items.

These items had been included in the figures shown in evidence, but there were still some other items which Mr. Damon thought should be included, but which had not yet been prepared in figures. Those items would be of the nature of development expenses, though Mr. Damon hardly thought that term was broad enough to cover them all; but they would be such items as interest during construction, taxes during construction, etc. He could list a great number that would come under that general phrase, but thought those would serve to typify what he meant by development expenses.

The hearing was adjourned until Sept. 15, in order to permit the presentation of testimony by both Mr. Arnold and Mr. Damon.

BERLIN CAR AND OMNIBUS ACCIDENT STATISTICS

The Grosse Berliner Strassenbahn, Berlin, Germany, has published some accident records which cover the years 1908 and 1907. They are of particular interest owing to the comparison made with the accidents due to omnibuses. During 1908, the street railway system carried 490,007,872 passengers, and had 1967 accidents, of which 258 were fatal. The omnibus lines carried 121,557,699 passengers in 1908. For every 1,000,000 passengers carried, the fatal and serious accidents compare as follows: On the surface cars, 0.526 in 1908 and 0.570 in 1907; on the omnibuses, 0.470 in 1908 and 0.610 in 1907. If all platform accidents due to the passengers' negligence are eliminated from the comparison, it appears that the cars are safer than the omnibuses, as per the following figures on serious accidents per 1,000,000 passengers transported: On the surface cars, 0.336 in 1908 and 0.350 in 1907; on the omnibuses, 0.410 in 1908 and 0.450 in 1907. As might be expected, the trackless omnibuses run over more pedestrians than the street cars. This is shown in the following figures giving the serious accidents of this kind per 1,000,000 passengers: On the surface cars 0.24 in 1908 and 1907; on the omnibuses, 0.34 in 1908 and 0.47 in 1907. The total number of car accidents showed a decrease from 2151 in 1907 to 1967 in 1908 despite a 5 per cent growth in travel and a slight increase in schedule speeds. The total number of car miles was 72,760,772 in 1908, and 68,066,709 in 1907.

The citizens of Fremantle, West Australia, have voted in favor of raising a loan of approximately \$100,000 for the construction of a municipal tramway system.

COMMUNICATIONS

RAIL CORRUGATION

PHILADELPHIA RAPID TRANSIT COMPANY
PHILADELPHIA, PA., Sept. 8, 1909.

To the Editors:

I have read with interest the abstract of Mr. Peterson's paper on causes of rail corrugation printed in the *ELECTRIC RAILWAY JOURNAL* for Aug. 28, and also the comments by George L. Fowler in the issue of Sept. 4. My own opinion of the cause of rail corrugation has not changed since the publication of my views on this subject in the issue of the *STREET RAILWAY JOURNAL* for May 18, 1907, page 865. I still believe that corrugation is caused by vibrations of the rail or movements of the whole track structure. The wheels of motor or other power-driven cars have a tendency to slip or skid because of the rapid vibration of the rails. The inertia of the car prevents the wheels from instantaneously following these vibrations, and the friction thus produced results in wear, varying with the wave length of the vibrations. The movement or vibration of the rails may result from one of four causes, namely, the vibration or lateral bending of the web of the rail; rails loose on their supports; ties loose on their foundations; the vibration or movement of the foundation immediately under the track structure. For several years we have been acting on the supposition that this theory of vibration is correct and have taken suitable precautions to prevent vibration wherever corrugation has appeared. At the present time there is very little rail corrugation on the tracks of the Philadelphia Rapid Transit Company that would be apparent to the casual observer. The worst examples of this trouble are on cast manganese rail at the entering ends of long radius curves, and this we attribute to our having had the web of the 9-in. girder rail, of which the curves are built, made too thin for the speed and service at those points.

H. B. NICHOLS,
Engineer of Way.

HIGH-TENSION STRAIN INSULATORS

The accompanying engraving illustrates the construction of a new form of strain insulator for high-tension transmission and trolley lines which is made by the Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., and is designated as type C. Its dielectric strength is 40,000 volts and its ultimate tensile strength is above 30,000 lb. For service voltages up to 12,000 and for mechanical stresses up to 10,000 lb., or even 15,000 lb. in special cases, this type of insulator has been successfully used. As will



High-Tension Strain Insulator

be seen from the sectional illustration, a pull on the eye-bolt produces a compression of the insulating cone. This cone is constructed of sheet mica compressed under heavy pressure, and it will withstand very large stresses. The outside tube is of porcelain and is 20 in. long, to afford ample protection against leakage in any weather. No fragile petticoats are used, and owing to its small size the insulator is quite inconspicuous. The porcelain tube acts only as a weather seal for the interior and is not subjected to any mechanical stress.

The Westinghouse Electric & Manufacturing Company also makes a full line of wood strain insulators capable of standing up under a tension of 4000 lb. and a voltage of from 150 to 11,000. The end caps are furnished with eyes, clevises or tapped lugs to adapt the insulators for dead-end anchor guy or steady strain service.

CONVENTION NOTES

Robert N. Wallis, president of the Accountants' Association, has sent out a letter to all members of that association inviting them to be present at a "get-together" luncheon which will be held at the Savoy Hotel, Denver, Wednesday, Oct. 6. The cost will be \$3 per plate. All those who expect to attend this gathering are earnestly requested to write at once to Mr. Wallis, Fitchburg, Mass.

A. L. Whipple, chairman of the entertainment committee, has just returned from Denver, where he has been perfecting arrangements for the entertainments to be conducted by the Manufacturers' Association during the convention week for the benefit of the delegates. A complete program of the entertainment will be published at an early date. It is not the intention of the entertainment committee ordinarily to provide entertainment during the days while there are sessions, but there are so many side trips to be taken in and about Denver that the committee thought many of the delegates would be apt to absent themselves during the week. On this account it has been deemed advisable, and with the approval of President Shaw arrangements have been made to provide for an official excursion over the Moffat Route on Friday, Oct. 8. This is a new steam railroad now being built from Denver to Salt Lake City, and 214 miles have been completed. It is expected to take the delegates over the first 65 miles of the road, including the section to the top of the Continental Divide—11,660 ft. above the sea. The party will leave Denver at 8:30 a. m., and by noon the delegates will stand upon the divide, surrounded by banks of perpetual snow. This is far above the timber line, and is said to be higher than any standard-gage railroad has ever before been constructed. The first 47 miles of the trip lie over the wonderful scenic route between Denver and Boulder Park, and have an average grade of 2 per cent. From Boulder Park to the summit of the divide an average grade of 4 per cent is maintained, and the train rises to the crest of the mountains by intricate windings, ascending higher up on the slope of the divide by a series of loops and curves that is amazing. On the way to the crest it passes through 54 tunnels, most of them being but a few car-lengths long, which have been cut through the shoulders of the mammoth mountains to provide a pathway for the trains. The trip will be one long to be remembered by those who participate in it.

In addition to the manufacturers mentioned in the lists of intending exhibitors, published in the *ELECTRIC RAILWAY JOURNAL* for Aug. 14, Sept. 4 and Sept. 11, the following companies have applied for exhibit space at the Denver convention:

Electric Railway Equipment Company, Cincinnati, Ohio.
Standard Steel Works Company, Philadelphia, Pa.
Standard Motor Truck Company, Pittsburgh, Pa.
The Planet Company, Chicago, Ill.
American Mason Safety Tread Company, Boston, Mass.

The electric tramway system in Tucuman, Argentine Republic, will be opened for traffic in October.

NOTES ON TRANSPORTATION TO DENVER CONVENTION

After careful consideration, the committee in charge of the New York-Denver special over the Pennsylvania Railroad has decided to adhere to the original leaving time of the train, namely, 3:55 p. m. on Friday, Oct. 1, instead of 9:55 a. m. on Oct. 1, as announced in the *ELECTRIC RAILWAY JOURNAL* for Aug. 28. The return to the original hour was made to allow those who wish to see the naval parade in New York on Oct. 1 to do so.

W. L. Conwell, chairman of the committee in charge of this train, has just issued a circular letter giving more in detail the arrangements made for the return trip, announced briefly last week. As stated at that time, the route of the eastbound special will be via the Santa Fé Railway, Denver to Kansas City; the Chicago & Alton Railway, Kansas City to St. Louis, and the Pennsylvania Railroad, St. Louis to New York. The trip from Colorado Springs to New York will be on fast schedule, without further stop-overs, with the view to reaching home as soon as possible after the sightseeing in Colorado has been concluded. The return itinerary provides for departure from Denver about midnight on Friday, Oct. 8, reaching Colorado Springs before daylight Saturday, Oct. 9, leaving there after supper same evening and arriving in New York early Tuesday morning, Oct. 12. The sleepers will be parked for occupancy in Denver early Friday evening and in Colorado Springs for convenient access and occupancy whenever desired from the time of the arrival on Saturday morning until departure that evening. Passage on the special return train is not limited to those who travel westbound on it, but to any who are in attendance at the convention. It must be understood, however, that as the diverse route privilege east of Chicago and St. Louis is granted in connection with round-trip tickets sold at the low rate authorized for the convention, it will be possible only for those holding tickets of Pennsylvania Railroad issue to return from St. Louis to New York on the special train, although all whose tickets read returning via the Santa Fé and the Chicago & Alton may accompany the special train party from Denver to St. Louis. Any person, therefore, wishing to join the party returning from Denver must be sure when purchasing his round-trip tickets to see that they read for return via the Santa Fé to Kansas City, the Chicago & Alton to St. Louis, and via the Pennsylvania Railroad from St. Louis to his starting point if he expects to return via the Pennsylvania Railroad on his eastbound trip; otherwise his route east of St. Louis will have to conform to the requirements of the line issuing ticket at his starting point. As the arrangements for this return special train movement on fast schedule indicated above are contingent upon there being a sufficient number in the party to warrant the railroad companies in providing such special service, those desiring accommodations should advise the committee promptly.

Secretary Swenson, of the American Street & Interurban Railway Association, is issuing this week Convention Bulletin No. 4, which is devoted principally to a statement of the railroad and Pullman rates to Denver and the special trains to be run at the time of the convention. The principal cities of the country are tabulated, and the exact round-trip railroad fares and Pullman fares for berth, compartment or drawing room are given. An official statement is also made of the privileges of choice in the return trip permitted by the railroad companies.

A list of the committees appointed by President Shaw to arrange for all of the special trains or special car accom-

modations to Denver at the time of the convention is also given. Briefly, they are as follows:

New England States—Special train to Denver and Pacific Coast and return, in charge of Charles S. Clark, of Boston.

New York City—Special train over the New York Central lines, in charge of a committee of which C. Loomis Allen is chairman; also a special train over the Pennsylvania Railroad, in charge of another committee, of which W. L. Conwell is chairman.

Chicago—Special train over the Chicago, Burlington & Quincy Railroad, of which J. M. Roach is in charge.

The Southeastern States—W. H. Glenn, Atlanta, is organizing a special party.

Central States—Special train, in charge of a committee, of which R. I. Todd, Indianapolis, is chairman. The route will probably be through St. Louis on the trip to Denver, and via Chicago on its return trip.

St. Louis, Kansas City and Surrounding Territory—Arthur S. Partridge is chairman of the committee for this territory, and will reserve Pullman accommodations for those who desire to attend the convention.

Central Northwestern States—A special car will be run from Davenport (Ia.) to Denver over the Chicago, Rock Island & Pacific, leaving Davenport at 2:02 p. m., Oct. 2, and arriving at Denver at 2 p. m., Oct. 3. The committee in charge consists of A. W. Warnock, Minneapolis, and P. P. Crafts, Clinton.

Southwestern States—D. A. Hegarty, Little Rock, Ark., is arranging for a car to take delegates from the Western States, including Texas, Arkansas and Oklahoma.

California—Two or more special cars will leave on the night of Friday, Oct. 1, and arrive at Denver 7 a. m., Oct. 4. Charles N. Black, San Francisco, is chairman of the committee in charge of these cars.

Seattle and the Far Northwest—It is expected by E. E. Potter and E. F. Seixas, of Tacoma, to have two or more special cars for the use of those in the Far Northwest who desire to go to Denver at the time of the convention.

Mr. Swenson also announces that the return limit of railroad tickets is until Oct. 31, so that it will be possible for those who wish to do so after the convention to visit Pike's Peak, Cripple Creek, Colorado Springs and other places reached by side trips from Denver.

The committees in charge of the two special trains from New York have made reservations for the following persons, who expect to attend the convention:

RESERVATIONS ON PENNSYLVANIA SPECIAL TRAIN.

Azel Ames, Kerite Ins. Wire & Cable Co., New York.
 Victor Angerer, Wm. Wharton, Jr., & Co., Philadelphia, Pa.
 Mrs. Victor Angerer.
 R. D. Apperson, Lynchburg Trac. & Lt. Co., Lynchburg, Va.
 F. B. Archibald, National Lock Washer Co., Newark, N. J.
 E. H. Baker, Galena Signal Oil Co., New York.
 W. P. Barba, Midvale Steel Co., Midvale, Pa.
 W. K. Beard, Electric Railway Journal, Philadelphia, Pa.
 H. W. Blake Electric Railway Journal, New York.
 S. T. Bole, The J. G. Brill Co., New York.
 N. W. Bolen, Public Service Ry., Newark, N. J.
 L. L. Brinsmade, West. Elec. & Mfg. Co., New York.
 Mrs. L. L. Brinsmade.
 R. D. Brixey, Kerite Ins. Wire & Cable Co., New York.
 H. De H. Broch, Standard Steel Works Co., Philadelphia, Pa.
 J. W. Brown, West Penn. Rys. Co., Connellsville, Pa.
 J. G. Buchler, Columbia Mach. Wks. & Malleable Iron Co., B'klyn, N. Y.
 T. W. Casey, Pay-As-You-Enter Car Corp., New York.
 C. C. Castle, Hildreth Varnish Co., New York.
 A. T. Clarke, United Rys. & Elec. Co., Baltimore, Md.
 T. M. Cluley, Union Electric Co., Pittsburgh, Pa.
 W. L. Conwell, West. Elec. & Mfg. Co., New York.
 T. Cooper, West. Elec. & Mfg. Co., Philadelphia, Pa.
 C. L. Crabbs, Brooklyn Rapid Transit Co., Brooklyn, N. Y.
 F. A. Craig, West. Trac. Brake Co., Pittsburgh, Pa.
 W. C. Cuntz, Penna. Steel Co., Steelton, Pa.
 Mrs. W. C. Cuntz.
 H. S. Dailey, Meikelham & Dinsmore, New York.
 R. E. Danforth, Public Service Ry., Newark, N. J.
 Mrs. R. E. Danforth.
 Misses Danforth.
 J. S. Doyle, Interborough R. T. Co., New York.
 F. J. Drake, Lorain Steel Co., Philadelphia, Pa.
 H. V. Drown, Public Service Ry., Newark, N. J.

- E. J. Dunne, Pub. Service Ry., Newark, N. J.
 C. R. Ellicott, West. Trac. Brake Co., New York.
 S. P. S. Ellis, Lorain Steel Co., Pittsburgh, Pa.
 H. C. Evans, Lorain Steel Co., New York.
 Mrs. H. C. Evans.
 W. H. Evans, Buffalo, N. Y.
 Thomas Farmer, Jr., Cons. Car Heating Co., New York.
 N. M. Garland, Ohio Brass Co., New York.
 William Gable, Natl. Brake & Elec. Co., New York.
 H. R. Goshorn, Philadelphia R. T. Co., Philadelphia, Pa.
 Mrs. H. R. Goshorn.
 W. G. Gove, Brooklyn Rapid Transit Co., Brooklyn, N. Y.
 Alfred Green, Galena Signal Oil Co., Brooklyn, N. Y.
 E. M. Grove, McConway & Torley Co., Pittsburgh, Pa.
 Henry Gulick, Gulick-Henderson Co., Pittsburgh, Pa.
 W. F. Ham, Wash. Ry. & Elec. Co., Washington, D. C.
 Mrs. W. F. Ham.
 J. W. Hancock, Roanoke Ry. & Lt. Co., Roanoke, Va.
 A. N. Hargrove, The J. G. Brill Co., Philadelphia, Pa.
 Geo. H. Harries, Wash. Ry. & Elec. Co., Washington, D. C.
 G. M. Haskell, The J. G. Brill Co., Philadelphia, Pa.
 C. S. Hawley, Cons. Car Htg. Co., New York.
 Ross F. Hayes, Curtain Supply Co., New York.
 C. T. Herrick, Williamsport Pass. Ry., Williamsport, Pa.
 Hugh Hazelton, Hudson & Manhattan R. R., New York.
 Charles Hewitt, Phila. Rap. Transit Co., Philadelphia, Pa.
 Mrs. Charles Hewitt.
 James Heywood, Philadelphia R. T. Co., Philadelphia, Pa.
 Mrs. James Heywood.
 J. M. High, The Pantasote Co., New York.
 L. F. Hoffman, Public Service Ry., Newark, N. J.
 R. C. Hoffman, Jr., R. C. Hoffman Co., Baltimore, Md.
 W. J. Jeandron, New York.
 P. N. Jones, Pittsburgh Rys. Co., Pittsburgh, Pa.
 George Keegan, Interborough R. T. Co., New York.
 W. R. Kerschner, Allentown, Pa.
 F. A. Keyes, Am. Steel & Wire Co., New York.
 Mrs. F. A. Keyes.
 C. B. Keys, General Electric Co., New York.
 C. S. Kimball, Wash. Ry. & Elec. Co., Washington, D. C.
 Mrs. C. S. Kimball.
 A. S. King, Sterling Varnish Co., Pittsburgh, Pa.
 R. W. King, Wash., Alex. & Mt. Vernon Ry., Washington, D. C.
 Mrs. R. W. King.
 T. J. King, Gt. Falls & Old Dom. R. R., Washington, D. C.
 C. O. Kruger, Phila. Rapid Transit Co., Philadelphia, Pa.
 J. C. Kyle, West. Elec. & Mfg. Co., Baltimore, Md.
 H. N. Latey, Latey & Slater, New York.
 W. H. Lawton, Wash., Alex. & Mt. Vernon Ry., Philadelphia, Pa.
 Mrs. W. H. Lawton.
 F. H. Lincoln, Philadelphia R. T. Co., Philadelphia, Pa.
 Mrs. F. H. Lincoln.
 W. C. Ludwig, United Rys. & Elec. Co., Baltimore, Md.
 T. N. McCarter, Public Service Ry., Newark, N. J.
 Mrs. T. N. McCarter.
 H. G. McConaughy, Dearborn Drug & Chem. Co., New York.
 W. S. McFarland, Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
 W. S. McGowan, Am. Brake Shoe & Fdy. Co., New York.
 W. McLain, Cambria Steel Co., Pittsburgh, Pa.
 Mrs. W. McLain.
 J. B. MacAfee, Norfolk & Portsmouth Trac. Co., Philadelphia, Pa.
 Mrs. J. B. MacAfee.
 E. R. Mason, Elec. Serv. Supplies Co., Philadelphia, Pa.
 Stephen C. Mason, McConway & Torley Co., Pittsburgh, Pa.
 T. J. Mayer, Elec. Service Supplies Co., Philadelphia, Pa.
 W. Meeteer, Wallace Supply Co., New York.
 P. W. Millar, Kerite Ins. Wire & Cable Co., New York.
 C. S. Mitchell, Pitts. Rys. Co., Pittsburgh, Pa.
 H. B. Nichols, Philadelphia, R. T. Co., Philadelphia, Pa.
 J. W. Perry, H. W. Johns-Manville Co., New York.
 J. R. Pratt, United Rys. & Elec. Co., Baltimore, Md.
 G. W. Provost, Union Electric Co., Pittsburgh, Pa.
 Robert Radford, Standard Steel Works Co., Philadelphia, Pa.
 J. W. Rawle, The J. G. Brill Co., Philadelphia, Pa.
 C. W. Reimochl, Penna. Steel Co., Steelton, Pa.
 C. L. Richards, Galena Signal Oil Co., New York.
 C. E. Roehl, Brooklyn Rapid Transit Co., Brooklyn, N. Y.
 Martin Schreiber, Public Service Ry., Newark, N. J.
 W. S. Sisson, D & W Fuse Co., New York.
 E. H. Sniffin, West. Machine Co., Pittsburgh, Pa.
 Mrs. E. H. Sniffin.
 P. C. Snow, Globe Ticket Co., New York.
 R. P. Stevens, Lehigh Valley Tran. Co., Allentown, Pa.
 Mrs. R. P. Stevens.
 A. A. Stevenson, Standard Steel Works Co., Philadelphia, Pa.
 A. E. Stone, Badger Fire Extinguisher Co., New York.
 Mrs. A. E. Stone.
 N. E. Stubbs, United Rys. & Elec. Co., Baltimore, Md.
 C. J. Symington, The T. H. Symington Co., Baltimore, Md.
 J. V. E. Titus, Elec. Service Supplies Co., Philadelphia, Pa.
 W. S. Twining, Phila. R. T. Co., Philadelphia, Pa.
 Mrs. W. S. Twining.
 S. I. Wailes, Natl. Brake & Elec. Co., New York.
 William Wampler, American Locomotive Co., New York.
 F. J. Whitehead, Wash. Ry. & Elec. Co., Washington, D. C.
 Clifford Wiley, New York.

RESERVATIONS ON NEW YORK CENTRAL SPECIAL TRAIN.

- G. S. Ackley, National Brake Co., Buffalo, N. Y.
 C. Loomis Allen, Utica & Mohawk Valley Ry., Utica, N. Y.
 Mrs. C. Loomis Allen.
 Alfred Allen, Utica, N. Y.
 W. K. Archbold, Archbold-Brady Co., Syracuse, N. Y.
 A. H. Armstrong, General Electric Co., Schenectady, N. Y.
 C. A. Babbiste, Electric Railway Journal, New York.
 Geo. A. Barnes, Galena Signal Oil Co., Cleveland, Ohio.
 C. E. Barry, General Electric Co., Schenectady, N. Y.
 T. Beran, General Electric Co., New York.
 Bertram Berry, Heywood Bros. & Wakefield Co., New York.
 C. M. Bliven, General Electric Co., Schenectady, N. Y.
 H. S. Bradfield, New York Car Wheel Co., New York.
 Mrs. H. S. Bradfield.
 M. C. Brush, Buffalo & Lake Erie Trac. Co., Buffalo, N. Y.
 F. Buchanan, Crouse-Hinds Co., Syracuse, N. Y.
 J. C. Calisch, Buffalo & Lake Erie Trac. Co., Buffalo, N. Y.
 W. Gibson Carey, General Electric Co., Schenectady, N. Y.
 F. E. Case, General Electric Co., Schenectady, N. Y.
 E. F. Chaffee, O. M. Edwards Co., Syracuse, N. Y.
 T. C. Cherry, Utica & Mohawk Valley Ry., Utica, N. Y.
 William J. Clark, General Electric Co., New York.
 J. H. Coleman, Coleman Fare Box Co., Buffalo, N. Y.

- J. C. Collins, New York State Rys., Rochester, N. Y.
 Mrs. J. C. Collins.
 W. H. Collins, Fonda, Johnstown & Gloversville R. R. Gloversville, N. Y.
 Mrs. W. H. Collins.
 C. F. Conn, J. G. White & Co., New York.
 E. J. Cook, New York State Rys., Rochester, N. Y.
 Mrs. E. J. Cook.
 Miss Cook.
 J. P. Devine, J. P. Devine Co., Buffalo, N. Y.
 Geo. H. Dreybus, Coleman Fare Box Co., Buffalo, N. Y.
 E. I. Edgecomb, Syracuse, Rap. Tran. Ry. Co., Syracuse, N. Y.
 Mrs. E. I. Edgecomb.
 J. R. Ellicott, West. Trac. Brake Co., New York.
 W. Caryl Ely, Buffalo, N. Y.
 George H. Ford, Automatic Ventilator Co., New York.
 Mrs. George H. Ford.
 G. M. Gest, New York.
 H. A. Goode, Wonham, Magor & Sanger, New York.
 W. R. W. Griffin, Rochester, Ry. Co., Rochester, N. Y.
 W. J. Harvie, Utica & Mohawk Valley Ry., Syracuse, N. Y.
 T. A. H. Hay, Northampton Trac. Co., Easton, Pa.
 W. O. Hay, Montgomery Trac. Co., Easton, Pa.
 Frank Hedley, Interborough Rap. Tran. Co., New York.
 E. M. Hedley, Galena Signal Oil Co., New York.
 Q. W. Hershey, Westinghouse Elec. & Mfg. Co., Syracuse, N. Y.
 A. F. Hills, Crouse-Hinds Co., Syracuse, N. Y.
 Rodney Hitt, Electric Railway Journal, New York.
 Walter Jackson, Electric Railway Journal, New York.
 E. L. James, Am. Brake Shoe & Fdy. Co., Springfield, Mass.
 Mrs. E. L. James.
 John C. Jay, Pennsylvania Steel Co., New York.
 Mrs. John C. Jay.
 F. D. Kathe, National Carbon Co., Cleveland, Ohio.
 E. A. Kendrick, Matthews-Northrup Co., Buffalo, N. Y.
 W. H. Kidder, New York.
 W. A. Lake, Pantasote Co., New York.
 Edward L. Leeds, Niles-Bement-Pond Co., New York.
 Ray D. Lillibridge, New York.
 Mrs. Ray D. Lillibridge.
 A. L. Linn, Jr., New York State Rys., New York.
 Mrs. A. L. Linn, Jr.
 H. B. Logan, Dossert & Co., New York.
 Mrs. H. B. Logan.
 Bruce E. Loomis, Fire Underwriters Electrical Bureau, New York.
 J. McCullough, Coleman Fare Box Co., Buffalo, N. Y.
 James H. McGraw, Electric Railway Journal, New York.
 Mrs. James H. McGraw.
 F. MacGovern, MacGovern, Archer & Co., New York.
 William Marshall, Anglo-American Varnish Co., Newark, N. J.
 Mrs. William Marshall.
 F. D. Miller, National Brake Co., Buffalo, N. Y.
 E. P. Morris, Elmer P. Morris Co., New York.
 Mrs. E. P. Morris.
 Frederic Nicholas, Electric Railway Journal, New York.
 Miss Helen Paddock, New York.
 J. H. Pardee, J. G. White & Co., New York.
 Mrs. J. H. Pardee.
 E. F. Peck, Schenectady Ry. Co., Schenectady, N. Y.
 Mrs. E. F. Peck.
 Mrs. G. F. Perine, New York.
 H. N. Ransom, General Electric Co., Schenectady, N. Y.
 Alexander Reed, U. S. Wood Preserving Co., New York.
 J. A. Renton, Kerite Ins. Wire & Cable Co., New York.
 W. B. Rockwell, Syracuse & Suburban Railroad, Syracuse, N. Y.
 Mrs. W. B. Rockwell.
 E. A. Rooney, Coleman Fare Box Co., Buffalo, N. Y.
 W. G. Ross, Montreal St. Ry. Co., Montreal, Que.
 Ralph Sanger, Wonham, Magor & Sanger, New York.
 C. N. Ryan, East Penna. Rys. Co., Pottsville, Pa.
 H. W. Sheldon, Standard Steel Works Co., New York.
 C. E. Smith, New York.
 Mrs. C. E. Smith.
 James V. Smith, Galena Signal Oil Co., Cleveland, Ohio.
 J. S. Speer, Soer Carbon Co., St. Marys, Pa.
 R. M. Standish, Electric Traction Weekly, New York.
 H. H. Stannard, G. M. Gest, New York.
 J. H. Stedman, Rochester Printing Co., Rochester, N. Y.
 E. S. Taylor, W. J. Jeandron, New York.
 S. W. Trawick, General Electric Co., New York.
 J. M. Wakeman, Electric Railway Journal, New York.
 C. T. Walker, Electric Railway Journal, Cleveland, Ohio.
 John F. Wallace, Electric Properties Co., New York.
 Mrs. John F. Wallace.
 Mr. White, Montreal St. R. Co., Montreal, Que.
 Ernst Woltman, A. & J. M. Anderson Mfg. Co., New York.
 Mrs. Ernst Woltman.

PAY-AS-YOU-ENTER CARS IN WASHINGTON

The Capital Traction Company, of Washington, D. C., as announced previously in these columns, is making an extensive experiment with pay-as-you-enter cars built under the license of the Pay-As-You-Enter Car Corporation. Last fall 39 cars of the pay-as-you-enter type were ordered from the Cincinnati Car Company. Twenty of these cars were received early in the spring of this year and were immediately placed in service. The remaining 19 cars on this order are now building, and will be delivered shortly. In addition, the railway company altered last spring two semi-convertible cars with 6-ft. platforms at each end for pay-as-you-enter operation, and is now converting in its own shops to more cars of the same type. The platform and door arrangements of these converted cars are the same as on the new pay-as-you-enter cars put in service this year.

News of Electric Railways

Cleveland Traction Situation

Although the Cleveland Railway made important concessions to the city on Sept. 7, the administration has objected to the settlement proposed on the ground that the rate of fare must not be agreed upon until after a valuation of the property is fixed. The company desires to know what the maximum fare is to be before appraising the property again. The rates set forth in its communication are the best that can be made, the officers believe, if the company is to secure funds for putting the system in condition to take care of the business properly. The following suggestions for settlement were made by the company:

"License provision.—We concede the right of the city to nominate a purchaser for the company's property any time after eight years from the date at which the ordinance becomes operative, provided that the company be permitted to retain its property in the event it is willing to accept as small a return as the proposed purchaser, substantially as provided in the Tayler ordinance.

"Arbitration under ordinance.—We concede your proposition relating to the selection of arbitrators under the operation of the ordinance, and withdraw our request that no arbitrator be an employee of the city or the company.

"Invalidity clause.—The drafting of an invalidity clause to be referred to Judge Tayler, Judge Lawrence, Mr. Tolles and Mr. Baker, by the form set forth in our letter of Aug. 25. The foregoing concessions are on the condition that the Council agree to the following:

"Valuation.—The question of valuation to be submitted to Judge Tayler at once, and that he be unhampered in determining the true, just value of the property.

"Maximum rate of fare.—The maximum rate of fare to be 5 cents cash, including a transfer, or seven tickets for 25 cents, with one cent for a transfer; the initial rate of fare to be 3 cents cash, with one cent for a transfer; the ordinance to be so drawn as to require double transfers on cross-town lines, without additional charge.

"East Cleveland and interurban controversies.—We suggest that these matters be held in abeyance pending our efforts to obtain new contracts."

The reply of the administration, dated Sept. 9, first rehearses the items upon which the company made concessions, and then states that the Council is willing to submit the valuation of the property to Judge Tayler if the company means that he is to consider the physical and franchise value only, excluding everything for good will and going value. The administration claims that an agreement between the city and the company already exists to the effect that the valuation shall be made by items so far as the parties at interest shall desire and that good will and going value shall not be taken into consideration.

As to maximum fare, the administration also argues that the company assented on Aug. 19 to the proposition that the adjustment of this matter should be delayed until after the valuation of the property has been made. The communication states that this is a vital matter to the City Council and that the city's understanding of it should prevail. The following form of submission to Judge Tayler is suggested in the letter:

"The Council of Cleveland and the Cleveland Railway unite in a request that you will, at your earliest convenience, and as sole arbiter, undertake the valuation of the physical property and the unexpired franchises of the Cleveland Railway.

"The agreements reached between the company and the Council are that the valuation is to be by items, to the extent that either side requests, and that the subject of valuation shall be the physical property and the unexpired franchises of the company, excluding good will and going value.

"The company and the Council will meet your wishes in the matter of time and place of hearings, and both, through their representatives, will produce all available data and evidence for your consideration."

The administration agrees to the suggestion of the company relative to the controversies with East Cleveland and the interurban railways. The result is almost sure to be against the ideas of Mayor Johnson in securing a new contract in East Cleveland. John R. McQuigg, Mayor of East Cleveland was renominated on a platform that includes standing for the contract that now exists with the Cleveland Railway. A nomination is equivalent to election in the village, as there was no opposition ticket nominated. The members of the Council who were nominated all uphold Mr. McQuigg.

The question of who will be the opposing candidates for Mayor in the coming municipal election was settled at the primary election in Cleveland on Sept. 7. Mayor Johnson is the choice of the Democrats and Herman C. Baehr the choice of the Republicans. Mr. Johnson is now serving his fourth term as Mayor. He was opposed this time by F. W. Waltz, a Democratic Councilman, but easily defeated Mr. Waltz. Mr. Baehr was opposed by Frank M. Chandler and also by Robert E. McKisson, who was Mayor of the city 10 years ago. He did not win at the election with the ease with which Mr. Johnson did. It is said to be unlikely at this time that an independent candidate will be nominated.

The report of the Municipal Traction Company for August, issued by Receiver Warren Bicknell, follows:

Gross earnings	\$575,923.19	
Maintenance	\$112,228.67	
Transportation	178,770.65	
General expenses	36,823.72	327,823.04
Net earnings		\$248,100.15
Deductions:		
Rental Neutral Street Railway.....	\$936.68	
Taxes	24,778.08	
Interest rental	38,589.22	
Dividend rental	73,378.00	137,681.98
Surplus		\$110,418.17

The People's Street Railway Company has been incorporated with a capital stock of \$10,000 by Thomas J. Dolan, Hugh McConnaughy, Robert Johnson, Francis Cottier and Miles Dodd, all carpenters living in Cleveland. These men are said to be of the opinion that a city system can be operated by a company which will sell its stock at \$1 per share, each shareholder to have only one vote, regardless of the number of shares he holds. They also express the opinion that the present system in Cleveland can be duplicated for \$10,000,000, but have said nothing about the amount of money that would be required to rehabilitate the present system.

Judge Tayler has granted an order allowing \$600,000 of street railway funds to the Cleveland Railway, to be applied on its floating debt and has authorized the receiver to expend \$125,000 for new cars and also to pay \$75,000 to holders of preferred claims against the Municipal Traction Company.

Annual Meeting of the Massachusetts Street Railway Association

The annual meeting of the Massachusetts Street Railway Association was held on Sept. 8, and the following officers were elected: Robert S. Goff, president; W. W. Sargent, first vice-president; H. H. Crapo, second vice-president; Fred H. Smith, treasurer; Charles S. Clark, secretary; Robert S. Goff, W. W. Sargent, H. H. Crapo, Francis H. Dewey, P. F. Sullivan, William S. Loomis, Edward P. Shaw, L. S. Storrs, executive committee; E. S. Wilde, George A. Butman, Henry E. Reynolds, auditors.

A committee consisting of James F. Shaw, Elton S. Wilde and Charles S. Clark was appointed to assign to each member company one monthly meeting. The company thus selected is to be responsible for the meeting assigned to it, is to bring before the meeting any subject relating to the business that the company considers it advisable for the association to consider, and is to provide speakers and present papers for discussion. This plan was tried last year with considerable success.

The itinerary for the tour of the members of the association who propose to attend the convention of the American Street & Interurban Railway Association at Denver was adopted. It will include a trip to the Alaska-Yukon-Pacific Exposition at Seattle, returning by the way of San Francisco, Los Angeles, and New Orleans.

Letters inviting the association to accept hospitality while on its Western trip were read from G. W. Wattles, president, Omaha & Council Bluffs Street Railway, Omaha, Neb.; R. E. Hunt, assistant general manager, Utah Light & Railway Company, Salt Lake City, Utah; Stone & Webster, general managers, Seattle (Wash.) Electric Company, and the Tacoma Railway & Power Company, Tacoma, Wash.; R. H. Spering, general manager, British Columbia Electric Railway, Vancouver, B. C.; A. T. Goward, manager, British Columbia Electric Railway, Victoria, B. C.; B. S. Josselyn, president, Portland Railway Light & Power Company, Portland, Ore.; Charles N. Black, vice-president and general manager, United Railroads, San Francisco, Cal.; G. W. Wilder, manager, Santa Barbara (Cal.) Consolidated Rail-

road; W. B. Tuttle, vice-president and general manager, San Antonio (Tex.) Traction Company; Stone & Webster, general managers, El Paso (Tex.) Electric Company, the Houston (Tex.) Electric Company, Galveston (Tex.) Electric Company, and Baton Rouge (La.) Electric Company; E. C. Foster, vice-president, New Orleans Railway & Light Company, New Orleans, La.; Stone & Webster, general managers, Paducah (Ky.) Traction Company; T. Fitzgerald, Jr., assistant general manager, Cincinnati (Ohio) Traction Company.

Transit Affairs in New York

The Third Avenue Bridge Company, which was organized in the interest of the Third Avenue Railroad, New York, to operate cars over the Queensboro Bridge from Fifty-ninth street and Third avenue, New York, to Long Island City, has filed with the Public Service Commission estimates of the probable business that will result from the operation of cars across the structure. The estimates show that 1,000,000 passengers a year could be carried over the line, 1.88 miles long, at a total cost with operating expenses and fixed charges (including 6 per cent on the capitalization of \$20,000) of \$123 per day. Three cars only would be required to maintain this service on a 5-minute headway, and to carry the necessary 2740 passengers a day. Daily gross receipts, it is estimated, would be \$137. Estimates of a carriage of 2,000,000 passengers a year, or 5,480 passengers a day, show that but four cars would be needed to handle the traffic on a 5-minute headway. At a 5-cent fare, including 2.6 cents to the Third Avenue Bridge Company, and the remainder to the Third Avenue Railroad, gross receipts would amount to \$52,000 a year, and operating expenses, and including 5 per cent of gross receipts to the city, would leave a balance at the end of the year of \$108.

Theodore P. Shonts, president of the Interborough Rapid Transit Company, held the second of a series of conferences on Sept. 10 with the members of the Public Service Commission of the First District of New York on the subject of proposed subway construction. On Sept. 14 the Public Service Commission announced that it has made plans for a new subway route to provide rapid transit for the west side of Manhattan and to extend into Queens by way of the Queensboro Bridge. The proposal will be presented to the Board of Estimate for approval immediately and probably will be advertised for bids at about the same time the Broadway-Lexington Avenue route is advertised. Providing a connection with the new Pennsylvania Railroad station, the route is said to be favored by the Interborough Rapid Transit Company, and is believed to have been decided upon as the result of the conferences between the commission and President Shonts, of the Interborough Rapid Transit Company.

Bridge Commissioner Stevenson, of New York, has written to the Board of Estimate asking for a special appropriation of \$17,000 to install service with electric cars across the Queensboro Bridge between Fifty-ninth street and Third Avenue, New York, and Astoria, Long Island, until such time as franchise arrangements have been made with a railroad company to operate cars over the bridge. Commissioner Stevenson proposes at the outset an equipment of 10 cars, maintaining a headway during the rush hours of a 2-minute interval, and during the remainder of the day as the traffic requires. The fares charged would be similar to those on both the Brooklyn and Williamsburg bridges—that is, 5 cents per round trip, or 3 cents per single fare. It is estimated that at least 10,000 passengers will use this line daily and that the receipts will pay for the maintenance and operation of the line. Mr. Stevenson would secure power from the New York Edison Company, and rent cars at a fixed charge per day, including the cost of maintenance, the cars to be returned to the company leasing them when the operation of the road is discontinued by the city.

The Chicago Wage Controversy

The referendum taken on Sept. 7 by the employees of the Chicago City Railway resulted in the defeat of the proposal of Walter L. Fisher, the city's traction expert, noted in the *ELECTRIC RAILWAY JOURNAL* of Sept. 11, 1909, page 411, by a vote of 1588 to 351. Representatives of the employees announced that the proposed scale of wages was defeated because of the length of time the contract would be effective and because the contract provided for grading the men into several classes.

When T. E. Mitten, president of the Chicago City Railway, agreed to adopt the proposed wage scale providing it was acceptable to the employees, he had an understanding

with the committee representing the employees that if the scale was rejected the men would agree to present the entire controversy for arbitration. After the result of the vote was made known Mr. Fisher issued the following statement:

"I am afraid we have exhausted the possibilities of negotiations. When one of the companies refuses to join in a proposition because the wages are too high, and the men employed on the other line reject the same proposition because the wages are too low, there seems to be nothing to do but to leave the entire matter to a board of arbitration whose decision will be binding on both parties."

John M. Roach, president of the Chicago Railways, was in conference with the committee representing his employees on Sept. 10 and 11, when the matter of readjusting the wage scale was again considered. During the conference an effort was made to decide upon an equitable plan for arbitration. As soon as President Mitten of the Chicago City Railway returned to Chicago on Sept. 12, after an absence of several days, it was announced that joint conferences would be held between the presidents of the two railways and the representatives of the employees in a further effort to refer the pending controversy to a board of arbitration.

At a recent conference it was pointed out that the Consolidated Traction Company may preclude the possibility of settling the controversy by arbitration. This company, which is a subsidiary of the Chicago Railways, is in the hands of a receiver and is subject to the jurisdiction of Judge Grosscup of the Federal Court. It is stated that the judge will not agree in advance to be bound by any decision regarding wages that might be reached by a board of arbitration. The representatives of the employees of the Chicago Railways have announced that they will not agree to arbitration unless the decision reached by the board of arbitration is made to apply to the employees of all the surface lines of the city.

New Secretary for the National Electric Light Association

At a meeting of the New England section of the National Electric Light Association, held at Newcastle, N. H., on Friday, Sept. 10, the election of Mr. T. Commerford Martin as general secretary of the National Electric Light Association was announced.

Mr. Martin is well known at present as the co-editor of the *Electrical World*, of New York, and has been prominently identified with electrical journalism for the past 25 years as editor of the *Electrical World* and of the *Electrical Engineer*, which latter was incorporated with the *Electrical World*. He has also served as electrical special agent of the United States Census Bureau for the past nine years, and in this capacity had charge with Prof. E. Dana Durand, now Director of the Census, of the street railway section of the 1902 census. He has also attended many street railway meetings, and owing to the close association between the *Electrical World* and the *ELECTRIC RAILWAY JOURNAL* has been a frequent contributor to these columns.

Mr. Martin, who is past president of the American Institute of Electrical Engineers and of the Engineers' Club of New York, was one of the founders of the National Electric Light Association, and has been closely associated with the activities of that body, which some years ago, in recognition of his valuable services, conferred upon him the distinction of an honorary membership. The field of technical journalism will feel the loss of Mr. Martin, as he has been an active member of it, and for many years he has been considered its dean. But all technical journalists will congratulate the National Electric Light Association upon securing Mr. Martin's services. Under his direction and leadership the association should widely extend its sphere of usefulness, and be of much greater value than even at present not only to its membership, but to the field at large.

Annual Meeting of the Kansas Association

The annual meeting of the Kansas Gas, Water, Electric Light & Street Railway Association will be held at Wichita, Kan., on Sept. 23 and 24. A partial list of the papers to be presented at the meeting follows:

"Correct Street and Interurban Railway Equipment," by E. T. Bronnenkamp, of the American Car Company.

"Scientific Illumination," by F. B. Galloway, of the B-R Electric Company.

"Sizes of Single-Phase Motors," by Mr. Briscoe, of the Wagner Electric Company.

"Notes on Transformers," by B. F. Eyer, Manhattan, Kan.

"Duties and Liabilities of Electric Companies," by John C. Nicholson, Newton, Kan.

"Series—Tungsten Lamps for Street Lighting," by W. E. Swezey, Junction City, Kan.

"Transformers," by J. L. Buchanan, General Electric Company.

"Tungsten Lamps," by Mr. Benson, General Electric Company.

The official program follows:

September 23—10 a. m.: Roll call; address of welcome by Hon. C. L. Davidson, Mayor; reply by association president; president's address; papers. 12:30 p. m.: Adjournment for lunch. 1:30 p. m.: Papers; discussion. 5:30 p. m.: Adjournment. 6 to 8 p. m.: Banquet by United Electric Company. 8:15 p. m.: Electrical display and parade by "Peerless Prophets."

September 24—9 a. m.: Roll call; papers; discussions; new business; election of officers; query box. 11:30 a. m.: Adjournment. Automobile and street railway ride to power plants, water works, telephone plants, parks and other points of interest. Afternoon: Races at the Fair Grounds. Evening: Humbug circus; free street parade, followed by regular performance at the Fair Grounds.

Dinner of Railway Business Association.—The executive committee of the Railway Business Association announces that the association will begin its second year with a subscription dinner on the evening of Oct. 20, 1909, the committee having postponed the annual meeting in New York to that date. The keynote of the occasion will be "The Public Be Pleased," a pronouncement which is expected to have a beneficial effect on the public mind and to assist materially in lessening permanently the agitation against the railroads. Tickets for the dinner, which will be held at the Waldorf-Astoria, will be \$10 a cover, and can be subscribed for only by members of the association. Frank W. Noxon, 2 Rector Street, New York, is secretary of the association.

Relief Association of Interborough Rapid Transit Company.—The annual report of the Interborough Rapid Transit Company contains a statement regarding the operations of the voluntary relief association of that corporation, from the time of its organization on Feb. 1, 1907, to June 30, 1909, inclusive. During this period, the receipts were \$164,677, of which \$109,933 was received in contributions from the Manhattan Railway division, \$41,878 from the subway division and \$11,174 from the general office. The receipts include also \$10 "conscience money." The disbursements during this period aggregated \$113,514, divided as follows: Manhattan Railway division, \$84,536; subway division, \$27,378; general office, \$1,600. The balance of \$51,163 remaining on June 30, 1909, was divided between \$17,732 cash and \$35,000 par value Manhattan Railway consolidated mortgage 4 per cent bonds valued at \$33,431. The operating expenses paid by the company up to June 30, 1909, were \$38,520. There had been admitted to membership on June 30, 1909, a total of 8,226 employees, of which 3087 had withdrawn, due to resignation, dismissal, death or other causes, leaving a balance of 5139, comprising 54½ per cent of the total number of employees of the company.

Hearing on Proposed Elevated Changes in Boston.—The Massachusetts Railroad Commission gave a public hearing on Sept. 8 at its offices in Boston on the petitions of the Boston (Mass.) Elevated Railway for approval of changes in the elevated stations at Dudley Street, Sullivan Square, Dover Street and the South Station. Geo. A. Kimball, chief engineer of the bureau of elevated and subway construction, explained the proposed alterations. At Sullivan Square provision is to be made for bringing the traffic from the Malden extension into the city, with platform enlargements and the erection of a new westerly platform outside the station for loading in-bound trains. A surface car loop is to be constructed in the westerly half of the station, in place of the present stub-track arrangement. At Dudley Street additional platform and waiting-room accommodations are to be provided in the center of the present surface car loop. At Dover Street the principal changes are the adaptation of the station for 8-car train service and the relocation of stairway. A middle siding is to be installed at the South Station to facilitate shuttle service between that point and the North Station. There was no opposition to the proposed changes and the board took the matter under advisement.

Formal Subway Proposal in Chicago.—The engineering and contracting firm of George W. Jackson, Inc., formally presented its proposal to build a subway system in Chicago, estimated to cost \$80,000,000, to the city on Sept. 7, when it addressed the following letter to Francis D. Connerly, City Clerk, with the request that the matter be presented to the Council: "George W. Jackson, Inc., most respectfully request your kind consideration relative to be-

ing allowed to submit to a committee of the City Council as to our financial ability to construct a comprehensive subway for the City of Chicago. We are in a position to proceed at once with the construction of 12 miles of subway in the territory bounded by Chicago Avenue on the north, Twenty-second Street on the south, Halsted Street on the west and Michigan Avenue on the east; also for the construction of 80 miles, as follows: North to Buena Park, northwest to Logan Square, west to Fifty-second Avenue, southwest to Kedzie Avenue and Thirty-fifth Street and two branches south to Seventy-fifth Street. In requesting your consideration of the above, we do so after mature deliberation as to our ability, both financially and otherwise, to construct a system without cost to the city, and at the same time to give the city the right to take over the system when in a position to do so."

Valuing Franchises in Detroit.—Prof. Henry C. Adams, of the University of Michigan, who has been retained by the Committee of Fifty, at Detroit, to appraise the franchises of the Detroit United Railways, said recently that he proposed to submit to the committee shortly for approval a general plan for the work which he is to do and an outline of the principles that govern the local situation in Detroit. Prof. Adams was quoted in the *Detroit Journal* as stating that the estimate of the present value of a franchise is a problem in exact mathematics. He is reported to have said: "If the physical valuation is accurate, and if the figures from the books of the Detroit United Railways on traffic are correct, the estimate of the franchise value can be made with precision. The actual calculation could be done by accountants. The problem is a rental one, so to speak. A franchise is like a rent. It is the right to do a certain thing for another's property at a given time. If a firm puts a certain amount of money into a street car system, pays its operating expenses, and takes in only enough to cover the cost, there is no franchise value. If there is a surplus there is a franchise value. The franchise value is its value to the man who has it."

Exhibit of New York Commission at State Fair.—Invited by the State Commissioner of Agriculture of New York to make an exhibit at the State Fair at Syracuse, which opened on Sept. 13, the Public Service Commission of the First District of New York sent to the fair a set of charts and statistics to show the magnitude of the regulation problem which is before it in the fields of transportation, gas and electricity in New York City, as well as the phenomenal growth of travel and tremendous increase in consumption of gas and electric current. A representative of the commission was present during the week to explain the various details to those interested. Among the exhibits were a profile chart showing hourly ticket sales on subway and elevated lines, the ferries and bridges over the East River; a large map of New York City showing all the street railways within the city limits; two large frames containing several photographs illustrating methods of construction used for the present subway; two large frames containing photographs showing the fender tests held at Schenectady and Pittsburgh last fall, and other maps and charts all bearing on the work of the commission. In addition, the commission distributed a pamphlet of 16 pages explaining the jurisdiction and work of the body and covering some of the principal matters disposed of during the last two years.

Sale of The Iron Age.—Announcement is made of the sale by the David Williams Company of *The Iron Age* and the business of the David Williams Company, including *The Metal Worker and Carpentry and Building*, to Charles T. Root, I. A. Mekeel, C. G. Phillips, and William H. Taylor. All of these gentlemen have a high reputation as successful publishers of technical papers. Messrs. Root, Mekeel and Phillips have long been associated together in the Root Newspaper Association, which publishes the *Dry Goods Economist*, the leading paper in the dry goods trade. Mr. Taylor was recently the owner of *The Engineer*, now consolidated with *Power*, and was formerly the publisher of *The Hub*, a carriage paper. For a long time he was Western manager of the STREET RAILWAY JOURNAL. *The Iron Age* is the leading publication of the iron and steel industry. It was founded at Middletown, N. Y., in 1859, by John Williams, as the *Hardware Man's Newspaper*. Subsequently the name of the paper was changed to *The Iron Age*. In 1868 David Williams, a son of the founder, took possession of the property, but in the meantime the headquarters of the journal had been transferred to New York. Charles T. Root, of the Root Newspaper Association, has announced that there will be no change in the staff, policy or method of publication of the paper. Charles Kirchhoff, who has been editor of *The Iron Age* for many years, is to remain with the paper as are also George W. Cope and A. I. Findley, associate editors.

Financial and Corporate

New York Stock and Money Market

September 14, 1909.

The stock market has finally settled down after the excitement and uncertainty attendant upon Mr. Harriman's illness and death, and is now fairly active in trading and undeniably strong in tone. There is ample evidence that the powerful leaders of finance realized that demoralization was possible and took charge of the situation. The market at present seems safely within their grasp, and evidently no bear attacks will be tolerated. To-day there was a renewal of rumors that the hard coal roads were on the verge of distributing extra dividends, and this caused strength in the entire list. Traction stocks have been very dull and prices have been practically unchanged.

The bond demand is less insistent and the money market has shown an increase in loans with a slight advance in rates. Quotations to-day were: Call, 2¼ to 3 per cent; 90 days, 3¾ to 4 per cent.

Other Markets

The feature of the week in the Chicago market was the sudden and unexplained drop in Subway stock. After having been under selling pressure for several days the price declined Sept. 13 to 10, and there was evidence of heavy liquidation by insiders. To-day the market was a trifle stronger, but the close was at 11½.

In the Philadelphia market there has been less interest in traction securities than heretofore. There has been but little offering of Rapid Transit and Union Traction stocks. Prices, however, have remained unchanged.

Massachusetts Electric issues have been somewhat active in the Boston market and the tone has been distinctly stronger. Prices have advanced a little, but a good demand exists for the stock.

In Baltimore, practically nothing has been done in traction stocks. Even the United Railways bonds have been dull. Prices have remained about the same.

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

	Sept. 7.	Sept. 14.
American Railways Company.....	a46	a46½
Aurora, Elgin & Chicago Railroad (common).....	*47½	a50
Aurora, Elgin & Chicago Railroad (preferred).....	*92½	a95
Boston Elevated Railway.....	129¼	127½
Boston & Suburban Electric Companies.....	*18	*18
Boston & Suburban Electric Companies (preferred).....	*72½	*74
Boston & Worcester Electric Companies (common).....	a13	a13
Boston & Worcester Electric Companies (preferred).....	a54	a54
Brooklyn Rapid Transit Company.....	78½	76½
Brooklyn Rapid Transit Company, 1st pref., conv. 4s.....	86½	86½
Capital Traction Company, Washington.....	a136½	a136
Chicago City Railway.....	a180	a190
Chicago & Oak Park Elevated Railroad (common).....	*3	*3
Chicago & Oak Park Elevated Railroad (preferred).....	*12	*12
Chicago Railways, pteptg, ctf. 1.....	a111	a112
Chicago Railways, pteptg, ctf. 2.....	a39	a37½
Chicago Railways, pteptg, ctf. 3.....	a26	a25
Chicago Railways, pteptg, ctf. 4s.....	a10½	a10½
Cleveland Railway.....	*8	*8
Consolidated Traction Company of New Jersey.....	a77½	a77½
Consolidated Traction of N. J., 5 per cent bonds.....	a106½	a106½
Detroit United Railway.....	a75	a75
General Electric Company.....	166	166½
Georgia Railway & Electric Company. (common).....	*94½	91½
Georgia Railway & Electric Company (preferred).....	*87	a88
Interborough-Metropolitan Company (common).....	14¼	14½
Interborough-Metropolitan Company (preferred).....	46½	46½
Interborough-Metropolitan Company (4½s).....	82½	83
Kansas City Railway & Light Company (common).....	a48	a46
Kansas City Railway & Light Company (preferred).....	a82	a82
Manhattan Railway.....	a143½	a144
Massachusetts Electric Companies (common).....	16½	17
Massachusetts Electric Companies (preferred).....	78	77½
Metropolitan West Side, Chicago (common).....	a18	a16
Metropolitan West Side, Chicago (preferred).....	a50	a49
Metropolitan Street Railway.....	a24	a24
Milwaukee Electric Railway & Light (preferred).....	*110	*110
North American Company.....	83¾	83½
Northwestern Elevated Railroad (common).....	a20	a20
Northwestern Elevated Railroad (preferred).....	a71	a70
Philadelphia Company, Pittsburg (common).....	48	a48½
Philadelphia Company, Pittsburg (preferred).....	a44½	a44½
Philadelphia Rapid Transit Company.....	30	a30
Philadelphia Traction Company.....	91¼	a89
Public Service Corporation, 5 per cent col. notes.....	a100½	a100½
Public Service Corporation, ctf. 5.....	a94	a94½
Seattle Electric Company (common).....	*114½	115
Seattle Electric Company (preferred).....	107	103½
South Side Elevated Railroad, Chicago.....	54½	a55
Toledo Railways & Light Company.....	a10¾	a11
Third Avenue Railroad, New York.....	22	22½
Twin City Rapid Transit, Minneapolis (common).....	109	108¾
Union Traction Company, Philadelphia.....	54	a54
United Railways & Electric Company, Baltimore.....	a13¾	a13½
United Railways Inv. Co., San Francisco (common).....	a41	47
United Railways Inv. Co., San Francisco (preferred).....	62	76½
Washington Railway & Electric Company (preferred).....	a92	a93
Washington Railway & Electric Company, preferred.....	a92	a93
West End Street Railway, Boston (common).....	97¾	98
West End Street Railway, Boston (preferred).....	106½	108¾
Westinghouse Electric & Manufacturing Company.....	85	85
Westinghouse Elec. & Mfg. Co. (1st pref.).....	a146	a133½

aAsked.

*Last sale.

Annual Report of the Interborough Rapid Transit Company

A statement of the earnings and expenses of the Interborough Rapid Transit Company of New York for the last two years, contained in the annual report to shareholders for the 12 months ended June 30, 1909, is as follows:

Year ended June 30—	1909	1908	Increase
Earnings from operation....	\$25,775,392.44	\$24,059,299.40	\$1,716,093.04
Operating expenses	10,747,443.20	10,722,694.66	24,748.54
Net earnings	\$15,027,949.24	\$13,336,604.74	\$1,691,344.50
Other income	\$1,384,643.73	\$1,220,170.55	\$164,473.18
Gross income	\$16,412,592.97	\$14,556,775.29	\$1,855,817.68
Interest on bonds and 3-year gold notes, rentals and amortization charges.....	\$5,822,962.54	\$5,069,649.62	\$753,312.92
Taxes	1,799,807.31	1,586,466.31	213,341.00
Total interest, rentals and taxes	\$7,622,769.85	\$6,656,115.93	\$966,653.92
Balance	\$8,789,823.12	\$7,900,659.36	\$889,163.76
Manhattan guarantee (7 per cent. per annum).....	4,200,000.00	4,200,000.00	.....
Net income	\$4,589,823.12	\$3,700,659.36	\$889,163.76
Dividend (9 per cent. for one year)	\$3,150,000.00	\$3,150,000.00	.....
Total	\$7,350,000.00	\$7,350,000.00	.....
Surplus	\$1,439,823.12	\$550,659.36	\$889,163.76
Per cent. expenses to earnings:			
Excluding taxes	41.69	44.57	*2.88
Including taxes	48.68	51.16	*2.48
Passengers carried.....	514,680,342	483,285,640	31,394,702
Daily average passengers carried	1,410,083	1,320,452	89,631

*Decrease.

The total number of miles of single track operated at the end of the fiscal year was 199.99. T. P. Shonts, the president, says in his statement to shareholders:

"While gross earnings increased 7.13 per cent, operating expenses increased only 0.23 per cent. This favorable result was due to economies brought about by changes in the organization; the correction in 1908 of defective design in the subway equipment, reducing the cost of maintenance; the manufacture in our own shops of a large number of repair parts heretofore bought in the open market; the inauguration of an improved method of inspection and general overhauling on a car mileage basis; the change during the year 1908 from hand to automatic fire stoking in the Fifty-ninth Street power house and the introduction of a new and less expensive system of handling the coal and ashes, and to a material reduction in the amount paid out for injury and damage claims during the year.

"It is perhaps timely to explain here the new conditions surrounding the issue of securities since the enactment of the Public Service Commission's law in 1907. The Public Service Commission has jurisdiction over the issue of all railroad securities of every description and can prescribe the manner in which the proceeds are to be expended, and for the purpose of arriving at a determination with respect thereto has full authority to examine the books, papers, contracts, etc., of the company and to call any witnesses necessary to a complete understanding of the company's financial condition and responsibility. In making this examination in connection with the above issue of 45-year bonds, by reason of its being the first for which application had been made since the inauguration of the commission, an unusual degree of care was exercised not only with respect to the necessity of the issue and the adequacy of the collateral, but a thorough examination of the physical condition of the property and the earning power of the road was made, by the commission's experts, with a view to ascertaining the sufficiency of the company's assets for securing the payment of its obligations for such refunding purposes and its ability to meet its engagements in connection therewith. These bonds, therefore, have the benefit of the Public Service Commission's approval.

"Fire insurance is carried on all rolling stock, materials and supplies, shops, storehouses and on miscellaneous buildings. Inspections are continuously made as a means of reducing risks to a minimum, and regular and systematic fire drills of employees are held bi-monthly in every yard and storehouse. In a recent bulletin the Fire Underwriters' Bureau reported: 'The properties of the company are in good condition, and equipment is as good as any in this country.' As a consequence your insurance is secured at the lowest rates.

"Your company owns and controls between \$4,000,000 and \$5,000,000 worth of real estate not required for operating purposes. A considerable part of this real estate is owned by the Manhattan Railway Company, and under the terms of the lease the proceeds can only be expended for the payment of its obligations and in making improve-

ments on its lines. All of this property will be sold from time to time, as favorable opportunity offers, and the proceeds applied for the corporate purposes of the respective companies. Several pieces of property not required for purposes of operation have been rented or sold on advantageous terms during the past year, and other sales and leases are in process of negotiation.

"The structures, equipment and other property of your company have been maintained throughout the year at the highest standard of efficiency.

"For the purpose of securing a more efficient and economical administration of the company's affairs practically a new organization was created, effective in part with the present fiscal year. Some of the departments were consolidated, others eliminated and in still others radical changes were made. A new department was created to include the purchase of materials and supplies, insurance, rentals and real estate, and placed in charge of a vice-president, and the law department was reorganized and placed in charge of a counsel and a general attorney, with a view to reducing outside legal expenses. The wisdom of this course is reflected in the reduced cost of operation during the past fiscal year and in greater efficiency and co-operation between all departments in the transaction of the company's business.

"A short time after the opening of the subway for operation and the inauguration of regular train service it became apparent that the junction at Ninety-sixth Street and Broadway was the controlling factor in our efforts to obtain the full maximum track capacity, the number of trains which could be operated through the entire length of the subway being regulated by the number of trains which could be operated through this junction.

"After considering and experimenting with a number of plans and devices, all more or less expensive and unsatisfactory, the difficulty was finally overcome, at small expense, through the installation of automatic speed control signals invented by the signal engineer of your company, permitting the operation of trains under closer headway in and out of the Ninety-sixth Street station. The capacity of that particular section was thus brought to a parity with the balance of the line and the company enabled to materially increase the train service of the subway. Since the installation of these signals at Ninety-sixth Street arrangements have been made for their installation at all points in the subway where it is possible to provide additional train capacity.

"With a view to increasing the power supply of the Fifty-ninth Street power house there was installed during the past year a low-pressure steam turbine, planned to operate in connection with the present reciprocating engines. The tests made on this combination unit of low-pressure turbine and reciprocating engine were eminently successful, greatly surpassing our expectations of a saving of 15 per cent over the best steam turbines and 20 per cent over the best reciprocating engines. As a result of this economy in power production the installation of low-pressure turbines can be extended to include all of the units in our power houses. When installed the capacity of power houses will have been increased 80 per cent at a cost of \$35.50 per kilowatt installed, as against \$87 per kilowatt installed with steam turbines only. This increased capacity can be secured without any additions to the present buildings of the company."

Injuries and damages during the year were as follows:

	1909	1908	Decrease	Per cent.
Claims, suits and judgments.....	\$222,088.34	\$261,514.30	\$39,425.96	15.
Expenses	105,417.19	116,916.56	11,499.37	9.8
Total accident cost.....	\$327,505.53	\$378,430.86	\$50,925.33	13.4

Mr. Shonts adds: "With an increase of 31,394,702 in the number of passengers carried, there was a decrease of one in the number of persons injured and a decrease of over \$50,000 in the amount expended. In the courts with 347 cases tried and settled this year as against 345 last year, there was a decrease in the aggregate verdicts of 35.4 per cent. The policy of quick settlements reduced the number of actions brought in the courts of record 6 per cent, although there was an increase of 12 per cent in all of the courts, due to a larger amount of petty actions brought in the municipal courts. But the volume of active litigation pending was nevertheless reduced 25 per cent during the year by trials and compromises."

"An independent fire-sprinkler system has been installed in the 159th Street and Eighth Avenue elevated yard, at a cost of approximately \$90,000. This system provides for a line of sprinklers in the aisles between tracks, operated by electrical motors controlled from a central tower, as well as independently from any point in the yard, the locating of two 50,000-gallon storage tanks on towers and the installation of two 1500-gallon electrically driven centrifugal pumps

for drawing water from a crib in the Harlem River. As an additional protection a concrete wall will be constructed to replace the present east wall of the inspection shed in this yard and a concrete floor on the structure covering an area 150 ft. x 400 ft. An independent automatic sprinkler system has been installed in the subway car storage yard under Broadway, between 137th and 145th Streets, at a cost of approximately \$15,000. This system provides for a line of aisle sprinklers in the center between all tracks and between the outside tracks and the wall of the subway, containing 1600 sprinkler heads and having four direct connections with the city mains, the pipes to which will at all times be at city main pressure."

The work of the Voluntary Relief Association is described at length and Mr. Shonts adds:

"In addition to this your board of directors recently appropriated the sum of \$50,000 for the construction of terminal buildings for the better accommodation of employees. These buildings, which will be located at the principal terminal points, will contain reading and smoking rooms, kitchens, shower baths and toilets, and will be designed to make the surroundings and influences as comfortable and wholesome as possible. August Belmont has donated \$10,000 for the purpose of fitting up the reading rooms and providing them with a full equipment for club purposes.

"The subject of taxation as affecting the transportation corporations of this city is one calling for constant consideration. Under the existing State and Federal laws this company is now subject to three distinct forms of taxation:

"1. A State tax of 1 per cent upon the gross earnings of the corporation from every source; and in addition, if the corporation has declared dividends in excess of 4 per cent, a tax of 3 per cent upon the excess dividends so declared.

"2. City taxation, divided into

"(a) Tax upon real estate, which is the ordinary land tax;

"(b) Tax of 5 per cent upon the net income of the Ninth Avenue line of the Manhattan Railway; and

"(c) The special franchise tax upon the intangible right of the company to operate in the public streets of the city, to which is added the tangible value of the property actually located in the streets. No fixed rule has ever been laid down by the State Board of Tax Commissioners from which the value of the special franchise may be determined. A case, however, is now pending in the Court of Appeals which may be expected to throw some light upon this question. In the case of the Interborough company the burden of taxation is considerably lightened by the fact of the city ownership of the property and the statutory exemption from taxation conferred by section 35 of the rapid transit act. In the case of the Manhattan Railway, however, where no exemption is given by law, the assessment of the special franchise has increased out of all proportion to the increased earnings of the property—that is to say, from a valuation of approximately \$42,000,000 in 1903 to \$78,500,000 in 1908-1909. The franchise taxes against the Manhattan company to date have been paid, under protest, for economical reasons. They are, however, being contested in the courts, and to the extent that they may be held to have been unjustifiably levied must be refunded by the city, with interest at 6 per cent.

"3. In addition, there is now imposed by recent act of Congress a special excise tax of 1 per cent upon the net income of all corporations in excess of \$5,000.

"The disproportion between the burden of taxation borne by the public service corporations of this and those of other States and between such corporations here and individual taxpayers is manifest. It is a serious obstacle in the way of the development of the rapid transit facilities in this city. Indeed no prudent plans for the development of these facilities can disregard the excessive taxes now imposed on traction properties in this city or, in connection with the heavily increased cost of new construction, safely assume its burden."

Regarding the subway and elevated extensions which the company desires to make, Mr. Shonts says:

"These plans were prepared for the purpose of developing a unified and comprehensive rapid transit subway system, to be owned by and come into the possession of the city at the termination of present operating leases, and with the further purpose of affording the best possible basis for future extensions into the undeveloped sections of Greater New York. It has seemed to your directors that such a system, with a corresponding elevated system, operated under one experienced management, with one 5-cent fare over all of the new and old subways, transferring passengers at convenient points, and one 5-cent fare over all of the new and old elevated lines, transferring passengers at convenient points, would represent the highest form of rapid transit development."

Investigation of Bridge Operating Company

The investigation of the Bridge Operating Company by the Public Service Commission of the First District of New York was continued on Sept. 9. As stated in the *ELECTRIC RAILWAY JOURNAL* of Sept. 11, 1909, page 413, Edwin W. Winter, president of the Brooklyn Rapid Transit Company; C. D. Meneely, secretary and treasurer of that company, and G. I. Hunt, auditor of the Bridge Operating Company, were sworn by the commission as witnesses on Aug. 31. On Sept. 9, Marvyn Scudder, special accountant for the commission, and Howard Abel, auditor of the Brooklyn Rapid Transit Company, were the principal witnesses. Mr. Scudder gave a list of the Bridge Operating Company's financial transactions since its incorporation in 1904. He said:

"The books of the company show that the total receipts from the day of the beginning of operation, June 12, 1904, to Dec. 31, 1905, were \$149,098.45 and that the total receipts from every source, excluding stock subscriptions, from the date of operation to June 30, 1909, were \$822,609.33. Deducting the taxes and operating expenses from that amount the remainder, \$391,363.53, represents the net receipts, or \$78,000 a year approximately. The capital stock of the company is \$100,000, so that the profit is about 78 per cent annually, since there is no fund for depreciation."

George D. Yeomans, counsel for the Brooklyn Rapid Transit Company, admitted the truthfulness of the statement made by Mr. Scudder regarding the earnings of the Bridge Operating Company, but both he and William Masten, representing the Metropolitan Street Railway, said that to permit the figures to be presented before the public in the form in which Mr. Scudder had arranged them would convey a wrong impression, and Mr. Yeomans asked to be allowed to offer a statement in explanation. Commissioner Maltbie acceded to the requests, though he made it clear to the attorneys that whatever testimony they introduced would not affect the attitude of the commission in the present investigation of the Bridge Operating Company. Mr. Yeomans replied that he did not believe it just to consider the operating company distinct from the Brooklyn Heights Railroad and the New York City Railway. Through Howard Abel, Mr. Yeomans submitted a statement showing the cost of operating across the bridge and the losses sustained in the past five years. Mr. Yeomans said:

"The Bridge Operating Company is merely the agent of the two controlling corporations, and if each of the companies was running the local cars directly, the profit on this line would not be considered great because it would be offset by the loss which each of the companies sustains in the through service across the bridge. This loss is far greater than the profit on the operating line and we should be given a chance to get that evidence on the record, and also the fact that since the ferries at the foot of Broadway, Brooklyn, shut down the loss to the Brooklyn Rapid Transit Company in the through service is greater than ever."

Albany & Hudson Railroad, Hudson, N. Y.—The property of the Albany & Hudson Railroad was sold under foreclosure on Sept. 8 at Hudson to I. W. Day, secretary of the reorganization committee. The plan of reorganization recently approved by the Public Service Commission of the Second District of New York was declared operative some time ago. This plan was outlined in the *ELECTRIC RAILWAY JOURNAL* of July 31, 1909, page 191. The Albany Southern Railroad was incorporated on Sept. 14 with the Secretary of State at Albany, as a reorganization of the Albany & Hudson Railroad. The new company has a capital of \$3,475,000, of which \$2,100,000 is preferred stock and \$1,375,000 common stock. The company's principal office is in Rensselaer. The directors are: W. R. Gross, H. A. C. Smith, Charles H. Werner, A. M. Young, Irvin W. Day, L. B. Grant, C. M. Congdon, New York; C. L. Rossiter, Brooklyn, and Myron T. Herrick, Cleveland, Ohio.

Boston (Mass.) Elevated Railway.—It is stated that a Boston financier who is a director in a number of street railways in New York and Massachusetts has quietly accumulated by purchase in the open market 10,000 shares of the stock of the Boston Elevated Railway and has become the largest holder of the stock of the company. James J. Bright, Cambridge, Mass., is understood to be the second largest holder with 2400 shares. There are only nine stockholders of the company who own more than 1000 shares of the stock of the company.

Burlington County Railway, Mt. Holly, N. J.—On application of the Bougher Estate of Philadelphia, which owns the controlling interest in the Burlington County Railway, Judge Reilstab in the Federal Court at Trenton, N. J., has appointed John G. Horner, Mt. Holly, receiver of the company.

Centerville Light & Traction Company, Centerville, Ia.—Frank S. Payne, president and general manager of the Centerville Light & Traction Company, and D. C. Bradley have purchased the interest of T. P. Shonts, New York, vice-president of the Centerville Light & Traction Company, and of C. P. Campbell, Chicago, secretary and treasurer of the company, in the company, and new officers have been elected as follows: Frank S. Payne, president; Mrs. C. M. Bradley, vice-president; Mrs. Grace Payne, secretary; D. C. Bradley, treasurer.

Columbus Railway & Light Company, Columbus, Ohio.—The Columbus Railway & Light Company has declared a quarterly dividend of $\frac{3}{4}$ of 1 per cent, payable on Oct. 1 to holders of common stock of record Sept. 15, thus increasing the dividend rate to 3 per cent per annum. Since Jan. 15, 1906, the Columbus Railway & Light Company has paid regular dividends at the rate of 2 per cent per annum on its common stock.

Columbus, Marion & Bucyrus Railroad, Marion, Ohio.—On the petition of the Cincinnati Trust Company, Judge Babst, on Sept. 8, appointed George Whysall, general manager of the Columbus, Marion & Bucyrus Railroad and the Columbus, Delaware & Marion Railway, and Eli West, Columbus, Ohio, receivers of the Columbus, Marion & Bucyrus Railroad. The petition of the Cincinnati Trust Company states that the Columbus, Marion & Bucyrus Railroad is indebted to it in the amount of \$7,500 for money borrowed and that \$12,500 is due on the bonds. The bonds and interest are guaranteed by the Columbus, Delaware & Marion Railway, which is also in the hands of Mr. Whysall and Mr. West as receivers, so the systems will be operated as in the past, with some possible betterments between Marion and Bucyrus.

Duluth-Superior Traction Company, Duluth, Minn.—An initial dividend of 1 per cent has been declared on the \$3,500,000 common stock of the Duluth-Superior Traction Company, payable on Oct. 1, to holders of record Sept. 15.

Houghton County Traction Company, Houghton, Mich.—An initial dividend of 2 per cent has been declared on the \$750,000 of common stock of the Houghton County Traction Company, payable on Oct. 1, to stockholders of record Sept. 18.

Norwich & Westerly Railway, Norwich, Conn.—On Sept. 1, the Norwich & Westerly Railway defaulted in the payment of the interest on its issue of \$750,000 of first mortgage 5 per cent bonds. It is stated that a tentative plan of reorganization, to which more than two-thirds of the bondholders and three-fourths of the general creditors have informally assented, has been framed. This plan, so it is said, calls for a considerable reduction in the volume of fixed charges, and if the plan is accepted foreclosure proceedings will not be instituted.

Second Avenue Railroad, New York, N. Y.—Judge Lacombe, in the United States Circuit Court, in the suit of the Guaranty Trust Company for the foreclosure and sale of the Second Avenue Railroad, has handed down an order extending the time for the complainant to take its chief testimony in the case until 30 days after the service of notice by the solicitors for any of the defendants. The defendants are the Second Avenue Railroad, the Metropolitan Street Railway, the Norton Trust Company, the Pennsylvania Steel Company and the Degnon Construction Company.

Springfield (Mass.) Street Railway.—The proposed consolidation of the Springfield Street Railway and the Western Massachusetts Street Railway was not opposed at the hearing before the Railroad Commission on Sept. 8. Bentley W. Warren, Boston, represented the companies at the hearing before the commission.

Westchester Traction Company, Ossining, N. Y.—Judge Holt, of the United States District Court, signed an order on Sept. 15 authorizing the sale of the Westchester Traction Company at Ossining, N. Y., on a date to be fixed by the special master appointed by the court for that purpose. Judge Holt directs that no bid for the property under \$1,200 be accepted. Each bidder will be required to deposit \$600 or a note on any trust company in New York. A mortgage on the property to be sold was given by the Westchester Traction Company to the New York Trust Company on April 12, 1902. The property of this company consists principally of 3 miles of track in Ossining, which is not now being operated. H. Benedict, 79 Wall Street, New York, N. Y., is receiver.

West Jersey & Sea Shore Railroad, Camden, N. J.—The West Jersey & Sea Shore Railroad has declared a semi-annual dividend of $2\frac{1}{2}$ per cent, payable Oct. 1, 1909, to holders of record Sept. 15. The previous disbursement was 2 per cent on April 1, 1909.

Traffic and Transportation

Hearing by Massachusetts Commission on New Bedford Fares

The Massachusetts Railroad Commission gave a hearing on Sept. 8 in Boston upon the petition of citizens of New Bedford for a reduction in fares from 10 cents to 5 cents between Lund's Corner and the city line. The Union Street Railway operates ears between the center of New Bedford and Lund's Corner, and the Old Colony Street Railway operates the same ears from Lund's Corner to the city limit. A 5-cent fare is charged by each company. The petitioners' case was introduced by Representative Lewin of New Bedford. The Old Colony Street Railway was represented by Bentley W. Warren of Boston, general counsel, and by H. E. Reynolds, assistant general manager. The Union Street Railway was represented by H. H. Crapo, president, and G. W. Wilde, general superintendent.

For the Old Colony Street Railway Mr. Warren stated that the petitioners desire that the company shall carry passengers for 5 miles for less than 5 cents. The line is a part of the former New Bedford, Brockton and Middleboro system. It has never paid and the best part of the route has always been that nearer Brockton on the northern portion of the Old Colony Street Railway. Between Lund's Corner and the city line, 5 miles, there are only 93 houses, and counts of the traffic show an average patronage per trip of 11 passengers for July, with a winter patronage of 4 or 5. The finances of the Old Colony Street Railway are familiar to the commission. The company paid a 4 per cent dividend last year and less the year before. The demands for improved and increased service keep increasing, but they cannot be met from the earnings. Regarding complaints about the service, Mr. Warren cited the difficulties of handling without delays sudden rushes of travel on single-track lines where the normal traffic is light. He brought out the point that certain complaints of delays had never been called to the attention of the company's officials. The Old Colony Street Railway is single track from the city line to Lund's Corner, while the Union Street Railway operates a double-track line from Lund's Corner to the center of the city. The cars operated on the through route are of the semi-convertible type, seating 40 passengers each. Figures prepared for the week of July 18 to 24 for the 5:45 p. m. ear showed very little crowding:

PASSENGERS COUNTED.

	July 18	July 19	July 20	July 21	July 22	July 23	July 24
Regular Car.....	34	39	27	25	30	47	64
Extra Car.....	..	30	46	51	35	..	..

The extra car followed the regular as a double header. This car was selected as the complaints of the service centered on it.

H. H. Crapo, president of the Union Street Railway, New Bedford, said that the city is about 12 miles long by 3 miles wide, and that the Union Street Railway would have to charge a 10-cent fare from the center of the city to the city line if it owned the present line of the Old Colony Street Railway from Lund's Corner to the boundary. The distance from the center of the city to Lund's Corner is 3.5 miles, making the total distance 8.5 miles, with two 5-cent fares. The company is charging a 10-cent fare for a ride of the same distance in every other direction. Nowhere does a 5-cent charge exist on the system for such a long distance. The petitioners have assumed that the city line is naturally the fare limit, which is peculiarly not the case in a long and narrow city like New Bedford.

Chariman Hall, of the commission, endeavored to obtain an explanation from the petitioners of how they would divide the proposed 5-cent fare between the two companies, and brought out the point that there is no obligation on the part of the Old Colony Street Railway to carry patrons at less than 5 cents each. The Union Street Railway holds no franchise between Lund's Corner and the city line, and no statute is known which would compel the Old Colony Street Railway to sell its line. The case was taken under advisement.

Near-Crossing Stops in Buffalo

On Sunday, Aug. 22, the International Traction Company began stopping its cars in Buffalo at the near side of the street. The notice by the company to its employees regarding the change was dated Aug. 19, and follows:

"On and after Sunday, Aug. 22, 1909, trainmen operating cars in the city of Buffalo will stop to receive and discharge passengers at the first crossing, only, of streets, and where signs reading, 'Cars Stop Here' are located, and it

must be remembered that where these signs are located cars will stop in both directions. Inspectors will give this order attention, and see that it is properly carried out."

The daily press made mention of the change several days before the new rule went into effect and the public seemed to understand and follow the order very quickly. For several days the company had a number of special employees and inspectors stationed at the points of heavy traffic to direct passengers, and this helped materially to expedite travel.

Employees of Municipal Line Ask Increase in Wages.—The employees of the Calgary Street Railway, owned and operated by the City of Calgary, Alberta, Can., have asked for an increase in wages from 21½ cents an hour to 25 cents an hour, the increase to date from Oct. 1, 1909. The City Council has replied that the conditions of service on the line do not warrant the increase.

Hearing on Application for a Reduction in Fare on New York State Line.—The application of the citizens of Chemung for a reduction in the passenger rate on the Elmira, Corning & Waverly Railroad, Waverly, N. Y., between Holbert's Crossing and Chemung from 10 cents to 5 cents was heard by Martin S. Decker, of the Public Service Commission of the Second District of New York, on Sept. 8. Decision was reserved.

Additional Freight Stations in Philadelphia.—The Philadelphia (Pa.) Rapid Transit Company is erecting four small freight stations along its Willow Grove and Doylestown line to accommodate shippers of garden produce. The company has a small milk traffic on this line which amounts to \$800 or \$900 a month. As there seems to be a demand for electric railway transportation for farm products, the company is taking steps to accommodate this traffic. The company has not yet made rates for this line.

Frauds in Connection With Accidents in Louisville.—James O'Brien, a former employee of the Louisville (Ky.) Railway, who was indicted in June, 1909, on a charge of perjury in connection with testimony given in a suit growing out of a street railway collision in Louisville, has been apprehended by the company in Boston, and will be arraigned at the fall term of the Circuit Court at Louisville. O'Brien was the motorman of a car of the Preston Street line in Louisville which collided with a car of the Market Street line. A number of suits were filed for damages, and O'Brien is accused of having made an affidavit to the effect that a Mr. Sutton was a passenger on the car which he operated, when in reality Mr. Sutton was a passenger on the Market Street car and was uninjured. James Hubbard and Luke Hubbard have been held in \$1,000 bail each for the October grand jury at Louisville for complicity to defraud the Louisville Railway through a "fake" accident. Maggie Tabler, who was associated with the men, turned State's evidence.

Finding of Investigating Committee in Spokane & Inland Empire System Wreck.—Several persons were killed and a number were injured on July 31, 1909, in a head-on collision between two trains of the Spokane & Inland Empire System near La Crosse, Idaho. Following the accident a committee consisting of three members of the Coeur d'Alene Chamber of Commerce, three members of the Spokane Chamber of Commerce, Mayor Boyd Hamilton of Coeur d'Alene, Fred C. Pugh, prosecuting attorney of Spokane County, and E. O. Connor, corporation counsel of Spokane, at the invitation of the Spokane & Inland Empire System, investigated the accident and has filed its report with Graves, Kizer & Graves, attorneys for the Inland Empire System. At the request of the committee it was provided with a train which was a duplicate of the special train in the accident. This train was run past the station at Gibbs at a rate of 25 miles an hour, the brakes were applied as the motor car passed the depot and the train was stopped within 200 ft. and at a point 60 ft. east of the place where the wreck occurred. The trains that collided were No. 5 and No. 20. Train No. 5 was in charge of Conductor Whittlesey and Motorman Campbell. Regular Train No. 20 was in charge of Motorman Delaney. Train No. 20 had been brought practically to a full stop by the motorman when the collision occurred. In placing the responsibility for the accident the committee concludes: "We find that the wreck was due, first, to the fact that Motorman Campbell violated the rules of the company and his orders in running past the 'Y' onto the main track on the time of regular passenger train No. 20; second, to the fact that Conductor Whittlesey commenced to take up tickets without watching to see that the train did not pass the 'Y,' and he violated his orders and the rules of the company; and third, to the fact that Motorman Campbell did not see No. 20 until within 250 ft., whereas the condition of the track permitted him to have seen No. 20 when 800 ft. away."

Personal Mention

Mr. L. S. Storrs has been elected president of the Marlboro & Westboro Street Railway, Westboro, Mass., to succeed Mr. F. H. Dewey.

Mr. F. H. Dewey has been elected vice-president of the Marlboro & Westboro Street Railway, Westboro, Mass., to succeed Mr. L. S. Storrs.

Mr. J. F. Beyer has resigned as vice-president of the Winona Interurban Railway, Winona Lake, Ind., and is succeeded by Mr. C. O. Johnson.

Mr. H. C. Anderson has been elected secretary of the Winona Interurban Railway, Winona Lake, Ind., to succeed Mr. S. C. Dickey, resigned.

Mrs. G. Bedell Moore has been elected president and a director of the Laredo (Tex.) Electric & Railway Company, to take the place of her husband, who died in October of last year.

Mr. Alexander Renick was elected second vice-president of the Philadelphia (Pa.) Rapid Transit Company on Sept. 15, to succeed Mr. C. O. Kruger, who has been elected president of the company.

Mr. C. O. Johnson has been elected vice-president and general manager of the Winona Interurban Railway, Winona Lake, Ind., to succeed Mr. J. F. Beyer as vice-president and Mr. S. C. Dickey as general manager.

Mr. S. C. Dickey has resigned as secretary and general manager of the Winona Interurban Railway, Winona Lake, Ind., and is succeeded as secretary by Mr. H. C. Anderson and as general manager by Mr. C. O. Johnson.

Mr. Hugh J. McGowan, president of the Indianapolis Traction & Terminal Company, Indianapolis, Ind., and president of the Indianapolis & Eastern Railway, has returned to the United States greatly improved in health after spending 14 months in Europe.

Mr. W. R. Leonard has been appointed assistant treasurer of the Everett Railway, Light & Water Company, Everett, Wash., to succeed Mr. R. E. Maxfield, resigned, who has accepted the position of auditor of the Seattle *Post-Intelligencer*. Mr. Leonard was formerly connected with the Northern Texas Traction Company, Ft. Worth, Tex.

Mr. A. A. Lightfoot has been appointed general superintendent of the People's Traction Company, Galesburg, Ill. Mr. Lightfoot was auditor of the Hartford & Springfield Street Railway, Hartford, Conn., for several years. Later he was assistant manager of the Lowell & Fitchburg Street Railway, Ayer, Mass.; general manager of the Mankato (Minn.) Traction Company, and general superintendent of the Elgin & Belvidere Electric Company, Chicago.

Mr. H. C. Page, who retired as general manager of the Springfield (Mass.) Street Railway to become general manager of the Worcester (Mass.) Consolidated Street Railway and affiliated companies, was tendered a banquet by the officers and employees of the Springfield Street Railway at the Highland Hotel, Springfield, recently. During the dinner Mr. William F. Haley, representing the Springfield Street Railway Employees' Association, presented Mr. Page with a diamond pin as a mark of esteem.

Mr. H. E. Farrington has been appointed superintendent of the Lowell division of the Boston & Northern Street Railway, Boston, Mass., to succeed Mr. W. A. Maloney, resigned. Mr. Farrington's experience covers many years of service with the Lynn & Boston Street Railway and the Boston & Northern Street Railway. Mr. Farrington was also connected with the United Railroads of San Francisco as superintendent of car repairs. Since returning from San Francisco to the East about two years ago, he has been superintendent of car equipment of the Boston & Northern Street Railway at Chelsea. In 1903 Mr. Farrington was president of the New England Street Railway Club.

Mr. L. C. Oswald was recently appointed superintendent of the Columbus, Marion & Bucyrus Railroad, Marion, Ohio. On Sept. 8 this company was placed in the hands of Mr. George Whysall, the general manager of the company, and Mr. Eli M. West as receivers. The Columbus, Marion & Bucyrus Railroad was built by Mr. John G. Webb, president of the Columbus, Delaware & Marion Railway, which is also in the hands of Mr. George Whysall and Mr. Eli M. West as receivers, they having been appointed on Aug. 7, 1909. Mr. Oswald has been connected with the Columbus, Delaware & Marion Railway for the last seven years in various capacities. During the construction of the road he was employed in the office of the chief engineer. Later he was agent, clerk in the office of the master mechanic and clerk in the office of the superintendent, and for the last five years has been chief clerk to Mr. Whysall, who

has been general manager of the Columbus, Delaware & Marion Railway and Columbus, Marion & Bucyrus Railroad.

Mr. W. A. Maloney has resigned as superintendent of the Lowell division of the Boston & Northern Street Railway, Boston, Mass., and Mr. H. E. Farrington has been appointed to succeed him. Mr. Maloney was born in Rutland, Mass., in 1869. At an early age he moved to Worcester, Mass., and in 1888 entered the employ of the Worcester Consolidated Street Railway. At that time the system consisted of only 28 miles of track, and Mr. Maloney occupied various positions until 1898, when he was given charge of transportation. Early in 1901 the street railway companies at Worcester were consolidated, forming a system with about 125 miles of track. Mr. Maloney remained at Worcester for a short time after the consolidation, resigning from the consolidated company to become superintendent of the Manchester (N. H.) Street Railway. Subsequently he became superintendent of the Lowell division of the Boston & Northern Street Railway.

Mr. Arthur N. Dutton, formerly superintendent of transportation of the Brooklyn (N. Y.) Rapid Transit Company, was tendered a banquet by the Brooklyn Rapid Transit Employees' Benefit Association, of which he was formerly president, at the main building of the association in East New York on the evening of Sept. 2. Officers and employees of the company to the number of 2000 are estimated to have been present. Music was furnished by the band composed of employees of the company, which is under the direction of Mr. Emil Reichardt. During the evening Mr. J. Stoll, one of the trustees of the association, presented Mr. Dutton with a silver loving cup as a present from the men. Mr. Dutton now is vice-president and general manager of the Peerless Motor Car Company, New York.

Mr. John B. Crawford, recently general superintendent of the Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind., has been appointed superintendent of the Winona Interurban Railway, Warsaw, Ind. Mr. Crawford has been connected with railway work for about 15 years. He began his career with the Hartford (Conn.) Street Railway and subsequently has been connected with the Groton & Stonington Street Railway, New London, Conn., as superintendent; with the Fort Wayne & Wabash Valley Traction Company as superintendent of transportation and with the Lexington Railway & Lighting Company as general manager. Resigning from the Lexington Railway & Lighting Company, Mr. Crawford re-entered the employ of the Fort Wayne & Wabash Valley Traction Company as general superintendent.

Mr. Thomas McCaffery, formerly division superintendent of the Los Angeles division of the Southern Pacific Railway, has recently been appointed general superintendent of the Pacific Electric Railway and the Los Angeles Interurban



T. McCaffery

Railway. Mr. McCaffery began service with the Southern Pacific Railway system 30 years ago as a telegraph operator. He successively occupied the positions of operator, dispatcher, chief dispatcher, trainmaster and division superintendent of the Los Angeles division of the company. About two years ago Mr. McCaffery was appointed master of transportation of the Pacific Electric Railway; later he was made superintendent of transportation and within a few months has been made general superintendent of the Pacific Electric Railway and the Los Angeles Interurban Railway. The entire responsibility for the freight and passenger department of 600 miles of interurban railway is Mr. McCaffery's as general superintendent of the Pacific Electric Railway and the Los Angeles Interurban Railway.

Mr. John B. Parsons, president of the Philadelphia (Pa.) Rapid Transit Company, tendered his resignation at a meeting of the board of directors of the company on Sept. 9. Mr. Parsons said that he had reached an age when he felt that he should be relieved of the arduous duties of president and expressed a desire not to be considered a candidate for re-election. At a meeting of the board of directors, on Sept. 15, a new office, chairman of the board of directors of the company, was created, and Mr. Parsons was elected to that position and Mr. C. O. Kruger, second vice-president and general manager of the company, was elected presi-

dent. Mr. Parsons was born on May 17, 1850, at Whitesville, Del. When he was only six years old the family moved to Salisbury, Md., where Mr. Parsons' father engaged in mercantile business, at which he continued for more than 20 years. Mr. Parsons attended Salisbury Academy until he was 16 years old. He intended to go to Princeton, but abandoned this plan and became assistant station agent at Salisbury on the Delaware Railroad. The prospects for advancement with the Delaware Railroad were meager and Mr. Parsons decided to live in Philadelphia. Shortly after going to Philadelphia he became connected with the Chestnut & Walnut Streets Passenger Railway, known as the Philadelphia City Passenger Railway, as a conductor. After serving two years in this capacity, Mr. Parsons was made manager of a branch line of the Chestnut & Walnut Streets Passenger Railway which intersected the main stem at Forty-fourth Street and Darby Road and extended into the suburbs about five miles, ending at the village of Darby. In 1881 the late Robert N. Carson and Mr. William H. Shelmerdine, Mr. William Wharton, Jr., and others, purchased the Lombard & South Streets Railway, extensively used by the market people. Mr. Parsons was placed in charge of the property, and soon reduced the fare on this line to 5 cents and made it a profitable undertaking. In January, 1886, Messrs. Carson and Shelmerdine secured the control of the People's Railway and leased the Germantown Passenger Railway and the Green & Coates line, and Mr. Parsons was called to take charge of the system. He was then at the head of a street railway combination representing 65 miles of road and property valued at \$12,000,000. In the latter part of 1887 Messrs. Elkins, Widener and Kemble made Mr. Parsons an offer to take charge of the West Chicago Street Railway in Chicago, and he accepted. Mr. Parsons remained in Chicago 10 years. On Dec. 13, 1896, he was elected vice-president and general manager of the Union Traction Company, Philadelphia, to succeed Mr. J. R. Beetem. At the same time Mr. John Lowber Welsh was elected president of the company. Mr. Parsons assumed his new position with the Union Traction Company on Jan. 1, 1897. In September, 1897, he was elected a director of the company, and on Sept. 26, 1898, he was elected president of the company. Upon the organization of the Philadelphia Rapid Transit Company he was elected president. It is understood that for some years Mr. Parsons has been anxious to be relieved of the arduous work inseparably connected with the duties of president, but has remained in that position at the instance of his associates in the Philadelphia Rapid Transit Company.

Mr. Charles O. Kruger, second vice-president and general manager of the Philadelphia (Pa.) Rapid Transit Company, was elected president of the company at a meeting of the board of directors on Sept. 15 to succeed Mr. John B. Parsons, who was elected chairman of the board of directors of the company. Mr. Kruger was born on Dec. 14, 1864, in Germantown, Pa., and was educated in the public schools of Philadelphia and at the Germantown Grammar School, from which he was graduated in 1882. In February of the same year he entered the employ of the banking firm of S. & W. Welsh, where his aptness led to rapid promotion in positions of responsibility connected with the enterprises in which the firm was interested. In 1892 Mr. Kruger was elected secretary and treasurer of the Penn Traffic Company, and the year following was elected to the same offices with the People's Traction Company. When the Union Traction Company was formed in 1895, Mr. Kruger was elected secretary and treasurer of that company, and held these positions until he was appointed general manager and elected vice-president of the company in 1898. He was elected second vice-president and appointed general manager of the Philadelphia Rapid Transit Company in 1902. In each position his work brought him in close contact with every department of railroading, so that his election as president of the Philadelphia Rapid Transit Company follows 17 years' practical experience covering the financial, mechanical and operating departments. Mr. Kruger will continue to act as general manager of the company.



C. O. Kruger

Construction News

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

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

RECENT INCORPORATIONS.

***Adel City Railway, Des Moines, Ia.**—Incorporated to construct an interurban railway from Des Moines to Adel. Capital stock, \$10,000. Incorporators: Dan A. Blanchard, L. M. Macy, W. B. Kinnick, Robert Pilmer, F. F. Flynn, B. J. Flynn, R. L. Parrish and H. A. Smith.

***Kentucky Rapid Transit Company, Louisville, Ky.**—Incorporated under the laws of Delaware for the purpose of taking over various traction companies and interurban lines in Kentucky. Its principal operations will, at first, be Louisville, Lexington and Frankfort, Ky. The company is also authorized to operate electric light and gas plants. Capital stock, \$10,000,000, \$2,500,000 of which is preferred stock and \$7,500,000 is common stock. Samuel M. Clement, Jr., West End Trust Building, Philadelphia, Pa., is said to be interested.

***People's Street Railway, Cleveland, Ohio.**—Incorporated in Ohio to construct an electric street railway in Cleveland. Capital stock, \$10,000. Incorporators: Thomas J. Dolan, Miles Dodd, Hugh McConaughy, Robert Johnstone and Francis E. Cottier.

Fort Worth, Mineral Wells & Northwestern Interurban Railroad, Fort Worth, Tex.—Application for a charter has been made by this company, which proposes to build an electric railway from Fort Worth to Mineral Wells via Weatherford, a distance of 54 miles, and later on to Roswell, N. M. Capital stock, \$100,000. Incorporators: L. C. Cole and Paul S. Hurley, Fort Worth; J. S. Hanford, Beaumont, and James A. Watkins, Little Rock, Ark. [E. R. J., Jan. 9, '09.]

***Newport News & Yorktown Railway, Newport News, Va.**—Incorporated to build a railway from Newport News to Yorktown, a distance of 20 miles. Capital stock, \$25,000. Officers: W. T. Chapin, Newport News, president; Alvah H. Martin, Norfolk County, vice-president, and C. P. Jones, secretary and treasurer.

***Tum Tum Mountain Railway, Vancouver, Wash.**—Incorporated to build an electric railway to connect Chelatchic, Prairie, Amboy, View, La Center and Ridgefield, a distance of about 40 miles. Headquarters, Vancouver. Incorporators: A. Aronston, H. J. Hener and others.

FRANCHISES

Watertown, Ill.—The Tri-City & Northeastern Interurban Railway, Port Byron, has applied to the Board of Trustees for a franchise to operate its proposed electric railway in Watertown. The railway will extend from Watertown to Albany. [E. R. J., July 24, '09.]

Fort Wayne, Ind.—The Fort Wayne-Bryan Electric Railway has applied to the County Commissioners for a franchise to build an electric railway from the State line to Reed's Corner. The railway is to extend from Fort Wayne to Bryan, Ohio, a distance of about 41 miles. Edgar A. Tennis, Fort Wayne, promoter. [E. R. J., July 3, '09.]

South Bend, Ind.—The Commissioners of St. Joseph County and Marshall County have granted franchises to the South Bend & Logansport Traction Company, recently incorporated, to build an interurban railway to connect South Bend, Plymouth, Rochester and Logansport, about 70 miles distant, to operate its line through these counties from South Bend to Logansport via Plymouth. If this railway is built there will be a continuous electric interurban line from Chicago to Louisville via Indianapolis. Thos. P. Moredock is said to be interested. [E. R. J., Sept. 4, '09.]

South Amboy, N. J.—The City Council has granted to the Jersey Central Traction Company, Keyport, a franchise to build its proposed extension through South Amboy to Perth Amboy.

***Lawton, Okla.**—Applications have been made to the City Council by J. S. Danneck and D. L. Sleeper for a franchise to operate a street railway in Lawton.

Woodburn, Ore.—The City Council has granted a franchise to the Oregon Electric Railway, Portland, to operate a street railway in Woodburn. The franchise provides that the company must commence work within two months. The railway is a branch of the main route from West Woodburn to Woodburn, 3 miles.

Gettysburg, Pa.—The Town Council has granted the Hanover & McSherrystown Street Railway, Hanover, a franchise to enter Gettysburg at its eastern boundary and run

a single-track railway on Hanover and York Streets and 60 ft. into Center Square. [E. R. J., Sept. 11, '09.]

***Beaver Falls, Pa.**—W. C. Cunningham and George W. Reynolds, representing Philadelphia capitalists, it is stated, will soon petition the City Council for a franchise to build an electric railway over certain streets of Beaver Falls to connect with New Castle. The route of the proposed line is along the west bank of the Beaver River, by way of Wampum, Koppel and Homewood.

West Newton, Pa.—The Pittsburgh, McKeesport & Westmoreland Railway has been granted a franchise by the City Council to build an electric railway in West Newton. The company has given a \$5,000 bond to complete the line within a year.

Longueuil, Que.—The Montreal & Southern Counties Railway, Montreal, has been granted a 24-year franchise to build a street railway in Longueuil. The railway will connect Montreal, St. Lambert, Longueuil, Chambly, La Prairie and St. Johns, about 15 miles distant. Marcus S. Hill, 112 St. James Street, Montreal, secretary. [E. R. J., May 29, '09.]

***Haskell, Tex.**—M. R. Hemphill has applied to the City Council for a franchise to build a street railway in Haskell. The railway will be 3½ miles in length.

Bellingham, Wash.—The Whatcom Railway & Light Company has accepted the franchise for the Happy Valley extension of the Harris Avenue line. The extension will be about 1 mile in length.

Charleston, W. Va.—The Kanawha Valley Traction Company has applied to the City Council for a franchise to extend its street railway system on Russell Street, so as to connect its present lines on the West Side with the bridge of the Kanawha Bridge & Terminal Company at Seventh Street. J. C. Rockwell, Charleston, superintendent.

Milwaukee, Wis.—The City Council has granted a franchise to the Milwaukee Electric Railway & Light Company to operate its electric railway on Sycamore Street, on Second Street and on Cass Street.

TRACK AND ROADWAY

Birmingham & Edgewood Electric Railway, Birmingham, Ala.—It is reported that grading has been started by this company on its electric railway from the end of the South Highlands line to Red Mountain, a distance of 3½ miles. G. T. Brazelton, secretary and treasurer. Headquarters, 103 North Twentieth Street, Birmingham. [E. R. J., Aug. 7, '09.]

Northern Electric Railway, Chico, Cal.—It is stated that this company will, as soon as the necessary capital is obtained, construct a branch line to Colusa. The franchise has already been secured.

Pacific Electric Railway, Los Angeles, Cal.—It is stated that this company will extend its railway 12 miles from La Habra Valley eastward through the valley to a point on Santa Ana River.

***Mill Valley, Cal.**—A company has been organized to build an electric railway from Locust Avenue station in Mill Valley through the Muir Woods to Lagoon, with John Dias as president; James V. Chase, secretary, and Judge Conlon and D. C. Braid, directors.

West Chester & Wilmington Electric Railway, Wilmington, Del.—This company, which is to construct an electric railway 17 miles in length between the two named cities, will shortly begin operations. Surveys have been made and all right of way has been secured. The road is through a fertile and rapidly developing farming and dairying district, and will serve a population of 125,000. St. George H. Cooke, Real Estate Trust Building, Philadelphia, engineer, and Sydney Kenney, Land Title Building, Philadelphia, is interested. [E. R. J., March 6, '09.]

Rock Island Southern Railroad, Monmouth, Ill.—Officials of the Rock Island Southern Railroad are reported to have announced that cars will be running over its new extension from Monmouth to Rock Island by Dec. 1, 1909. The work of grading is progressing satisfactorily and the construction of the necessary bridges is well under way. At Monmouth a large gang of men is at work laying track.

Chicago, Kankakee & Urbana Railroad, Paxton, Ill.—The Chicago, Kankakee & Urbana Railroad has been organized to succeed the Chicago, Kankakee & Champaign Electric Railway, which had been dissolved and its board of directors ordered to sell all the property. The new company will buy all rights of the old company. The directors elected are: Ira Palmer, R. F. Cummings, Upton Schaub, C. E. Thrasher, Frank J. Hennessey, William J. Brock, George W. Bennett, W. J. West and W. D. Moore, Jr. The directors organized by electing William J. Brock, Kankakee,

president; Ira F. Palmer, Onarga, first vice-president; George N. Bennett, Urbana, second vice-president; Frank J. Hennessey, Chebanse, treasurer; William M. Hickey, Kankakee, secretary; Ira F. Palmer, Onarga; R. F. Cummings, Clifton, and W. J. West, Gilman, executive committee. [E. R. J., July 24, '09.]

Indiana North-Western Traction Company, Monticello, Ind.—W. F. Brucker, Monticello, secretary, confirms the report that this company has been incorporated to build an electric railway from Lafayette to Hammond via Logansport. Officers: Eugene Puntelle, 222 La Salle Street, Chicago, Ill., president, and Geo. A. Haskell, Chicago, treasurer. [E. R. J., Sept. 11, '09.]

Indianapolis, New Castle & Toledo Electric Railway, New Castle, Ind.—The Union Trust Company, 116 East Market Street, Indianapolis, receiver for this company, has let the first contract for the completion of this electric railway to W. C. Miller, Indianapolis, having authority to issue \$460,000 in receiver's certificates by the order of the Superior Court of Indianapolis.

Iowa Light & Traction Company, Eldora, Ia.—It is announced that this company, through its local representative, J. H. McBride, has made a proposition to the Marshalltown, Ia., Council to build an interurban railway from Marshalltown to Grundy Center and from Marshalltown to Ames, Ia., within three years, and guaranteed by a forfeiture bond of \$50,000, providing the company be granted a franchise. The company also proposes to buy the property of the Marshalltown Light, Power & Railway Company, and to extend this company's line to the city park and fair grounds. Andrew Stevenson, 153 La Salle Street, Chicago, Ill., president and general manager. [E. R. J., Sept. 4, '09.]

Red Oak & Northeastern Railway, Red Oak, Ia.—It is announced that this company is preparing plans to begin construction on this electric railway from Red Oak through Greenfield to Des Moines, a distance of 110 miles. W. L. Battin, Greenfield, president, and W. L. Sonntag, general manager. [E. R. J., Aug. 29, '08.]

***West Union, Ia.**—It is stated that B. W. Newberry and J. C. Flenniken, Strawberry Point, are interested in a proposition to build next season a 20-mile electric railway from Oelwein to Strawberry Point.

Waldo Street Railway, Rockland, Maine.—Maynard S. Bird, who is interested in this electric railway to connect Camden, Northport and Belfast, a distance of 19 miles, states that only the surveys and right of way have been secured. An organization will be effected this winter and construction will be started next spring. The power house, repair shops and amusement park will be located at Rockland. The company also expects to furnish power for lighting. [E. R. J., Aug. 14, '09.]

Missoula (Mont.) Street Railway.—It is stated that this company has awarded the contract to construct the grade of this electric railway from Pine Street to East Missoula, 2½ miles distant, to Clinton & Rumelhart, Missoula. The company also awarded the contract for the construction of two trestles, one at East Missoula, and the other to span the Rattlesnake River, to Milberry & Weaver, Missoula. It is understood that the company will lay its own rails when the grading is finished. W. A. Clark and others are interested. [E. R. J., Sept. 4, '09.]

Omaha, Lincoln & Beatrice Railway, Lincoln, Neb.—It is reported that this company will resume work on its electric railway, which is to connect Lincoln, Bethany Heights, University Place, Omaha, Papillion, Springfield and Waverley, a distance of 56 miles. It has been completed between Lincoln, University Place and Bethany Heights, 5 miles. E. C. Hurd, secretary.

Hudson & Manhattan Railroad, New York, N. Y.—This company has obtained permission of the Street and Water Board of Jersey City, N. J., to extend its Cortlandt Street tunnel under Railroad Avenue to Summit Avenue.

Sandusky, Norwalk & Mansfield Electric Railway, Norwalk, Ohio.—This company is said to be planning to build an extension from Mansfield to Bucyrus, 30 miles distant. It is expected that the company will issue about \$750,000 in bonds for the construction of this new branch. The company also proposes to build a new line from Mansfield to Shelby, 10 miles, to connect with the Mansfield and Bucyrus branch.

Toledo, Columbus, Springfield & Cincinnati Railway, Toledo, Ohio.—At a meeting held in the Spitzer Building, Toledo, Ohio, recently, the following Toledo men were named for members of the board of directors of this company: M. Seyfang, S. C. Heston; A. Beesch, Dr. S. S. Thorn and William P. Heston. The company was incorporated several years ago, and at present 85 per cent of the right-of-

way between Lima and Bellefontaine, as well as 90 per cent of the rights between Lima and Toledo, has been secured. Some grading has also been done. The company plans to build a railway between Toledo and Cincinnati through Lima, Bellefontaine, Columbus and Springfield.

Southwestern Interurban Railroad, Mangum, Okla.—It is reported that engineers have completed the field work and will soon be ready with a report for the electric railway which is to connect Mangum, Granite, Altus, Blair, Hollis, Vinson, Reed and Cordell, 22 miles distant. J. W. Solomon, Reed, president; H. M. Ferguson, Mangum, vice-president, and J. C. McCollister, secretary. [E. R. J., Oct. 31, '08.]

Oklahoma Union Traction Company, Tulsa, Okla.—It is stated that this company has begun grading in Tulsa for its first proposed railway which will extend to Orcutt's Lake, a resort 3 miles distant. The railway will be built to Sapulpa, a distance of 20 miles. Albert A. Small and G. C. Stebbins, Tulsa, are said to be interested. [E. R. J., June 26, '09.]

West Tulsa Belt Line Railway, Tulsa, Okla.—It is reported that construction work on this railway has been started. The line will extend through Tulsa, and will be 5 miles in length. W. E. Hawley and Gray Erick are interested. [E. R. J., July 10, '09.]

Niagara, St. Catharines & Toronto Railway, St. Catharines, Ont.—This company is in the market for material for 8 miles of single track for its extension from Welland to Port Colborne. E. F. Seixas, general manager.

***Hartland, Ont.**—John E. Stewart and Hon. A. B. Donworth are said to be interested in a plan to build an electric railway from Hartland to Foreston, N. B.

***Port Arthur, Ont.**—The City Council is said to be endeavoring to organize a company to operate street railways in several adjoining townships in conjunction with the municipal system in Port Arthur. Address J. J. Carrick, Port Arthur, Ont.

Pittsburgh, McKeesport & Westmoreland Railway, McKeesport, Pa.—It is announced that this company has received bids for the excavation work on the proposed extension from McKeesport to Westmoreland, a distance of 19 miles. It is the intention to have this new line in operation within a year.

McKeesport & Portvue Street Railway, McKeesport, Pa.—It is reported by the Realty Company, McKeesport, that work on the proposed street railway between McKeesport and Portvue Heights will be started this month. Gilbert F. Myer, manager. [E. R. J., July 31, '09.]

Allen Street Railway, Nazareth, Pa.—This company expects to place contracts during the next two weeks for the construction of about 1200 ft. of pile trestle with a 30-ft. span Bethlehem girder bridge. The bridge will have concrete abutments and retaining walls. The average length of piles will be 25 ft.

Philadelphia & Suburban Elevated Railroad, Philadelphia, Pa.—S. S. Neff, president, advises that this company has not yet incorporated, but expects to in October. Construction will be started on the railroad as soon as franchise is granted. The railroad will be wholly in Philadelphia and will be standard gage. It will consist of 20 miles of single track, operated by 650-volt direct current and will be equipped with the third-rail system. Headquarters, 416 Franklin Bank Building, Philadelphia. F. T. Finch, secretary. [E. R. J., Sept. 11, '09.]

***Amarillo, Tex.**—Will O. Miller, Jr., Amarillo, is said to be interested in a projected electric railway between Amarillo and Canyon City.

***Walnut Spring, Tex.**—An interurban railway from Walnut Springs to Glenn Rose is being projected by Judge Sadler and J. H. Farr, Glenn Rose. The right of way and necessary franchises will be secured immediately. The survey has been completed and grading will be started soon.

Richmond & Henrico Railway, Richmond, Va.—This company, which was recently granted an extension of time by the City Council for the construction of its proposed railway and a viaduct, has deposited \$10,000 with the city clerk to hold the franchise and as evidence that construction would be begun within 30 days after the deposit had been made. John C. Hagan, secretary and treasurer. [E. R. J., June 19, '09.]

***Charleston, Montgomery & Eastern Railway, Charleston, W. Va.**—It is reported that this company is making a preliminary survey for the electric railway which is to connect Charleston with Gauley Bridge, 38 miles, by the way of Montgomery, Camelton and Kanawha Falls. Charles K. McDermott is engineer in charge at Charleston, W. Va.

Fairmont & Northern Traction Company, Fairmont, W. Va.—This company has completed its organization by electing the following officers: S. L. Watson, president; C. E. Watson, vice-president; Walton Miller, secretary and treasurer, and S. B. Miller, chief engineer. The company will start the construction of an electric railway from Fairmont to Fairview within a short time. [E. R. J., Aug. 28, '09.]

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.—This company has arranged with the authorities of Racine to build a viaduct on East State Street across the tracks of the Chicago, Milwaukee & St. Paul Railroad. The company will pay \$12,000 of the cost and the city the remainder.

SHOPS AND BUILDINGS

Chicago, South Bend & Northern Indiana Railway, South Bend, Ind.—This company expects to place a contract during the next two weeks for the construction of a car house, repair shops, etc.

Mason City & Clear Lake Railway, Mason City, Ia.—It is announced that this company will immediately start construction of the car house which it proposes to build at Emery. The building will be 210 ft. x 55 ft. with 4 tracks and a storage capacity of 16 cars. Cement blocks will be used in the construction.

Rochester (N. Y.) Railway.—This company is erecting a concrete storehouse on Blossom Road, 100 ft. x 40 ft., two stories high in front, and but one story high in the rear. Track connections will be made with the company's own line and the New York Central & Hudson River Railroad, so as to facilitate the handling of shipments. The second floor of the two-story portion of the building will contain offices for the storekeeper, the yardmaster and other employees.

Hudson & Manhattan Railroad, New York, N. Y.—This company has leased for a period of 15 years three plots of ground required for a storage yard, station entrances and exits at Henderson Street and Grove Street, Jersey City, N. J.

Fargo & Moorehead Street Railway, Fargo, N. D.—This company is said to have let the contract to Bower Brothers, Fargo, for the construction of a brick and stone extension to its car house. The addition will be 236 ft. x 118 ft., and will cost \$4,000.

Ohio Electric Railway, Cincinnati, Ohio.—It is announced that bids have been received for the construction of the interurban depot to be erected in Lima by this company. The station is to be of concrete and brick, 2 stories in height and will cost about \$50,000. The second floor will be occupied by the traffic department. There will be 6 tracks on the main floor of the building. The Western Ohio Railway will also use the depot for its division between Toledo and Dayton.

Port Arthur & Fort William Electric Railway, Port Arthur, Ont.—The Municipal Commission on street railways has decided to erect a car house at Port Arthur for its street railway which it operates in Port Arthur and Fort William.

Texas Traction Company, Dallas, Tex.—This company has in course of erection in Richardson, Tex., a brick and steel depot, which will cost about \$2,500 when completed.

POWER HOUSES AND SUBSTATIONS

Washington, Baltimore & Annapolis Railway, Washington, D. C.—This company has awarded a contract to Edward Watters & Company for the erection of a substation at Ardmore, Md., at a cost of \$8,000.

Illinois Traction System, Champaign, Ill.—It is stated that this company will presently erect a power station at Venice, Ill., which will have a capacity of 10,000 hp. The plant, which is estimated to cost \$500,000, will be used on the southern division of the system.

Indianapolis, New Castle & Toledo Electric Railway, New Castle, Ind.—It is stated that arrangements have been made for the installation of the electric machinery and equipment in the power house of this company at New Castle at once. This equipment was partially installed previous to the appointment of the Union Trust Company, as receiver, and was subsequently removed.

Port Arthur & Fort William Railway, Port Arthur, Ont.—This company has recently purchased a 500 hp motor generator set from the Allis-Chalmers-Bullock Company.

Spokane, Walla Walla & Western Railway, Walla Walla, Wash.—It is reported that the survey is completed for the power plant of this company. L. C. Goodwin, engineer, has obtained a proposed power site which will develop about 4500 hp, sufficient to operate the proposed railway. E. M. Symonds and M. S. Parker are interested. [E. R. J., Aug. 28, '09.]

Manufactures & Supplies

ROLLING STOCK

Walkill Transit Company, Middletown, N. Y., is in the market for three double-truck closed cars.

Municipal Tramways, Calgary, Alt., it is reported, will purchase six more cars of the pay-as-you-enter type.

Shore Line Electric Railway, New Haven, Conn., is ready now to purchase six cars, as mentioned in the ELECTRIC RAILWAY JOURNAL of Feb. 20, 1909.

Vandalia Railroad, Pittsburgh, Pa., is reported to be planning the purchase of two gasoline motor cars for use on the Butler (Ind.) branch of that railroad.

Spokane & Inland Empire Railroad, Spokane, Wash., it is reported, has ordered 16 cars from The J. G. Brill Company.

Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, has ordered 12 city and six interurban cars from the Niles Car & Manufacturing Company, it is reported.

Northwestern Elevated Railroad, Chicago, Ill., mentioned in the ELECTRIC RAILWAY JOURNAL of Aug. 28, 1909, as planning the purchase of 20 cars, denies that it is in the market for any new cars.

Fort Dodge, Des Moines & Southern Railroad, Boone, Ia., has ordered two cars of the pay-as-you-enter type from the American Car Company. This company also expects to remodel a number of its cars for this service.

Chicago (Ill.) City Railway is rebuilding in its shops 45 double-truck cars which will be used on the Calumet & South Chicago Railway. The company will also remodel about 100 of its cars, it is reported, for pay-as-you-enter service.

Fairmont & Mannington Railroad, Fairmont, W. Va., is having an express car 44 ft. long over all built by the G. C. Kuhlman Car Company. Taylor trucks have been purchased for use under this car and a set of trucks of the same manufacture has been purchased for replacement.

Ft. Wayne & Wabash Valley Traction Company, Ft. Wayne, Ind., is building an interurban passenger car in its shops at Ft. Wayne. It is reported that this company will rebuild a large number of its old type of cars during the coming winter. The company is also making plans to build an electric locomotive in its shops.

Detroit (Mich.) United Railways, reported in the ELECTRIC RAILWAY JOURNAL of Aug. 7, 1909, as having ordered 25 pay-as-you-enter cars from the G. C. Kuhlman Car Company, has drawn the following specifications:

Length of body...31 ft. 3 in.	Hand brakes.....Peacock
Length over bumpers,	Headlights.....Dayton
42 ft. 3 in.	Sanders.....Detroit United
Width over posts at belt,	Seats, style, H. & K. No. 11-A
8 ft. 3½ in.	Trolley retrievers....Wilson
Sill to trolley base,	Trucks.....Brill No. 27-F1
9 ft. 3¾ in.	Varnish.....Berry Bros.
Curtain fix...Curtain S. Co.	Wheels.....Griffin
Curtain material, Pantasote	

Parsons Railway & Light Company, Parsons, Kan., mentioned in the ELECTRIC RAILWAY JOURNAL of July 10, 1909, as having ordered seven 21-ft., single-truck, semi-convertible cars from the St. Louis Car Company, has only ordered five cars of this type, the details of which follow:

Seating capacity.....32	Curtain fixtures,
Length of body.....21 ft.	Curtain Supply Company
Length over vestibule, 31 ft.	Curtain material.....Crown
Width over sills, 8 ft. 1½ in.	Fenders.....Eclipse
Width over posts at belt,	Heaters.....Consolidated
8 ft. 2 in.	Headlights.....Dayton
Height top rail to sills,	Motors..two Bullock, yoke
2 ft. 7½ in.	suspension
Body.....wood	Seats.....St. Louis
Interior trima.....mahogany	Seating material..Pantasote
Underframe.....wood	Step treads.....Mason
Bumpers.....St. Louis	Trolley base.....St. Louis
Couplers.....Tomlinson	Trucks.....Brill 21-E

TRADE NOTES

Pay-As-You-Enter Car Corporation, New York, N. Y., has licensed the Ft. Dodge, Des Moines & Southern Railway, Boone, Ia., to build several pay-as-you-enter cars.

T. H. Symington Company, Baltimore, Md., has opened a permanent office at 1912 Hudson Terminal Building, 30 Church Street, New York, N. Y., in charge of T. C. de Rosset.

American Brake Shoe & Foundry Company, Mahwah, N. J., has moved its branch office at Room 310 National

German-American Bank, St. Paul, Minn., to 425 New York Life Building, Minneapolis, Minn.

Western Electric Company, New York, N. Y., reports a gain in gross sales for August, 1909, over August, 1908, of about 60 per cent. Estimates based on the earnings for the first nine months indicate gross sales for the year in excess of \$47,000,000. There has been a specially good demand for cables and generating machinery.

Allis-Chalmers Company, Milwaukee, Wis., denies that any further additions to the West Allis works are contemplated. An extension to the Cincinnati works of the company is being made, however, which will give employment to about 1000 additional men. Construction work and the installation of new equipment were commenced there some weeks ago.

Alexander Milburn Company, Baltimore, Md., has enlarged its factory and increased its staff for the purposes of manufacturing the Milburn acetylene contractor's light. Among the recent purchasers of 5000-cp lights are Grant Smith & Company, and Locher, Gross Isle, Mich.; Smith-McCormick Company, Portland, Pa.; F. J. Romer Construction Company, St. Paul, Minn.; American Pipe & Construction Company, Rochester, N. Y.; Erie Railroad, Johnson-Dauchy & Carey Company, Mandan, N. D.; Meadows Company, Johnson City, Tenn.; United States Reclamation Service, and the United Engineering & Contracting Company, Lockport, N. Y.

A. Y. Evins, Atlanta, Ga., who has been connected with street railways in Atlanta, Mobile and Birmingham for many years, has associated himself with the More-Jones Brass & Metal Company, St. Louis. For the past few years Mr. Evins has been master mechanic of the Birmingham Railway & Light Company, a position which he resigned recently to become assistant manager of the railway department of the More-Jones Brass & Metal Company, which has been in the brass and metal business since 1874, specializing in railway bearings and castings. With the development of electric railways the company entered that field with its bearings, and has since put in a complete line of electric railway materials. Mr. Evins has a wide acquaintance among electric railway operatives, and his many friends will be glad to hear of his connection with the More-Jones Brass & Metal Company.

ADVERTISING LITERATURE

Arthur D. Little, Inc., Boston, Mass., has issued a booklet entitled "The Purchase of Coal."

Coates Clipper Manufacturing Company, Worcester, Mass., has issued Bulletin No. 22. Coates unit link, flexible shaft and drills, including the rail drill, are illustrated and described, together with other products of the company.

Frank Ridlon Company, Boston, Mass., has issued its list of second-hand electrical machinery for September, 1909. Accompanying the list is a four-page folder, in which the American no-slip pulley cement and its uses are described.

H. W. Johns-Manville Company, New York, N. Y., has issued a circular which has for its subject Morris metallic packing, made of a specially treated, soft, gray cast-iron, and intended for use with stationary and marine engines, gas engines, locomotives, steam pumps and air and gas compressors.

Valentine-Clark Company, Chicago, Ill., has reprinted from the New York American, as a placard, its cartoon entitled "Well, Look Who's Back!" the subject of which is the return of prosperity, pictured in the person of a much-bejewelled man oozing money from every pocket and from a hand bag and with the so-called smile that won't come off. With the placard is a post card addressed to the Valentine-Clark Company on which inquiry may be readily made regarding prices on Michigan or Western cedar poles.

NEW PUBLICATIONS

Electric Power Conductors. By William A. Del Mar, New York, 1909; D. Van Nostrand Company. Cloth, 324 pages and index. Price, \$2.

The author, who is assistant engineer of the electrical transmission department of the New York Central & Hudson River Railroad, has expanded his own working formulas, notes and data into a book of considerable size, which takes up in a practical way all of the engineering considerations involved in the design and installation of electrical power conductors for both alternating and direct current. The introductory chapters deal with the properties of conductors and are followed by an analysis of methods for determining the sizes of conductors, outline specifications, descriptions of various methods of testing and a few notes on installation of cables both overhead and underground. Chapters 10 and 11 deal with third-rail working conductors and rail bonding.