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Frederic Nicholas, Associate Editor.

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Take One Fare at a Time

The practice of collecting more than one fare at a time when change has to be made should not be encouraged. Where the pay-as-you-enter system for collection of fares has not been introduced it is found that conductors, in their rounds of open cars, frequently accept fares from several passengers without stopping to make change when denominations larger than 5 cents are tendered. Bank tellers and cashiers in stores deal separately with persons in transactions involving the passage of money. While the act of making change for a street railway fare, because

of the invariable unit rates, is simpler than that of cashing a check or taking care of receipts for different amounts, it has the same importance and risk as any other transaction where cash is involved; the chance for dispute is present if any complication arises. Conductors who form the habit of accepting more than one fare at a time when change has to be made have been observed to ask the passengers the denomination tendered, and also to mix the change of two passengers. In the former case the conductor subjects himself or the company to the possibility of loss, and in the latter the passengers may be annoyed or angered. A number of companies recognize the desirability of avoiding any dispute on the subject of fares by requiring the conductor, when obliged to give change, to state the amount of money received from the passenger and the amount returned to him, and also to collect all fares separately, and not in bunches. In fact, this practice has proved so satisfactory that rules to do this have tentatively been embodied by the committee on city rules in the proposed code of standard rules to be considered at Denver next October.

Painters and Paint Making

The art of the master painter, like that of many another skilled workman, has undergone many changes in the past decade. Just as the introduction of automatic machines has revolutionized nearly all manufacturing methods, so has the development of scientific paint making completely altered the character of the painter's trade. In the old days the master painter manufactured largely his own paint from the raw material. His head was full of secret formulas picked up here and there in the course of his long experience. The more secretive he was and the more he changed and manipulated his ingredients to suit imaginary differences in conditions, the more valuable employee he was considered. The preparation of his materials was of more importance than their application. If a certain secret mixture of oils and driers and pigments did not give satisfactory service, there was always some vague but sufficient excuse. Some of these old-time painters were skilful and efficient, considering the means at their disposal for mixing paints, but others worked by rule of thumb and trusted to luck and the ignorance of their superior officers.

Modern paint making methods have relegated the shop paint grinder and the mixing barrel to the background, and have brought about the passing of the old-time master painter. The efficient painter of to-day takes the paints issued to him, ready to apply, and puts them on the wood strictly according to instructions issued by the manufacturer of the paints. He is skilled with his hands, and need have no knowledge of what the paint contains or how it is mixed. The old prejudice against ready mixed paints is rapidly disappearing. Good paints are necessarily sold

largely on reputation, and there is nothing for the paint maker to gain in selling loaded or watered paint. The large manufacturer can buy oils and pigments cheaper and of better quality than can the small consumer. Precise factory methods insure uniformity of color and quality, and a new formula is not tried out on a car as a first experiment. The tendency in the paint business is to supply materials as nearly ready to apply as packing and shipping will permit, leaving to the painter the single responsibility of putting them on the cars.

Enforcing Permanent Instructions

System is the foundation of the successful organization of shop and office forces. The heads of departments have too many other important duties to permit them to follow up, day by day, the routine work of every subordinate. It is necessary to outline the individual duties of each employee, and it is also essential that all employees be guided by general instructions promulgated for permanent use. In every office there are numerous standard methods and practices which are supposed to be followed, but it frequently happens that they are disregarded, through ignorance or neglect. The importance of having every employee follow the general instructions covering these standards, as well as special individual instructions, is apparent. It should be the duty, therefore, of heads of departments to define as clearly the general duties of all of the employees under them as they define their special duties. In the transportation department the bulletin board serves the purpose of calling the attention of the trainmen to standing orders. The men are supposed to consult the bulletin board each day before taking out their cars. Neglect to do this is not considered an excuse for failure to obey these standing orders as long as they are posted on the board. The same plan lends itself to the promulgation of general and permanent instructions in the shops and in the office. Each subordinate who is given any responsibility should receive and receipt for a copy of each sheet of standing instructions issued from time to time, and at regular periods should be required to sign a statement that he has read within a week all of the instructions and rules then in force. In this way the responsibility for violation of any of the rules or regulations can be placed directly. Of perhaps more importance is the incentive created for the men to actually study the instructions at frequent intervals, so that they will be refreshed in their minds.

Open Cars and Pleasure Riding

In many sections of the country the open car has always possessed a popularity for pleasure riding with the public which has not been attained by any other type of equipment. The objections of the open car from a traffic standpoint are serious. It takes longer to load an open car than it does for a closed car or semi-convertible car. The use of the open car demands a double equipment of rolling stock, and the presence of a running board introduces an undeniable source of danger. Nevertheless, there is a fascination, more pronounced in some sections of the country than in others, but still quite general, about riding in an open car, and as long as there is such a demand the car will have a money value.

Undoubtedly, the popularity of the open car is due largely to the fact that it affords the least possible obstruction to the movement of fresh air through the car. This gives a sense of freedom to the passenger because the car is not closed in front or on the sides. The sensation in riding is much more like that experienced in an automobile than in traveling in a car which is closed. From an operating standpoint, also, the open car has certain undeniable advantages, and these, with the demand for the car on the part of the public, have led to its retention, in spite of the competition of the modern semi-convertible car. If the latter, with its desirable features of minimizing accidents and investment in climates where there is changeable weather, is to supplant the open car, the good points of its rival should be studied, and as many of them as possible should be incorporated. Finally, if there are any meritorious features which can be introduced in the semi-convertible and not in the open car they should be adopted.

In considering this matter one should bear in mind that the greater part of the passenger traffic of the open car comes from pleasure travel, a very large factor in which is easy riding. Special attention should therefore be given to the trucks and their under attachments in the semi-convertible car. It is possible, too, that the use of screen doors instead of glass would improve the distribution of fresh air in circulation. It may even in time be necessary to use a grating construction of the side panels, although the principal difficulty in the semi-convertible appears to be due to the tendency of the vestibules to form air pockets. In some semi-convertible cars the doors of which are operated by compressed air a considerable portion of the car length is necessarily solid when the doors are of glass and slide toward the center of the car body in opening. Where possible, it would be well to open this portion of the car, and, presumably, some way might be found, in the season of pleasure travel, to attach temporary curtains to such openings for use in cases of storm. The problem is admittedly difficult, but it seems clear that if the semi-convertible car is to obtain its full share of pleasure riding, it will have to be brought closer to the standards of atmospheric circulation which have always made the open bench car so popular.

Some Reasons for Going to Denver

Discussion of the merits of Denver as a city for the convention of the American Street & Interurban Railway Association occupies so prominent a place in the current affairs of the companies that it may be well to epitomize some of the reasons why it is of measurable advantage for an official to attend a meeting of this character once a year. It will be assumed that the company which has under consideration as a proper business question the subject of the expense of a trip to Denver for its officials is well managed and progressive. Its officials in all departments are assumed to be those of a character that will seek improvement in methods and criticism of existing practice if anything better can be learned from the practice of other roads.

A man of systematic business habits, if attending a convention, will get well acquainted with a few people, meet

a number of others, go to all the sessions of the various associations which the arrangement of their times of meeting will permit, and will inspect the exhibits thoroughly. By so doing he brings a new point of view into his own work. He gets away from the routine of his office or shop, and from that fact alone is able to consider problems in a way which is not always possible during close application to official duties.

The advantage of personal acquaintance between two live men, occupying similar positions in different companies that are not competitive, is so plain that mere reference to it may be sufficient. From his own experience every man who thinks about the problems he has to solve will testify to the value of the ideas which he has received at some time in his life by discussion with others. Now, these ideas may result eventually as much to the benefit of the man himself as to the company that employs him, but the company is likely, in any event, to get its fair share of all that is learned. If the man is made a better railway operator, engineer, accountant, executive, or is equipped to fill the duties pertaining to any other department better, which will be the fact if full advantage is taken of all the opportunities presented at an important convention of this nature, the industry as a whole is benefited. If the officials do not make progress in their methods the system will not progress, and if it does not it will fail to keep up with the increasing traffic needs of every developing community in this country. These facts are incontrovertible, whether the convention is held in a city near or remote.

Denver, it is true, is somewhat farther distant from the cities on the Atlantic seaboard than any other place which has been previously selected for a meeting of the American Street & Interurban Railway Association. It is not, however, very much farther in point of time, as it can be reached from New York in from 48 to 60 hours, depending upon the trains taken and the connections made. This is only about 30 hours longer than if the convention was held in Chicago. In other words, if a person left New York at 3:30 p. m. on Friday he could be in Denver at 3 p. m. on Sunday. The railroad fare will, of course, be somewhat more than if the convention was to be held in the Middle West, but the railroads are making special rates to Denver this year and the fare, in excess of that which would have to be paid to attend a convention in, say, Columbus or St. Louis, will not be a very large percentage of the total convention expenses of a delegate in one of these nearer cities.

On the other hand, all of the advantages which have been cited for attendance at a National railway convention are presented at Denver, and many others in addition. The farther away one goes from his own city the greater the difference in operating conditions are apt to be, and the more one will be able to learn by inspecting them. Especial attention has been given in Denver to certain features of operation, such as the general design of rolling stock and protection against lightning, and a week, or even three or four days, spent in that city should be extremely profitable to the operating superintendent, the engineer or any person connected with any of the various departments of a railway company, independent of the gain derived from attending the convention itself.

The Coney Island & Brooklyn Decision

One of the long-expected decisions in regard to the proper fare to be charged between Brooklyn and Coney Island, that relating to the Coney Island & Brooklyn Railroad Company, has just been handed down by the Public Service Commission, First District. That relating to the Brooklyn Rapid Transit Company has not yet been announced. The position of the Coney Island & Brooklyn Railroad was peculiar, because it formerly had two rates of fare between Coney Island and Brooklyn, charging 10 cents on Saturdays, Sundays and holidays and 5 cents on other days of the week. This fare was in force from 1902 until Aug. 31, 1908, when the company, after 30 days' notice, advanced its fares on all days to 10 cents.

The legal status of the situation can be briefly summed up by saying that some time before this advance in fare two complaints were lodged with the Public Service Commission, claiming that the 10-cent charge on Saturdays, Sundays and holidays was "unjust, unreasonable and unlawful." The commission has been engaged during the past 18 months in hearing testimony on and considering these claims. In the meantime the Legislature passed an act requiring both companies to reduce their fare to 5 cents, but this act was vetoed by Governor Hughes, because the subject was under consideration by the commission.

The decision delivered by Commissioner Bassett is published elsewhere in this issue, and is probably the most important relating to electric railway companies which has thus far been delivered by the commission. We shall not attempt to analyze the argument, because the position of the commission is fully outlined in the decision itself, but it might be well to call attention to a few of the salient points.

In the first place, the commission holds that an electric railway company is responsible for the maintenance of its property in good condition, not only now, but in past years, and declares that if a part of the funds which should have been used for such maintenance of the property has been paid out to the stockholders in dividends they should suffer, and not the public. The second point is that the commission will not order a reduction of fares if the earnings of the company after maintaining the property in good condition will not also provide a proper return to the stockholders. Commissioner Bassett does not state what he considers a proper return, but he does say that the commission will decline to reduce fares when the net earnings, after depreciation charges have been met, are not more than 6 to 6½ per cent of the physical value of the property, not including any allowance for franchises, good will, going concern or development charges. The third point indicated in the decision is that the commission will decide questions of this kind largely upon evidence obtained after the public hearings are closed, without giving the company an opportunity to cross-examine the witnesses.

The question of fares on week days was not involved in the complaint received by the commission, and it declined to pass upon it, although Commissioner Bassett expresses an opinion that such an increase is unreasonable and unjustifiable and of slight profit to the company, but that the company has a legal right to make such a charge. On the question of the 10-cent fare on Saturdays, Sundays and holidays the commission decided in favor of the company.

ROLLING STOCK STANDARDIZATION IN BROOKLYN—TRUCK AND CAR ALTERATIONS

The standardization of the trucks and car bodies operated on the Brooklyn Rapid Transit Company's surface lines has been accompanied by the introduction of various miscellaneous improvements tending to increase the reliability of the service and to decrease the maintenance. The following paragraphs will discuss such alterations as may be of interest to other companies.

TRUCK STANDARDS

When standardization of the surface equipment commenced in July, 1906, there were about 15 truck designs

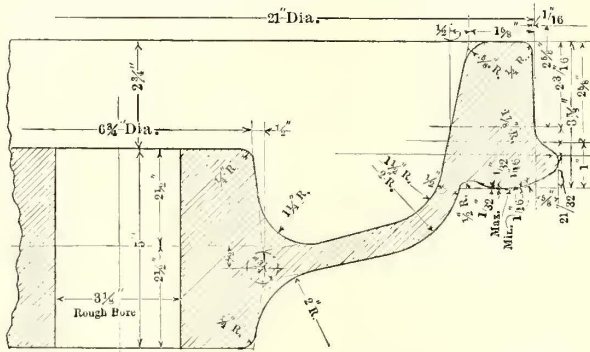
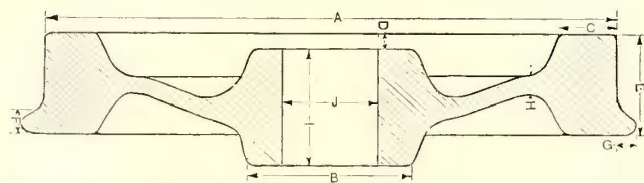


Fig. 1—Truck and Car Alterations—21-in. Rolled Steel Pony Wheel for Maximum Traction Trucks

in use. Since then the Peckham No. 6, Peckham No. 9, Brill No. 21-E and half a dozen other trucks have been eliminated, leaving the present distribution as follows: Peckham No. 25 and Baldwin No. 185 (of like construction) on convertible cars; Peckham No. 14-D-5 on 200 semi-convertible cars; Brill No. 22-E maximum traction on 250 semi-convertible cars, 513 double-truck closed cars, and 750 double-truck open cars; DuPont trucks for 77 single-truck closed cars and 163 single-truck open cars. Detailed descriptions of the latest surface and elevated trucks adopted by the company will be presented in another article, which will contain the specifications under which these trucks were built.

In the actual truck framing very few changes have been



even gone so far as to draw up a design for a rolled-steel pony wheel, as shown in the accompanying drawing, Fig. 1. The first rolled-steel wheels were tried as early as 1905. The company's experience has proved the solid wheel to be cheaper on a mileage basis and decidedly safer through the elimination of broken flanges. The costs of rolled-steel and cast-iron driver and pony wheels compare as follows:

| Material..... | Rollled steel | Rollled steel | Cast iron | Rollled steel | Cast iron |
|-----------------------------|---------------|---------------|-----------|---------------|-----------|
| Diam., inches.. | 34 | 33 | 33 | 21 | 20 |
| Cost per 10,000 miles | \$1.1508 | \$1.04 | \$1.1628 | \$0.62 | \$0.6914 |
| Mileage | 120,000 | 120,000 | 35,000 | 90,000 | 35,000 |

The cost of the 21-in. rolled-steel pony wheel and of the 34-in. wheel is based on experience with 33-in. rolled-steel wheels. The 34-in. wheels are used as drivers on maximum traction trucks and the 33-in. wheels for the four-motor cars. Fig. 2 shows the profile record used

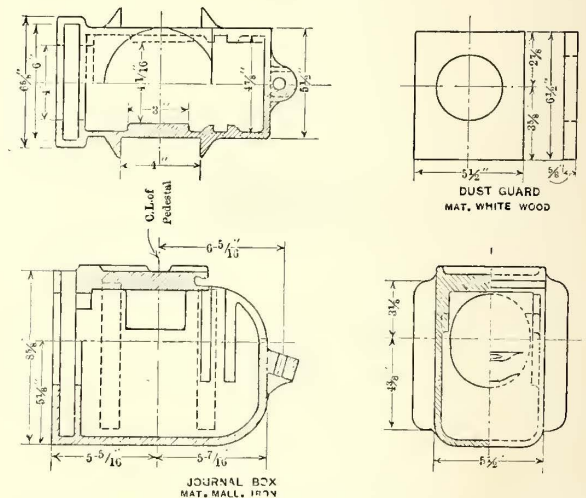


Fig. 4—Truck and Car Alterations—Journal Box for Brill Maximum Traction Truck

when rolled-steel wheels are checked upon delivery. This wheel profile is lettered in accordance with columns on the record blank, Fig. 3, thus serving as a convenient guide for the inspector.

Only two axle diameters are now used on the surface cars. The latest type of semi-convertible car represented by class 2500 and the double-truck four-motor equipments have 4 3/4-in. axles, but all other cars have 4-in. axles. The axles of most elevated motor cars except 36 cars with Baldwin trucks are 6 in. at the motor bearing, 6 7/16 in.

INSPECTION OF ROLLED STEEL WHEELS

| ORDER NO. | WHEEL NO. | HEAT NO. | A | B | C | D | E | F | G | H | I | J | BORE OUT OF CENTER | RIM WARPED | WHEEL OUT OF ROUND | REMARKS | DATE INSPECT |
|-----------|-----------|----------|---|---|---|---|---|---|---|---|---|---|--------------------|------------|--------------------|---------|--------------|
| 1 | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | |

Figs. 2 and 3—Truck and Car Alterations—Profile and Record Blank for Wheel Inspection

required. Perhaps the only one which need be mentioned is the use of the tie-bars on the Brill maximum traction trucks and a new design of compression pin casting.

WHEELS AND AXLES

The Brooklyn Rapid Transit Company has been using Schoen-Carnegie rolled-steel wheels for its elevated and surface M.C.B. trucks. It has now decided to use the same wheels for the drivers of maximum traction trucks and has

at the wheel seat and 6 1/2 in. at the gear seat. The motor axles of the Baldwin trucks are 5 1/2 in. at the motor axle bearing, 6 1/2 in. at the wheel seat and 7 in. at the gear seat. The axles of the 100 new class 1400 cars at 6 1/2 in. at the motor bearing, 7 3/4 in. at the wheel seat and 7 13/16 in. at the gear seat. The axles of trail trucks of motor cars are 5 in. in the center, 6 in. at the wheel seat and 6 1/4 in. inside the wheel hub. The axles on trail cars are 5 3/8 in.

at the wheel seat and taper from 5 1/8 in. to 4 1/2 in. at the center.

JOURNAL BOXES

For surface cars the company has decided to use the journal box standards of the American Street & Interurban Railway Engineering Association except on maximum trac-

to waste lubrication. This box is made dustproof by a 1/16-in. lead gasket between the cover and box. The cover is secured to the box by two tapered bolts and lock nuts.

The journal box standards in elevated service are as follows: Elevated trailers, 3 1/2 x 6 1/4-in. plain boxes with end-thrust stop wedges; trailer and motor trucks of motor

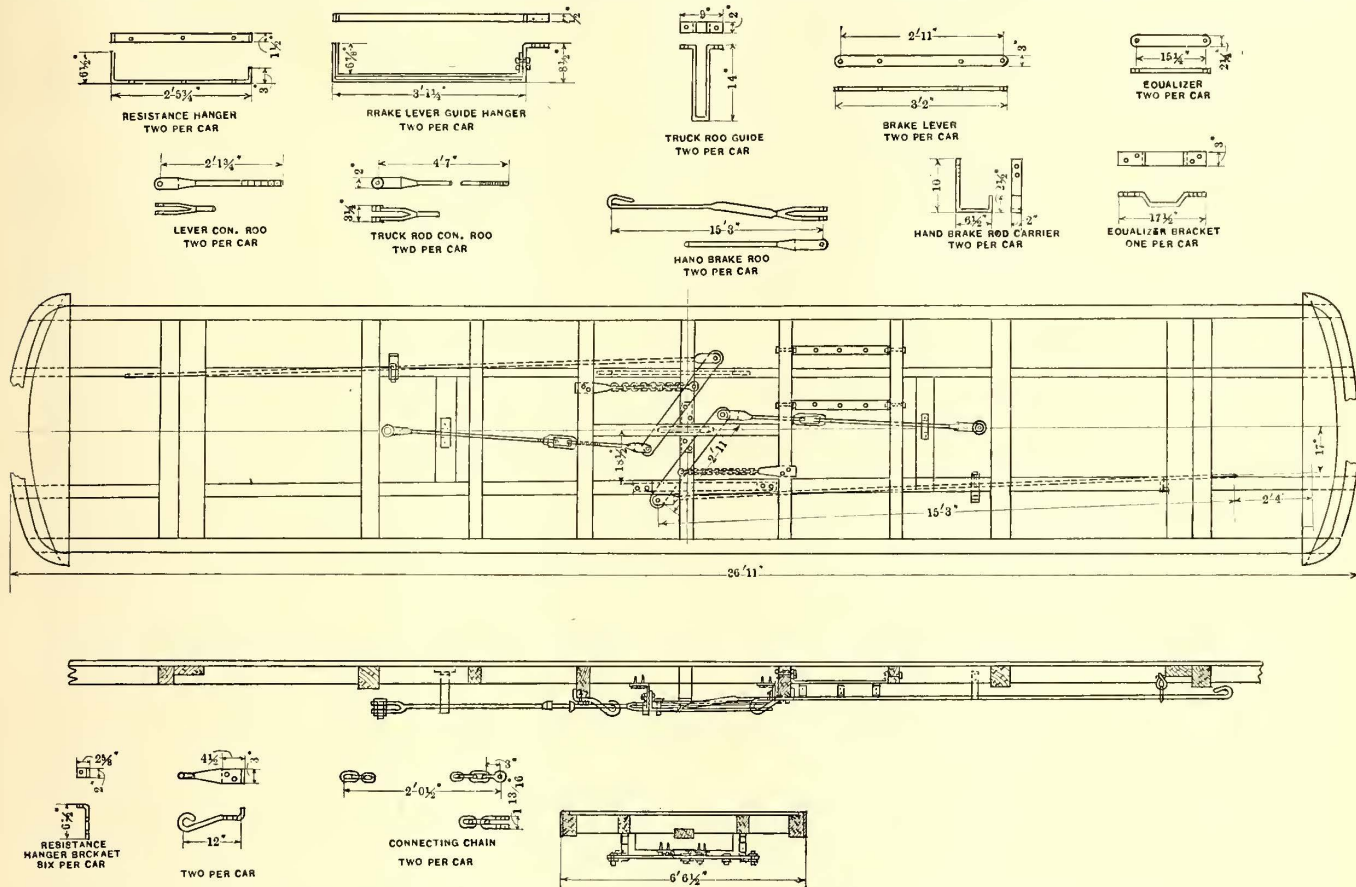


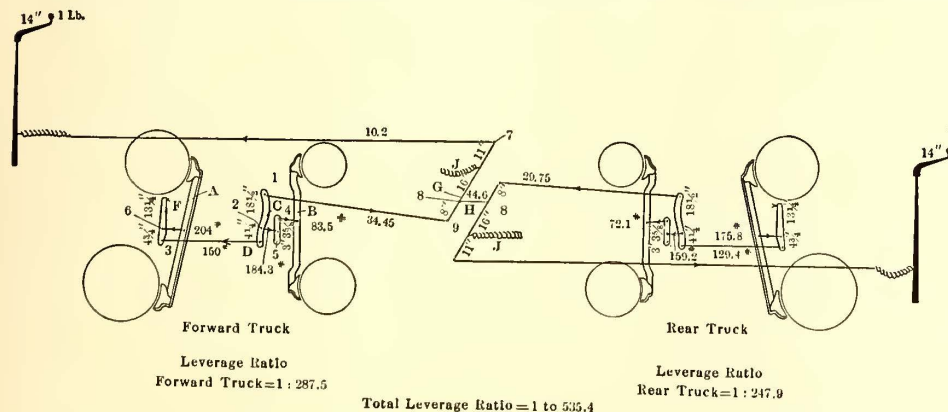
Fig. 5—Truck and Car Alterations—Standard Brake Rigging of Double Truck (Open) Surface Passenger Cars

tion trucks where the axles are not suitable. The original Brill boxes furnished with the maximum traction trucks are being replaced by boxes designed by the railway company which are similar to those used on its Peckham 14-D-5 trucks. The Brill box had a large space reserved in the bottom for wick lubrication and was provided with

cars with 4 1/4-in. x 8-in. M.C.B. journal boxes except the motor trucks of Class 1400, which have 5-in. x 9-in. journals.

BRAKING IMPROVEMENTS ON SURFACE CARS

Double car-body brake levers have replaced the old brake rigging which consisted of a single lever and chain.



| Table of Stresses. at 50.1 # | | | |
|------------------------------|---------------------------------|------|----------------------------------|
| Rods & Levers | | Pins | |
| Mark | Tensile Stress Lbs. per Sq. In. | No. | Shearing Stress Lbs. per Sq. In. |
| A | 21790 | 1 | 4502 |
| B | 17200 | 2 | 13740 |
| C | 17000 | 3 | 11170 |
| D | 14510 | 4 | 3110 |
| E | 15860 | 5 | 3758 |
| F | 20035 | 6 | 15180 |
| G | 13830 | 7 | 838 |
| H | 4614 | 8 | 4190 |
| Chain | 6054 | 9 | 3352 |

| Car No. | Weight Equipped | Lb. required on Brake Handle to give 8000 Pressure of 90% of Total Weight of Car |
|-----------|-----------------|--|
| 2500-2599 | 35200 | 59.1 |

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Fig. 6—Truck and Car Alterations—Brake Leverage Diagram of Type O-45 Maximum Traction Truck for Cars Weighing 35,200 lb.

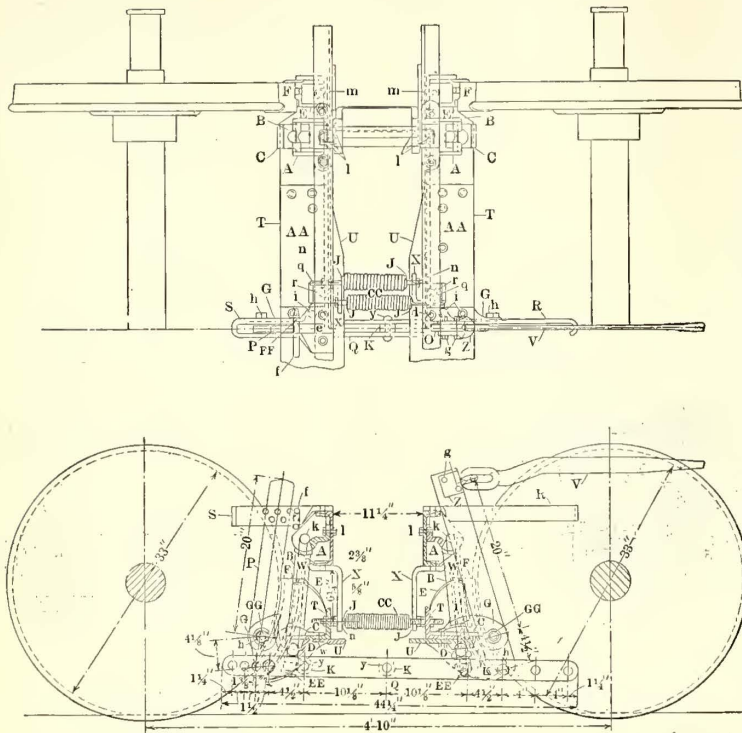
a steel ring dust guard. The wick did not prove an efficient lubricator and has been replaced by the company's standard oily waste. The steel ring dust guard was objectionable as it cut into the axle and has therefore been superseded by a wooden guard. The journal boxes on the four-motor equipments have also been changed from wick

Of course, if the single-truck rod broke, the car was crippled for all braking purposes. Under the present conditions the destruction of one truck rod still permits the braking of the other truck.

Brake leverage diagrams and tables of stresses in rods, levers and pins have been calculated and recorded in blue-

print form for all classes of cars. Fig. 6. shows one of these records as prepared for the cars numbered 2500-2599, which are mounted on Standard O-45 maximum traction

CHANGES IN PECKHAM NO. 25 TRUCKS
Two of the principal alterations in the brake rigging of the Peckham No. 25 truck shown in Fig. 7 are an increase



| Bill of Material | | | No. Pcs. | Remarks | |
|------------------|-------------------------------|-------------------------------------|---------------|----------------|------------------------|
| Mark | Description | Material | per Trk. | | |
| A | Brake Link Hanger | Mall. Iron | 4 | | |
| B | " " Sleeve | " " | 4 | | |
| C | " " Bearing | " " | 4 | | |
| D | " " Block | " " | 4 | | |
| E | " Shoe Head | Cast Steel | 4 | | |
| F | Brake Shoe | " " | 4 | | |
| G | " Lever Jaw | Mall. Iron | 2 | | |
| H | Channel Washer | " " | 8 | | |
| J | Y Plug | " " | 8 | | |
| K | Connector Washer | Cast Iron | 3 | | |
| L | | | | | |
| M | | | | | |
| N | | | | | |
| O | Live Lever | 2 1/4 x 3 1/2 x 1" | O.H. Steel | 1 | |
| P | Dead " | 2 1/4 x 3 1/2 x 1" | " " | 1 | |
| Q | Live & Dead Lever Conn. | 4 1/2 x 2 1/2 x 3/8" | " " | 2 | |
| R | " Lever Guide | 3/8 x 2 x 1 1/2" | Wrot. Iron | 1 | |
| S | Dead " Bracket | 2 1/2 x 2 1/2 x 3/8" | " " | 1 | |
| T | Brake Beam | 1/2 x 4 x 6 x 4 10' L | Steel | 2 | |
| U | " Reinforcement Plate | 5/8 x 8 x 36" | " " | 2 | |
| V | Live Lever Connector | 2 1/2 x 2 x 3/8" | " " | 1 | |
| W | Brake Shoe Key | 1 1/2 x 3/8" | Soft Steel | 4 | |
| X | Release Spring Bracket | 1 3/4 x 1/2 x 2 1/2" | " " | 4 | |
| Y | Live & Dead Lever Bushing | 1" Long, # 11 | C.D.S.F. | 8 | |
| Z | " Lever Clevis | 3/4 x 1 Dia. & 5/8 x 1 1/2 x 2 1/2" | O.H. Steel | 1 | |
| a | | | | | |
| b | | | | | |
| c | Live Lever Guide Bolt | 3/8 x 2" | Wrot. Iron | 2 | |
| d | Dead " Bracket Bolt | 3/8 x 2 1/2" | " " | 2 | |
| e | " Eye Pin | 3/8 x 2 1/2" | " " | 1 | |
| f | Live " Clevis Bolt | 1 1/2 x 3/8" | " " | 2 | |
| g | " & Dead Lever " | 1 1/2 x 3/8" | " " | 2 | |
| h | Brake Lever Jaw " | 3/8 x 2" | " " | 8 | |
| i | " Link T Bolt | 1 1/2 x 10 1/2" | Upset | 4 | |
| k | " Hanger Bolt | 3/8 x 2 x 1 1/2" | Wrot. Iron | 12-3/4 & 8-3/4 | |
| m | " Shoe Head Bolt | 3/8 x 2 1/2" | " " | 4 | |
| n | " Rel. Spring " Short | 3/8 x 2 1/2" | " " | 4 | |
| q | " " Long | 3/8 x 7 1/2" | " " | 4 | |
| r | Release Spring Bracket Bolt | 3/8 x 2 1/2" | " " | 4 | |
| t | | | | | |
| u | | | | | |
| w | Brake Link Bearing Rivet | 1/2 x 2 1/4" | R.H. | Steel | 4 |
| y | Live & Dead Lever Conn. Rivet | 1/2 x 3/8" | R.H. | " " | 3 |
| AA | Brake Beam Rivets | 5/8 x 2 1/4" | R.H. | " " | 14 |
| BB | | | | | |
| CC | Release Spring | Developed Length 11 5/8 x 9/32" | Sprg. Steel | 4 | 1 1/2 O.D. 2 1/2 long. |
| DD | | | | | |
| EE | Cotter | Brake Hanger T Bolt | 3/16 x 1 1/2" | Sprg. Steel | 4 |
| FF | " | Dead Lever Eye Pin | 3/16 x 1 1/2" | " " | 1 |
| GG | " | Brake Lever Bolts | 3/16 x 1 1/2" | " " | 2 |

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Fig. 7—Truck and Car Alterations—Brake Rigging Assembly of the Peckham No. 25 Passenger Truck

trucks. The average weight of these cars is 35,200 lb. (empty). It will be noted from the table that with a brake

in the size and a change in the design of the brake hanger T-bolt. These alterations were made because of break-

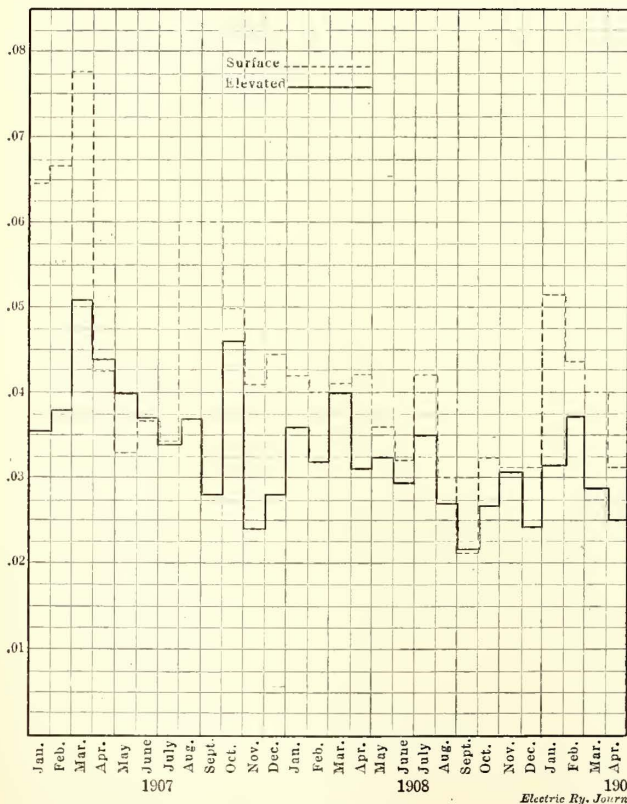


Fig. 9—Truck and Car Alterations—Brake Shoe Costs—Per 1000 Ton-Miles

handle pressure of 59 lb. the pressure on the brake shoes equals 90 per cent of the weight of the car. The highest tensile stress in the brake rigging is 21,790 lb. per sq. in.

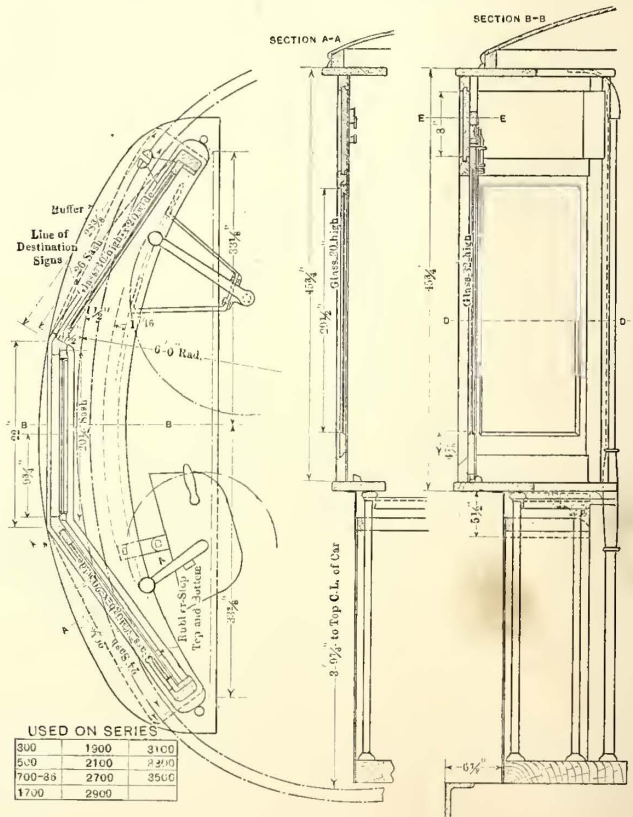


Fig. 10.—Truck and Car Alterations—Vestibule for Double Truck Surface Cars

ages of the old T-bolts, which caused the brake rigging to drop in the street. The T-bolt was increased from 1 in. to 1 1/8 in. It was strengthened by enlarging the bolt at the

point where it was fastened to the head and eliminating the square corners at the intersection of the head and bolt. The head is also made oblong in shape, $1\frac{1}{4}$ in. x $1\frac{1}{8}$ in., instead of 1 in. round as before, thus allowing additional wear. Changes similar to the foregoing are being made on the Taylor hangers, also used on the elevated line.

The brake beams originally furnished with the Peckham No. 25 trucks were too weak and first gave trouble by breaking in the center. This was remedied by the addition of a $\frac{5}{8}$ -in. x 8-in. steel plate which was riveted to the horizontal leg of the original 4-in. x 6-in. x $\frac{1}{2}$ -in. angle. There has since been some trouble from the beams breaking near the ends where the leg of the angle is cut away for the brake shoes. This is now taken care of when installing new brake-shoe heads by substituting a brake beam which is 1 in. wider and gives ample strength at that point. The Taylor brake hangers were so located that they fouled the gear cases when the brake shoes were worn and the wheels low. The location is now being shifted toward the side of the truck. Incidentally, this change admits using an interchangeable brake beam with the Peckham No. 100 freight truck. At the present time all motors on Peckham No. 25 and No. 100 trucks are rigidly suspended to the angle iron of the truck frame, but they will eventually be arranged for spring suspension.

All this truck change-over work is being done on a maintenance basis. When one brake beam breaks the other three are also removed, but are used on other cars instead of being scrapped. In this way the change-over is made without excessive expense.

BRAKE-BEAM STOP OR ANTI-CHATTERING DEVICE

Fig. 8 shows the details of the brake-beam stop or anti-chattering device as made for the pony and driving ends of Brill maximum traction trucks. The old stop casting, which had a smooth back and a long center hole, through which it was bolted to the truck bar, used to give trouble by sliding up and away from the brake beam. This has been overcome in the new casting by cutting oblique grooves in the back to permit height adjustment. A wrought-iron shim at the bottom provides for wear. Fig. 8 is accompanied by a bill of material, from which it will be noted that new bolts and washers were not required in making the change.

SAND BOXES

The sand box being an important factor has also been given attention. The surface cars are equipped with some "Ham" sand boxes, but the majority are of the "Reliable" type.

BRAKE SHOES

As the brake-shoe standardization practice of the company was quite fully described in the ELECTRIC RAILWAY

JOURNAL of Oct., 24, 1908, a résumé only will be given here for the sake of completeness. The figures on life and cost, however, cover periods later than those given in the earlier article.

Standardization of brake shoes was first considered in 1903 when there were 27 types on the surface and 13 on the elevated lines. By changes in the brake rigging, particularly on utility cars, the surface patterns have been reduced to 22 and the elevated patterns to 4. Eventually there will be but two patterns, one for 33-in. and 34-in. wheels and one for 20-in. ponies. These two standards are in accordance with the recommendations of the American Street & Interurban Railway Engineering Association for wheels with narrow treads. They are made by the American Brake Shoe & Foundry Company as patterns M-512 and M-582, respectively. New heads to take these shoes have been designed throughout.

As a considerable number of the old patterns are still

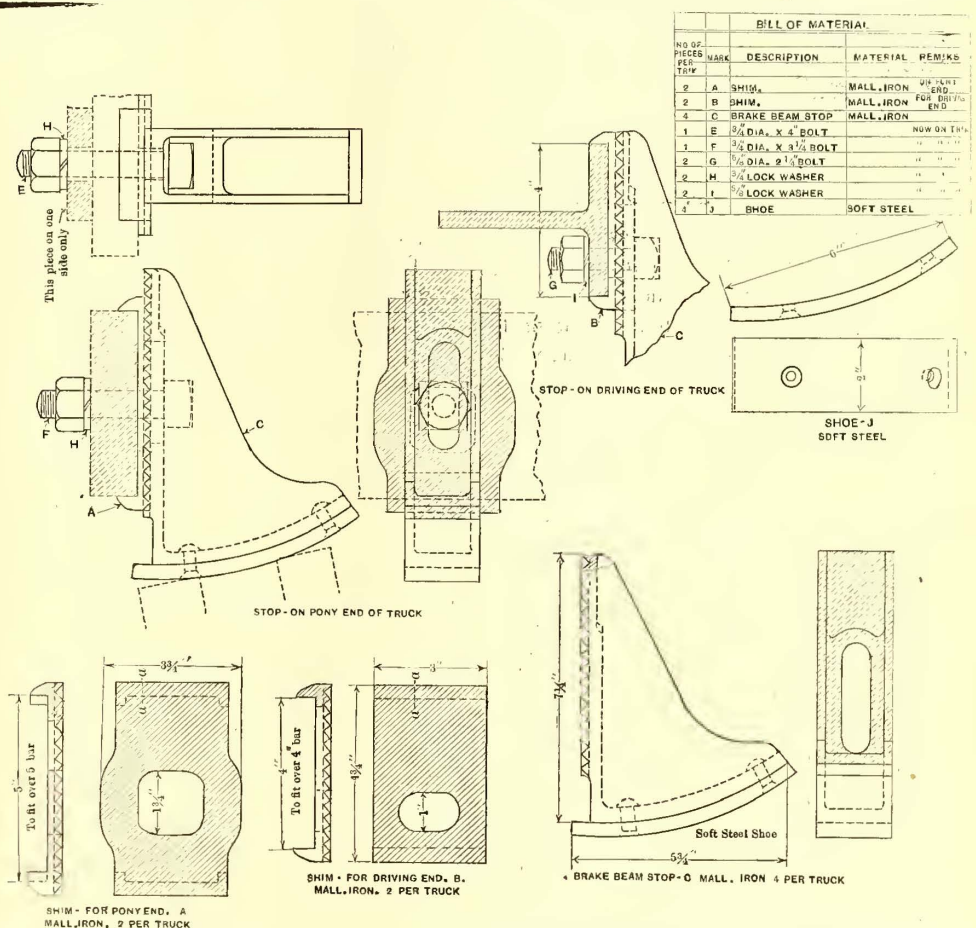


Fig. 8—Truck and Car Alterations—Details of Brake Beam Stop for Maximum Traction Trucks

in service every endeavor is made to get the maximum wear from the different brake shoes. Each foreman is furnished with a blue print showing the attainable wear of each type of shoe as proved by experience and it is his duty to see that these standards are at least maintained if not bettered. This surface railway was the first to keep brake-shoe costs on a ton-mile basis, believing that this unit offers fairer comparisons than the train-mile. The ton-stop unit would be even better if such a comparison were practicable under the wide variety of running conditions involved in city service. The accompanying curve sheet, Fig. 9, shows the ton-mile brake-shoe cost records for the period from January, 1907, to April, 1909. These costs do not include credits for scrap.

CAR-BODY STANDARDS

It is rather difficult to present any detailed description of the rehabilitation of the surface car bodies because so much of the work was simply a thorough overhauling of neglected rolling stock. Sagging platforms in particular were noticeably frequent. On steel-supported platforms this defect was eliminated by reinforcing the channel iron knees by riveting an additional plate inside the channel. During 1906 the company began to install on all cars

these details for the convertible car of the 2500 series introduced in 1907. This car is 38 ft. 3¼ in. overall, 28 ft. over the body and is 7 ft. wide overall. The body underframing is of wood and the platforms are carried on 6-in. x 3½-in. x ½-in. outside angles, reinforced at the end sill by 5-in. x 3-in. x ⅜-in. angles. Interesting features of the floor framing are the sub-end sills placed 9¼ in. from the end sill; the connection of the cross-sills to the side sills by standard angles instead of ordinary bent angles, and the reinforcement of the side sills by a ⅝-in. x 8-in. steel plate.

The seats in the four-motor convertible cars from the 3700 type upward were originally rattan-covered. The maintenance of these seats is so high, owing to their rapid deterioration and even wanton destruction, that it has been decided to substitute wooden seats. The slats are made of cherry ⅜ in. thick x 11/16 in. wide. It is figured that the cost of a wooden seat and back will be less than that for recovering the present seat with rattan. This work is being done coincident with truck changes.

| WHERE USED | |
|------------|------|
| SERIES | |
| 800 | 2500 |
| 560 | 2700 |
| 700 | 2900 |
| 1700 | 3100 |
| 1900 | 3300 |
| 2100 | 3500 |

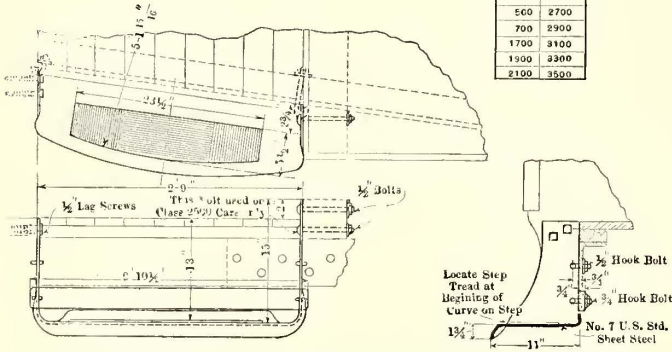


Fig. 11—Truck and Car Alterations—Standard Step for Surface Cars

semi-enclosed Sjoberg vestibules of the three-light design shown in the accompanying illustration, Fig. 10. The vestibule sash is made with both upper and lower tracks. On the later four-motor cars the vestibules are of practically the same type, but they are built in the posts extending from the crown piece to the bonnet, whereas old car vestibules are built up from the dash to the top.

BUFFER REINFORCING CASTING

Cast-steel buffer reinforcing castings have been built for both the open and closed cars to strengthen the buffers in the center. This improvement was made to prevent the bending usually caused by striking other vehicles or by the binding of draw-bars in the buffer angle iron on curves. As the buffer height of the open cars is about 12 in. more than that of the closed cars the reinforcing casting of the former is provided with an apron which prevents it from riding over the bumper of a closed car ahead.

HEATER ARRANGEMENT

To prevent scorching from electric heaters it was deter-

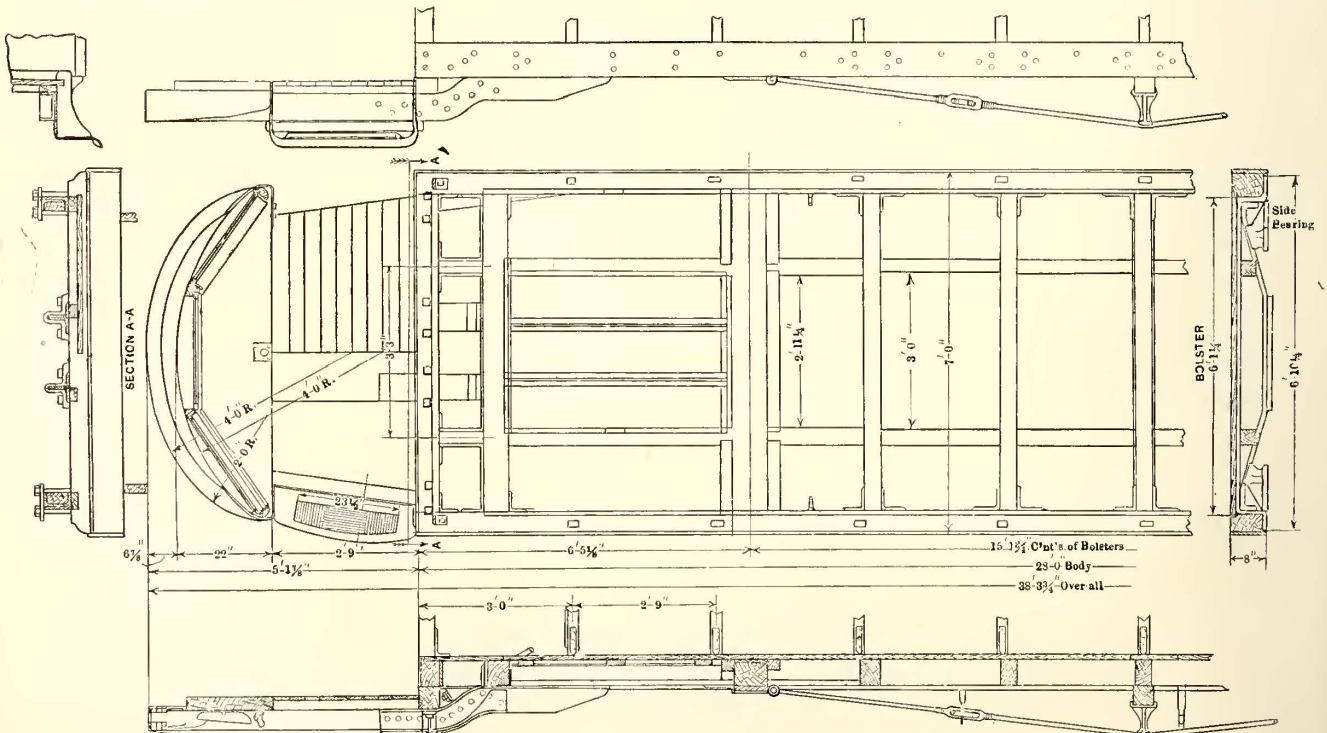


Fig. 12—Truck and Car Alterations—Underframe of Surface Convertible Passenger Cars, 1907 Type

The Universal safety tread is the standard for all surface cars except the four-motor equipments, which have Stanwood steps. The length of the step is 2 ft. 9 in. and the width is 11 in., including the curve on the step. The tread is placed on No. 7 sheet steel and is 23½ in. long and 5½ in. wide overall. The latest surface car underframing and platform practice is shown in Fig. 12, which presents

mined to allow 5 in. between the front of the seat and the seat riser panel to which the heater is attached. This has been done in both elevated and surface cars. The old cars standardized have heat deflectors made of a wooden board lined with transite. The new cars have a galvanized-iron deflector which it is believed will give better satisfaction at a lower cost. This arrangement is illustrated in Fig. 14,

THE WISCONSIN CONVENTION

The Wisconsin Electric & Interurban Railway Association and the Northwestern Electrical Association held a joint meeting at the Grand View Hotel, Chain O' Lakes, near Waupaca, June 28 and 29, 1909. This summer meeting was called by the officers of the two associations to furnish a means of discussing operating topics of interest to electric railway and light companies and incidentally to give members a chance for a brief outing along with the convention. Sixteen electric railway and lighting companies of Wisconsin were represented. The sessions were presided over partly by Clement C. Smith, of Milwaukee, president of the Wisconsin Electric & Interurban Railway Association, and Ernest Gonzenbach, of Sheboygan, president of the Northwestern Electrical Association.

One of the important results of the meeting was the consolidation of the two associations, which has been talked about for some 18 months as being desirable and probably inevitable. The sentiment was unanimous in favor of this consolidation, inasmuch as both associations are now practically limited to the State of Wisconsin. Years ago the Northwestern Electrical Association was formed to cover a number of States, but by the organizing of various State associations in the States surrounding Wisconsin the territory has gradually been limited to the State of Wisconsin. The Wisconsin Electric & Interurban Railway Association, consisting of electric railway and lighting companies in Wisconsin, was organized recently with the double object of having occasional meetings for the discussion of operating topics and for taking up various matters in connection with the Wisconsin commission and Wisconsin legislation. The consolidation of the two associations has been hindered somewhat by the fact that the Northwestern Electrical Association has not technically been limited to the State of Wisconsin. Under the new arrangement individual membership in the association without vote, but with all other privileges of the association, is given to all former individual members. Individual memberships will cost \$5 per year. The company or Class A members with voting power pay dues at the rate of one-tenth of 1 per cent of their gross receipts.

The question of consolidation of the associations was first brought up in an executive committee meeting of the Northwestern Electrical Association the afternoon of June 28. After considerable discussion it was decided to recommend to the two associations a consolidation to be carried out as follows: The name of the association is to be the Wisconsin Electrical Association. The membership is to consist of companies and individuals as before outlined. Various company members of the Wisconsin association agreed to subscribe enough to wipe out the debt of the Northwestern association, amounting to about \$300, thus allowing the consolidated association to start with a clean slate. Dues are to be paid beginning with Jan. 1, 1910. Owing to the incompleteness of records, no attempt will be made to collect delinquent dues. All present and former members wishing to continue membership shall pay alike, beginning with Jan. 1, 1910.

This plan of the executive committee was presented to the association at the morning session June 29 and was unanimously adopted by both associations. The executive committees of the two associations were then directed to draft a constitution and by-laws and nominate officers to serve until the annual meeting in January, 1910. At a special session held at 2 p. m., June 29, C. C. Smith, speaking for the joint committee, reported in favor of a con-

stitution the same as that of the Wisconsin Electric & Interurban Railway Association, with the additional provisions for membership recommended by the executive committee already outlined. The committee placed in nomination two tickets, one consisting of the former officers of the Wisconsin association and the other of the former officers of the Northwestern association. The election resulted in a mixed ticket from the officers of the two associations, as follows: Ernest Gonzenbach, of Sheboygan, was elected president, being formerly president of the Northwestern association; Clement C. Smith, of Milwaukee, former president of the Wisconsin association, was elected first vice-president; Irving P. Lord, of Waupaca, was made second vice-president, and George B. Wheeler, of Eau Claire, was made third vice-president. The secretary and treasurer is John S. Allen, of Lake Geneva, formerly secretary of the Northwestern association.

This consolidation will result in one good, strong association for Wisconsin, and will relieve the uncertainty as to the future of the Northwestern Electrical Association which has been hanging over it for some eight years past. Every one was agreed as to the importance of keeping up the work of the Wisconsin Electric & Interurban Railway Association as regards legislative matters. Lest there be some misunderstanding as to just what this work consists of, a few words about the association's method of handling legislative matters will be in order. It is well known that whenever a State legislature convenes numerous bills are proposed which are ill advised and likely to do damage to the industries which they affect. It is necessary that the bad points of these bills be pointed out and brought forcibly to the attention of legislative committees or other members of the Legislature if the passage of such legislation is to be avoided. Under the old methods of handling these matters the smaller companies of a State were obliged either to ignore such injurious proposed legislation and trust to luck that it be not passed or go to considerable expense and trouble to present their cases individually. The plan now in use in Wisconsin and rather imperfectly carried out in some other States also is for the association to employ some competent attorney to keep track of proposed legislation affecting electric railway and lighting companies and to present to the committees or to the individual legislators reasons why such legislation should not pass. The expense of maintaining this service by a competent attorney is borne by the various members of the association and the cost is much less than if dependence were placed in the individual efforts of various companies. In many cases the managers of individual companies would take chances on the passage of a bill rather than go to the expense of a trip to Madison. Under the present arrangement no such chances need be taken as to obscure measures, as the association's attorney watches all legislation affecting its members.

REPORT ON LEGISLATION

At the first session, which was held Monday morning, June 28, E. W. Fairchild, of Milwaukee, the attorney who has handled the association's legislative matters for the past year, made a report on recent legislation in Wisconsin affecting public utilities. He said that but little legislation affecting such utilities had been passed the last session. The reason for this is that the public utility law providing for the commission has solved so many of the problems which come up in connection with public utilities. Matters are now left to the commission which formerly would have been the subject of bills before the

Legislature. He called attention to the large amount of work involved in keeping track of proposed legislation. Every bill must be read carefully sentence by sentence, because some overlooked paragraphs or joker in a bill may be of great importance and may be passed by the Legislature without full knowledge of its intent.

Amendments to the Wisconsin public utility law were made last session to cover the following points of interest to electric railway companies. The time before which companies may voluntarily give up their franchises and avail themselves of an indeterminate franchise under the power of the commission was extended from July 1, 1908, to Jan. 1, 1911. On the latter date the question may be reopened as to whether all companies shall be forced to give up their franchises and take indeterminate permits. Mr. Fairchild said that it looked very much as if such action would be taken in 1911. The Wisconsin commission is very much in favor of the indeterminate permit idea on the grounds that a definite period of expiration of the franchise involves uncertainty as to the future of the property and necessitates higher rates than would be necessary if the company could continue to do business indefinitely on its good behavior. Another change in the utility law makes it necessary to have a vote of the people in a city or town before any public utility can be purchased by the municipality. The temperature in cars was before required to be kept at 70 deg. under all conditions. This has been modified to read 60 to 70 deg. whenever reasonably profitable. Waiting rooms are now required on interurban roads in towns of 150 population and over. In case of injury of a person at a railroad crossing the burden of proof of the carelessness of the person injured is upon the company. The law now makes prosecution of those caught stealing electricity easier than before, because it removes the value limitation previously imposed. The matter of industrial insurance will doubtless come up at the next special session of the Legislature.

In the discussion which followed Mr. Fairchild was asked as to whether there seemed to be any likelihood that the present commission law of the State would be repealed, as there had been some agitation on that subject. Mr. Fairchild replied that he thought such a move extremely improbable. The movement against the commission originated in one point which failed to get reduced rates in a certain hearing and had made but little progress. The Legislature and commission are working in very close touch and harmony and the ideas of the commission on any subject are taken almost as law by the Legislature.

PURCHASE OF COAL ON B.T.U. BASIS

R. T. Gunn, general manager of the Eastern Wisconsin Railway & Light Company, Fond du Lac, read a paper on "Purchase of Coal on Straight Contract or B.t.u. Basis."

He stated that in generating power by steam the cost of coal is about 75 per cent of the entire expense. In most properties the one item of fuel is almost as much as the combined labor payrolls of the entire property. Mr. Gunn after a year of investigation feels that it is demonstrated beyond a doubt that the only proper method of making coal purchases is on a heat unit or B.t.u. rating. All the larger coal companies, and especially those who handle the best grades of fuel, are only too anxious to sell on a guarantee of so many heat units per pound of coal and are willing to contract and make settlements on analyses at the end of each month, the purchaser paying the bonus where coal exceeds the guarantee and withholding where the coal does not come up to the guarantee. To

go more into detail, he gives an example of how this may be worked out in practice. In this locality Youghiogheny screenings may be bought on a guarantee of 13,000 B.t.u. per pound of coal. To determine what the coal will average and obtain a fair test, a small sample is saved from each day's delivery. These samples are mixed thoroughly and at the end of the month analyzed. Care must be taken to keep samples in airtight jars. The coal may be wet and the analysis should tell the condition of the coal as actually received and not after it has been air dried. Local conditions figure more in buying coal than in any other department of the business. Some may find it economy to buy cheap and low grades of fuel, while others may find economy in the best fuel containing the highest number of heat units per pound, although comparatively much higher in price per ton. Two examples illustrate this. In one power plant which is equipped with B. & W. water-tube boilers one boiler is sufficient to carry the load 18 hours out of the 24, a second being added over the peak load. With low-grade coal containing a large amount of ash this would be impossible, as furnaces would have to be cleaned during the 18-hour period. This plant, therefore, uses the best coal obtainable. When low-grade coals were used three boilers were required to carry the peak load and two boilers at all times. A saving of \$10,000 per annum is now being made in this plant by using the higher grade fuel. These results have been obtained by making B.t.u. tests over a period of several months with different kinds of coal. The same company has another plant equipped with Jones underfeed stokers which when operating on high-grade coal shows only a slight saving over the cheaper grades of coal. The human element is one which must have more consideration if the best results are to be obtained. Firemen can lose or save more money for a public utility than any other laborer connected with the organization. This accounts in a great many instances for the fact that the management does not obtain much better results from high-grade than from inferior coals. Purchasing fuel on a B.t.u. basis stops the practice of delivering coal from mines other than that called for in the contract, so that the coal is not uniform. The time will soon arrive when all fuel will be purchased on its real value like any other commodity.

In presenting his paper Mr. Gunn also emphasized the economy to be obtained by forcing boilers to their maximum capacity. Part of the saving in the plants he referred to is due to this forcing and not allowing boilers to run underloaded.

C. N. Duffy, Milwaukee, said that June 1 the Milwaukee Electric Railway & Light Company entered into a contract for the purchase of coal on a B.t.u. basis as a result of investigations. The company is now obtaining coal of a better average heat value than before and at a lower price.

Some questions were raised by members as to the value of continuous CO₂ flue gas recorders or indicators as a guide for firemen. One member thought them too expensive for an ordinary plant. Another thought that recording steam-pressure gages did almost as well, because they required uniform handling of fires. Ernest Gonzenbach, however, exploded the idea that a uniform steam pressure meant proper handling of fires. He told of his experience in the management of a North Carolina plant which presented a beautiful steam chart, but where the coal economy was poor. The firemen were in the habit of loading the furnaces as full of coal as they could be piled and then

sitting down to play the banjo. By a reform in firing methods the monthly coal bill was cut down from \$5,000 to \$2,200. In regard to methods of estimating output for figuring coal consumption per kw-hour he called attention to the fact that some companies take the total kw-hours generated rather than the total kw-hours sent out of the station. Deducting the current used in the station to assist in the production of energy sometimes made considerable difference. In the Sheboygan plant the consumption averages about 5 lb. of coal per kw-hour actually sent out.

J. R. Cravath, Chicago, in answer to a question as to the use of the Venturi meter for measuring the water fed to boilers, told of the practice of the Rockford (Ill.) Electric Company, which keeps a Venturi meter with a recording chart in the feed line of the boilers. This records continuously the rate of boiler feed and the man in charge of the fireroom is not allowed to start an additional boiler in operation until the meter indicates that the rate of water consumption is considerably in excess of the rated load of the boilers in service. This keeps the boilers well loaded at all times. There is more in heavy loading of boilers than at first appears. When a boiler is being forced a fireman must of necessity handle his fire so as to get a fair degree of economy from the coal in order to keep up steam. There is no leeway for the formation of air holes in the fire.

R. T. Gunn spoke very favorably of the use of a Williams regulator to keep a constant height of water in the boiler. This prevents water being allowed to get low and other conditions not conducive to economy or safety.

W. D. Voth, chief engineer, Sheboygan Light, Power & Railway Company, gave an outline of the premium plan which has been in use for four years in the Sheboygan plant with great success. The company inaugurated this plan at a time when it was found that fuel oil and miscellaneous power-house supplies were costing 1.1 cents per kw-hour. The power-house force is given a premium amounting to 10 per cent of the saving below 1.1 cents per kw-hour. The premium is divided among the men in proportion to their respective salaries. It is really in the nature of a gradual increase of salary, because the larger the output and the better the load factor the larger the amount available for premium. Mr. Gonzenbach said that he thought it better to pay an increase in this way than by raising salaries.

W. E. Haseltine, Ripon, reported having used a similar premium plan in the power house successfully. He has a combined water and light plant. The output of the plant in horse-power-hours is figured both in electricity and in water pumped. This was determined for each month of the year before the premium plan was begun because the relative amounts of electricity and water put out vary from month to month. The plan is to give the fireman 20 per cent of the saving in coal per hp-hour by comparison with the same month of the year before the premium plan went into effect.

PARKS AND PLEASURE RESORTS

R. M. Howard, Green Bay Traction Company, read a paper on "Summer Parks," which applied to parks in and near cities with a population in the neighborhood of 30,000. He said that an amusement park fitted up with good attractions in the neighborhood of such a city would usually attract big crowds for one or two years until the novelty wore off, after which there is likely to be a decline. He took up a case of such a park and figured out the cost of

maintenance of the park and the interest and depreciation on the extra rolling stock required to handle its peak traffic. His figures were very discouraging to any company attempting to maintain such a park.

Mr. Gonzenbach, of Sheboygan, spoke along the same lines. He figured that his company is making money by keeping its park closed. The park traffic looked good to the uninitiated, but really there was a deficit. The fixed expenses of maintenance, the extra cars required and the accidents which occur in connection with handling such crowds were against profits. His experience with baseball parks was also discouraging. The traffic was of such a short peak-load nature that it yielded little revenue commensurate with the cost of contributing to the park and the extra rolling stock. In the lighting business peak loads are avoided because of the small returns that they gave on the necessary investment. In the railway business the companies seem to have been exerting themselves to secure this very peak-load business.

Irving P. Lord, of Waupaca, told of his experience with a baseball park. The baseball enthusiasts of Waupaca came to him asking for support for baseball games. His company furnished the land for the park and transported the players as a contribution to the baseball movement. After running in that way a year the baseball people wanted further financial help. The venture had not been profitable to the company. More people wanted to ride home at once at the close of a game than this small road had cars to handle, and this caused dissatisfaction and criticism of the service. Ball games had been held on Sunday. He had found that the weather being equal, Sundays without ball games give street railway receipts about the same as those on which there are ball games. This meant that people were traveling in other directions and, furthermore, the crowd which goes out into the country or elsewhere on Sunday is a much better one to handle, as it is distributed through the day. Electric Park, which his company owns, has been concessioned so that the company has no expense of maintenance. He thinks that much the best way.

George B. Wheeler, of Eau Claire, expressed himself as somewhat concerned with the adverse reports on pleasure-resort traffic profits given by Messrs. Howard, Gonzenbach and Lord. His company had just started a resort under conditions which seemed to him favorable for making it a profitable venture. The ground has been obtained at a nominal rent. It is situated on an existing line of track so that no new track investment is required and is between a town of 20,000 on one end of the line and 10,000 on the other end. About \$5,000 has been appropriated to pay the expenses of this traffic for the coming season. He did not favor once-a-week amateur baseball, but rather a professional ball club with frequent week-day games. His company had appropriated \$500 per month toward baseball.

Mr. Gonzenbach called attention to the fact that concerts, theaters and baseball games are productive of peak-load traffic because of the large number of people which must be moved at once. He therefore favored a park with continuous attractions of some kind which are not expensive to maintain.

Clement C. Smith stated his experience with the Sterling & Dixon (Ill.) line, where a large amount of money had been spent in a park midway between the towns. The result was a most dismal failure. The leading attraction in that park now is a cage of monkeys.

Mr. Howard said that on his company's interurban park open-air dances were held twice a week and found to be profitable, as the crowd going to these dances could be handled on the regular cars.

REPORT ON EDUCATION

Thursday morning Prof. Cyril M. Jansky gave a paper and talk on the work which the University of Wisconsin is doing to spread scientific information of everyday use among those engaged in various industries. The old idea, he said, was to cultivate culture simply for culture's sake, and that culture was only for gentlemen. The idea of making culture serve any useful end would have been scorned. The professor then brought out the idea that to advance the welfare of a people scientific principles must be applied to all things industrial. Scientific knowledge must be made to permeate down among the masses. He then told of the Wisconsin University extension work which is being conducted to help men in various industries to learn more about the processes which they handle and to become educated in the principles and so become more effective and useful members of society and better employees of the companies for which they work. These courses are carried on by correspondence and by occasional visits of instructors to places where classes may be formed. The general plan is to fit the work to the individual in each case, which, of course, involves much work by the instructors. The work is carried on by means of a State appropriation for the purpose, but a nominal fee is charged for tuition because people in general do not appreciate things which are free. The work differs from ordinary commercial correspondence school work in that it is not a commercial or money-making scheme, being supported by the State.

Professor Jansky's remarks were received with much interest and appreciation by the managers present, and it appeared from the discussion that all prized the opportunities which this university extension work offers to men in the employ of various companies who wish to become better posted along various lines of value to themselves and their companies.

John S. Allen, Lake Geneva, spoke specifically of having a boiler-room man who is looking for just this kind of instruction.

Clement C. Smith suggested that where there is a group of properties or network of interurban lines classes might be formed to meet at some central point. The question was then asked as to the effect on the men of such education and whether it did not soon result in their employment by other companies in better positions. The consensus of opinion and experience seemed to be that men who work diligently at correspondence or other courses are likely to become too valuable to remain in the same position long, but this was not considered an objection to the plan, but rather as a proof of its success. As one member put it, "We want the kind of men that are going ahead. We do not want men that no other company wants."

R. T. Gunn said that the employees of this company had derived much benefit from a kind of educational meeting which is held every two weeks.

Ernest Gonzenbach emphasized the point that there is really no place on an electric railway system for a purely unskilled laborer. Even the least skilled man of the lot who is working along the track needs a certain amount of special knowledge and the scale of wages should be such as to hold these specially good men. Considerable was said during the discussion about better education of men

in the boiler-room. Mr. Gonzenbach thought that better educated men were needed in the car shop even more than in the boiler-room.

C. N. Duffy, Milwaukee, expressed much appreciation of the address of Professor Jansky of the university work of which he is the director. He thought the point should be strongly emphasized that the greatest work that the university can do is in the education of the unskilled laborer. The more men there are who leave operating companies because they are too good for the companies the better it will be for all of the companies. All that had been said about need for better knowledge in the boiler-room applied with equal force to the common worker in the accounting department.

In closing Professor Jansky called special attention to the university's six weeks' summer school for artisans, in which those taking correspondence work can come to the university and have the advantages of the regular laboratories and learn laboratory methods. Nearly everything can be learned by correspondence except knowledge of laboratory methods and apparatus, and this can be obtained in the six weeks' summer course.

DESIRABLE AND UNDESIRABLE BUSINESS

Mr. Gonzenbach then gave a talk on the undesirability of certain classes of business in both the electric railway and electric lighting fields. In connection with electric lighting this unprofitable business is, of course, that which is on for a short time during the company's heaviest peak load, which yields a small yearly revenue, but calls for large investment in apparatus and consequently large interest and depreciation charges.

The electric light man, he said, had by this time come to recognize that purely peak-load business is not desirable. In the railway business, however, we have apparently done all we can to pile business into peaks. By means of baseball and amusement parks immense crowds were gotten together, all of which had to be handled within a short time each day or each week and for a few weeks each year, and as if that were not enough fares had been reduced to get a crowd. Apparently the railway man liked excitement and he usually got it. The amusement park doubtless amused the natives, but did not amuse the railway man at the end of the season. As to park attractions, let them be the natural attractions of an attractive piece of land, if possible, without expensive maintenance charges. Interurban lines having natural parks obtained from them a net gain of traffic without any added cost of operation.

Something which had set him to thinking some time ago was the discovery that 10 to 15 per cent of his interurban revenue came from a single small community a short distance out of town. He is now devising means for ultimately securing a continuous settlement of suburbanites along the interurban line, getting people who work in the city to live in the country. In order to work up this suburban-home idea he began to look up available literature on suburban topics. He found that none of it was suited for the possible suburbanite of small means. He therefore had a paper prepared called the "Suburban Outlook," which he also arranged to supply to other neighboring interurban roads.

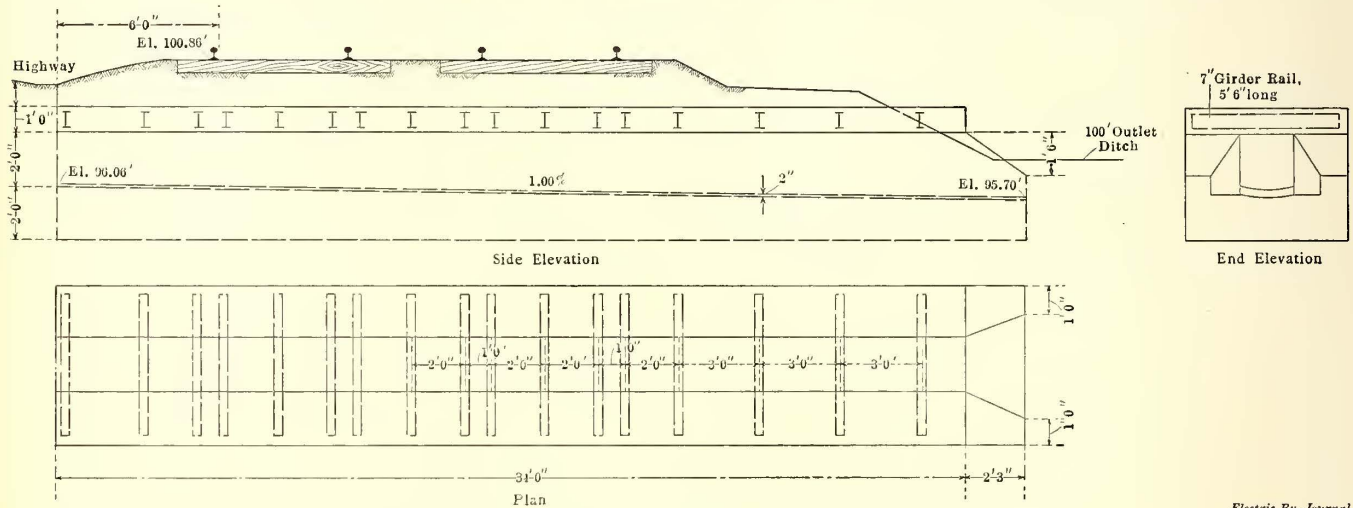
After the conclusion of Mr. Gonzenbach's address the meeting adjourned.

Separate cars for women, which were tried in the Hudson Tunnels, were withdrawn on July 1, as the experiment proved a failure.

REINFORCED CONCRETE CULVERTS OF THE SCHENECTADY RAILWAY

The high-speed double-track interurban line of the Schenectady Railway Company connecting Albany and Schenectady parallels the State highway for about 12 miles. Last year the New York Good Roads Commission rebuilt the highway and laid a macadam road. In the course of this work it was necessary to build seven culverts under the roadway to drain the land on each side. The Schenectady Railway Company was required to build an equal number of connecting culverts under its right of way. The type of construction used by the railway company is shown in the accompanying engraving.

The tracks were first shored up by the section gangs, two 5-in. T-rails, 30 ft. long, being placed under each rail. The excavation, consisting mostly of sand and some back fill, was then started by the construction gang. The foundation concrete was a 1-3-6 mixture with 2-in. stone and was placed without forms. Small rubble stones, spaced about 2 ft. apart, were set in concrete to act as binders for the side walls. When the foundation had set, the side walls



Reinforced Concrete Culvert, Schenectady Railway Company

and roof were started, using collapsible forms. The roof form was placed in sections and supported in the center on posts so that it fitted inside of the side wall forms and also acted as a spreader. The concrete in the side walls was a 1-3-6 mixture, the same as the foundation, and was placed with a spaded face. The roof concrete was a 1-2-4 mixture with 1-in. stone and was reinforced by short lengths of 7-in. girder rail spaced as shown on the plan. The roof was further reinforced by Clinton wire mesh which was interwoven between the rails. The small clearance between the top of the culvert and the base of the ties made it necessary to put in extra heavy reinforcement in the roof and to use a rich concrete mixture in order to prevent breakage under the shock of 40-ton interurban cars running over the structure at high speed. When the concrete was sufficiently hard, the forms were removed by knocking out the legs from under the roof forms which dropped into the opening and were then hauled out. By removing the roof forms, the spreader for the side wall forms was taken out, making it a simple matter to loosen and remove them. The exposed parts and as much of the opening as could be reached were then finished with neat cement. When the back fill was completed, the shoring was removed and the tracks resurfaced and aligned by the section gangs.

The following quantities were used for each culvert:

Excavation, 62 cu. yd., at 40 cents; 1-3-6 concrete, 26.5 cu. yd., at \$6.50; 1-2-4 concrete, 7.5 cu. yd., at \$8; 7-in. girder rail, 17 pieces, weighing 2275 lb., at \$15 scrap value; Clinton wire mesh, 175 sq. ft., at 10 cents. The prices given are average prices and include cost of transporting and installing in place. The average actual cost of each of the culverts was about \$290, to which should be added \$40 for shoring up and replacing tracks and \$15 for engineering and superintendence, making the total cost approximately \$345.

ANNUAL REPORT OF RHODE ISLAND RAILROAD COMMISSIONER

The report of Joseph P. Burlingame, Railroad Commissioner of Rhode Island for the year ended Dec. 31, 1908, states that the receipts of some of the street railway companies showed a decline during the year, while others experienced an increase. The financial statistics in the report relate to the year ended June 30, 1908.

The 10 corporations reporting had 399 miles of single track. The paid-up capital stock was \$25,763,485. The

results of operations in 1908 compare with those of 1907 as follows: Total receipts, \$5,666,203; increase, \$224,135. Total expenditures, \$4,503,958; increase, \$141,820. Net earnings, \$1,162,245; increase, \$82,315. The gross earnings were derived from the following sources: Passenger department, \$4,317,465; increase, \$51,412. Freight department, \$182,442; increase, \$25,090. Rent of roads, express privileges, transportation of mails, etc., \$1,166,296; increase, \$146,663. The Rhode Island Company, operating 284 miles of road in the State, contributed \$4,217,023.

Discussing the subject of accidents, the report says:

How accidents can be prevented is the question that is interesting all Railroad Commissions, as well as all the corporations operating the roads.

I believe it would be better if every accident that happened was reported, as the publicity thus given would, I think, have a tendency to make the public more careful. Many accidents happen that are caused by the negligence of the traveling public—people rushing across tracks without looking, attempting to get on or off moving cars—this carelessness in many cases leads to accidents that many times result seriously, and in some cases fatally. I believe that if the public would co-operate with the railroad corporations and exercise due care, many accidents could be prevented.

The report recommends that more power be given to the Railroad Commissioner.

CONEY ISLAND & BROOKLYN FARE DECISION

Commissioner Bassett, of the Public Service Commission of New York, First District, handed down this week a decision in the cases of J. Monheimer and Scott MacReynolds against the Coney Island & Brooklyn Railroad for charging a 10-cent fare on Saturdays, Sundays and holidays between Coney Island and Brooklyn. An abstract of the decision follows:

This proceeding arose upon two separate complaints, each of which asserts that the 10-cent fare charged by the defendant company on Saturdays, Sundays and holidays on each of its Coney Island lines is unjust, unreasonable and unlawful. The two complaints were without objection consolidated for the purpose of the hearing and progressed as one proceeding. At the time of the filing of the complaints and for some time after the close of the hearings in this proceeding the defendant charged a single fare of 5 cents on each of its Coney Island lines on all week days excepting Saturdays and holidays. This 5-cent fare on ordinary business days, with the extra fare for other days, had prevailed since 1902 and continued in force until Aug. 31, 1908, when the fare was increased to 10 cents on all days of the week.

The commission has not only received and considered in this proceeding all of the facts that the parties cared to present, but it has deemed that this case shall embody the entire question of Coney Island fares so far as that question pertains to this railroad. To this end the investigations of the commission have been carried on for many months, and the conclusions reached in this opinion are based upon all of the data obtained, the larger part of which were not adduced by any of the parties, but were either presented by the commission or have been ascertained and analyzed by it since the public hearings were closed.

FARE CONDITIONS

We shall first consider this case according to the fare conditions that existed at the time of the hearings, and prior to Aug. 31, 1908. The reason why the difference in fare was made on holidays appears to be that on ordinary week days this railroad would carry few Coney Island passengers in competition with the elevated roads of the Brooklyn Rapid Transit system if 10 cents fare were charged. On Saturdays, Sundays and holidays, however, especially in summer, the movement of travel was so great that all lines of travel were well patronized. The result was that the defendant company obtained a large patronage on the crowded days, even at 10 cents fare.

ROUTES AND EARNINGS

The defendant company operates six different routes to Coney Island either by through car or on transfer, as follows:

- (1) From Covert Avenue in the Borough of Queens to Coney Island, a distance of 11.53 miles.
- (2) From Delancey Street, Manhattan, 12.38 miles.
- (3) From Grand Street Ferry, Brooklyn, 11.18 miles.
- (4) From Park Row, Manhattan, 11.278 miles.
- (5) From Fulton Ferry, Brooklyn, 10.51 miles.
- (6) From Hamilton Ferry, Brooklyn, 9.3 miles.

In the fiscal year ending June 30, 1907, the extra fares amounted to \$94,724.88, out of a total of \$1,612,924.02. The net income of the company in 1907, after payment of operating expenses, rentals, taxes and fixed charges, was \$81,044.75. It is apparent that if the extra fares had not been collected and the riding had continued the same, the company would have been unable to meet the fixed charges. No dividends have been paid on the stock of the company since Feb. 1, 1907. The total passenger receipts from June 30, 1906, to April 8, 1907, were \$1,229,303.92, while from June 30, 1907, to April 8, 1908, they were \$1,156,155.36, a falling off of \$73,148.56 as compared with the previous year.

The Coney Island & Brooklyn Railroad Company has during recent years had capital stock of \$2,000,000 outstanding (at present writing \$2,980,725) and mortgage bonds of \$3,500,000 bearing interest at 4 per cent. Its route mileage is 13.75 miles. It leases the Brooklyn City & Newtown Railroad Company and pays therefor \$100,000

per annum, being 5 per cent on the mortgage bonds of the Brooklyn City & Newtown Railroad Company of \$2,000,000. The route mileage of the Brooklyn City & Newtown Railroad Company is 9.854; that of its proprietary company, the DeKalb Avenue & North Beach Railroad Company, is 0.532, all construction having been done by the proprietor. The combined route mileage is thus 24.136. The entire system is double-tracked. Since the Coney Island & Brooklyn Railroad Company's consolidated mortgage is a lien on the entire system, and its proceeds are applied to any part, the funded debt may best be compared with the combined route mileage. The per mile funded debt of the system is thus \$228,000.

DIVIDENDS

Notwithstanding payment of interest on the above funded debt averaging over \$225,000 per mile of route, the company for the period between 1902, when the 10-cent fare went into effect, and 1907 paid as dividends an average of 11.43 per cent per annum on its capital stock of \$2,000,000. If during this period one-third to one-half of the net income were put aside for proper reserves (as recommended by Mr. Ford, the expert of the company), 5.71 per cent to 7.62 per cent average dividends could have been paid. If 5 cents fare to Coney Island had been charged instead of 10 cents, the company could have still paid 3.3 per cent to 4.4 per cent per annum on its capital stock after providing for rentals, interest and depreciation, assuming that no profitable increase of traffic had taken place as a result of the lower fare.

Since 1899, when it began to pay substantial dividends, it has paid practically its entire surplus earnings to its stockholders. The following is a schedule showing dividends paid and net income.

| Year ending June 30. | Dividends | | Net income for the year. |
|----------------------|----------------|----------------|--------------------------|
| | Rate per cent. | Amount. | |
| 1899 | 9.50 | \$189,190.00 | \$213,794.52 |
| 1900 | 10.00 | 199,800.00 | 173,067.40 |
| 1901 | 12.00 | 239,900.00 | 360,571.78 |
| 1902 | 16.00 | 320,000.00 | 334,069.54 |
| 1903 | 16.00 | 320,000.00 | 325,972.81 |
| 1904 | 16.00 | 320,000.00 | 308,061.65 |
| 1905 | 14.00 | 280,000.00 | 160,908.36 |
| 1906 | 8.00 | 160,000.00 | 161,494.24 |
| 1907 | 6.00 | 120,000.00 | 81,044.75 |
| | 107.50 | \$2,148,890.00 | \$2,118,928.05 |

The foregoing facts clearly show that the failure of the company to put aside a reserve for depreciation and its policy of paying the largest possible dividends, regardless of the upkeep of the equipment of the railroad, are responsible for the condition of the company at the time of the hearings. The stockholders having obtained in the form of dividends the earnings that should have gone for maintenance, should not now object because renewals and increased maintenance and interest charges make dividends temporarily impossible, nor should this presumably temporary situation stand in the way of a reduction of fare if other considerations would justify such a reduction.

CLAIMS OF THE COMPANY

Several claims were set up by the company to show that the 10 cents fare to Coney Island is justified, regardless of the conclusions that may be drawn from the large past earnings of the company. We will take these up in order.

1. It is claimed that the cost of labor has increased. Tables compiled from the sworn reports of the defendant show no substantial increase of the cost of labor per unit of service. Table XVIII (Commission's Exhibit 25) shows the average number of cash passengers per employee (regardless of nature of employment) from year to year. Substituting for the year 1907 the number of cash passengers, as corrected by the elimination of second fares, we find that the average number of passengers per employee increased from 27,905 in 1899 to 35,551 in 1907, which shows a saving of labor equal to 22 per cent in proportion to the number of passengers. The highest increase of wages, however, mentioned by the defendant's expert was from 20 to 23 cents per hour, i.e., 15 per cent.

2. It is claimed that the Coney Island business must earn thrice the fixed charges of ordinary business because it is purely a summer business. The bulk of the Coney Island traffic, as indicated by the monthly fluctuations of the returns from second fares for 1907, was done during five summer months, as shown in the accompanying table.

| | |
|-----------------------|-------------|
| May | \$8,962.20 |
| June | 14,421.33 |
| July | 22,996.45 |
| August | 17,466.76 |
| September | 11,525.78 |
| All other months..... | 13,174.72 |
| Total, 1907..... | \$88,541.24 |

During the months of November, December, January and February no second fares were collected on the DeKalb and Franklin Avenue lines; on the Hamilton Avenue line the collections aggregated \$79.49, and on the Smith Street line they were likewise very small. It may therefore be assumed that the operations of those four months are not affected by the Coney Island traffic. The winter traffic required the defendant to be ready to furnish 497,901 car-miles in December; the maximum Coney Island traffic in the month of July brought the car-mileage up to 756,031 miles, which is an increase of 52 per cent. How much of this increase is due to the normal increase in summer over winter is not shown by the evidence, but part would be necessitated in any case. Neither does the evidence show how many more cars must be supplied in the rush hours than at other times of day. It would seem likely that the extra cars needed by any city railroad for summer and rush hour uses would go far to cover the special needs of the Coney Island traffic of this railroad.

3. It is claimed that the entire Coney Island business is conducted at a loss. The monthly income account of the

ever, that summer business is not synonymous with Coney Island business. There is a large Prospect Park traffic in summer also.

EARNINGS AND EXPENSES

The foregoing considerations throw light on what the position of the company would have been if its business had been more correctly conducted. They demonstrate that the Coney Island business is a profitable business handled at a rate of 5-cent fare for five days in the week and a 10-cent fare on Saturdays, Sundays and holidays. Whether a regular 5-cent fare would be remunerative to the company or would depress its income to a point where a reasonable return could no longer be secured upon the investment is a question that requires a close analysis of the company's operations. The basis for such an analysis is furnished in the accompanying table of revenue and expenses, wherein the quantities or amounts have been reduced to a car-mile basis.

The service rendered by a street railway company and the amount of its expenses may be measured by the number and frequency of the cars that it runs. In other words, the total distance traveled by revenue cars in a given period represents the amount of service given, and the unit of service is one car-mile. Certain other units of service, such as the car-hour, also have their value, but on the whole the car-mile affords the most satisfactory basis of comparing costs of street railway operation that is now

CONDENSED INCOME STATEMENT OF THE CONEY ISLAND & BROOKLYN RAILROAD COMPANY FOR 1907, WITH COMPARATIVE CAR-MILE EARNINGS AND EXPENSES FOR EACH OF THE YEARS 1902 TO 1907.

| | Amount in year ended June 30, 1907. | Income and expenses per car-mile— | | | | | | |
|---|-------------------------------------|-----------------------------------|--------------|--------------|--------------|--------------|--------------|----------------|
| | | 1907, cents. | 1906, cents. | 1905, cents. | 1904, cents. | 1903, cents. | 1902, cents. | 1902-7, cents. |
| Revenues: | | | | | | | | |
| "City" fares..... | \$1,518,199.14 | 22.387 | 22.940 | 23.002 | 24.319 | 23.918 | 23.326 | 23.296 |
| Second (Coney Island) fares..... | 94,724.88 | 1.397 | 1.397 | 1.406 | 1.709 | 1.809 | 1.242 | 1.492 |
| Revenue from carrying mail, etc..... | 800.00 | .012 | .012 | .012 | .013 | .014 | .004 | .011 |
| Total car earnings..... | \$1,613,724.02 | 23.795 | 24.350 | 24.420 | 26.041 | 25.740 | 24.572 | 24.798 |
| Miscellaneous earnings..... | 7,850.24 | .116 | .076 | .072 | .075 | .085 | .125 | .091 |
| Total revenue from operation..... | \$1,621,574.26 | 23.911 | 24.426 | 24.492 | 26.116 | 25.825 | 24.697 | 24.889 |
| Expenses: | | | | | | | | |
| Maintenance..... | \$246,927.32 | 3.641 | 3.429 | 3.247 | 2.828 | 2.783 | 2.715 | 3.121 |
| Operation of power plant..... | 314,332.12 | 4.635 | 4.313 | 4.222 | 3.983 | 3.882 | 2.764 | 3.987 |
| Operation of cars..... | 455,646.08 | 6.719 | 6.667 | 7.148 | 6.814 | 6.493 | 6.451 | 6.719 |
| General expense..... | 211,942.55 | 3.125 | 3.132 | 3.131 | 3.300 | 3.078 | 2.981 | 3.126 |
| Total expenses of operation..... | \$1,228,848.07 | 18.120 | 17.542 | 17.748 | 16.924 | 16.236 | 14.911 | 16.953 |
| Taxes..... | 58,272.63 | .859 | .866 | .799 | 1.055 | 1.127 | 1.071 | .960 |
| Total expenses and taxes..... | \$1,287,120.70 | 18.979 | 18.408 | 18.538 | 17.979 | 17.363 | 15.982 | 17.913 |
| Net income: | | | | | | | | |
| Surplus revenue over expenses and taxes..... | \$334,453.56 | 4.932 | 6.018 | 5.954 | 8.137 | 8.462 | 8.715 | 6.976 |
| Non-operating income..... | 41.00 | .000 | .014 | .024 | .008 | .006 | .019 | .012 |
| Total clear income..... | \$334,494.56 | 4.932 | 6.032 | 5.978 | 8.145 | 8.467 | 8.734 | 6.988 |
| Deduct rental..... | 100,000.00 | 1.475 | 1.469 | 1.527 | 1.584 | 1.609 | 1.639 | 1.551 |
| Deduct interest..... | 153,449.81 | 2.263 | 2.190 | 1.995 | 1.682 | 1.613 | 1.618 | 1.894 |
| Balance available for dividends..... | \$81,044.75 | 1.194 | 2.373 | 2.456 | 4.879 | 5.245 | 5.477 | 3.543 |
| Dividends..... | 120,000.00 | 1.769 | 2.351 | 4.275 | 5.070 | 5.149 | 5.246 | 3.976 |
| Number of miles run by passenger cars..... | | | | | | | | 6,781,723 |
| Number of passengers (including transfers)..... | | | | | | | | 39,158,626 |
| Number of transfers..... | | | | | | | | 5,898,528 |

company for the year 1907 shows the highest net earnings reported for the five summer months from May to September, both inclusive, during which the net earnings aggregated \$220,443.93 out of a total of \$264,476.77; i.e., 83.5 per cent of the total net earnings for the year. Operating expenses and taxes during these months averaged \$118,362.12 per month, while during the winter months they averaged \$101,408.50 per month. Thus the increase in the cost of operation during the summer was only \$16,943.38 per month, while the gross earnings increased from a monthly average of \$107,608.91 for the winter season to \$162,450.91 for the summer season; i.e., by \$54,752. There was a net gain of \$37,808.62 per month over the average winter net earnings. The ratio of operating expenses and taxes to gross earnings for the five summer months was 72.8 per cent, whereas the ratio of operating expenses and taxes to gross earnings during the remainder of the year 1907 was 94.1 per cent. These figures clearly show that the summer business is not conducted at a loss, and that the increase of that business means an increased profit. On the contrary, it is clear that the operating cost of the summer traffic is less than that of the winter business. The addition to the monthly operating expenses caused by the summer business is but 30.5 per cent of the addition to the monthly gross earnings. It should be noted, how-

available, especially when the comparisons are confined to a particular road. In his testimony before the commission the company's expert objected to the use of the car-mile unit on the ground that the company had replaced small cars with large cars, and thereby changed the significance of the car-mile as a unit of service. The company's reports to the commission, however, show that few changes of the kind mentioned have been made in the company's rolling stock in the last few years, and there is no reason to believe that those changes invalidate comparisons of car-mile costs between 1902 and 1907.

The statistics on which these car-mile ratios are based are derived from the annual reports of the company to the Railroad Commission, such reports being made and sworn to by the officers of the company. So far as the revenues are concerned there is no reason to question their substantial accuracy, as they are almost entirely composed of cash fares collected from passengers carried. The miscellaneous earnings, consisting of revenue derived from the sale of advertising privileges, rent of buildings, tracks and other street railway property, constitute a relatively small item.

Taking the figures of operating expenses as given in the foregoing table under the four headings of Maintenance, Operation of Power Plant, Operation of Cars and General

Expenses, it is possible to arrive at a fairly definite figure as to the average cost of operating a car 1 mile on the lines of the Coney Island & Brooklyn Railroad. In the six years embraced in the table, covering the period 1902 to 1907, during which a second fare was charged to Coney Island on Saturdays, Sundays and holidays, the general expenses (including the cost of management and the almost equally large item of damages and attendant legal expenses) averaged 3.126 cents per car-mile. In 1907 the general expenses amounted to almost precisely the same figure, and this may therefore be taken as the normal expense on this road. The operation of cars in 1907 cost 6.719 cents per car-mile, which is also the average for the whole period and may therefore be considered as not less than the normal cost. The operation of the power plant in 1907 cost 4.635 cents per car-mile as contrasted with 2.764 cents per car-mile in 1902. From the foregoing figures it is apparent that omission of proper maintenance and the great increase of power cost were the main causes of the deficiencies shown at the hearings. Losses on Coney Island business were not perceptibly responsible.

We will now proceed to consider also the operations of 1908. In the year ending June 30, 1908, there was a further rise in the cost of operation of power plant to 5.868 cents per car-mile, making a difference between 1902 and 1908 of 3 cents per car-mile, or \$200,000 a year. Inasmuch as \$200,000 would afford a dividend of 10 per cent upon the stock of the Coney Island & Brooklyn Railroad Company, the significance of this increase in the cost of power is sufficiently obvious without further analysis. While there has also been some increase in the cost of maintenance of the company's road and equipment, it is clear that the real seat of the company's financial difficulties is the enormously enhanced cost of its power supply. The company's increased expense in this direction could not well escape its notice, and it some time since planned to replace its antiquated power plant, which dates back to the early days of the electric railway business, with a modern system of power supply. The new power plant has now been in operation for several months, and the result appears in the following figures showing the cost of power supply (exclusive of maintenance) per ear-mile run:

| | |
|-----------|------------|
| July | 4.32 cents |
| August | 4.50 cents |
| September | 4.70 cents |
| October | 5.00 cents |
| November | 4.12 cents |
| December | 2.82 cents |
| January | 2.63 cents |
| February | 2.42 cents |
| March | 2.27 cents |
| April | 1.92 cents |
| May | 1.88 cents |

In the ordinary course of business the cost of power per car-mile increases in winter, owing to the additional electric energy that is consumed in heating the cars or wasted by reason of the snow, ice or other impediments on the tracks. In the place of such an increase during the present winter the working expenses of the power plant have been reduced more than 2 cents per car-mile. If, therefore, it be assumed that the normal cost of power to the Coney Island & Brooklyn Railroad Company be 2.25 cents per ear-mile for the entire 12 months of the fiscal year, the figures will be approximately correct.

The remaining item of operating expenses to be considered is the cost of maintaining the road and equipment. As to this cost the figures at hand afford little assistance, for the reason that they cover only such repairs as were obviously necessary. No allowance seems to have been made for the wear and tear that is not repairable, or for the growing inadequacy of equipment that has to be replaced before it is worn out. Assuming, for example, that the average life of a street car is 20 years, it is evident that one-twentieth of the capital invested in the car is consumed upon an average every year that it is in use, irrespective of the amount of money that may be expended in keeping the car in thoroughly good repair. No calculation of costs is at all satisfactory which omits the proper charges for such deterioration of physical property. The commission has recognized that fact in prescribing a uniform system of accounts for street railways which requires depreciation charges as a part of the operating expenses. Under this system of accounts, which will be in force July 1, 1909, the Coney Island & Brooklyn Railroad Company will be

required to include proper depreciation in its operating expense accounts, and it would therefore be unjust for the commission to issue an order which failed to recognize the element of depreciation as an item of general cost. How much should be allowed for depreciation in the case of the Coney Island & Brooklyn Company is a matter that remains still to be investigated. The accounting order does not attempt to fix the rate of depreciation, but requires the individual companies to make an investigation as to the probable life in service of their operated properties, and on the basis of their experience formulate a rule as to the amount needed for preserving the capital assets unimpaired. Such rule as to the rate of depreciation has not yet been formulated by the Coney Island & Brooklyn Railroad, but is estimated to be 5 cents per car-mile, and this amount should either be spent or be put into a fund for use when needed.

The estimated car-mile costs of the Coney Island & Brooklyn Railroad may be recapitulated as shown in the following table:

| | |
|--------------------------------------|-------------|
| Maintenance (including depreciation) | 5.00 cents |
| Operation of power plant | 2.25 cents |
| Operation of cars | 6.72 cents |
| General expenses | 3.13 cents |
| Total operating expenses | 17.10 cents |
| Add taxes | .90 cents |
| Operating expenses and taxes | 18.00 cents |

Turning now to the income side of the ledger, it is found that for the year ended June 30, 1908, there were the following revenues from operation:

| | |
|-----------------------------------|----------------|
| "City" fares (5 cents) | \$1,455,655.33 |
| Second (Coney Island) fares | 89,769.78 |
| Revenues from carrying mail, etc. | 800.00 |
| Miscellaneous earnings | 11,232.06 |
| Total | \$1,557,457.17 |

If the fare were reduced to 5 cents for every day in the year it is evident that the receipts from "second" fares in the above items would be eliminated, and the question arises whether the income from single fares would be correspondingly increased. It is also questionable whether, even if no change were made in the rate of fare whatever, the gross revenues would be maintained. There was a difference between the two years 1907 and 1908 of over \$60,000, and for some time there has been a steady decrease. If this were continued throughout the year just closing the income would be very materially reduced.

REDUCTION IN TRAFFIC

It is true that other lines in Brooklyn have shown a falling off in the last two years which is doubtless due to general business depression and to the readjustment of traffic incident to the extension of the subway and the extension of Manhattan Borough companies in Brooklyn across the Williamsburg Bridge. While the falling off on other lines would seem to have been checked recently, there are special features affecting the Coney Island & Brooklyn Railroad lines which would seem to indicate that those lines will continue to feel the loss of traffic until the density of population shall have considerably increased in the territory adjacent to the outlying portions of the defendant's routes. The defendant's Coney Island line is paralleled on either side by the Brighton Beach line and the Culver line of the Brooklyn Union Elevated Railroad Company, upon which roads express service is maintained from Coney Island to Park Row. Within the last few years on each of these elevated lines obsolete steam engines have been superseded by third-rail equipment, the frequency of service has been greatly increased and the service otherwise improved. The defendant's DeKalb Avenue line also feels the competition of the Lexington Avenue line and the Myrtle Avenue line of the Brooklyn Union Elevated Railroad Company. On both of these last-named lines there has been a marked increase in frequency of trains and in the number of cars operated within the past few years, and the improvements at the Manhattan end of the Brooklyn Bridge permitting through elevated service to Park Row have made these lines more attractive to large numbers of passengers. With these conditions added to the increasing competition from the surface lines of the Brooklyn Rapid Transit system, the company seems liable to show a slow recovery from the falling off in earnings that has been evident for the past three years.

However, if we assume that this decrease would be stayed, that the decrease due to the elimination of the second fare would be offset by gains in other directions, and that the total income from operation would be, with a 5-cent fare, \$1,550,000, we have certainly been generous to the public, and possibly too severe upon the company. In other words, it would seem likely that the total earnings would be less than \$1,550,000 rather than more with a 5-cent fare for every day. Assuming that the company was able to earn this amount without any increase in car-mileage, we would have the following approximate results:

| | |
|-----------------------------------|-------------|
| Total revenue from operation..... | \$1,550,000 |
| Total operation expenses..... | 1,220,000 |
| Net revenue | \$330,000 |

This amount, which is available for rental, interest and dividends, would represent a return at 6 per cent upon \$5,500,000, at 6½ per cent upon a little over \$5,000,000, and of 7 per cent upon a little over \$4,700,000.

RETURN ON THE INVESTMENT

There remains to be considered whether this is a fair return upon the capital invested in the street railway property. Neither the evidence produced at the hearings nor the reports of the company gave any trustworthy statement of the actual investment. Without information on this subject, however, no real progress could be made in determining the reasonableness of a 10-cent fare. It is plain that the rate that might result in loss on a large investment would be reasonable on a smaller investment. Total outstanding stock and bonds might or might not be a proper criterion.

Bion J. Arnold, who has been employed to appraise the properties, has reported to the commission that the present value of the physical property of the road, without including anything for franchise, good will, going concern, or development charges, plus such amounts as would be necessary to put the road in first-class operating condition, due to the fact that the road has been allowed to deteriorate, would be at least \$5,000,000.

In the opinion of the commission, therefore, a 5-cent fare every day in the week would not produce a proper return upon the value of the road, plus a sufficient amount to bring it up to date, which amount must be expended by the company.

It is possible that a reduction of the rate to 5 cents would mean a considerable increase in the number of passengers carried, and consequently in the gross income; but it would also mean, probably, an increase in the operating expenses. Whether there would be an increase in the net income is problematical; and in view of the narrow margin allowed the company upon the basis of a 5-cent fare during the week and 10 cents on Saturdays, Sundays and holidays, the commission does not feel that it would be warranted in ordering a reduction merely upon an expectation so uncertain.

ALLOWANCE FOR REHABILITATION

It should be noted that the commission has considered, in the amount upon which a fair return should be allowed, a considerable sum for rehabilitation. The policy of the company for several years past has been to distribute substantially all of its surplus revenue to stockholders in the form of dividends. As has been pointed out, no provision was made for depreciation and the appropriations for maintenance were very inadequate up to two years ago. As a result the property of the defendant is still in inferior condition notwithstanding the recent improvements that have been made. While this condition should not be urged by stockholders as a valid reason against a reduction of fare if such reduction were found to be justifiable, still the commission is bound to give consideration to the necessity for improvements, as a part of its duty of protecting the public; and the commission is unwilling to take any action that would make it more difficult for the people of Brooklyn to obtain the service to which they are entitled. The present depreciated value of the property is very much below what would be the value of such a system in first-class operating condition. As the commission has considered that it is prudent to allow a sufficient amount to restore the road to standard condition, it will be its duty to compel the company to continue the rehabilitation of the property and it will see that replacements are ultimately paid for out of earn-

ings before earnings are used for dividends. If a rate were fixed upon the present depreciated value it might be so low as to prevent rehabilitation. However, it should be frankly stated that if the company should not put its property in first-class operating condition the reasonableness of the fare could then properly be reconsidered.

INCREASED FARE ON WEEK DAYS

We now pass to a consideration of the operations of the company since on Aug. 31, 1908, it increased the fare on ordinary business days from 5 cents to 10 cents. The receipts from extra fares show an increase, but the total business done shows a decrease as compared with the previous year. We have carefully reviewed the operating figures so far as ascertainable since the new method went into effect, and although it is claimed by the company that the new operation has resulted in a substantial gain in the receipts for the company as a whole and also an improvement in the class of traffic, yet the figures obtained equally tend to show that the advance in the rate means a loss of business which just about balances the additional collections directly resulting. The company by giving a 5-cent fare on five days of the week invited many people to buy property and build homes near Coney Island. While this fact does not in any way amount to a contract between the company and the residents, it would appear that the practice of charging 10 cents on all days of the week should only be continued after a showing that the former practice of charging 5 cents on five days of the week was the main cause of the loss of net earnings. Even if there has been some increase in net earnings since Aug. 31, 1908, and even if it could be proved that a part of this is due to the increase in fare, the fact remains that the main causes of insufficient profits have been omission of maintenance and uneconomical power production. It is a matter of grave doubt, however, whether the old rate was not really more profitable for the company than the new rate, for the reason that the former single fare to Coney Island induced traffic that was carried in more or less empty cars and could therefore be handled at a very low cost; that is to say, the cars which in the morning brought people to their work in Brooklyn and Manhattan carried back on their return trip as passengers to Coney Island family parties that chose the relatively slow surface cars of the Coney Island & Brooklyn Railroad in order to save the extra fare charged by the elevated roads. It is significant that the proportion of children among passengers was apparently nearly twice as great on the single-fare days as on the double-fare days. When these people returned late in the afternoon this special traffic was in a direction opposite to the tide of travel away from work and was again handled at a low cost because carried in large part in cars that would otherwise have been run with small loads. It is a well-recognized fact among railroad managers, both passenger and freight, that an unusually low rate may be a profitable rate if it induces traffic to fill cars that would otherwise have to be hauled empty. In fact, the accepted theory of railroad freight rates is based on the idea of encouraging traffic to move at a low rate, provided that rate covers prime costs and makes some contribution toward meeting the fixed charges.

The action of the company in increasing the fare appears to us to have been unjustifiable. The increase appears also to have been unreasonable because it places an additional burden on the traffic with slight profit to the company or none at all. It appears to have been based upon a mistaken theory that recent loss of profits was due to Coney Island fare conditions rather than to the substantial causes that the analysis by the commission has revealed. The complaints, however, in the present proceeding relate only to the holiday fare. As a matter of proper procedure the scope of the present hearing is not broad enough to lay the foundation for an order dealing with the company's recent increase of fare on business days. The company should remedy the matter now that the impropriety of its action is called to its attention. It is alleged that the 10-cent fare is unlawful. The Coney Island & Brooklyn Railroad Company was organized on Dec. 6, 1860, under the General Railroad Act of 1850, and in the permission and consent granted to it by the Common Council of the City of Brooklyn on Jan. 21, 1861, it was provided that the fare within the City of Brooklyn should not exceed 5 cents. Under the law last cited the company was permitted to

charge a rate of fare not exceeding 5 cents per mile. Therefore the company was privileged to charge 5 cents within the City of Brooklyn and at the rate of 3 cents per mile for the distance outside of the City of Brooklyn. The distance outside the former city would be from Prospect Park to Coney Island 6 miles. All of the laws and franchises affecting this corporation have been placed before the commission and examined and we do not find that the legal right of the company to charge 5 cents within the former City of Brooklyn and 3 cents per mile outside has ever been abridged. It is, of course, understood that this statement is without derogation of the right and duty of the commission to prescribe a lower rate of fare whenever the rates charged may be found to be unjust or unreasonable.

We are therefore of the opinion that the fare of 10 cents on Saturdays, Sundays and holidays was not unjust, unreasonable or unlawful and that the complaints should be dismissed.

Respectfully submitted,
(Signed) E. M. BASSETT, Commissioner.

July 1, 1909.

WIDER TRACK CENTERS IN CHICAGO

The agitation in Chicago for wider spacing between cars on adjoining tracks culminated last week in a resolution adopted by the Board of Supervising Engineers, fixing the spacing of track centers for all future work at 10 ft. 2 in. and the width of all new cars to be built hereafter at 8 ft. 6 in. Brief mention of the adoption of this resolution was made in the *ELECTRIC RAILWAY JOURNAL* of July 3, 1909, at the conclusion of an abstract of a communication by George Weston, member of the board, to the committee on local transportation of the City Council. The resolutions adopted by the Board of Supervising Engineers on June 29 are as follows:

Resolved, That the previous action of the board in fixing the standard distance between track centers at 9 ft. 8½ in. be and hereby is modified, so that the minimum distance between track centers shall be 10 ft. 2 in. for all track special work and track, the manufacture or construction of which has not actually progressed so far that it is impracticable to change it at the present time.

WHEREAS, The improvements which have been made in the art of car construction, and the demonstrated success of the pay-as-you-enter type of car, permit the construction of a narrower car than heretofore, with substantially equivalent accommodations to the traveling public; and

WHEREAS, The board has recently authorized the construction of new cars having a maximum width of 8 ft. 6 in., be it

Resolved, That it is the judgment of this board that all future cars to be hereafter constructed under the direction of this board for operation upon the surface lines in the city of Chicago shall not exceed 8 ft. 6 in. in width over all.

B. J. Arnold, chairman of the board, issued a statement explaining the action taken, in which he said:

In reaching this decision the board recognizes the fact that the maximum space obtained still makes it extremely dangerous for any person to be caught between passing street cars. The possibilities of serious injury, if not death, to any person who permits himself to get into this situation are such that the public should avoid it in every possible way. Even the distance of 20 in. cannot be obtained upon the tracks already reconstructed, nor so long as the present wider cars are operated. In the nature of the case this must continue to be done for a considerable period of time. The two companies concur now in the policy of wide spacing in order to obtain the benefit of comparative experience.

The Chemin de Fer du Midi has just given out the first contracts for the electrification of a section of its main line 400 km in length, between Toulouse and Bordeaux. The installation will use single-phase, 15-cycle current, and the initial section is expected to be ready for operation in about a year.

COMMITTEE ON TRANSPORTATION TO DENVER

President James F. Shaw, of the American Street & Interurban Railway Association, has announced a partial list of appointments on the general committee on transportation. The committee will be divided into small groups, each of which will be headed by a chairman, and each group will have general charge of conducting the special trains or cars from various cities or sections of the country. The following gentlemen have accepted the invitation to act as members of this committee:

Charles S. Clark and any gentlemen whom he wishes to have act with him will have charge of a special train from Boston, Mass., carrying all delegates from the New England States.

C. Loomis Allen, chairman; J. H. Pardee, James H. McGraw and any other gentlemen whom the chairman wishes to have act with him will conduct a special train from New York City via the New York Central Lines, which will carry delegates from New York City and points in New York State.

W. L. Conwell, chairman; Gen. George H. Harries, C. O. Kruger, William A. House, Thomas N. McCarter, George Keegan and any other gentlemen whom the chairman wishes to have act with him will have charge of another through train leaving New York City by way of the Pennsylvania Railroad and carrying special cars from Philadelphia, Baltimore and Washington which will take delegates from Pennsylvania and the Middle Atlantic States.

C. F. Holmes and W. W. Wheatley have accepted as members of the committee which will have charge of a special train from St. Louis through Kansas City. The chairman of this committee has not yet been selected. This train will carry delegates from points east of St. Louis as far as Indianapolis, Columbus, Cincinnati, Memphis and Louisville.

D. A. Hegarty has accepted as a member of the committee in charge of a special car or party from the Southwestern States, including Texas, Arkansas and Oklahoma. The chairman and other members of this committee have not been appointed.

W. A. Warnock and P. P. Crafts will act as a committee in charge of a car or party from the Central Northwestern States.

C. N. Black, chairman, S. K. Colby, John A. Britton and F. F. Bodler will constitute the committee in charge of a special car or party of delegates from cities in California.

E. E. Potter and F. G. Seixas will act together as a committee in charge of a party or car starting from Seattle, Wash., and carrying delegates from all of the Northwestern States.

Committees will also be appointed to take charge of a party from Canada and a special train from Chicago. The personnel of these committees has not yet been determined. The Chicago train will carry delegates from Chicago and vicinity and from points east of Chicago as far as Detroit, Cleveland and Toledo.

These sub-committees will have entire charge of all of the arrangements for the comfort and entertainment of those traveling on the special trains or cars and they will carry out a campaign this summer which it is hoped will result in good patronage of the special facilities to be provided.

In the matter of the railroad fares the association has received formal notice from the Western Passenger Association, which has jurisdiction over rates of fare from

Chicago to Denver, that the privilege has been extended to members of the association traveling to the convention to purchase summer tourist tickets good leaving between Oct. 1 and 5 from Chicago and good for the return trip up to and including Oct. 31. The rate on these tourist tickets is \$30 from Chicago to Denver and return.

HOTEL RATES FOR DENVER CONVENTION

B. V. Swenson, secretary of the American Street & Interurban Railway Association, has issued convention bulletin No. 3, under date of July 1, which gives complete information about hotel rates in Denver during the week of the convention and other interesting facts about the city and its surroundings. The text of the circular follows:

PLACE OF MEETING

Many of our members are, of course, familiar with Denver and its magnificent environment, but to those who are not doubtless some general information will prove interesting and instructive.

The city was founded in 1859 by prospectors who had gone to that section in the search for gold, and in the 50 years of its existence has risen with great strides, until today it ranks twenty-fifth among the cities of the United States in point of population, which aggregates 225,000 people within an area of 60 square miles. It is not only the capital of Colorado, but the commercial metropolis for the entire Rocky Mountain region, with 15 steam railroad lines entering the Union Station. The city has 14 parks, containing in the neighborhood of 1500 acres, and all connected by boulevards. A clean, well-built, up-to-date city, with the customary Western hustle, its prosperity is best shown in the fact that it has nearly 2500 factories, with annual payrolls of over \$12,000,000, and producing annually products to the value of nearly \$100,000,000, as well as by its seven national banks, seven State banks and three trust companies, the resources of its financial institutions amounting to \$65,000,000. Much of Denver's development is due to the general custom among those who make their fortunes in Colorado of spending their money at home, which accounts in a great measure for the city's beautiful residences and well-paved, well-kept and well-lighted streets.

Perhaps no city in the country has been so favored by nature in beauty of climate, location and perspective. Weather Bureau reports for a period of 20 years show an average of over 350 sunshiny days, with a brisk, invigorating atmosphere and a minimum humidity. The periods of extreme cold rarely occur in Denver until after the Christmas holidays, and this weather seldom continues for more than three or four weeks during January and February. The city is peculiarly free from snowstorms, probably more so than any of the cities of the Northern States. Sleighing is almost unknown, as the snows which do visit the city occur during the night and soon disappear in the morning sun. The altitude of Denver is about 1 mile, and the outlook of the city covers a territory extending for 200 miles along the Rockies, from Long's Peak on the north to Pike's Peak on the south.

The side trips from Denver, both in number and scenic beauty, are perhaps equaled nowhere in the world, certainly not in America, and for the benefit of our members a later bulletin will give a résumé of the more famous and interesting of these excursions.

The transportation facilities of the convention city, it is hardly necessary to tell you, are most comprehensive and up to date. The splendid system of the Denver City Tramway Company operates about 175 miles of track, and, as is well known to our members, for excellence of equipment, facilities and methods of operation Denver's street railway system ranks among the leading railways of the country.

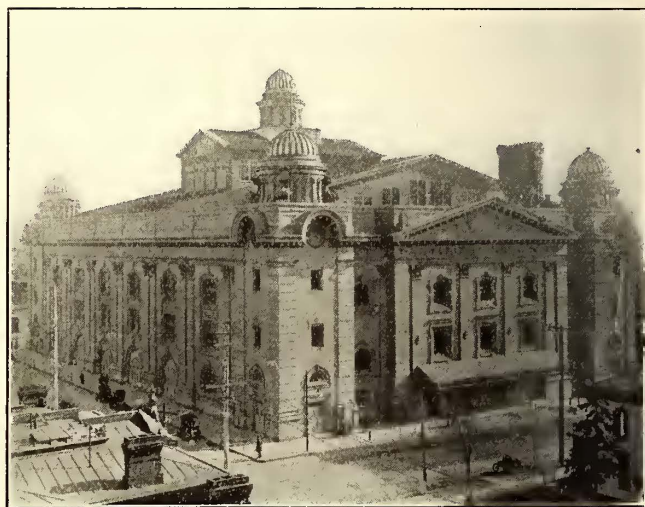
To those unfamiliar with Denver's hotel facilities and the ability of the city to accommodate large gatherings, the number of leading hotels shown in this bulletin may prove a surprise. The city is becoming more and more favorably known as an ideal convention place, and has entertained conventions of the leading societies, lodges and associations within the past few years, among these being

the reunion of the Grand Army of the Republic with 125,000 visitors, the Order of Elks with 60,000 and the Knights Templar with over 40,000 delegates. Our members should rest content, therefore, that there will be ample room for everybody during the convention week, and also be assured of fair treatment in the matter of hotel rates.

The exhibits will be displayed in the new Auditorium, completed in 1908 and used for the first time by the National Democratic Convention. This building is unique in the fact that it is the first of its kind erected by any of our American municipalities. It is located within two blocks of the business district of Denver, and is, therefore, most convenient to all the leading hotels. The building covers an area of 260 ft. long by 168 ft. wide, with walls measuring between 90 and 100 ft. in height. It is of steel, with concrete floors and roof, and splendidly equipped in the matter of ventilation and illumination. The Auditorium itself and adjacent areas available for convention purposes provide an exhibit space of about 45,000 sq. ft., and from the information now available this space will be fully utilized by our Manufacturers' Association.

HEADQUARTERS HOTELS

In recent years it has been the opinion of the official representatives of the various affiliated bodies that each association should have its own headquarters hotel, and this plan has seemed to be most satisfactory to our members. In view of this, no departure has been made from this arrangement for the 1909 convention, and the hotels listed below have been selected as headquarters, it being understood that those in charge of the convention do not



The Auditorium, Denver

desire that these particular hotels be patronized to the exclusion of others, but, rather, used as general meeting places for those interested in specific lines of work.

The Brown Palace has been decided upon as the headquarters hotel of the American Association, and similarly of the Manufacturers' Association. The Savoy Hotel will be the headquarters of the Accountants' Association, and the Adams will be the headquarters hotel of the Engineers. The Claim Agents' Association will utilize the Metropole as headquarters, and the Transportation & Traffic Association will establish its headquarters at the Albany Hotel.

HOTEL RESERVATIONS

The hotels listed in this bulletin are those which have worked in sympathy with the Denver Convention League in the matter of our convention, and we respectfully suggest to our members the desirability of patronizing the hotels here shown.

The matter of making a proper distribution of the accommodations provided by the principal hotels has been given a great deal of thought and consideration, with a view of arriving at an absolutely equitable division as between the delegates of our own and affiliated associations. In line with this, we have requested the Denver Convention League to arrange that no specific assignment of rooms be made in these hotels before July 15, that the hotels on that date act on applications then in hand and

make tentative assignments, which are at once to be submitted to the office of the secretary of the American Association for approval. On receipt of this proposed distribution the secretary will take the matter up in detail with the secretary of the Manufacturers' Association, and if the assignments seem satisfactory, approval will be given and they will be returned to Denver with the request that notice be sent to each guest, giving full information of reservation made.

On Aug. 1 and 15 and Sept. 1 additional tentative assignments of rooms will be forwarded by the Denver hotels to the secretary's office, and action similar to the above taken. By this plan, it is believed, it will be possible to settle upon a distribution of hotel accommodations that will be entirely satisfactory to all concerned, and take care equally well of the representatives of the electric railway and the manufacturing interests.

Applications for hotel reservations should be made directly to the hotel at which you desire to stop. It will aid greatly in avoiding mistakes if the members, when writing, will indicate that their reservations are made in connection with the convention. In making applications explicit statements should be made concerning the kind of room desired—whether with or without bath—and the dates of arrival and departure from the hotel. The special rates are made with the understanding that the charges of the hotel will be for the full time of reservation, and that they are all to be made upon the European plan; in other words, for the room only, without meals.

In view of the plans above outlined, we respectfully urge our members to at once communicate to the Denver hotels their applications for reservations, in order that such requests may be considered in the assignments which it is proposed to make under date of July 15.

HOTEL LOCATION AND CAPACITY.

| Name of Hotel. | Location. | No. of Guests. |
|----------------|--------------------------|----------------|
| Abbott | 19th and Curtis | 150 |
| Adams | 18th and Welton | 350 |
| Alamo | 1411 17th Street | 120 |
| Albany | 17th and Stout | 600 |
| Aldine | 1013 17th avenue | 175 |
| American | 16th and Blake | 250 |
| Anthony | 1276 Logan street | 20 |
| Arno | 1811 Grant street | 50 |
| Astor | 1960 Broadway | 75 |
| Auditorium | 14th and Stout | 200 |
| Belvedere | 429 15th street | 150 |
| Bonacord | 1422 Grant street | 45 |
| Broadway | 1539 Broadway | 100 |
| Brown Palace | 17th and Tremont | 400 |
| Columbia | 509 15th street | 112 |
| Congress | 17th and Market | 200 |
| Dewey | 1520 Glenarm place | 75 |
| Drexel | 1645 Welton street | 160 |
| Elk | 17th and Glenarm | 70 |
| Elmore | 1514 17th street | 200 |
| Elmwood | 1320 Stout street | 60 |
| Grand Central | 17th and Wazee | 100 |
| Graymont | 711 18th street | 75 |
| Harvard | 501 Colfax avenue | 80 |
| Holland | 1760 Pennsylvania street | 50 |
| Horton | 1830 Grant street | 10 |
| Inter Ocean | 16th and Blake | 100 |
| Kaiserhof | 17th and Welton | 250 |
| Lafayette | 17th and Lincoln | 60 |
| Law | 18th and Stout | 150 |
| Lewiston | 731 18th street | 100 |
| Markham | 17th and Lawrence | 250 |
| Melrose | 1742 Sherman street | 40 |
| Metropole | 18th and Broadway | 300 |
| Midland | 17th and Arapahoe | 100 |
| Miles | 1853 Welton street | 150 |
| Montview | 1446 Stout street | 75 |
| Orient | 1726 Welton street | 160 |
| Oxford | 17th and Wazee | 600 |
| Pierce | 1302 California street | 140 |
| Plaza | 15th and Tremont | 200 |
| Plymouth | 16th and Broadway | 150 |
| Roslyn | 607 14th street | 150 |
| Savoy | 17th and Broadway | 250 |
| Shirley | 17th and Lincoln | 350 |
| Shirley Annex | Broadway near 17th | 350 |
| Standish | 1530 California street | 250 |
| St. Elmo | 1433 17th street | 80 |
| St. Francis | 411 14th street | 120 |
| St. James | 1534 Curtis street | 250 |
| St. Thomas | 1508 California street | 40 |
| Tours | Colfax and Lincoln | 120 |
| Tremont | 411 16th street | 100 |
| Vallejo | 1420 Logan street | 75 |
| West | 1337 California street | 180 |
| Windsor | 18th and Larimer | 400 |

TRANSPORTATION

The matter of transportation is being vigorously pushed, but at this date it is not possible to give definite information on this point. The association has been able to positively secure for its delegates an extension of the summer

tourist rates from Chicago to Denver, but the matter of a similar extension from the Eastern territory has not yet been decided, and positive announcement on this point cannot, therefore, be made in the bulletin. It is the intention, however, to issue immediately after this question is settled a bulletin devoted to the matter of transportation, and it is hoped to distribute this information on or before July 10.

SCHEDULE OF MINIMUM RATES BY THE DAY, EUROPEAN PLAN.

| | Rooms Without Private Bath. | | Rooms With Private Bath. | |
|---------------|-----------------------------|------------|--------------------------|------------|
| | 1 Person. | 2 Persons. | 1 Person. | 2 Persons. |
| Adams | \$1.50 | \$2.50 | \$3.00 | \$5.00 |
| Alamo | 1.50 | 2.00 | 2.00 | 4.00 |
| Albany | 1.50 | 2.50 | 3.00 | 4.00 |
| American | 2.00 | 4.00 | 3.00 | 6.00 |
| Astor | 1.00 | 1.50 | 1.50 | 2.50 |
| Auditorium | 1.00 | 2.00 | 2.00 | 4.00 |
| Belvedere | 1.00 | 2.00 | 2.00 | 3.50 |
| Brown | 2.00 | 4.00 | 3.50 | 5.00 |
| Carlton | 1.00 | 2.00 | ... | ... |
| Congress | 1.00 | 2.00 | 1.50 | 3.00 |
| Drexel | 1.00 | 2.00 | 2.00 | 3.50 |
| Elk | .75 | 1.50 | ... | ... |
| Grand Central | 1.00 | 2.00 | ... | ... |
| Graymont | 1.00 | 2.00 | 1.50 | 3.00 |
| Holland | 1.00 | 2.00 | 2.00 | 3.50 |
| Kaiserhof | 1.50 | 3.00 | 2.00 | 4.00 |
| Lafayette | 1.00 | 2.00 | 2.00 | 3.00 |
| Law | 1.00 | 2.00 | ... | ... |
| Madison | 1.00 | 2.00 | 1.50 | 3.00 |
| Metropole | 1.50 | 2.00 | 2.50 | 3.50 |
| Midland | 1.00 | 1.50 | 2.00 | 3.00 |
| New Broadway | 1.00 | 2.00 | ... | ... |
| Orient | 1.00 | 2.00 | 2.00 | 3.00 |
| Oxford | 1.50 | 2.00 | 2.00 | 3.50 |
| Pierce | 1.00 | 2.00 | 1.50 | 3.00 |
| Plaza | 1.00 | 2.00 | 1.50 | 3.00 |
| Savoy | 1.50 | 2.50 | 3.00 | 5.00 |
| Shirley | 1.50 | 2.00 | 2.50 | 3.50 |
| Standish | 1.50 | 3.00 | 2.00 | 3.50 |
| St. Elmo | 1.00 | 2.00 | ... | ... |
| St. Francis | 1.00 | 2.00 | 2.00 | 3.50 |
| St. James | 1.50 | 2.00 | 2.50 | 3.00 |
| Tours | 1.00 | 2.00 | 2.00 | 3.50 |
| West | 1.00 | 2.00 | 1.50 | 3.00 |
| Windsor | 1.00 | 2.00 | 2.00 | 3.00 |

This proposed bulletin will contain as much detailed information as possible on railroad fares from various cities of the country, with equivalent Pullman rates. The bulletin will also contain information concerning transportation committees, which are now well under way, giving the names of committeemen and territory assigned. Program, meeting halls and other convention matters will be covered in later bulletins, as definite conclusions are reached.

SHOP FIRE PROTECTION AT MOBILE

The Mobile Light & Railroad Company has just completed the installation of a piping system and storage tank for protecting the shop buildings in case of fire. The storage tank has a capacity of 50,000 gal., and is mounted on a 100-ft. steel tower. From this tank an 8-in. main leads to an underground piping system surrounding the several shop buildings. The supply tank is fed with water from the city mains, and a 6-in. water connection also is available for directly feeding the underground piping in the shop yards whenever water is not available from the storage tank.

Eight large fire hydrants are located in the shop yards and are fed by a line of 6-in. piping. The hydrants are not nearer than 50 ft. to the buildings, so that they may be approachable at all times. Over each hydrant a special hose house with two large double doors is installed, and in each house is a 100-ft. length of hose connected to the hydrant. Additional hose is carried on a portable reel. In each of the shops and car houses are four standpipes, each with 50 ft. of hose connected with a 1 1/8-in. nozzle. The hose at these standpipes is hung on a "jiffy" automatic hose rack, so that it is immediately available for use in case of fire.

The shop forces include a man who formerly served in the city fire department, and S. M. Coffin, master mechanic, has appointed this employce as assistant fire chief. Fire drills are conducted frequently, so that the men may deal systematically with any emergency call.

METHOD OF PLOTTING SPEED CURVES

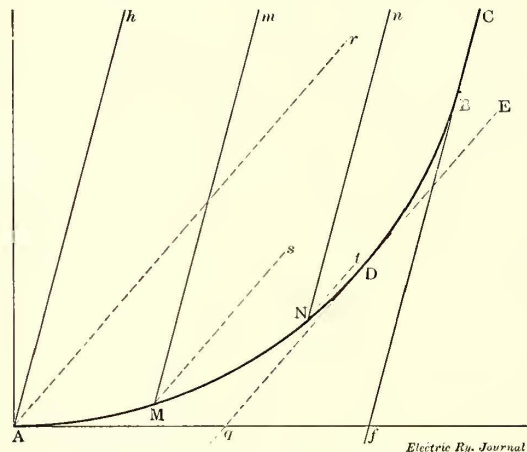
NEW YORK CENTRAL & HUDSON RIVER RAILROAD COMPANY,

NEW YORK, July 1, 1909.

To the Editors:

In Mr. Farmer's article, "New Method of Plotting Speed Curves," on page 1131 of your issue of June 19, a description appears of a new method of finding the speed at any point of a distance-time curve. I beg to call to your attention the fact that this method is not entirely correct or of universal application. This is to be regretted, for such a simple and easy method as this appears at first sight to be would be a great labor saver.

In the accompanying diagram *A B C* is a distance-time curve with distance represented by ordinate and time by abscissæ. The scales of time and distance are omitted as



Distance-Time and Velocity Curves

not essential to this discussion and the shape of curves chosen, while unusual, is such as to emphasize the inaccuracy. The curve becomes a straight line at *B*, and lines *C B j* and *h A* are drawn parallel, according to the directions in the article referred to. The speed at the time corresponding to any point on the curve is then said to be proportional to the distance of that point from line *h A*. Take at random any point on the curve, as *M*, and call the speed at that point *S*. Draw line *m M* parallel to *h A*. At a distance from *h A* twice as great draw another parallel line *n N* cutting the curve at *N*. The speed at *N* is then $2 S$.

Now suppose a second distance time curve *A D E* to be precisely the same as the first curve up to the point *D*, where it becomes a straight line. It is obvious that the differences beyond *D* leave unaltered the speed and other characteristics in that portion of the curve to the left of *D*. As before, draw *Eq*, *r A*, *s M* and *t N* parallel. Following the rule that speeds are proportional to distances, from *r A*, and remembering that the speed at *M* is *S*, it is apparent upon inspection of the figure that the speed at *N* is about $1.7 S$. But the speed at *N* is already known to be $2 S$.

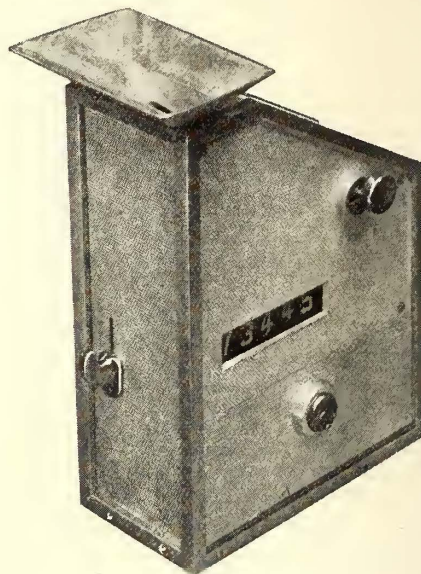
Taking as the most typical form encountered in practice, a curve of uniform acceleration, the errors by Mr. Farmer's method are found to be about 50 per cent at half-speed, decreasing at higher speeds, and at lower speeds running up to nearly double that value. R.

The first electrified section of the London, Brighton & South Coast Railway Company was opened for operation in May, and it is expected that electric service will be extended into Victoria Station by Aug. 1.

A NEW FARE BOX

The accompanying engraving shows a new fare box, which collects and registers nickels and at the same time allows the conductor access to the cash drawer for making change. The device was invented and is being sold by H. T. Werden, 1 Madison Avenue, New York City. It is known as the "Payee" fare box.

The nickels are dropped into the hopper on top of the box, and slide through the slot down a long slanting chute to the registering stop. This chute is provided with a glass top, so that both the passenger and conductor can see the coin as it drops. If a mutilated or counterfeit coin is



Registering Fare Box

dropped in the box and is detected by the conductor, he registers the fare and removes the coin from the cash drawer, returning it to the passenger. The slot in the hopper is just large enough to pass a nickel, and will not allow a coin of larger diameter to enter the chute. If a dime or penny drops into the hopper it falls through the slot into another passageway and drops out of the box in the cup shown at the left.

A detachable key operates the registering mechanism. The conductor grasps the box with his fingers and his thumb rests on the knob of the key. A slight push on the knob actuates the register and allows the nickels to fall into the cash drawer below. By means of two small pegs only one coin at a time is permitted to pass through the opening into the cash drawer. In the normal position one of these pegs projects out in the chute and stops the passage of a coin dropping down from the hopper. When the register knob is pushed this peg is withdrawn, but simultaneously the second peg is forced out above the lowest coin and prevents the second coin from dropping further. When the register knob is released the upper peg is withdrawn and the lower peg again forced out to the normal position.

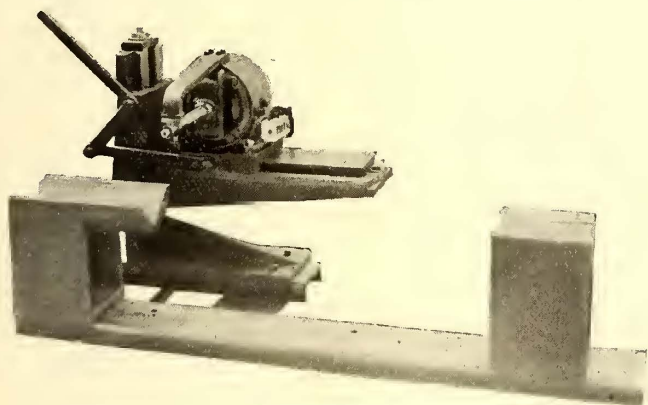
The box weighs only 10 lb. and is but $11\frac{1}{2}$ in. x $7\frac{1}{2}$ in. x 4 in. in size; hence it is readily portable. It is made of punched metal, is neat, secure and, it is claimed, will not get out of order. Each conductor may be given a "Payee" fare box and be held responsible for its registration and cash delivered, thus providing a simple method of checking up each conductor's receipts. Conductors are furnished

with a key which will open the cash box, so that they have available at all times an ample supply of change.

The box is held in place on the platform by a simple catch forming part of a base plate permanently bolted to the platform railing. The base plate is formed with shoulders at the sides, from which project at one end two fixed metal pins. A spring bolt is provided at the other end of the shoulders. Small holes are drilled in the box to engage with these pins. To fasten the box it is slipped into engagement with the two fixed pins and then the spring bolt is snapped into place. This attaches the box securely to the base plate.

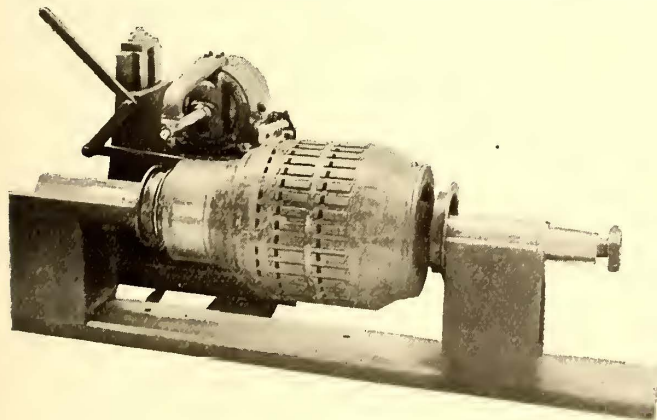
COMMUTATOR GROOVING MACHINE

The special commutator grooving machine shown in the accompanying engraving has recently been designed and placed on the market by the General Electric Company. It will accommodate all sizes of General Electric railway motor armatures built to date. It consists of sup-



Commutator Grooving Machine for G.E. Armatures

ports for the armature, the commutator of which is to be grooved, and a moving carriage, which carries the grooving motor. The armature supports are pillow blocks with V-shaped bearings, one of them being movable horizontally on the base. The carriage stand has a rough horizontal adjustment at its base, a vertical screw adjustment for the motor carriage slide arm, and an angular adjust-



Armature in Position in Machine

ment in the slide arm to be used in case the commutator bars are not exactly parallel to the shaft. The rotating saw is on the extended shaft of a CQ $\frac{1}{4}$ - $\frac{3}{8}$ hp, 1200-r.p.m., 550-volt, direct-current motor. The shaft is long enough to permit of the use of two saws, allowing the grooving of two slots at the same time. Owing to the size of the motor, no starting resistance is required. The weight of the complete apparatus is 750 lb.

IMPROVED DESIGN OF SHEET STEEL GEAR CASE

The first design of Lyon sheet-steel gear case was patented in 1905. The experience gained during four years of manufacture has led to a number of changes in details which have increased the strength of the cases and reduced the maintenance costs. These changes consist principally in adding reinforcement at points of greatest strain. Cases requiring side brackets are now reinforced by a special steel plate placed on the inside of the case, this plate being larger in size than the base of the bracket. The end brackets on the case are also reinforced by sheet-steel plates on the inside. These reinforcements are made to lap, giving the case rigidity and preventing its coming out of alignment. The latest types of Lyon reinforced cases are furnished with grease doors having compressed centers, which not only prevent the grease from flying out of the case, but also prevent dirt from working into the gears. In the design of recent cases, special attention has been given toward avoiding right angles in the metal, as it has been conclusively proved that metal bent at right angles is more liable to fracture than metal formed with rounded corners.

This improved type of case is now known as the Lyon reinforced sheet-steel gear case, and is being marketed by the Electric Service Supplies Company, Philadelphia, Pa.

GRAPHITE SHEET LUBRICATION

A new type of sheet lubrication for journal bearings has been put on the market by the Strong, Carlisle & Hammond Company, Cleveland, Ohio. It consists of solidified graphite cones or tablets which are molded on a copper wire cloth. In babbitting a box, a piece of this sheet is cut wide enough to fit not quite one-half way around the journal. It is then shaped to the journal and the babbitt metal is poured in in the usual way. Afterward the sides of the bearings are scraped, so that the journal will turn freely.

When oil is used, from 75 to 90 per cent of the quantity of the graphite sheet which would otherwise be employed is cut out, to avoid any tendency of the oil to wash loose particles of graphite out of the bearings. This method of babbitting boxes has been employed on one of the cars of the Northern Ohio Traction & Light Company and has given very satisfactory results. After a mileage of 23,375, the bearings were in such good condition that they were replaced for further wear.

Many letters have been written by residents of Philadelphia to the newspapers of that city regarding the recent traction situation. A signed letter published in a recent issue of the *Public Ledger* said in part: "If your paper would print a modest suggestion from a plain, blunt man, an humble citizen, anent the increase in fare on our street-car lines I believe it would end the horrible business, and not only that, but that it would prevent a repetition of it. My suggestion is simply that we build the suburbs in the center of the city, thus doing away with the necessity of street-car lines. It should be plain to the mind of even a police court judge that if the lines were taken away our fellow-citizens could save all their car fare. To show that my actions are in accord with my written sentiments, I have resolved to walk the longest way home instead of the shortest as heretofore. I claim that this is an act of wisdom, for by so doing I deprive the company of two fares instead of one."

ELECTRIC RAILWAY LEGAL DECISIONS

LIABILITY FOR NEGLIGENCE

Alabama.—Carriers—Injuries to Passengers—Actions—Pleading and Proof—Relation of Carrier and Passenger—Evidence—Negligence—Prima Facie Case—Master and Servant—Injury to Servant—Street Railroads—Care as to Licensees—Care as to Passengers—Railroad Company—Care as to Employees—Who Are Passengers—Employees of Carrier.

In an action against a carrier for injuries to a passenger, the allegation that plaintiff was a passenger on defendant's car at the time he was injured is a material allegation, and must be proved.

On mere proof of injury to a passenger, his prima facie right of recovery, under counts charging simple negligence, is established.

An employee of a street railroad company, riding on a car at the time of his injury by a collision, in addition to showing the collision and injury, must adduce some evidence tending to show negligence in order to recover.

The only duty owed by a street railroad company to a licensee on one of its cars is not to wantonly or intentionally injure him, or to exercise due care to avert injury after his danger becomes apparent.

A carrier owes to a passenger the highest degree of care.

A street company owes to one of its employees, riding on a car, the duty of exercising reasonable care not to injure him.

A section hand, injured while riding back and forth to work on a car, without charge, pursuant to a rule of the company, is not a passenger, but is in the exercise of a mere privilege connected with his employment.—(Birmingham Ry., Light & Power Co. v. Sawyer, 47 S. Rep., 67.)

Florida.—Railroads—Personal Injuries—Presumption of Negligence—Burden of Proof.

The statute provides that a railroad company shall be liable for any damage done to persons by the running of cars or other machinery, unless the company shall make it appear that its agents have exercised all ordinary and reasonable care and diligence; the presumption in all cases being against the company, but this provision does not create such a presumption as will outweigh proofs, or that will require any greater or stronger or more convincing proofs than in any other issue. The statute casts upon the company the burden of affirmatively showing that its agents exercised all ordinary and reasonable care and diligence to prevent the injury complained of.—(Jones v. Jacksonville Electric Co., 47 S. Rep., 1.)

Illinois.—Carriers—Street Railways—Passengers—Action for Injuries—Question for Jury—Evidence—Admissibility—Subjects of Expert Testimony—Appeal and Error—Exclusion of Evidence—Harmless Error.

Under the evidence in an action against a street railway company for injury to a passenger caused by a jerking of cars on the grip-iron on a grip car becoming caught, held proper to refuse to direct a verdict for the company.

In an action against a street railway company for injury to a passenger caused by cars jerking on the grip-iron on a grip car becoming caught, the company could not show that it had employees who had particular duties to perform, it being permitted to prove everything that was in fact done by any employee in the way of inspection, superintendence and care of the track and appliances, as no matter how many employees the company had, or what their duties were, the company would be liable to the passenger for their neglect of such duties, and since duties unperformed would constitute no defense.

In an action against a street railway company for injury to a passenger caused by a jerking of cars on the grip-iron on a grip car becoming caught, the company could not ask a witness as to the possibility of a car running into the tongue of a switch, since that was not a proper subject of expert testimony, and since there was no evidence for plaintiff tending to show that the grip caught on the tongue of a switch.

In an action against a street railway company for injury to a passenger caused by a jerking of cars on the grip-iron on a grip car becoming caught, it was not reversible error to exclude a question asked a witness for the company as to whether he had ever known of an accident occurring through anything getting into the cable slot, since there was no evidence tending to prove that anything got into the slot on the occasion of the accident, and since, if the purpose was to show that no such accident had happened before, the testimony would tend to show that something was wrong with the slot or appliance, raising an inference of negligence of the company.—(Wyckoff v. Chicago City Ry. Co., 85 N. E. Rep., 238.)

Iowa.—Carriers—Carriage of Passengers—Setting Down Passengers—Contributory Negligence.

Where an interurban railway conductor was advised by a passenger that he wished to alight, and saw the passenger moving toward the rear end of the car, and knew, or should have known, that the car had slackened its speed as if about to stop at the passenger's request, and the motorman had been given the usual signal to stop to discharge passengers, the conductor and motorman were bound to see that the passenger was not in the act of alighting before starting the car, which had not come to a full stop, with unusual force and violence.

An interurban railway passenger, who had signified his desire to alight, was not negligent as a matter of law in taking a position on the car step after the car had commenced to slow down.—(Heinze v. Interurban Ry. Co., 117 N. W. Rep., 385.)

Louisiana.—Street Railroads—Operation—Care Required—Collision with Fire Apparatus—Negligence of Motor-neer.

It being important that the apparatus for its extinguishment should reach a fire promptly, and, the men and horses of the fire department being expected and trained to use the utmost expedition for the accomplishment of that purpose, the requirement that individuals and vehicles engaged upon less pressing missions shall not only accord them the right of way, but shall hold themselves in readiness to do so when they have reason to anticipate that fire apparatus may appear, is not unreasonable, and that condition may be said to exist when a vehicle, and more particularly a street car, which is confined to its track, approaches a fire engine house situated in close proximity to such track.

The motoneer of an electric car which passes immediately in front of a fire engine house is guilty of double negligence when he drives the car at full speed in approaching such house, and fails to see, in time to enable him to stop the car and avoid collision with an outgoing hose wagon, a signal given while his car is 144 feet distant from the engine house.—(Dole v. New Orleans Ry. & Light Co., 46 S. Rep., 929.)

Massachusetts.—Street Railroads—Injuries to Pedestrians—Contributory Negligence—Lighting—Mode.

As plaintiff was approaching a street on which defendant's street railroad was operated, her view of a car approaching from the north, by which she was subsequently struck, was and continued to be unobstructed from the time such car was 850 ft. north of the point where the accident took place until it reached such point. The car was lighted by incandescent lights inside and one on the dashboard. The accident happened on a dark, misty morning; but the fog was not such as to obscure objects like the car in question. Held, that plaintiff was negligent, as a matter of law, either in not looking carefully to see the car or in not looking from the proper position.

Where, in an action for injuries to a pedestrian in a collision with a street car, it was not shown that plaintiff knew or relied on the use of searchlights by the street car company on its cars, it was no excuse for plaintiff's failure to discover the car in time to avoid being struck by it that it was only equipped with an incandescent light on the dashboard, instead of a searchlight in use on some of defendant's cars for a year prior to the accident.—(Beirne v. Lawrence & M. St. Ry. Co., 83 N. E. Rep. 359.)

Michigan.—Master and Servant—Injuries to Servant—Assumption of Risk—Knowledge of Practice as to Inspection—Evidence—Admissibility.

A master may conduct his business in his own way, and, unless a servant wishes to assume the risk of the method adopted by the master, he should refuse to enter upon the employment, or leave it on discovering such method, and a servant, knowing the hazards of his employment as it is conducted, cannot recover for injuries received on the ground that there was a safer method which would have prevented the accident had it been adopted. Hence, where an experienced lineman employed by defendant street railway company knew that it was the practice of the company to make no separate inspection of trolley poles, but to rely on such as the linemen might make in connection with work required of them, and that all changes and repairs upon poles were made by his crew, he continued, it he did not accept, his employment with full knowledge of the facts, and he assumed the attendant risks.

In an action by a lineman against a street railway company for injuries from the falling of a decayed trolley pole, evidence that it was the universal custom of such companies to omit inspection other than that made by the repair crew is admissible on the issue of assumption of risk.—(Lynch v. Saginaw Valley Traction Co., 116 N. W. Rep., 983.)

Minnesota.—Street Railroads—Injuries to Persons on Track—Actions—Evidence—Sufficiency—Damages—Measure of Damages—Injuries to Person—Excessive Damages.

In a personal injury action, the evidence considered, and held sufficient to sustain the finding of the jury that the defendant was negligent and that the plaintiff was not guilty of contributory negligence.

When an injury to a woman results in a miscarriage, she is entitled to recover such damages as will fairly compensate her for the pain and suffering occasioned by the miscarriage, but not for the pain and suffering occasioned by the loss of the child.

The pain and suffering which the mother would have suffered when the child was born in the natural course of events cannot be deducted from the pain and suffering occasioned by the miscarriage, which resulted from the defendant's negligence.

The damages awarded held not so great as to show passion and prejudice on the part of the jury.—(Morris v. St. Paul City Ry Co., 117 N. W. Rep., 500.)

Missouri.—Damages—Excessive Damages—Carriers—Injury to Passenger—Instructions—Conflicting Theories—Presentation—General Instructions—Carriers—Action for Injury to Passengers—Instructions—Construction—Trial—Instructions—Sudden Jerks—Danger of Position—Nursing—Limitation as to Amount.

In an action for personal injuries, it appeared that plaintiff was an unmarried woman 33 years of age, in good health, earning \$5 per week as a domestic; that blood poisoning set in soon after the injury, and plaintiff's physical condition made amputation impossible for over two months; that both flesh and bone of her foot sloughed away, finally necessitating amputation; that the injured limb would be 2 in. shorter than the other, necessitating a halting walk; that her doctor bill was \$500; that she was bedridden for several months and was bound for expenses for medicine and nursing. Held, that a Judgment for \$7,500 was not so excessive as to warrant setting it aside.

In an action against a railway company for injuries to a passenger, where plaintiff's testimony tended to show that the car had stopped at the proper place to receive passengers, that there was an implied invitation to enter, that while she, in the usual way and with proper care, was entering the car, there was a sudden movement forward throwing her down with one foot under the wheels, and defendant's testimony tended to show either that plaintiff was forced against and under the car by a crowd pushing to get on, or that she negligently undertook to mount a moving car before it reached the stopping place, and was injured by her own inadvertence, each party was entitled to instructions on their respective theories of the case.

An instruction which puts certain facts to the jury, and tells them that if they find that way plaintiff is entitled to recover, is a general instruction.

A general instruction for plaintiff, which, among other things, charged that, if defendant's servants in charge of the car received plaintiff as a passenger thereon, and if while she was on the run-board thereof, etc., they caused or suffered the car to start and move forward, etc., in the absence of contributory negligence, plaintiff could recover, in effect requires the jury to find that plaintiff was invited to enter the car, and had accepted the invitation, and is not open to the objection that it permits plaintiff to recover without a finding that the car had stopped when plaintiff sought to enter.

If the instruction was vague as to requiring the jury to find that the car had stopped when plaintiff attempted to board it, in order to recover, the jury could not be misled, where other instructions plainly required them to find that the car had stopped at a point where defendant usually received passengers, to entitle plaintiff to recover, and further charged that plaintiff must establish by the greater weight of evidence that she received the injuries in the manner she alleged, and that otherwise the verdict must be for defendant, and that, before they found for plaintiff, they must find she got on the run-board when the car was stopped, and that her injury must be found to be the result of a subsequent forward movement, and that if plaintiff was in a crowd, which was trying to board the car before it stopped, and plaintiff, notwithstanding warnings, attempted to board the car before it stopped, etc., or if the pressure of the crowd, combined with her attempt, threw her under the wheels, or if it was a mere accident without fault on either side, she could not recover.

Where plaintiff's testimony placed her with one foot on the run-board of an electric car and one on the floor of the car raising herself to pass into it at the time the car started up, it is not error in presenting her theory to as-

sume that plaintiff was in a position of danger at the time of the alleged start.

In an action by a passenger for injuries, where the petition asks no specific amount under any head or item of damages, but the elements of damage are set forth with particularity, and a general verdict is prayed covering them all, an instruction putting the question of damages to the jury, as the petition did, is not bad, in the absence of a request for a more specific instruction.—(Flaherty v. St. Louis Transit Co., 106 S. W. Rep., 15.)

New York.—Street Railroads—Collision with Vehicle—Right of Way.

A driver on a street occupied by street-car tracks does not have an equal right of way with the street-car company, except at street intersections, on that portion of the street occupied by the tracks.—(Gilman et al. v. New York City Ry. Co., 107 N. Y. Sup., 770.)

New York.—Carriers—Injuries to Passenger—Evidence—Sufficiency.

In an action against a street railroad for the death of a passenger, evidence held insufficient to show that the driver of defendant's car intentionally pushed decedent from the platform.

Where decedent boarded the crowded front platform of a horse car, and the drive with an involuntary motion, resulting from the necessity of properly managing his horses, pushed decedent from the platform, there was no liability on the part of the carrier.—(Dubnow v. New York City Ry. Co., 107 N. Y. Sup., 729.)

New York.—Carriers—Actions for Injuries—Sufficiency of Evidence—Contributory Negligence.

Where a street railway passenger, without waiting for the car to stop, jumped off and immediately started in the rear of the car to cross the other tracks, and a moment's notice would have apprised him, either by the corner lights of the car which struck him or by the sound, that the car was approaching, a finding that he was free from contributory negligence is against the weight of evidence.—(Wilson v. Rocheste & E. R. Ry. Co., 108 N. Y. Sup., 117.)

Washington.—Electricity—Actions for Injuries—Evidence—Sufficiency—Existence of Current—Source of Current Causing Shock—Injuries—Negligence—Maintenance and Repair of System.

In an action against an electric railway company for injuries to a city electric light trimmer from a shock caused by contact of the trolley wire through various other wires with the flexible wire by which the light was lowered, the evidence of the contact of wires, the shock, and the fact that a car had just passed held sufficient to show the presence of a current in the trolley wire at the time of the shock.

Proof of contact with defendant's trolley wire held sufficient to sustain a finding that it was the source of a current causing a shock, notwithstanding testimony that it might have come from some other source, where there was no direct proof of any other source.

Where a city operating an electric lighting plant removed a guy wire supporting a trolley wire from the railroad company's pole to its own pole, and the railroad company subsequently took down and replaced the trolley wire and re-fastened the guy wire to the electric light pole, but either failed to put in an insulator or failed to replace one that was missing, the railroad company was liable for injuries from an electric shock to an electric light trimmer received from the trolley wire through the guy wire and the flexible wire for lowering the light from the pole to which the guy wire was attached; it being the duty of the railroad company to keep its wires in reasonable repair and to correct faults which were dangerous to others.

Evidence held to sustain a judgment for an electric light trimmer for a shock from electricity escaping through a guy wire from a trolley wire to the cable for lowering the light.—(Garretson v. Tacoma Ry. & Power Co., 96 Pacific Rep., 511.)

West Virginia.—Carriers—Injury to Passengers—Negligence—Directing Verdict.

Where a passenger, while riding on an electric car seated on the floor between the seats with his feet resting on the running board, falls off while the car is rounding a curve, the mere fact that the car was crowded and running at the rate of speed usual under ordinary circumstances does not of itself show negligence on the part of the company.

Under such circumstances, the lower court is justified in excluding plaintiff's evidence and directing a verdict for the defendant.—(Wenzel v. City & Elm Grove R. Co., 61 S. E. Rep., 1001.)

CHARTERS, FRANCHISES AND ORDINANCES

Colorado.—Street Railroads—Grant of Franchise by Municipality—Term—Right of Appeal—Effect of User.

A grant by a city to a street railroad company of the right to construct and operate tracks in its streets, without any limitation as to time, is one at least for the term of the corporate life of the grantee.

Where a city granted to a street railroad company the right to construct and maintain tracks "along and across the streets of the city," and the company has constructed and put in operation lines in conformity to a system which contemplates their extension, and the building of branch lines as public needs may require or justify, the city cannot arbitrarily, and without cause, repeal the grant except to tracks at the time constructed and in operation, and ordinance attempting such repeal is void.—(Mercantile Trust Co. of New York v. City of Denver et al., 161 Fed. Rep., 769.)

Connecticut.—Eminent Domain—Proceedings to Take Property—Appeal—Effect as Supersedes—Street Railroads—Location—What Constitutes.

Gen. St. 1902, § 3834, provides that any party to any proceeding relating to street railways, brought before the railroad commissioners on either original application or by appeal, aggrieved by the decision of the commissioners, may appeal to the Superior Court in the same manner as in appeals taken under section 3747, and with like effect. Section 3747 makes any appeal taken thereunder a supersedeas of the order appealed from until the final action of the court thereon. Held, that section 3834 is not limited to such proceedings as may be brought by every street railway under the general laws, but applies to proceedings brought in furtherance of the exercise of the power of eminent domain, which has not been granted to all of them, and that approval by the railroad commissioners of the location on, and the taking of, land for a street railway, became, under section 3747, of no binding force on appeals therefrom.

The location of a street railway, the charter itself not fully prescribing the precise location, is the definite and final selection and demarcation of its route by its board of directors.

Though the location of the route of a street railway must be made within the limits fixed by its franchise, such limits will be liberally construed to uphold the location made, and it is enough if the limits are substantially observed.—(New York, N. H. & H. R. Co. v. Stevens, 69 Atl. Rep., 1052.)

Georgia.—Eminent Domain—Injunction—Street Railroads—Location of Route—Estoppel—Evidence—Admissibility—Amount of Property that May Be Taken—Grounds of Relief—Inadequacy of Remedy at Law—Power to Take—Street and Suburban Railways—Words and Phrases—"Street Cars."

Under the facts of this case the plaintiff was not estopped from seeking to enjoin the defendant as prayed in its petition.

Where a railroad company has the right to condemn private property for public uses in the construction and operation of its road, it has a large discretion in the selection of a location for its route over such property, and, unless such discretion has been abused, it will not be controlled or interfered with by the courts.

(a) Upon the trial of a case wherein the owner of the property through which it is proposed to run such road complains that such discretion of the company has been abused by it, it is error to exclude testimony relevant and material upon the issue as to whether or not the company has acted in bad faith in the selection of such location.

(b) Where the route selected and sought to be condemned by such company for the location of its road ran near the cotton mill of the owner of the land, who introduced testimony to show that another route over such land was equally as practicable, feasible, and advantageous to the company and the public as the one selected, and that it contemplated in a short time making an enlargement of its mill, the plant of which was originally designed and constructed with the intention of subsequently making such enlargement, and which would have been designed and constructed at less cost if such intention had not existed, it was error to exclude testimony, offered for the purpose of showing that such company acted in bad faith in selecting the route it did select, to the effect that the portion of the land over which such route was selected was the only location on such land on which its mill could be scientifically and economically enlarged, and that to enlarge their plant at any other location on said land would necessitate the building of a new and independent mill which could not be operated in connection with the existing plant.

A party having the right of condemning private property for public purposes can only condemn such amount thereof as is useful, needful and necessary for public purposes.

(a) If such party, in condemnation proceedings, makes an effort to condemn more land than is necessary for public purposes, as the assessors in such proceedings can only determine the amount of compensation to be paid, the owner of such land has the right to have a court of equity intervene and enjoin the condemnation of such of his land as is not necessary for public purposes.

(b) Where a party has a right to condemn land for public purposes, it is not confined to such quantity as may be absolutely necessary or indispensable for public purposes; but such quantity as may be reasonably necessary may be condemned.

Upon the trial of a case wherein the owner of land seeks to have a party having the right of condemnation enjoined from condemning his land, it is not error to admit testimony of such condemnor that he made an effort before instituting such condemnation proceeding to acquire by contract the property sought to be condemned and failed in such effort.

Suburban and street railroad companies incorporated under the general law pursuant to Civ. Code 1895, § 2180, have power to condemn private property outside of the limits of incorporated towns and cities.

"Street cars," accurately speaking, are cars which traverse the streets of a town or city and carry passengers who get off and on at various points along the line. They have been considered as vehicles of street travel.—(Piedmont Cotton Mills v. Georgia Ry. & Electric Co., 62 S. E. Rep., 52.)

New York.—Easements—Prescription—Acquisition of Rights of Way—Evidence—Admissibility—Adverse Possession—Title by Prescription—Evidence to Overcome—Sufficiency—Right of Way—Abandonment.

In an action by an abutter to restrain the operation of an elevated railroad and for damages, evidence that more than 20 years prior to the action the railroad entered on the street under a charter from the rapid transit commission and the acts of the Legislature and of the municipality raised a presumption of lawful entry under a deed which had been lost.

In an action by an abutter to restrain the operation of an elevated railroad and for damages, a lis pendens and petition in condemnation proceedings, whereby a predecessor of the railroad sought to acquire title to a right of way in front of the premises in question, and also a judgment of condemnation and an order appointing commissioners, such proceedings having been instituted about five years after the erection of the elevated structure and the commencement of the operation of the trains, and the judgment of condemnation and order appointing commissioners having been entered several months thereafter, and it being thereby declared that the railroad's predecessor had not been able to acquire title to the easement required for the erection of its elevated structure, and that its offer to the owner of the premises had been rejected, were competent and material to rebut the presumption raised by evidence introduced by the railroad that there had been a lawful entry under a deed which had been lost.

But slight evidence to overcome title by prescription is required.

An increase in the length of elevated railroad trains, their number, change in the method of operation from steam to electricity, and as an incident thereto the laying of a third rail and building of a walk by the side of the elevated structure, do not constitute such an increase in the user or change of its character as to be deemed an abandonment of any right acquired under the original entry.—(Betjemann v. Brooklyn Union Elevated R. Co. et al., 111 N. Y. Sup., 567.)

New York.—Carriers—Regulation—Carriage of Passengers—Excessive Fares—Penalty.

A corporation, organized as a steam railroad under the general steam railroad act, operating as an electric street railway a road 5 or 6 miles long, and continuing to claim its right under the steam railroad act, instead of conforming to the law of street surface railroads, must conform to that act; and charging fares in excess of rates fixed by Railroad Law, Laws 1890, p. 1096, c. 565, § 37, renders it liable to the penalty imposed by section 39, provided the overcharge is not made through inadvertence or mistake.

A railroad company, charging excessive fares pursuant to plan and intention, rather than under legal advice, is subject to the penalty imposed by Railroad Law, Laws 1890, p. 1096, c. 565, § 39, for charging excessive fares, unless the overcharge was made through inadvertence or mistake.—(Petze v. Coney Island & B. R. Co., 111 N. Y. Sup., 532.)

News of Electric Railways

New Rapid Transit Proposal in New York

The Interborough Rapid Transit Company presented to the Public Service Commission, of the First District of New York, on June 30, a proposition for the addition of 68½ miles of new track to its lines, 44 of which would be subway extensions and 24½ would include third tracks and extensions of present elevated lines.

It is suggested that the most favorable way for the company to build the subways would be as an extension of contract No. 1, under which the present subway was built, the only change being that the company would furnish the money for construction instead of the city. The company, however, wants the Public Service Commission to grant it indeterminate franchises for the third tracking of the Third Avenue, Second Avenue and Ninth Avenue elevated lines, and conditions its building of subways on the granting of the elevated franchises and the adoption by the commission of the plan for the Steinway tunnel.

In detail the subway extensions proposed by the Interborough Rapid Transit Company, according to a statement issued by T. P. Shonts, president of the company, is as follows:

1. A four-track subway extension connecting with the existing subway at about Thirty-sixth Street and Fourth Avenue and running from that point under Lexington Avenue to about Forty-sixth Street.

2. A two-track subway extension connecting with the four tracks above proposed from a point near Forty-sixth Street, running north under Lexington Avenue to East 120th Street and the Harlem River; same to be used for purely local service and connecting with all of the existing subways and the subways that we now propose.

3. A two-track subway connecting with the proposed four-track subway in Lexington Avenue at about Forty-sixth Street and then under Third Avenue northerly, passing under the Harlem River to East 149th Street, the Melrose district of The Bronx, there again connecting with the existing subway to West Farms and devoted solely to express service of the most rapid kind.

4. A four-track subway extension on the West Side connecting at Times Square with the present subway and running under Seventh Avenue and Varick Street to Canal Street.

5. From Varick Street or West Broadway, a two-track subway extension, southerly by way of West Broadway, to Greenwich Street, southerly by way of Greenwich Street to the Battery, and there looped into the present subway.

6. A two-track subway, beginning at Varick Street or West Broadway, running easterly under Canal Street to and over the Manhattan Bridge to Nevins Street, in Brooklyn, and there connecting with the existing city's subway to Flatbush Avenue.

7. A two-track subway extension from Park Avenue and Forty-second Street through the Steinway tunnel into Long Island City, Queens County, at Van Alst Avenue.

These plans involve about 18 miles of new tunnel construction, with 44 miles of new track, and, if completed, the city would own a subway route which, beginning on the west side of The Bronx at 242d Street, the parade ground of Van Cortlandt Park, would run south along the west side of Manhattan to the Battery, and from there north on the East Side to East 180th Street, at the Zoological Garden in Bronx Park, with transverse connections from East 149th Street, the Melrose district of The Bronx, down Lenox Avenue to West 103d Street, through Forty-second Street from Fourth Avenue to Times Square, and at Canal Street, from Varick Street, or West Broadway, to and across the Manhattan Bridge, connecting with the city's subway at Nevins Street and running to Flatbush Avenue, Brooklyn, together with a passage through the Steinway tunnel into the Borough of Queens, the whole operating under a 5-cent fare.

The elevated extensions proposed are as follows:

1. A two-track elevated extension from Eighth Avenue and 149th Street on the West Side over the Macomb's Dam Bridge, with a third track beginning at about 162d Street, out Jerome Avenue to the reservoir, three blocks beyond the Fordham Road.

2. A two-track Second Avenue extension from Chatham Square to the City Hall, thus enabling Second Avenue passengers to go directly to the Brooklyn Bridge, and providing there a four-track terminal.

3. One new track for express service on the Second Avenue elevated to the Harlem River.

4. One new track on the Third Avenue road from Chat-

ham Square to Forty-second Street, which, when connected with its present facilities, will provide an additional track for express service through to 149th Street.

5. A center track on the Ninth Avenue elevated, running from Cortlandt Street to Fourteenth Street, which, with certain station changes at 116th Street and 125th Street, will permit an express service on a third track from Rector Street to 155th Street, a distance of 9½ miles and thence along the proposed Jerome Avenue extension, a distance of 3 miles more.

6. Connect two of the existing tracks on the Queensboro Bridge to the Second Avenue elevated line at or near Fifty-ninth Street. Between Fifty-fifth and Fifty-ninth Streets the Second Avenue elevated line will contain four tracks. This will give an elevated railroad connection from the plaza of the Queensboro Bridge in Long Island City direct to the City Hall or South Ferry station of the Manhattan elevated roads via Second Avenue, together with a connection with the existing elevated roads in Manhattan Island and The Bronx, with a single 5-cent fare.

The company also proposes to lengthen the present subway stations with the use of the city's money. In closing it says it is willing to separate this proposition and the propositions for the elevated line work, and the proposition for the subway extensions, and is willing to go ahead with the third tracking of elevated lines, regardless of favorable action on the subway proposition, but the statement continues:

"As at present advised, we are hardly prepared to go on with the expensive subway extensions herein proposed without the additional support we would derive from the third tracking of the elevated roads. We feel, moreover, that we must make our propositions with respect to the Steinway tunnel, the extensions over the Manhattan and Queensboro bridges and the Jerome Avenue extension of the Sixth Avenue elevated line, which become practicable only if the Interborough Rapid Transit Company can conserve its credit by constructing the subways under the most economical plan possible, contingent upon the acceptance of our present proposition to build four-track subway extensions and to third track the elevated railroads."

President Shonts, of the company, in his letter to the commission, says:

"I think it must be conceded that no private company can safely undertake to build new subways with the increased cost of construction now prevailing, unless relieved of the burden of dealing with property owners for the right-of-way and of the heavy franchise taxes which might be imposed upon the property if privately owned. The favorable construction privileges contained in the original lease must also be extended to the new construction."

The subway plan of the company departs from the former plans of the commission by a diversion of two of the four tracks proposed for Lexington Avenue to Third Avenue. This is done, it is said, because of the narrowness of Lexington Avenue, which would entail heavy judgments against the city for property damages if four tracks should be built beneath that thoroughfare.

The Board of Estimate of New York approved on July 2 the report of its special subway committee to grant the request of the Public Service Commission for permission to advertise for bids on all the subway plans now before it.

The people of the State of New York, represented by the Public Service Commission, has recovered a judgment of \$1 against Frederick W. Whitridge, receiver of the Third Avenue Railroad, as a penalty for building a loop at the Fort George terminal of the railroad without first obtaining permission of the commission. The suit was to recover a penalty of \$5,000 a day for 15 days. For Mr. Whitridge Joseph H. Choate, Jr., said that permission had been asked from the commission, but that it was so slow in coming that, since the loop was a necessity, the receiver went ahead with the construction, not expecting any opposition from the commission.

Cleveland Traction Situation

The retail and wholesale boards of the Cleveland Chamber of Commerce have adopted resolutions condemning the course pursued by Mayor Johnson in prolonging the traction struggle through the passage of the Schmidt grants. The wholesale board has pledged its support to the committee of 100, and especially the retail members of that board, who have been attacked by the Mayor in his circular.

The executive committee of the committee of 100 has

been at work for several days on plans for the campaign against the Schmidt grants, but no details have been announced. It is expected that the real work will be begun about July 15 and that a whirlwind speaking campaign will be conducted until Aug. 3, the date of the referendum election. Business men, lawyers and others who are accustomed to talking in public will be enlisted in this work. All of Mayor Johnson's arguments will be answered. The local organization of street railway men will also take part in the campaign. They have no desire again to come under the superintendence of a company managed by Mr. Johnson.

Mayor Johnson has asserted several times that he would prove from the reports furnished by the receivers of the Municipal Traction Company recently that the 3-cent lines are paying expenses and making sufficient profit to pay dividends upon the investment. He has not gone into this matter, but says that 85 per cent of the lines in Cleveland will be operated at 3 cents if the Schmidt franchise is upheld. Every time he speaks in public the Mayor reiterates the statement that the Tayler ordinance means a 5-cent fare and that the committee of 100 favors the 5-cent rate. As a matter of fact, the Tayler ordinance provides for an initial fare of 3 cents which may be raised if the returns are not sufficient to furnish good service and pay dividends of 5 per cent on the stock of the company. The cost of transportation, however, is never to exceed the fare represented by seven tickets for 25 cents, except when paid in cash, and then the fare is to be five cents.

The Forest City Railway owes taxes amounting to \$18,000, while the Low Fare Railway is indebted \$400 for the same purpose for the year 1908. No provision has been made on the books of the Municipal Traction Company for the payment of the taxes and it is not known whether they will be classed as general or preferred claims. Some discussion has arisen as to the possibility of paying the general claims against the Municipal Traction Company, and the opinion of some attorneys is that those who have general claims will get only a very small dividend.

New Line Opened Between St. Paul and Minneapolis.

The new Fort Snelling Bridge across the Mississippi River at Minneapolis has been accepted, and the Twin City Rapid Transit Company has established a service of through cars on the new Snelling-Minnehaha interurban line from Hennepin Avenue and Fifth Street, Minneapolis, to East Seventh Street, St. Paul.

New Nebraska Line Opened.—The Nebraska Traction & Power Company, which is building an electric railway from Omaha to South Omaha, Ralston and Papillion, has placed the line in operation between Forty-fourth Street and Q Street, Omaha, and Seymour Lake. It is expected that service will soon be extended to Ralston and that in the fall the line will be in operation to Papillion.

New Mail Contract in Brooklyn.—A new agreement has been made between the Brooklyn Rapid Transit Company and the Post Office Department for the transportation of mail in Brooklyn between the general post office and the substations. It is understood that the company will hereafter receive about \$42,000 a year for this service, as compared with a compensation of about \$39,000 a year paid formerly.

Texas Occupation Tax Decision Upheld.—The Supreme Court of Texas on June 24, in the case of the Dallas (Tex.) Consolidated Electric Street Railway against the State, affirmed the decision of the lower courts holding that the Act of May 16, 1907, levying an occupation tax consisting of a percentage of the gross earnings of street railway companies does not repeal that part of the Act of 1897 which imposes an occupation tax on street railways of \$2 per mile of road.

Large Steam Railroad Electrification Proposed in France.—The Chemins de Fer du Midi, one of the large steam railroads in France, has awarded the first of its contracts for the electrification of its main line from Bordeaux to Toulouse. The line to be equipped is more than 250 miles long. The single-phase system at 15 cycles will be used. The order for electrical equipment for the first section of the line, which should be in operation in about a year, was divided among a number of electrical manufacturing companies.

Franchise Must Go to Highest Bidder.—The Court of Appeals of New York has decided that a municipality must sell a railroad franchise to the highest bidder, whether such bidder is a corporation or an individual. The case in which this opinion was handed down involved the sale of a franchise for the construction of an electric railway on Eighth Street, Sixth Avenue and other highways in Troy. Two bids were submitted for the franchise, one by Joseph A. Powers, representing the Trojan Railway, and the other

by the United Traction Company, Albany. The former bid was the highest by \$1. Mayor Mann rejected the Powers bid and accepted that of the United Traction Company.

Franchise Valuations in New York.—The New York State Board of Tax Commissioners announced on June 30 that the aggregate special franchise valuation in the State this year, exclusive of four cities, is \$578,458,837. The assessments for Albany, Binghamton, Mount Vernon and New Rochelle have not yet been fixed. Last year the total of these cities was \$9,055,375. The total assessment for the entire State last year was \$607,069,557. The decrease this year is due to the revision made in the assessments on the properties of the Consolidated Gas Company, New York, in compliance with the decision of the United States Supreme Court in the 80 cent gas litigation. The total assessment in Greater New York last year was \$492,492,970, as against \$474,501,900 for this year, a decrease of nearly \$18,000,000.

Conductor Sentenced in Brooklyn.—Frederick Lehefeld, a conductor in the employ of the Brooklyn Rapid Transit Company, who was recently convicted of forgery, was sentenced by Judge Dike on June 28 to serve not more than 5 years and not less than 2½ years at Sing Sing. Before he sentenced Lehefeld, Judge Dike stated that he had investigated the case thoroughly and had learned that the prisoner had worked for 13 railway companies, and to each of them had given a fictitious name. His scheme was to write letters to the different companies endorsing himself for appointment and signing the name of an official of the company. By presenting a letter of this sort to the employment bureau, he generally secured work. In investigating the man's career it was discovered that he kept a diary in which he recorded his receipts for each day and the amount which he retained for himself.

Short Tunnel Advocated for San Francisco.—The board of directors of the Merchants' Association of San Francisco, which has been considering the transit situation in San Francisco, advocates that Twin Peaks be tunneled to provide a thoroughfare for street cars, wagon and automobile traffic and pedestrians as the readiest way in which to develop the southern districts of the city. The idea is to start the tunnel at about the junction of Market Street and Castro Street and to have it emerge near the almshouse tract and continue thence down the peninsula. The board also favors a street railway express service. In its report it says: "It is absolutely necessary that not only should the present car lines be extended but also that there should be some system of rapid transit provided with express trains that would travel with high speed and not stop except at intervals of four or five blocks, so that people could travel from the central portion of the city to the outlying districts in 15 or 20 minutes."

Meeting of General Managers' Association.—The general managers of the Fort Wayne & Wabash Valley Traction Company, the Norfolk & Portsmouth Traction Company, the Newport News & Old Point Railway & Electric Company, the Lexington & Interurban Railway and the Ohio River Electric Railway & Light Company, all of which are controlled by the same interests, met at Fort Wayne, Ind., on June 28 and 29 to discuss subjects of general interest and consider problems affecting the different properties. The program which was originally intended to take up a large part of the second day of the meeting had to be postponed until the association meets in Norfolk, Va., in August. While at Fort Wayne those in attendance at the meeting were the guests of C. D. Emmons, general manager of the Fort Wayne & Wabash Traction Company, who took them over the lines of the Fort Wayne & Wabash Valley Traction Company and to Lafayette, Anderson, Muncie and Bluffton on a tour of inspection of interurban railways.

Terms Proposed for Camden-Philadelphia Tunnel.—Members of the special committee of the City Council of Camden, N. J., city officials and a representative of Stern & Silverman, who are promoting the Camden Tunnel Railway, which proposes to build a tunnel between Camden and Philadelphia, conferred recently with E. G. C. Bleakley, counsel of Camden, on the proposed ordinance granting a franchise to the Camden Tunnel Railway. These terms have been proposed for the right to operate in Camden, but are subject to approval: At the end of three years the company will begin to pay the city an annual rental of \$2,500 which is to be increased progressively each year until at the end of six years it will amount to \$16,000 annually. These amounts are as follows: First year, \$2,500; second year, \$5,000; third year, \$6,000; fourth year, \$7,500; fifth year, \$10,000; sixth year, \$12,000; seventh year, \$16,000 and thereafter annually the same amount. Unless work on the tunnel is commenced within one year and the entire system is completed within five years, the franchise is to lapse.

Financial and Corporate

New York Stock and Money Market

July 6, 1909.

After the three days' holiday the stock market to-day was sluggish with prices rather firmly maintained. The Harriman shares, especially Southern Pacific, led in the trading, due to the fact that foreign reports indicated heavy buying abroad. United States Steel common remained steady, in spite of the definite announcement that the plan for Paris listing had failed. Third Avenue stock was heavy during the earlier part of the day, receding to 16, but at the close recovered to the highest point of the day. Interborough shares were fairly active and prices were maintained. The bond market continues strong.

The money market is still easy, supplies plentiful and rates low. Quotations to-day were: Call, 1½ to 1⅞ per cent; 90 days, 2½ per cent.

Other Markets

There has been less activity in the traction issues in the Philadelphia market during the past week. There has been no pressure to sell Rapid Transit and prices have remained stationary on light trading. Quotations for Philadelphia Traction and Union Traction are practically unchanged.

The most active traction issue in the Chicago market has been Kansas City Railway & Light. Although the trading has been within narrow limits, prices within the week have advanced almost two points. There have also been limited sales of all the Chicago Railways issues.

In Boston there has been little trading in tractions. A few shares of Boston Elevated and Massachusetts Electric preferred have been in the market, but there have been no price changes worth mentioning.

United Railways bonds have been the only traction securities in evidence in the Baltimore market. The closing prices for these to-day were: incomes 57½, 4s 87 and refunding 5s 82½.

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

| | June 29. | July 6. |
|--|----------|---------|
| American Railways Company..... | a45¾ | a45½ |
| Aurora, Elgin & Chicago Railroad (common)..... | 39½ | a40½ |
| Aurora, Elgin & Chicago Railroad (preferred)..... | a88 | a87 |
| Boston Elevated Railway..... | 120 | 129½ |
| Boston & Suburban Electric Companies..... | *16 | *16 |
| Boston & Suburban Electric Companies (preferred)..... | *71 | *71 |
| Boston & Worcester Electric Companies (common)..... | 10 | 10 |
| Boston & Worcester Electric Companies (preferred)..... | a56 | 52½ |
| Brooklyn Rapid Transit Company..... | 79½ | 79¼ |
| Brooklyn Rapid Transit Company, 1st ref. conv. 4s..... | 87½ | 86¾ |
| Capital Traction Company, Washington..... | a135 | a139 |
| Chicago City Railway..... | a190 | a190 |
| Chicago & Oak Park Elevated Railroad (common)..... | *4 | *3 |
| Chicago & Oak Park Elevated Railroad (preferred)..... | *14 | *12 |
| Chicago Railways, ptcptg. ctf. 1..... | a109 | a113 |
| Chicago Railways, ptcptg. ctf. 2..... | a38 | a40½ |
| Chicago Railways, ptcptg. ctf. 3..... | a28 | a28 |
| Chicago Railways, ptcptg. ctf. 4s..... | a10 | a10 |
| Cleveland Electric Railway..... | *78 | *78 |
| Consolidated Traction Company of New Jersey..... | a78½ | a76½ |
| Consolidated Trac. Co. of N. J. 5 per cent bonds..... | a106½ | a106½ |
| Detroit United Railway..... | a62 | a62 |
| General Electric Company..... | 161¾ | 164¾ |
| Georgia Railway & Electric Company (common)..... | a93 | a92¾ |
| Georgia Railway & Electric Company (preferred)..... | 87 | 87 |
| Interborough-Metropolitan Company (common)..... | 165½ | 16¼ |
| Interborough-Metropolitan Company (preferred)..... | 50½ | 49¾ |
| Interborough-Metropolitan Company (4½s)..... | 79½ | 80 |
| Kansas City Railway & Light Company (common)..... | a49 | 51 |
| Kansas City Railway & Light Company (preferred)..... | a84¾ | 83 |
| Manhattan Railway..... | a147 | a147 |
| Massachusetts Electric Companies (common)..... | a13¾ | a13¾ |
| Massachusetts Electric Companies (preferred)..... | 71 | 70 |
| Metropolitan West Side, Chicago (common)..... | a17 | a17 |
| Metropolitan West Side, Chicago (preferred)..... | a50 | a48½ |
| Metropolitan Street Railway..... | 26 | 18 |
| Milwaukee Electric Railway & Light (preferred)..... | *110 | *110 |
| North American Company..... | 82½ | 83¾ |
| Northwestern Elevated Railroad (common)..... | a23 | a23 |
| Northwestern Elevated Railroad (preferred)..... | a69½ | a70 |
| Philadelphia Company, Pittsburg (common)..... | a42½ | 42 |
| Philadelphia Company, Pittsburg (preferred)..... | a43 | 43 |
| Philadelphia Rapid Transit Company..... | a28½ | a28½ |
| Philadelphia Traction Company..... | a01½ | a01 |
| Public Service Corporation, 5 per cent col. notes..... | a100½ | a100½ |
| Public Service Corporation, ctf. s..... | a88½ | a89 |
| Seattle Electric Company (common)..... | *112 | *112 |
| Seattle Electric Company (preferred)..... | *102 | *103 |
| South Side Elevated Railroad, Chicago..... | a55½ | a55 |
| Toledo Railways & Light Company..... | a8½ | 40 |
| Third Avenue Railroad, New York..... | 21 | 18 |
| Twin City Rapid Transit, Minneapolis (common)..... | 103½ | a104 |
| Union Traction Company, Philadelphia..... | a52½ | a53½ |
| United Railways & Electric Company, Baltimore..... | a11¾ | 11 |
| United Railways Inv. Co., San Francisco (common)..... | a39 | a39 |
| United Railways Inv. Co., San Francisco (preferred)..... | a56½ | 56 |
| Washington Railway & Electric Company (common)..... | a12½ | a12¾ |
| Washington Railway & Electric Company (preferred)..... | a90¾ | a91 |
| West End Street Railway, Boston (common)..... | 92½ | a93 |
| West End Street Railway, Boston (preferred)..... | 101 | *106 |
| Westinghouse Electric & Manufacturing Company..... | 85 | a85 |
| Westinghouse Elec. & Mfg. Company (1st pref.)..... | 121¼ | a124¼ |

a. Asked. *Last sale.

Report of Hudson & Manhattan Railroad

The report of the Hudson & Manhattan Railroad for the year ended June 30, 1908, as made public by the Public Service Commission, First District, shows the following income account from Feb. 26, 1908, to June 30, 1908, for the portion of line completed and in operation from Nineteenth Street and Sixth Avenue, New York, to Hoboken, N. J.:

| REVENUES. | |
|--|---------------------|
| Passenger revenue..... | \$218,186.10 |
| Income from station privileges..... | 3,492.64 |
| Other miscellaneous..... | 736.87 |
| Total operating revenue..... | \$222,415.61 |
| OPERATING EXPENSES. | |
| Maintenance of way and structures..... | \$37,267.16 |
| Maintenance of equipment..... | 18,973.50 |
| Operation of power plant..... | 77,771.20 |
| Operation of cars..... | 65,527.06 |
| Damages (including legal expenses)..... | |
| General expenses..... | 30,141.69 |
| Total..... | 229,680.61 |
| Operating loss..... | \$7,265.00 |
| REVENUE FROM OUTSIDE OPERATIONS. | |
| From Hudson Terminal buildings..... | \$110,048.57 |
| Less operating expenses..... | 38,467.90 |
| From other real estate..... | \$71,580.67 |
| Total..... | 73,626.77 |
| Operating income (revenue less expenses)..... | \$66,361.77 |
| Interest on bank balances, etc..... | 647.96 |
| Gross income..... | \$67,009.73 |
| DEDUCTIONS FROM INCOME. | |
| Preliminary expenses prior to opening to public..... | \$7,148.55 |
| Preliminary expenses Hudson Terminal buildings..... | 12,721.53 |
| Total..... | \$19,870.08 |
| Less adjustment in stock material values..... | 319.00 |
| Surplus for period..... | \$47,458.65 |

The downtown system which will extend from the Hudson Terminal at Church, Cortlandt, Fulton and Dey Streets, New York, to Jersey City, N. J., is still in course of construction. The entire length of the projected line is about 8.8 miles of double track and 8.1 single track. All taxes during the period of construction are payable by the construction company.

The cost of road and equipment stood on the balance sheet as of June 30, 1908, at \$101,514,348.

The following additional information is furnished:

| | |
|---|-----------|
| Miles of first track (in operation June 30, 1908)..... | 3.31 |
| Miles of second track (in operation June 30, 1908)..... | 3.30 |
| Total track mileage (electrically operated subway and tunnels)..... | 6.80 |
| Thereof, mileage in State of New York..... | 4.22 |
| Average number of cars operated..... | 40 to 45 |
| Total number of trips made (estimated)..... | 27,840 |
| Total passenger car-miles run..... | 618,742 |
| Passengers—number of 5-cent fares..... | 4,363,722 |

Hearings on Third Avenue Railroad Reorganization

The hearing before the Public Service Commission of the First District of New York set for June 29, on the proposed plan for the reorganization of the Third Avenue Railroad, mention of which was made on page 50 of the ELECTRIC RAILWAY JOURNAL for July 3, 1909, was postponed until July 7. Frederick W. Whitridge, receiver of the Third Avenue Railroad, was unable to be at the hearing on June 29, and a number of stockholders requested additional time in which to consider the plan.

The argument of the bondholders' committee which drew up the reorganization plan was heard first at the hearing on July 7. John M. Bowers, counsel for the committee, pointed out the merits of the plan. He concerned himself largely with the legal side. According to Mr. Bowers, the plan follows the principles laid down in the reorganization of the Erie Railroad, in reducing the fixed charges against the company by having the holders of old mortgage bonds accept an income bond instead of a security involving a fixed charge on the property. Mr. Bowers presented in his argument the basis of the exchange of the new securities for the old by means of this table:

| | |
|--|---------------------|
| Old bonds, principal and interest..... | \$40,640,000 |
| Stock..... | 16,000,000 |
| Total..... | \$56,640,000 |
| To be issued: | |
| Refunding mortgage bonds..... | \$15,516,800 |
| Adjustment bonds..... | 31,045,000 |
| Stock..... | 20,000,000 |
| Total..... | \$66,561,800 |
| Difference..... | 9,021,800 |
| To be used to raise cash of..... | 7,500,000 |

The refunding mortgage and adjustment bonds in the

tabulation are those which it is proposed to issue for the old consolidated bonds, plus \$6,000,000 of the refunding bonds, and \$1,000,000 of the adjustment bonds, which are to be sold by the syndicate. Mr. Bowers said the plan appeared to be the only one under which the cash required could be raised, and that any other plan would involve wiping out the stock.

Mr. Whitridge followed Mr. Bowers. He said that he based the estimates submitted by him to the bondholders' committee as to the earnings of the property on the income of the Third Avenue system in the December and March quarters—the two worst of the year. The net earnings for December, after paying the interest on the existing \$5,000,000 first mortgage bonds, a small amount of taxes, the interest on the receiver's certificates, and on about \$6,000,000 additional of underlying liens, were \$406,000 in round figures, and they were \$177,000 for the March quarter. The net earnings for April were \$106,000; the net earnings for May were \$197,000, and for June would be less than for May. He felt justified in estimating, therefore, that the Third Avenue Railroad would begin its reorganized career with net earnings, after payment of interest on the prior liens, of about \$1,500,000, and after deducting an allowance of \$300,000 a year for depreciation, he felt that \$1,200,000 would remain applicable to return on the securities to be reckoned with in the reorganization. Mr. Whitridge said that after the reorganization there would be some increases in operating cost, but that these would be offset by saving in other directions, such, for instance, as an item of \$140,000 which he has paid out this year for lawyers. The development of traffic in the Borough of the Bronx, which has been neglected somewhat, would help the earnings of the company materially, as that borough is increasing steadily in population and many of the residents are largely dependent upon the lines of the company for transportation to and from the business section of New York.

It was pointed out that \$1,552,000 would be required for the full interest on the 5 per cent income bonds proposed, and that there would be a deficit on this interest of \$900,000, an amount which is due before there is any return on the stock. Mr. Whitridge was then asked upon what he predicated any estimate of value for the stock, on which the stockholders are asked to pay \$25 a share. According to him, the matter of an estimate for the value of the stock is a subject for each holder to decide for himself. He said that he personally might think the stock to be worth next to nothing, but that the stockholders might think it to be worth \$25 a share.

Camden & Trenton Railway, Camden, N. J.—Under the plan of reorganization of the Camden & Trenton Railway, approved by committees representing the first general mortgage bondholders, it is provided that a new corporation be formed to take over the property at foreclosure sale, which will take place shortly, to be known as the Riverside Traction Company, and that \$124,500 of the preferred stock of the new company shall be sold at par for cash to provide working capital. The committees report that all of this stock has been sold for cash and that the full purchase price thereof has been paid to the West End Trust Company as depository. The remaining funds necessary for the rehabilitation of the road will be derived from the sale of first mortgage bonds. It is probable that between \$300,000 and \$400,000 will in this way be provided for capital expenditures.

Chicago (Ill.) Consolidated Traction Company.—The receivership of the Chicago Consolidated Traction Company and its underlying leaseholds has been formally extended by Judge Grosscup to the North Shore Street Railway. David R. Forgan and John M. Roach, receivers of the Consolidated Traction Company, were appointed receivers for the North Shore Street Railway and the receiverships were consolidated.

Cleveland (Ohio) Electric Railway.—Horace E. Andrews, president of the Cleveland Electric Railway, announced on June 29 that the \$2,026,000 of Cleveland City Railway first mortgage 5 per cent gold bonds, dated July 1, 1889, which matured July 1, 1909, and the accompanying coupons, July 1, would, on and after July 1, 1909, be taken up by N. W. Harris & Company, New York, N. Y. The Cleveland Electric Railway has sold to N. W. Harris & Company, \$2,128,000 of an authorized issue of \$3,179,000 of 5 per cent gold bonds dated July 1, 1909, and due Jan. 1, 1912, but subject to call at par and accrued interest on and after March 1, 1910, on 60 days' notice. The new bonds will be secured by deposit of the bonds retired and also by a general lien on the entire property of the Cleveland Railway, subject to the outstanding bonds, and on payment of the \$1,000,000 East Cleveland Railroad bonds (for which the escrow bonds of the under the new 2½-year mortgage are reserved) in March, 1910. They will be further secured

by a collateral lien on the portion of the property now covered by that mortgage.

Conneaut & Erie Traction Company, Erie, Pa.—A plan has been proposed and assented to for the reorganization of the Conneaut & Erie Traction Company, now in the hands of Robert W. Watson, Harrisburg, as receiver. It is proposed to organize the Cleveland & Erie Traction Company as the successor to the Conneaut & Erie Traction Company. The Conneaut & Erie Traction Company had a capital stock of \$800,000, \$800,000 first mortgage 5 per cent bonds and about \$400,000 second mortgage 5 per cent bonds. In the plan of reorganization the old first mortgage bondholders will receive \$500,000 in new first mortgage 5 per cent bonds and \$500,000 in 5 per cent income bonds. Holders of the old second mortgage will receive \$500,000 in the new incomes and the capital stock of the new company. The capital stock will be placed in control of five voting trustees. One hundred thousand dollars of the new first mortgage 5 per cent bonds will be used to raise new money, as will also a like amount of the new incomes. The new money will meet all expenses of reorganization and leave \$50,000 in the company's treasury as working capital. Receiver Watson will be president of the new company. Present plans of the new management are said to include a working agreement with the Cleveland, Painesville & Ashtabula Railroad, which is now controlled by the Cleveland, Painesville & Eastern Railroad, which will give the Cleveland & Erie Traction Company a through line from Erie to Cleveland.

Consolidated Railway & Power Company, Fayetteville, N. C.—Wm. D. McNeill, president of the Consolidated Railway & Power Company, has been appointed receiver of the company.

Interborough Rapid Transit Company, New York, N. Y.—Following the decision of the Public Service Commission of the First District of New York that it was unnecessary formally to grant authority to the Interborough Rapid Transit Company for the issuance of \$10,000,000 of 5 per cent bonds for the retirement of an equal amount of three-year 5 per cent notes which fall due on March 1, 1910, but which are subject to call at 101, it was announced that the company had closed negotiations with J. P. Morgan & Company for the purchase of the bonds. This \$10,000,000 bonds is the first lot of the \$55,000,000 authorized in April, 1909, to be sold publicly. At the present time \$30,000,000 of the bonds are issued but deposited as collateral under the \$25,000,000 three-year 6 per cent notes, which were purchased last year at 97 by a syndicate managed by Morgan & Company.

Interstate Railways Company, Philadelphia, Pa.—The directors of the Interstate Railways Company have approved the plan of Geo. H. Earle, Jr., for the rehabilitation of the company. It is proposed that the 4 per cent bonds be deposited in trust for five years and the income of the company be used for necessary betterments. If any surplus is available after the expenditure of \$500,000 or more per year for betterments, it shall go toward paying the interest. The amount needed to pay the 4 per cent interest on the \$10,776,600 bonds, or \$431,064 per annum, is to be obtained by the issue of 6 per cent script. Bondholders who prefer cash may so elect and the script they refuse will be sold to provide funds for the cash payments. The plan further provides that certificates of the Philadelphia Trust Company issued to the bondholders who recently deposited their bonds under agreement with E. B. Smith & Company will be accepted by the trustees in lieu of the bonds. The plan is to be declared operative when the committee decides that a sufficient number of the bondholders has assented by the deposit of their shares with the Real Estate Trust Company.

Long Island Electric Railway, Long Island City, N. Y.—The Long Island Electric Railway has asked the Public Service Commission of the First District of New York to approve a proposed reduction in its capital stock from \$2,100,000 to \$600,000. Some time ago the New York & North Shore Railway, with a capital of \$1,500,000, was consolidated with the Long Island Electric Railway. This stock did not represent actual value, as the property had been mortgaged for \$1,261,000, and most of it sold out later under foreclosure. Stockholders of the New York & North Shore Railway have turned over to the Long Island Electric Railway by voluntary surrender the \$1,500,000 capital stock. It was decided to reduce the capital stock to an amount which actually represented the value of the property. The directors of the Long Island Electric Railway approved the measure last year, and holders of outstanding certificates have since acquiesced.

New Orleans Railway & Light Company, New Orleans, La.—On June 28, 1909, a general meeting of the stockholders of the New Orleans Railway & Light Company was

held at the offices of the company in New Orleans, La., for the purpose of considering a plan submitted by the directors of authorizing the issuance of \$50,000,000 of 5 per cent 40-year first and refunding mortgage bonds. Out of a total of 300,000 shares of preferred and common stock entitled to vote 200,524 shares were cast, 182,490 shares voting in favor of the proposal and 18,034 shares against it. The purpose of the issue of bonds was fully explained in the abstract of the letter of Hugh McCloskey, president of the company, to the stockholders, published in the *ELECTRIC RAILWAY JOURNAL* of June 5, 1909, page 1058.

Northampton (Mass.) Street Railway.—The directors of the Northampton Street Railway have decided not to pay a dividend in July on the \$400,000 stock. In January, 1909, 2½ per cent was paid; in 1908, 3 per cent semi-annually, and 3 per cent in July and 4 per cent in January, 1907.

Peoria (Ill.) Railway.—N. W. Halsey & Company, New York, N. Y., are offering at 98 and interest the unsold portion (less than \$500,000) of a block of \$1,500,000 "first and refunding" 5 per cent gold bond of the Peoria Railway, dated June 20, 1906, and due serially Feb. 1, 1910-1920, and subject to call at 105 on any interest date. The bonds are unconditionally guaranteed by endorsement, both as to principal and interest, by the Illinois Traction System.

Quebec Railway, Light & Power Company, Quebec, Que.—On June 25, George H. Thompson, president, and John Sharples, Wm. Shaw and Wm. Hanson, directors of the Quebec Railway, Light & Power Company, resigned. New officers have been elected as follows: W. G. Ross, of the Montreal Street Railway, president; Frank Ross, Quebec, vice-president; L. C. Marcoux, N. Bealleau, Wm. Price, M.P., and Frank Ross, Jr., Quebec; Robert Mackay, J. N. Greenshields and Rudolphe Forget, M.P., Montreal, directors.

San Diego (Cal.) Electric Railway.—The San Diego Electric Railway has purchased the South Park & East Side Railway, San Diego, which operates 3½ miles of line in San Diego.

Toledo, Bowling Green & Southern Traction Company, Toledo, Ohio.—At a meeting of the directors of the Toledo, Bowling Green & Southern Traction Company, on June 30, the officials of the company expressed themselves as being in favor of increasing the capital stock of the company by \$750,000, issuing new bonds through the transfer of the bonds now held by the stockholders and lifting the receivership of and taking over the Toledo, Urbana & Interurban Railway. A plan for carrying this proposal into effect will be submitted to the stockholders of the Toledo, Bowling Green & Southern Traction Company at a meeting to be held at Findlay on Aug. 6, 1909.

Toledo Railways & Light Company, Toledo, Ohio.—The bondholders' committee of Toledo Railways & Light Company recently sent a letter to holders of the first mortgage 4 per cent consolidated bonds in which they said that the company would not be able to pay the principal or interest on the \$4,866,000 bonds maturing July 1, and asking that no summary or drastic action be taken against the company because of the defaults. Practically all of these bonds are deposited with the committee, which has agreed not to institute foreclosure proceedings. This is the third default on the interest payments.

Virginia Railway & Power Company, Richmond, Va.—Under a decree directing the delivery of property and approving the deed of conveyance, Judge Edmund Waddill, Jr., of the United States Circuit Court, at Richmond, Va., on June 30 formally ended the receivership of the Virginia Passenger & Power Company, and at midnight the Virginia Railway & Power Company assumed control of the street railways of Richmond, Petersburg and Manchester, with the interurban connections. The company has organized as follows: Frank Jay Gould, New York City, chairman of board of directors; William Northrop, Richmond, president; Fritz Sitterding, Richmond, vice-president; Henry W. Anderson, Richmond, vice-president and general counsel; Guy Phillips, New York, secretary and treasurer; George B. Williams, Richmond, assistant secretary and assistant treasurer; R. H. Keim, Richmond, general auditor; A. B. Guigon, Richmond, assistant counsel; G. H. Whitfield, Richmond, general superintendent of light and power department; C. B. Buchanan, Richmond, general superintendent of railways.

West End Street Railway, Boston, Mass.—The shareholders' protective committee has sent out a circular letter stating that, at the request of the Boston Elevated Railway, the matter of consolidation has been referred by the Legislature to a commission composed of the Railroad Commissioners and the Boston Transit Commission, which will hear the parties interested and report to the next Legislature whether or not changes advocated by the committee are judicious and consistent with the public interest.

Traffic and Transportation

Regulations of Washington Commission Amended

At a general session of the Interstate Commerce Commission held at Washington, D. C., on June 21, 1909, a number of amendments and additions to the rules and regulations for the operation and equipment of street railway cars within the District of Columbia were adopted. Section 5 was modified so as to read as follows:

"No street car shall move at a greater rate of speed than 15 miles an hour in Washington, nor at a greater rate of speed than 20 miles an hour in the suburbs of said city. Street cars shall not exceed a rate of speed greater than 6 miles an hour at street crossings. When it is necessary for street cars to stop at street crossings they shall stop on the near side thereof; the front end of the car or train to rest on a line with the curb on the near side of the intersecting street, except where the mechanical appliances make it impracticable to do so: Provided, that in cases where stops are now allowed on both sides of a crossing, such stops may be continued if the railroad companies so desire: Provided, that cars moving south on Seventh Street, northwest, shall be allowed to stop on the far side of Rhode Island Avenue in lieu of the near side thereof, that cars moving east on New York Avenue, northwest, shall stop on both sides of Thirteenth Street when requested to do so, and that cars of the Capital Traction Company moving south on the Fourteenth Street line shall stop after rounding the curve at New York Avenue, northwest, in lieu of stopping before rounding said curve. No motorman or conductor shall refuse to stop to take up a passenger at any street crossing or other regular stopping place unless all the seats in the car or train are occupied. No motorman or conductor shall refuse to stop to let off a passenger at any street crossing or other regular stopping place."

It was ordered that the following be substituted for Section 1:

"Every street railway car other than trailers operated in the District of Columbia shall be equipped with front automatic or platform-operated projecting pick-up fenders and with automatic wheel guards. The front end of projecting fenders shall not have an elevation of more than six inches above the rail when in their normal position, and the front end of wheel guards shall not have an elevation of more than four inches above the rail when in their normal position. Wheel-guard gates shall not be more than five inches above the rail when in their normal position. Wheel-guard gates shall not travel more than six inches from their normal position before tripping the guard."

This section is to become effective on Sept. 1, 1909.

It was also ordered that Section 3, which says that platforms of street cars shall be guarded by gates of a construction and operation approved by the Interstate Commerce Commission, be amended so as to read as follows:

"Platforms of street cars shall be guarded by gates. That side of open or summer cars adjacent to the track opposite that upon which the car is running shall be provided with a guard rail."

This section is to become effective on Sept. 1, 1909.

It was further ordered that Section 4, regarding that fenders must be kept in thorough working order and in good repair when in use, be amended to read as follows:

"The fenders and wheel guards must be kept in thorough working order and in good repair when in use."

This section is to become effective on Aug. 1, 1909.

It was further ordered that Section 10, requiring that all new double-truck suburban or interurban electric cars placed in service in the District of Columbia on or after Jan. 1, 1909, shall be equipped with an approved type of air brake in addition to the usual hand brake, be amended so as to read as follows:

"All cars provided with four motor equipments which shall be operated in the District of Columbia on or after July 1, 1909, shall be equipped with air brakes in addition to the ordinary hand brake."

The following regulations were added:

"13. All motor cars must be provided with four sand boxes. A tube, not less than two inches inside diameter, shall lead from each box to the front wheel of each truck, terminating in front of and as close as practicable to the wheel, directly over the rail and not more than six inches above the rail.

This section is to become effective on Nov. 1, 1909.

"14. All sand boxes shall be kept in working order at all times and shall be kept well supplied with dry sand which shall be best suited to assure the proper flow of sand."

This section is to become effective on Oct. 1, 1909.

"15. Gears shall be provided with complete cases which

shall be kept in good repair. Gears shall be kept well greased and in such proper condition as to reduce to a minimum the noise occasioned by the operation of the same. Truck bolts and other parts must be kept tight to avoid undue noise."

This section is to become effective on Sept. 1, 1909.

"16. Brake beams and shoe hangers must be kept tight and no more lost motion in these parts than is absolutely necessary will be allowed."

This section is to become effective on Sept. 1, 1909.

"17. Brake chains must be tested proof and must be kept in good repair."

This section is to become effective on Aug. 1, 1909.

"18. Link-hanger and slide-brake beams must have a safety hanger bolted to the truck."

This section is to become effective on Dec. 1, 1909.

"19. Car floors, platforms and steps must be kept in good repair."

This section is to become effective on Aug. 1, 1909.

"20. All cars must be equipped with grab-handles properly located and secured."

This section is to become effective on Aug. 1, 1909.

"21. Fuse boxes and circuit breakers on all cars must be provided with covers."

This section is to become effective on Sept. 1, 1909.

"22. No live contacts which are in reach of passengers or pedestrians will be permitted."

This section is to become effective on Sept. 1, 1909.

"23. All cars in operation in the District of Columbia which are equipped with air brakes shall also be equipped with a hand brake, both of which shall be kept in operative condition at all times. The hand brake shall be tested at least once on every round trip at a fixed point to be selected by the railway company and indicated to the Interstate Commerce Commission."

This section is to become effective on Aug. 1, 1909.

New York Commission Disapproves Wheel Guard

As mentioned briefly on page 47 of the ELECTRIC RAILWAY JOURNAL of July 3, 1909, the Public Service Commission of the First District of New York has disapproved the type of wheelguard in use upon the lines of the Second Avenue Railroad and the Central Park, North & East River Railroad, New York, the action of the commission being taken upon the recommendation of Milo R. Maltbie of the commission, who conducted the hearings. In reporting against the wheelguard, Mr. Maltbie submitted an opinion in which he says:

"In view of the many cases in which this pilot wheelguard has not prevented persons from being severely injured or killed, in view of the large sums paid out for damages and claims, and in view of the fact that all other lines have substituted other types for the type in question, it would seem that there was a prima facie case against its continuance.

"Mr. McLimont, formerly the electrical engineer of the commission, testified that non-automatic, shearing wheelguards (the one under consideration belongs to this class) must be carried at a height above the track of not more than one inch in order to be effective.

"The receiver of the Second Avenue Railroad maintained that the condition of the paving and track made it impracticable to operate with less than 2½ inches as a standard, and it is generally admitted that 1-inch clearance is out of the question.

"The facts and evidence seem to prove, in conclusion, that it is impossible to maintain the pilot wheelguard now being considered at a height of 1 inch from the rails under existing conditions in New York, that such conditions render necessary a clearance of at least 2½ inches on the lines under consideration, that even when special attention is given to maintenance there will be frequent cases where the guard will not be in a condition to save life or to prevent serious injury, and that persons and particularly children have passed under the guard and were killed. Out of 23 accidents since Aug. 5, 1907, in which pilot wheelguards were involved, 15 were fatal. In 41 other cases where it is believed this wheelguard was involved, there were 10 fatalities.

"The automatic-trip wheelguard, upon the other hand—a type manufactured by many companies and of which there are many varieties—can be carried normally 4 or 5 inches above the rails, out of the way of all ordinary obstruction, thus requiring little attention or expense for maintenance. When the trip is struck by the person upon the track, the apron is released and forced to the pavement by a spring. The edge of the apron passes under the body, picking it up and carrying it along until the car is stopped. This type is in use in hundreds of cities and is being introduced by

several companies in this city. Experience has proved its efficiency and practicability as a type.

"The commission is of the opinion that nothing is more important than the saving of human life, and that no street railway company can justify its action in equipping its cars with any but the most efficient designs. It may be added that the total expense to the two companies under consideration, made necessary by the installation of improved wheelguards throughout, would be about \$4,000 immediately and less than \$10,000 ultimately. Even from a financial point of view, the saving of one life would more than offset the cost of the entire installation."

C. E. R. A. List of Members

The Central Electric Railway Association issued under date of June 29, 1909, the following revised list of member companies with the number of miles of line they operate:

| Members. | Number of miles. |
|--|------------------|
| Angola Railway & Power Company..... | 4 |
| Chicago, Lake Shore & South Bend Railway..... | 77 |
| Chicago, South Bend & Northern Indiana Railway..... | 67 |
| Cincinnati, Lawrenceburg & Aurora Electric Street Railway..... | 32 |
| Cleveland, Painesville & Eastern Railroad..... | 60 |
| Cleveland, Southwestern & Columbus Railway..... | 169 |
| Columbus, Delaware & Marion Railway..... | 50 |
| Columbus, Marion & Bucyrus Railroad..... | 18 |
| Columbus, Magnetic Springs & Northern Railway..... | 18 |
| Dayton & Troy Electric Railway..... | 34 |
| Dayton & Xenia Transit Company..... | 27 |
| Detroit, Monroe & Toledo Short Line Railway..... | 56 |
| Evansville & Southern Indiana Traction Company..... | 33 |
| Evansville Railways..... | 49 |
| Fort Wayne & Springfield Railway..... | 22 |
| Fort Wayne & Wabash Valley Traction Company..... | 139 |
| Grand Rapids, Holland & Chicago Railway..... | 40 |
| Indiana Union Traction Company..... | 315 |
| Indianapolis, Columbus & Southern Traction Company..... | 59 |
| Indianapolis, Crawfordsville & Western Traction Company..... | 45 |
| Indianapolis & Cincinnati Traction Company..... | 103 |
| Indianapolis & Louisville Traction Company..... | 41 |
| Kokomo, Marion & Western Traction Company..... | 28 |
| Lake Erie, Bowling Green & Napoleon Railway..... | 20 |
| Lake Shore Electric Railway..... | 160 |
| Lebanon & Franklin Traction Company..... | 11 |
| Lebanon-Thorntown Traction Company..... | 9 |
| Louisville Railway & Lighting Company..... | 21 |
| Marion, Bluffton & Eastern Traction Company..... | 32 |
| Michigan United Railways..... | 117 |
| Muncie & Portland Traction Company..... | 32 |
| Northern Ohio Traction & Light Company..... | 140 |
| Ohio & Southern Traction Company..... | 5 |
| Ohio Electric Railway..... | 545 |
| Sandusky, Norwalk & Mansfield Electric Railway..... | 33 |
| Southeastern Ohio Railway, Light & Power Company..... | 15 |
| Springfield, Troy & Piqua Railway..... | 30 |
| Terre Haute, Indianapolis & Eastern Traction Company..... | 376 |
| Toledo & Chicago Interurban Railway..... | 41 |
| Toledo & Indiana Railway..... | 52 |
| Toledo, Fostoria & Findlay Railway..... | 49 |
| Toledo, Port Clinton & Lakeside Railway..... | 51 |
| Toledo, Urban & Interurban Railway..... | 51 |
| Western Ohio Railway..... | 112 |
| Winona Interurban Railway..... | 35 |
| Total mileage..... | 3,423 |

C. E. T. A. List of Members

The Central Electric Traffic Association issued under date of June 29, 1909, the following revised list of member companies which are using the 1000-mile interchangeable mileage ticket, with the number of miles of line they operate:

| No. | Name of company. | Number of miles. |
|--------------------|--|------------------|
| 24. | Cannelton, Rockport & Owensboro Rapid Transit Company..... | .. |
| 3. | Chicago, Lake Shore & South Bend Railway..... | 77 |
| 8. | Chicago, South Bend & Northern Indiana Railway..... | 67 |
| 2. | Columbus, Delaware & Marion Railway..... | 50 |
| 19. | Columbus, Marion & Bucyrus Railroad..... | 18 |
| 14. | Evansville & Southern Indiana Traction Company..... | 33 |
| 21. | Dayton & Troy Electric Railway..... | 34 |
| 17. | Evansville Railways..... | 49 |
| 9. | Fort Wayne & Wabash Valley Traction Company..... | 139 |
| 10. | Fort Wayne & Springfield Railway..... | 22 |
| 6. | Indianapolis & Louisville Traction Company..... | 41 |
| 7. | Indianapolis, Columbus & Southern Traction Company..... | 59 |
| 26. | Indianapolis, Crawfordsville & Western Traction Company..... | 45 |
| 18. | Indiana Union Traction Company..... | 315 |
| 13. | Kokomo, Marion & Western Traction Company..... | 28 |
| 23. | Lake Erie, Bowling Green & Napoleon Railway..... | 20 |
| 25. | Louisville & Northern Railway & Lighting Company..... | 21 |
| 12. | Marion, Bluffton & Eastern Traction Company..... | 32 |
| 20. | Ohio Electric Railway..... | 545 |
| 27. | Southeastern Ohio Railway, Light & Power Company..... | 15 |
| 4. | Springfield, Troy & Piqua Railway..... | 30 |
| 22. | Terre Haute, Indianapolis & Eastern Traction Company..... | 376 |
| 11. | Toledo & Chicago Interurban Railway..... | 41 |
| 15. | Toledo, Fostoria & Findlay Railway..... | 49 |
| 5. | Toledo, Urban & Interurban Railway..... | 51 |
| 1. | Western Ohio Railway..... | 112 |
| 16. | Winona Interurban Railway..... | 35 |
| Total mileage..... | 2,304 | |

The revised list will appear on all mileage tickets ordered after Aug. 1, 1909.

Memphis Street Railway Rewards Employees.—The Memphis (Tenn.) Street Railway recently distributed \$3,000 among its employees as a reward for the faithful and conscientious performance of their duties during the Confederate reunion in Memphis in June.

Chicago Elevated Railway to Patrol Track.—The Northwestern Elevated Railroad, Chicago, Ill., has decided to install crossing gates at nine points in Rogers Park and to place two men on guard at each of these crossings. The company also proposes to secure police powers for three of its employees and have them patrol the right of way of the company and arrest trespassers.

Physical Connection Ordered Between Indiana Electric Railways.—The Indiana Railroad Commission having considered a petition and heard the evidence has issued an order that on or before Aug. 15, 1909, the Evansville, Suburban & Newburg Railway and the Evansville Terminal Railway shall establish a physical connection at the point of intersection of the roads in Newburg, Ind., and interchange freight after that date.

Coney Island & Brooklyn Railroad Changes Fare Zone.—The Coney Island & Brooklyn Railroad, Brooklyn, N. Y., has extended the 5-cent fare limits on its Coney Island lines so that visitors to Prospect Park may ride between any entrance to the park and Coney Island for a single fare. Heretofore the 5-cent zone for passengers island bound began at the Park Circle, which was also the second-fare point on the return trip from Coney Island. A special transfer ticket and identification check is issued to permit passengers on Franklin Avenue cars to transfer to Smith Street cars, Manhattan bound, and vice versa, at the Park Circle. It is about 6 miles from Prospect Park to Coney Island.

Folder of the Chicago, Lake Shore & South Bend Railway.—The Chicago, Lake Shore & South Bend Railway, South Bend, Ind., has published a folder and time-table of its line between South Bend and Chicago, printed in black on green paper. The company has recently inaugurated a fast 3-hour service between Chicago and South Bend, called the "Business Men's Special," which leaves South Bend at 7 a. m. and arrives at Chicago at 10 a. m. and returning leaves Chicago at 6:20 p. m. and arrives at South Bend at 9:35 p. m. The folder also contains a map of the "South Shore Route" and a map of the loop district of Chicago showing the principal business houses and the route of the road.

Trespassers at Rochester Warned.—The New York State Railways, Rochester, N. Y., is warning trespassers on its interurban lines running over private right of way individually of the risk they run in using the right of way as a thoroughfare. When a person is seen by the motorman of an approaching car on the company's right of way the motorman throws out of the window of the car a sealed red envelope with the word "warning" printed in large, black letters to attract the trespasser's attention. In the envelope is the following notice: "All persons are forbidden to use the tracks or any portion of this company's right of way for footways or thoroughfares. The practice is dangerous and unlawful. All persons so doing are trespassers and will be subject to prosecution. The company is not liable for accidents or injury to trespassers."

Niagara Gorge Railroad Time Table.—The Niagara Gorge Railroad has issued an illustrated folder and time table. The cover is in duplicate and shows a view of the whirlpool rapids and the line of the company skirting the whirlpool. The route of the road is described and there is a large panoramic view of the territory in the vicinity of the Falls, Niagara Falls, N. Y., Niagara Falls, Ont., Whirlpool Rapids, Whirlpool, Lewiston, Youngstown-on-the-Lake, and Port Niagara Beach all being shown. There is also a brief description of all the places mentioned. A page entitled "Items of Interest to Tourists," contains information about the Whirlpool Rapids, Whirlpool, the age and volume of both falls, the power houses, etc. The publication is a work that is almost indispensable to travelers visiting the Falls who desire intelligently to understand the surrounding territory.

Trolley Trips in Two States.—This is the title of a folder which the Western New York & Pennsylvania Traction Company, Olean, N. Y., has issued, in which the attractions afforded along the line are described and illustrated. The road is an interstate line, and the territory through which it passes abounds in beautiful scenes. Rock City is all that its name implies, and is said to rank next to Niagara in its wealth of natural scenery. The principal office of the company is conveniently located at Olean, though a second office is maintained at Bradford. These two cities are the terminals of the mountain or Rock City route. The company owns and operates the city systems in Bradford,

Olean and Salamanca. Treating Olean as the center, three chief routes radiate from it: A, over the mountain from Olean to Bradford; B, from Olean to Shingle House, and C, from Olean to Little Valley. A plan of Rock City shows the locations of the rocks, the Mineral Springs and the recreation park at that place. A map in colors shows the completed lines and the proposed lines of the company.

Folder of the Grape Belt.—The Buffalo & Lake Erie Traction Company, Buffalo, N. Y., has issued an attractive folder describing its lines, which extend through the "Grape Belt," between Buffalo, N. Y., and Erie, Pa., a picturesque section of country lying along Lake Erie, which body of water the railroad skirts. Scenes in the cities and villages show the commercial activity so common to the territory traversed, while scenes at the lake resorts show that the residents are equally in earnest when they set about to amuse themselves. The most pretentious picture is a panoramic view of Buffalo Harbor. A map in colors 24 in. long and 8 in. wide shows the route of the Buffalo & Lake Erie Traction Company's line, the route of the Jamestown, Chautauqua & Lake Erie Railway's line, the lines of the steamboat companies operating on Lake Erie and the territory as far south in New York State as Jamestown. The cover is in colors and contains a reproduction of a scene in the business section of Buffalo. The folder is concluded with a list of the ticket offices of the company and their addresses.

Pittsburgh Railways Company Has Right to Connect with Railroads.—In an opinion handed down recently the Common Pleas Court No. 1, Allegheny County, Pa., dissolved the restraining order granted in May in the suit of A. H. Willis et al. and the Township Commissioners of Baldwin Township against the Pittsburgh Railways asking an injunction to restrain the Pittsburgh & Castle Shannon Railroad and the Pittsburgh & Charleroi Street Railway from connecting their tracks. The plaintiffs alleged that the consent of the Township Commissioners had not been given, as required by the Murphy bill passed at the last session of the Pennsylvania Legislature; that such a connection was forbidden by section 8 of the Street Railway Act of 1901, and that municipal consent was necessary, as was held in the recent decision of the Supreme Court of Pennsylvania in the case of Erie vs. Erie Traction Company. The case was argued before the full bench in Common Pleas Court No. 1, consisting of Judges Brown, Macfarlane and Ford. In its opinion the court held that the Pittsburgh Railways derives its powers from its special charter, granted in 1871, and does not need to look to the general railroad laws, such as the Murphy bill, for power to make this connection, and that the constitutional requirement of municipal consent for the construction of a street railway within any city, boro or township did not apply to this case, for the reason that the Castle Shannon Railroad was being connected with street railways which were already constructed with municipal consent and the cars were being operated by the company which owned or leased the tracks, for the construction of which municipal consent had been given.

Special Cars for Women Withdrawn.—The Hudson & Manhattan Railroad, operating under the Hudson River between New York and New Jersey, withdrew on July 1 the special cars for women which it has been operating since March 31, 1909, during the rush hours. The following notice telling about the discontinuance of the service was posted by the company in its cars and stations: "On and after July 1, 1909, the exclusive car for women operated from Hoboken to New York between 7:30 a. m. and 8:30 a. m. and from New York to Hoboken between 5:30 and 6:30 p. m. will be discontinued, as the patronage does not warrant further maintenance of this service." Subsequently William G. McAdoo, president of the company, issued this statement: "When the cars for the exclusive use of women were established on our line on March 31 last, we stated that it was an experiment, and that the company reserved the right to discontinue them if they should not be sufficiently patronized. We have made a long and thorough test, and regret to find that there is not a sufficient demand on the part of women for an exclusive car. The patronage has constantly diminished. We would have made these cars a permanent feature of our operation if the women had shown by their use of them that they were wanted or needed." Shortly after the Hudson & Manhattan Railroad placed special cars in service for women the Public Service Commission of the First District of New York asked the Interborough Rapid Transit Company to show cause at a public hearing why it should not operate special cars for women in the New York subway, and a report of the hearing was published in the ELECTRIC RAILWAY JOURNAL of May 1, 1909, page 853. The commission has not yet announced its finding in the matter.

Personal Mention

Mr. William F. McDermott, Chicago, Ill., has been appointed auditor of the Inter-Mountain Railroad, Denver, Col. Mr. McDermott was formerly associated with Lee Higginson & Company, bankers, Chicago, Ill.

Mr. H. H. Roseman has been appointed general traffic manager of the Illinois Traction System, Peoria, Ill., to succeed Mr. B. R. Stephens, whose resignation from the company was noted in the *ELECTRIC RAILWAY JOURNAL* of June 19, 1909.

Mr. H. C. Patterson has been appointed mechanical and electrical engineer of the Illinois Traction System, Peoria, Ill., to succeed Mr. H. C. Hoagland, resigned, who on July 1 assumed the duties of vice-president and general manager of the Missouri Central Railway, Columbia, Mo., as previously announced in the *ELECTRIC RAILWAY JOURNAL*.

Mr. J. W. Wolfe, master mechanic of the Ohio River Electric Railway & Power Company, Pomeroy, Ohio, has been appointed superintendent of the company to succeed Mr. I. L. Oppenheimer, who has recently become general superintendent of the Lexington & Interurban Railway, Lexington, Ky.

Mr. N. M. Argabrite, who for the past five years has been connected with the Winona Railway & Light Company, Winona, Minn., in the capacity of superintendent and later as general manager, has resigned from the company, effective on Aug. 1, 1909, to become general manager of the Public Service Operating Company, Belvidere, Ill., successor to the Belvidere Gas & Electric Company.

Mr. George F. Hosbury has been appointed district passenger and freight agent for the Lima-Toledo division of the Ohio Electric Railway, Cincinnati, Ohio, with headquarters in Toledo. Mr. J. F. Sadler has been appointed district passenger and freight agent, with jurisdiction over the Columbus-Zanesville division, the Columbus-Morgan division and the branches east of Springfield, and Mr. Harry P. Blum will have charge of the branches west of Springfield, together with the Dayton-Richmond and Dayton-Union City division, with headquarters at Dayton. Mr. Sadler will have offices at Columbus. Mr. F. E. Burkhardt remains as district freight and passenger agent of the company at Lima.

Mr. Edward Folger Peck, general manager of the Schenectady (N. Y.) Railway, who was elected president of the Street Railway Association of the State of New York, at the meeting at Bluff Point, N. Y., on June 29 and 30, was born in New Britain, Conn., in 1861. He entered the electrical field in 1880 with the American Electrical Company, New Britain, which subsequently became the Thomson-Houston Company. Mr. Peck was one of the first electrical experts to be entrusted by this company to install its apparatus, and was in charge of the Thomson-Houston Company's exhibit at the Franklin Institute Fair in 1884, the first exhibit devoted solely to electrical apparatus held in the United States. He afterward had charge of the exhibit of the same company at the World's Fair in New Orleans in 1884-1885. Mr. Peck resigned from the Thomson-Houston Company in 1885 to become general manager of the Citizens' Electric Illuminating Company, Brooklyn, N. Y., and continued in this capacity until 1897, when he entered the engineering and supply business in New York City under the name of the Peck Electrical Company. In 1899 Mr. Peck was appointed general manager of the Kings County Electric Light & Power Company, Brooklyn, a position he held until 1902, when he was appointed general manager of the Schenectady Railway. Mr. Peck has always taken a very active interest in the affairs of the Street Railway Association of the State of New York and has been a member of a number of its most important committees. During the past year he has been vice-president of the association. Besides being general manager of the Schenectady Railway Company Mr. Peck is president of the Electric Express Company, Schenectady, and is a member of the American Institute of Electrical Engineers.



E. F. Peck

Mr. I. L. Oppenheimer, whose appointment as general superintendent of the Lexington & Interurban Railway, Lexington, Ky., was noted in the *ELECTRIC RAILWAY JOURNAL* of July 3, 1909, page 54, entered the electric railway field in 1899, when he promoted the Ohio River Electric Railway & Power Company. Mr. Oppenheimer succeeded in financing this company and constructing the line as originally proposed in 1900, in which year he became identified with Mr. John Blair MacAfee and Chandler Brothers & Company interests, and he has been connected with them since that time. During this period and up to the time of accepting the position of general superintendent of the Lexington & Interurban Railway Mr. Oppenheimer was the head of the Ohio River Electric



I. L. Oppenheimer

Railway & Power Company, and still remains a director of the company. This was one of the first electric railways in the United States to interchange carload freight with a steam railroad, a physical connection between it and the Hocking Valley Railway being made immediately after its completion. During the last two years Mr. Oppenheimer has also been identified with the Norfolk & Portsmouth Traction Company, the Fort Wayne & Wabash Valley Traction Company, the Newport News & Old Point Railway & Electric Company and the Lexington & Interurban Railway, being secretary of the board of general managers operating these properties. The company with which Mr. Oppenheimer has become connected controls 81 miles of city and interurban electric railway and does a general lighting business.

OBITUARY

John H. Miller, general manager of the Springfield (Ohio) Railway, died at his home in Springfield on June 29 as the indirect result of a stroke of paralysis which he suffered in January. Mr. Miller was connected with the Springfield Railway for nine years, and previously was superintendent of the Springfield (Ohio) Electric Light Company.

The Public Service Commission of the Second District of New York recently issued the following review of its work:

"The Public Service Commissions have entered upon the third year of their work, being enacted by an Act of the Legislature in effect July 1, 1907. The Second District Commission had upon the close of business on June 30, 1909, handled 2990 cases. Two thousand and three of these were treated informally, and 1721 of them disposed of and closed on the records during the two years' existence of the commission. In this period 987 cases were made formal and orders served in each case. Eight hundred and fifty-nine hearings were given at which formal cases were heard.

"The number of applications received for capitalization was 145 and the total amount authorized \$155,708,925. Of this amount \$111,200,500 were bonds, \$19,454,600 capital stock and the remainder various kinds of evidences of indebtedness. Of the complaints taken up informally with the different corporations under the jurisdiction of the commission and settled without the necessity of formal orders there were 1414 in relation to railroads, 110 in relation to express companies and 197 in relation to gas and electric companies. The building of nine railroads and street railways has been authorized and permission to extend lines has been granted in 15 cases. The elimination of 25 grade crossings has been ordered, but work can proceed no further because the Legislature made no appropriation this year for continuing this work. Thirty-seven gas and electric corporations and two municipalities have been authorized to exercise franchises, and 15 companies have been given permission to assign, transfer or lease their properties to new corporations. The complaints handled by the commission cover a wide range of subjects, including practically every phase of operation, service and rates of railroad, street railway, gas and electric companies. The commission continues to receive large numbers of applications and complaints, but with its thorough organization is able to expeditiously dispose of matters which do not call for unusual examination and investigation."

Construction News

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

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

RECENT INCORPORATIONS

***Attawaugan Street Railway, Hartford, Conn.**—Incorporated to build an electric railway from Dayville through Attawaugan, Ballouville and Pineville to Killingly and also from Attawaugan to Alexander's Lake. Capital stock, \$50,000, preliminary.

Iowa & Omaha Short Line Railway, Walnut, Ia.—Incorporated to build an electric railway between Des Moines, Council Bluffs and Omaha, a distance of 140 miles. Headquarters, Pierre, S. D. Local office, Walnut. Capital stock, \$1,000,000. Incorporators: G. W. Adams, Walnut, president; C. L. Kirkwood, North Branch, vice-president; A. L. Ingram, treasurer, and P. Kathmann, secretary, Treynor, and John A. Holmes, Pierre, S. D. [E. R. J., Feb. 20, '09.]

***Belleville & Mascoutah Traction Company, Mascoutah, Ill.**—Incorporated to construct an electric railway from Mascoutah to Belleville. Capital stock, \$150,000. Incorporators: Emil J. Kohl, Adolph Knobeloch, Belleville; Gust. J. Scheve, E. R. Hagist and Peter W. Lill, Mascoutah.

***Carrollton, Missouri River & Northwestern Railroad, Carrollton, Mo.**—Incorporated to build an electric railway from Carrollton to the boat line on the Missouri River and to Northwest Carroll. Capital stock, \$150,000. Directors: Herndon Ely, Lewis Ely, P. L. Trotter, S. J. Jones and W. R. Painter.

Hannibal & Northern Missouri Railroad, Jefferson City, Mo.—Chartered to build an interurban electric railway from Hannibal on the Mississippi River through Marion, Shelby, Macon and Adair counties to Kirksville, connecting Palmyra, Philadelphia, New York, Bethel, Sue City, La Plata or Biggs, a distance of 100 miles. Capital stock, \$2,000,000. Incorporators: F. W. Latimer, Galesburg, Ill., president; Henry Funk, Clarence. Surveying has been done and it is stated that construction work will be begun during the summer. [E. R. J., March 27, '09.]

***Union Railway Gas & Electric Company, Camden, N. J.**—Incorporated under the laws of New Jersey in the interest of E. W. Clark & Company, Philadelphia, and Hodenpyl, Walbridge & Company, New York, to take over the Springfield (Ill.) Railway & Light Company, Peoria (Ill.) Light Company, Evansville (Ind.) Light Company and the Rockford & Interurban Railway, Rockford, Ill., under terms given on page 1139 of the *ELECTRIC RAILWAY JOURNAL* of June 19, 1909. The authorized capital stock is \$18,000,000. Of this \$12,000,000 is to be preferred stock bearing 6 per cent cumulative dividends and \$6,000,000 is to be common stock. Incorporators: F. H. Hansell, John A. MacPeak and Joseph F. Cotter.

***West Tulsa Belt Railway, Guthrie, Okla.**—Incorporated to build an electric railway, 5 miles in length, in Guthrie, at an estimated cost of \$20,000. Capital stock, \$25,000. Incorporators: W. E. Hawley, C. L. Hoonker, Jr., H. C. Hall, John Haver and Gray Erick.

***Coos Bay & Inland Railroad, Portland, Ore.**—Incorporated to build an electric railway from Coos Bay to Roseburg, which later will extend to other points. Headquarters, Portland. Capital stock, \$1,000,000. Incorporators: Jacob Haas, Geo. S. Taylor and Chas. Ringler.

Virginia Railway & Power Company, Richmond, Va.—Incorporated under the laws of Virginia as the successor to the Virginia Passenger & Power Company, Richmond Passenger and Power Company & the Richmond Traction Company, the properties of which it took over on June 30 in accordance with a plan mentioned on page 1140 of the issue of the *ELECTRIC RAILWAY JOURNAL* of June 19, 1909, and page 1177 of the issue of June 26, 1909.

FRANCHISES

San Francisco, Cal.—The Stockton street railway franchise has been sold by the Board of Supervisors to Frank D. Stringham and associates, who propose to organize a company and proceed with the construction of a railway involving a tunnel in Stockton Street between Sutter and Sacramento Streets and extensions to the water front and to the Presidio. [E. R. J., April 17, '09.]

De Kalb, Ill.—The City Council has granted to the De Kalb Midland Railway a 50-year franchise to build a street railway over certain streets of De Kalb. The franchise gives the railway the right to carry freight. This company is about to construct an electric railway between De Kalb, Elva, Waterman, Somonauk and Sandwich, a distance

of 28 miles. John F. Pearce, Chicago, president. [E. R. J., July 3, '09.]

Kankakee, Ill.—The Chicago, Kankakee & Champaign Electric Railway has been granted a 50-year franchise by the City Council to construct an electric railway on Schuyler Avenue and River Street, Kankakee. [E. R. J., June 12, '09.]

Moline, Ill.—The Tri-City Railway, Davenport, Ia., has applied to the City Council for three 20-year franchises to build single or double-track street railways over certain streets in Moline.

Bluffton, Ind.—The City Council has granted a 50-year franchise to the Bluffton, Geneva & Celina Traction Company to build an electric railway eastward over Washington Street. The officials have agreed to have the railway between Bluffton and Geneva in operation within a year. [E. R. J., July 3, '09.]

Gladstone, Mich.—The Delta County Board of Supervisors has granted to the Escanaba Electric Street Railway a franchise to build an electric railway connecting the cities of Escanaba and Gladstone. [E. R. J., June 19, '09.]

New Brunswick, N. J.—The Jersey Central Traction Company has applied to the Middlesex County Board of Freeholders for an extension of its franchise to build its tracks across the Amboy Bridge. The company will put up a \$5,000 bond to guarantee to start construction within 60 days after the extension is granted.

New York, N. Y.—The South Flatbush Railroad has withdrawn its application as filed on June 11 last for permission to construct a rectangular street railway from Avenue Q station of the Brighton Beach Elevated line of the Brooklyn Rapid Transit Company to Flatbush Avenue. The reason given for such a proceeding was that the company is to be reorganized, and later an amended application will be filed with the Public Service Commission. [E. R. J., June 19, '09.]

Southport, N. Y.—A franchise has been granted to the Elmira, Corning & Waverly Railroad to use 1 mile of the highway south of Southport for its proposed railway. [E. R. J., June 26, '09.]

Utica, N. Y.—The City Council has granted to the Utica & Mohawk Valley Railway franchises to build street railways on Whitesboro Street from Saratoga Street west to the city line and on Mohawk Street from Bleeker to Pleasant Street. Neither one of the franchises becomes operative until approved by the Public Service Commission and the franchise on Mohawk Street must by the terms of law be sold at public sale on July 30.

Concord, N. C.—The Board of Aldermen has granted to the Piedmont-Carolina Railway, Salisbury, a franchise to build a street railway in Concord. The company was required to put up \$1,000 forfeit to begin work within 60 days. [E. R. J., Feb. 20, '09.]

Gahanna, Ohio.—The Columbus, New Albany & Johnstown Traction Company has applied to the City Council for a franchise to build a street railway over Mill, North and High Streets and Carpenter Road in Gahanna. [E. R. J., June 12, '09.]

Wilmington, Ohio.—The City Council has granted to the Cincinnati, Milford & Blanchester Electric Railway a franchise to build an electric railway over certain streets of Wilmington. The franchise provides that the company must commence work within six months and have the railway completed within a year.

Marshfield, Ore.—John R. Smith, secretary of the Coos Bay, Oregon & Idaho Railway, has applied to the City Council for a franchise to build a steam or electric railway and terminals in Marshfield. This company, which was formed to secure rights-of-way, is now making surveys from Coos Bay to Roseburg. [E. R. J., May 1, '09.]

***Marshfield, Ore.**—Application for a street railway franchise has been made by John R. Smith to the City Council. It is stated that a similar request will be made to North Bend Council.

Mifflin, Pa.—Application has been made to the Township Commissioners by the West Penn Railways for a franchise to build a street railway from Dravosburg to Coal Valley.

Aberdeen, S. D.—A. L. Ward, Aberdeen, advises that he has been granted a franchise to build a street railway in Aberdeen. Application has also been made for a charter. [E. R. J., June 2, '09.]

***Corpus Christi, Tex.**—Application has been made to the City Council by J. M. King, W. B. Tuttle, San Antonio, and I. A. Cohen, St. Louis, Mo., for a franchise to build a street railway in Corpus Christi. It is stated that the railway, which will be 4 miles in length, will cost approximately \$75,000.

TRACK AND ROADWAY

Northern Electric Railway, Chico, Cal.—This company, which has franchises for a street railway in Yuba City, to be operated in conjunction with its Marysville line and its interurban system, has begun the construction of the lines, which will extend over Second, E and Bridge Streets and Cooper Avenue.

***Colfax, Cal.**—It is stated that W. S. Fletcher, Forest Hill, is interested in a plan to build an electric railway between Colfax and Forest Hill. It is the intention to carry both passengers and freight. Application will be made to the Board of Supervisors at once for the necessary franchise.

Ontario & San Antonio Heights Railroad, Ontario, Cal.—It is stated that this company is about ready to let a contract for the extension of its electric railway from Upland through Claremont to North Pomona, a distance of 6 miles. The extension will cost about \$200,000. [E. R. J., May 8, '09.]

Sacramento & Sierra Railway, Sacramento, Cal.—This company, which proposes to construct an electric railway from Sacramento to Lake Tahoe via Orangevale Bluffs, has filed deeds for its right-of-way. It will cross the American River and extend to Seventh Street, where the terminal will be located. The company has purchased 80 acres of land adjoining the terminal site. Construction on the railway at Orangevale Bluffs has already commenced. [E. R. J., May 8, '09.]

Central California Traction Company, San Francisco, Cal.—H. J. Gray, Sacramento, has been awarded a contract by this company to build its proposed 3½-mile line to Agricultural Park. Work on this line will begin within 10 days, starting from the terminal at Eighth Street and J Street. Following this construction, bids will be asked within two months for construction work connecting the line at Agricultural Park with the present terminus of the company's line at Lodi, thus connecting Sacramento and Stockton.

***Meriden, Middletown & Guilford Railway, Meriden, Conn.**—At a recent meeting of the directors of this company it was voted to proceed with the construction of the proposed electric railway from Meriden to Guilford. Among those present were: Charles E. Jackson, Joseph Merriam, Middletown; A. H. Augur, Middlefield, and James H. White, Eugene L. Hall, C. F. Rockwell and Francis Atwater, Meriden. The directors voted to meet again at an early date to perfect an organization for the construction of the proposed railway.

Oil Belt Traction Company, Oblong, Ill.—It is stated that this company has completed plans and will be ready to place contracts for material for its proposed electric railway which is to connect Charleston and Bridgeport. U. L. Upson, Buffalo, N. Y., will have charge of the construction work. G. E. Groves, Oblong, is the promoter of the enterprise. [E. R. J., June 12, '09.]

Evansville & Mt. Vernon Electric Railway, Evansville, Ind.—Engineers have completed the survey of the proposed extension of this company's line to New Harmony, a distance of 18 miles. Building will, it is reported, be commenced during the fall.

Covington & Southwestern Railway, Kingman, Ind.—This company, which is building an electric railway from Kingman to Crawfordsville, has completed the grading to a point about 2 miles east of Kingman. The ties have been laid for a distance of about 3 miles. The company will lay 60-lb. Illinois steel rails. Fred Mollenkoph, Fort Wayne, engineer. [E. R. J., June 19, '09.]

***Portland, Ind.**—W. H. Ogan, Tipton, is said to be interested in a proposition to build an electric railway from Portland to Celina.

Centerville Light & Traction Company, Centerville, Ia.—It is announced that this company will build the proposed extension to Mystic, 7 miles, provided that the people will subscribe for \$75,000 in bonds, at 6 per cent, secured by first mortgage on the property of the entire plant, lighting, heating and street railway. This was accepted by a committee representing the people.

Climbing Hill, Ia.—Robert H. Baldwin, locating engineer, has made his final report on the proposed electric interurban railway from Sioux City to Ida Grove, Ia. It will run southeasterly from Sioux City through Climbing Hill and Oto, to Ida Grove. Within a few days articles of incorporation will be filed and the right-of-way secured. Mr. Baldwin's report on the freight and passenger line as proposed, which has Sioux City for its western terminus, states that from an engineering and operating standpoint it is entirely feasible and would tap a section of territory now unserved by adequate transportation facilities. The

line will be less than 55 miles between Sioux City and the projected terminals. A sentiment is expressed for a further extension in a southeasterly direction to Denison, Ia., and an investigation of such a route may be made after the permanent organization is completed. According to the report the line can be built for \$22,000 a mile with a maximum grade of 2 per cent in but few places, and will practically serve 342 square miles of rich farming land. The population will be more than 1000 to a mile of road. As soon as certain details are attended to the preliminary and final surveys will be made through Woodbury and Ida Counties. [E. R. J., June 12, '09.]

Kansas City, Lawrence & Topeka Electric Railway, Rose-dale, Kan.—The Board of Railroad Commissioners has granted permission to this company to issue \$2,000,000 in securities to build its projected electric railway between Topeka and Kansas City, 67 miles. R. W. Hocker and J. A. Stewart, Kansas City, Mo., are interested in this proposed railway. [E. R. J., June 19, '09.]

North Missouri Central Railway, Mexico, Mo.—This company has awarded a contract to the Franklin Construction Company, Frisco Building, St. Louis, Mo., for the construction of a railway running through Mexico, to Columbia from Jefferson City, Mo., a distance of about 63 miles. The contract involves about \$1,800,000. The Franklin Construction Company is in the market for about 160,000 oak or pine standard ties, also about 6300 tons of 60-lb. relaying rails, spikes, bolts, etc.

Morris County Traction Company, Morristown, N. J.—This company placed in operation on June 19 its new line between Elizabeth and Springfield.

Rockland Railroad, Nyack, N. Y.—It is stated that this company has completed plans for the building of its proposed 30-mile electric railway to connect Tappan, Suffern, Stony Point and Nyack. At a meeting of the stockholders at the office of the company, 165 Broadway, New York, the following officers and directors were elected: B. A. Hegeman, Jr., president; W. O. Jacquette, vice-president; A. C. Miller, second vice-president and general manager; Stafford S. Delano, treasurer; W. H. Coverdale, chief engineer, and Charles J. Hardy, secretary and counsel. Directors: H. A. Taylor, Edwin S. Bayer, F. V. Smith, H. H. Hewitt, K. B. Smith, Francis Dickson, M. S. Paine, Henry O'Neill and Theodore Hofstatter. [E. R. J., June 19, '09.]

Cincinnati, Dayton & Fort Wayne Railway, Dayton, Ohio.—This company has started surveying for its proposed Defiance-Hicksville-Fort Wayne extension. The surveys will be completed early in the summer and it is expected to begin work on the line in the fall. The route from Defiance to Hicksville parallels the Baltimore & Ohio Railroad, passing through the Bend, Sherwood and Mark Center to Hicksville. At Hicksville it is proposed to branch off to Fort Wayne.

Cleveland, Barberton, Coshocton & Zanesville Railway, Cleveland, Ohio.—This company has filed for record at Cleveland a \$6,000,000 mortgage in favor of the Windsor Trust Company, New York, N. Y. The proceeds are to be used in building an electric railway from Cleveland to Zanesville, via Elyria, Barberton, Orrville, Millersburg and Coshocton. J. J. Breiteringer, president. [E. R. J., June 26, '09.]

***Muskingum & Morgan Railway, Light & Power Company, Zanesville, Ohio.**—The promoters of this new company have perfected the following organization. Directors: Andrew McDonald, president; John J. Adams, vice-president; R. C. Burton, treasurer; W. H. Pierpont, secretary; James McDonald and W. H. Atha, all of Zanesville. The company contemplates building an electric railway between Zanesville and McConnelsville and also expects to furnish power and light to towns along the route.

Zanesville & Meigs Valley Traction Company, Zanesville, Ohio.—It is announced that this company will have the surveys for its proposed railway completed within 30 days. Financial arrangements are said to have been completed. The railway will extend from Zanesville through the Meigs valley to Beverly. E. R. Meyer, Zanesville, president. [E. R. J., April 24, '09.]

***Medford, Ore.**—It is stated that W. S. Dewing and Edward Woodbury, Kalamazoo, Mich., are interested in a proposition to establish an electric railway from the Pacific Coast through Medford to Butte Falls.

Waynesburg & Monongahela Street Railway, Waynesburg, Pa.—This company has filed a \$5,000 bond with the Waynesburg Council and has begun construction work on the line in Washington Street. It will extend from Waynesburg to Monongahela River. W. J. Sheldon, Waynesburg, general manager. [E. R. J., June 19, '09.]

Manufactures & Supplies

ROLLING STOCK

Detroit (Mich.) United Railway is asking for bids on five interurban express cars.

Capital Traction Company, Washington, D. C., is reported to have ordered four city cars from the Cincinnati Car Company.

Chicago, South Bend & Northern Indiana Railway, South Bend, Ind., has purchased two sets of trucks from the Baldwin Locomotive Works.

Chicago (Ill.) Railways Company is planning to purchase 20 motor and 60 trail garbage dump cars. Plans and specifications for these cars have not yet been prepared.

Buffalo & Lake Erie Traction Company, Buffalo, N. Y., has placed an order with the Cincinnati Car Company for 10 cars to be built under license of the Pay-As-You-Enter Car Corporation.

Fairmont & Clarksburg Traction Company, Fairmont, W. Va., reported under date of July 3 that it is negotiating for the purchase of new cars, but that no definite action had been taken up to that time.

Columbus (Miss.) Railway, Light & Power Company, which was contemplating the purchase of several new city cars mounted on maximum traction trucks, has decided to purchase four second-hand cars.

Parsons Railway & Light Company, Parsons, Kan., has placed an order through the Dwyer Construction Company, Dayton, Ohio, with the St. Louis Car Company for seven 21-ft. single-truck semi-convertible city cars. Allis-Chalmers motors are specified.

Lawrence Railway & Light Company, Lawrence, Kan., has ordered from the St. Louis Car Company five 21-ft. single-truck semi-convertible city cars, equipped with Allis-Chalmers motors. The order was placed through the Dwyer Construction Company, Dayton, Ohio.

Fort Wayne & Wabash Valley Traction Company, Fort Wayne, Ind., announces that it will purchase a total of 26 city, 4 interurban passenger, 2 motor freight, 4 freight trailer and 10 gondola cars. The interurban cars are to be similar to the 300 type now in use. The freight cars will be the company's standard type.

Salt Lake & Ogden Railroad, Salt Lake City, Utah., has made no definite plans for rebuilding its 40 steam railway passenger cars for operation on its electrified line. It is expected that recommendations for rebuilding the cars will be made at an early meeting of the directors of the company.

Rogue River Valley Railway, Jacksonville, Ore., has changed its plans regarding the gasoline car for which it was reported to be in the market, and is arranging to build for itself at San Francisco, Cal., a small 25-passenger gasoline motor car to run on four wheels, the car to be made of an omnibus-truck body remodeled to suit railroad work. It is expected that the car will be completed in about three months.

Interborough Rapid Transit Company, New York, N. Y., has awarded contracts for 600 trucks for the 350 cars which it ordered recently, apportioned as follows: American Car Company, 170 trailer trucks and 190 motor trucks; Standard Car Truck Company, 40 trailer trucks and 60 motor trucks; St. Louis Car Company 40 trailer trucks; Wason Manufacturing Company, 100 trailer trucks. Orders for 100 trucks remain to be placed.

Long Island Railroad, Long Island City, N. Y., has prepared specifications for the 100 all-steel motor cars ordered from the American Car & Foundry Company, as mentioned in the ELECTRIC RAILWAY JOURNAL of July 3, 1909. The cars will seat 70 persons, will be 63 ft. 4¾ in. long over vestibules, 54 ft. 4½ in. body length; width over all, 9 ft. 11 in.; height from top of rail to sills, 41¾ in. The bodies will weigh approximately 53,000 lb. each. Other details follow:
 Air brakes.....Westinghouse
 Roofs.....Welded steel
 Control system.....Westinghouse
 Seats.....H. & K. walkover
 Couplers.....Kiesel type
 Seating material.....Rattan
 Curtain fixtures.....Nat'l L. W. Springs
 Union S. & Mfg.
 Curtain material.....Pantasote
 Step treads.....Mason
 Headlights.....Dressel
 Trucks.....Steel P. R. R. Std.
 Journal boxes.....Symington
 Wheels.....Steel
 Motors.....2 West-308

TRADE NOTES

Crocker-Wheeler Company, Ampere, N. J., has recently received an order from the Marshall (Tex.) Traction Company for a 125-kw 550-volt direct-current generator for use in electric railway service.

Cumberland Railway, Carlisle, Pa.—This company has awarded to the United Ice & Coal Company, Harrisburg, the contract for the removal of about 10,000 cu. yd. of earth on its proposed railway on Cemetery Hill, Newville, and 4000 cu. yd. near Plainfield. A contract was also awarded by the company for the furnishing of 13,000 tons of 70-lb. rails to the Pennsylvania Steel Company. The Carlisle Construction Company has the contract for the general work. [E. R. J., May 22, '09.]

Nashville Railway & Light Company, Nashville, Tenn.—The Secretary of State has granted an amendment to the charter of this company, whereby permission is given to build extensions from its present system over practically all the roads leading out of Nashville. [E. R. J., June 12, '09.]

Red Springs Street Railway, Mount Pleasant, Tex.—It is stated that this company has completed the laying of tracks between Mount Pleasant and Red Springs, a distance of 1½ miles. Cars have been received and the line will be placed in operation within a few days. It is the intention to extend the line to Pittsburg, 12 miles south, by next summer. [E. R. J., June 19, '09.]

Northern Texas Traction Company, Fort Worth, Tex.—It is said that this company is considering plans to extend its railway to Riverside at an early date.

***San Angelo, Tex.**—At a mass meeting recently held in San Angelo the proposition of J. J. Lanin and others to build an electric railroad from San Angelo to Sterling City was accepted. San Angelo is to donate \$40,000 and right-of-way through Tom Green County, and the promoters state that in return the repair shops and headquarters will be located at San Angelo.

Uvalde (Tex.) Street Railway.—This company, which recently began operating a 3-mile street railway in Uvalde, is said to be considering a plan to extend the railway to Batesville, a distance of 20 miles. The company operates gasoline motor cars.

Whatcom County Railway & Light Company, Bellingham, Wash.—It is announced that this company will spend, during the summer, approximately \$100,000 for improving its system in Bellingham. Track will be relaid with 73-lb. rails.

Grand Rapids (Wis.) Street Railway.—G. M. Hill, secretary of this company, has issued a call for a 10 per cent assessment on the stockholders of the company to raise funds for immediate use in constructing the interurban electric railway between Grand Rapids and Nekoosa. Graders and the construction material have been received and work will be started at once. The plan of the company is to extend the line to Stevens Point, Wausau and Merrill. [E. R. J., June 5, '09.]

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.—This company has just placed in operation a new line, 8 miles in length, extending from the pavilion in Lake Park down Folsom Street, and thence west on Center Street until it forms a junction with the Fond du Lac Avenue line.

SHOPS AND BUILDINGS

Pacific Electric Railway, Long Beach, Cal.—This company contemplates building a comfort station, south of the Salt Lake depot in Long Beach.

POWER HOUSES AND SUBSTATIONS

Fort Smith Light & Traction Company, Fort Smith, Ark.—This company is enlarging its power house by the addition of a 500-kw generator. The work is being done under the supervision of H. M. Byllesby & Company, Chicago, Ill.

Twin City Rapid Transit Company, Minneapolis, Minn.—This company is erecting a one-story substation on East Seventh Street in Minneapolis. The cost will be \$10,000.

Morris County Traction Company, Morristown, N. J.—This company has completed the foundations for a new power house on East Blackwell Street, Dover. The building will be 150 ft. x 100 ft. and will be built of concrete and brick.

Portland, Eugene & Eastern Railway, Portland, Ore.—It is stated that this company will build a power plant this year at Martin's Rapids, about 30 miles east of Eugene, furnishing power for all its railways as far north as Albany. J. O. Story, Portland, president.

Chattanooga (Tenn.) Railways.—This company has purchased and is installing in its main power station a 2500-hp cross-compound engine and d.c. generators. This company has also installed in its Ridgedale substation a 500-kw rotary converter.

Texarkana Gas & Electric Company, Texarkana, Tex.—This company has just installed in its power station a 300-kw General Electric rotary converter.

George E. Austin, president of the American General Engineering Company, New York, sailed for Europe July 1. Mr. Austin is to make an extended trip through England and the continent in the interest of his company's foreign business.

Stone & Webster, Boston, Mass., announce that Eliot Wadsworth was admitted on June 30 as a partner in the firm. The members of the firm now are: Charles A. Stone, Edwin S. Webster, Russell Robb, Henry G. Bradlee and Eliot Wadsworth.

Baldwin Locomotive Works, Philadelphia, Pa., a stock company organized under the laws of Pennsylvania, have purchased the entire property, business and good will of the long-established partnership of Burnham, Williams & Company, Philadelphia, and have assumed all their assets and liabilities. There will be no change in the management of the company.

Mead-Morrison Manufacturing Company, New York, has taken over the business of George W. McCaslin and John A. Mead & Company and now owns the sole rights to manufacture and sell the McCaslin overlapping gravity bucket conveyor for carrying coal, ashes, cement and other similar materials. The company has opened offices at 11 Broadway, New York.

Westinghouse Electric Manufacturing Company, Pittsburgh, Pa., has furnished equipment for lighting the tunnels and terminals of the Pennsylvania Tunnel & Terminal Company, operating the Pennsylvania Railroad tunnels under New York City and the rivers. This equipment is being installed in the Long Island City power house and consists of 2 turbine-alternator sets of 2500-kw capacity. The alternators will supply 3-phase, 60-cycle current at 440 volts.

Lindsley Brothers Company, Spokane, Wash., dealers in cedar poles and cross-arms, announce that C. P. Lindsley, formerly president of the company, has become interested in the Craig Mountain Lumber Company, Lewiston, Idaho, and will hereafter act as general manager of that company. E. A. Lindsley has assumed active management of the Lindsley Brothers Company at Spokane. G. L. Lindsley will remain as manager of Eastern sales with offices at 1261 Monadnock Block, Chicago. The company reports that its cross-arm factory which was opened at Portland, Ore., in 1908 is meeting with excellent patronage.

A. Bradshaw Holmes, secretary and treasurer of the Independent Pneumatic Tool Company and the Aurora Automatic Machinery Company, Chicago, Ill., died on June 30, 1909, from injuries sustained by accidentally falling from the piazza of the hotel at which he was living. He was 31 years of age and unmarried. Mr. Holmes was well known in the pneumatic tool business, having been connected with the Standard Pneumatic Tool Company and the Rand Drill Company for a number of years prior to his connection with the Independent Pneumatic Tool Company, of which corporation he had been secretary and treasurer since its organization.

Western Electric Company, New York, N. Y., reports that for the first half of its fiscal year ended May 31, the gross business was at the rate of approximately \$46,000,000. This is an increase of 40 per cent over 1908 and at the rate of 87 per cent of the 1907 record, which was \$53,000,000. The business for May, 1909, showed an increase of 60 per cent over May, 1908, and April, 1909, showed 50 per cent over April, 1908. For the past six months the increase of the company's orders was 30 per cent over the same period in 1908. The European business of the company gained 30 per cent over a year ago and was 12 per cent greater than in 1907, which previously held the high record.

Keystone Lubricating Company, Philadelphia, manufacturer of Keystone grease, reports the results of some recent tests under heavy pressure of this lubricant, which is composed of high-grade petroleum oils reduced to suitable consistency or "density." In these tests, which were made on the Olsen testing machine, the lubricant was supplied to a journal $3\frac{3}{4}$ in. in diameter, running in a babbitted bearing, and the pressure was increased by steps of 86.2 lb. per square inch up to the high maximum pressure of 431 lb., a full 60-minute run being made at each pressure. During the entire run at each pressure the lubricant maintained true fluid friction between journal and bearing, and withstood the temperature rise without a sign of any disintegration, such as oils and greases of animal or vegetable origin are liable to on account of their readiness to decompose. According to the manufacturers, this was due to the permanent consistency of the grease.

H. M. Byllesby & Company, Chicago, Ill., announce that C. E. Groesbeck, of San Diego, Cal., has been elected vice-president of the company and will hereafter have charge of the company's interests on the Pacific Coast. Mr.

Groesbeck's headquarters will be at Tacoma, Wash., where the company has purchased and is operating the Tacoma Gas Light Company's property. The company is supervising the rebuilding by American District Steam Company, Lockport, N. Y., of all the underground steam-heating system of the Ottumwa Railway & Light Company, Ottumwa, Ia., in which work \$100,000 is being expended. The Ottumwa Railway & Light Company has maintained an exhaust steam-heating plant for the last 20 years and it has proved so successful that the company recently decided to rebuild and extend the service. The system which is being installed is founded on the meter basis and it is to be provided with new underground drains. The back pressure will not exceed 3 or 4 lb. The rebuilding of the system will include the relaying of about 4 miles of steam mains.

ADVERTISING LITERATURE

Grip Nut Company, Chicago, Ill., has issued illustrated catalog No. 17, containing descriptions, illustrations of, and tabulated information regarding, its universal window fixtures and accessories.

Stone & Webster, Boston, Mass., have issued a circular dated July 1, describing a number of issues of investment securities of electric railway, gas and electric light companies controlled by them.

Scofield & Company, New York, N. Y., are sending out a pamphlet describing their "Equipoise" telephone arm for desk use and Peterson's desk companion for keeping ink-wells and pencils on roll-top desks.

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has prepared an attractive folder, "Electric Power for Domestic Purposes," which offers many valuable suggestions for the use of small motors in the home.

Glacier Metal Company, New York, N. Y., and Richmond, Va., has issued a four-page circular about its "Copper-Tin," a bearing metal for lining armature and motor bearings. The circular is addressed particularly to purchasing agents and master mechanics.

J. G. Brill Company, Philadelphia, Pa., publishes in the June number of its magazine an interesting article on the conditions which govern the type of car for city service in London, Eng. Another article describes some additions to the Brill plant at Philadelphia.

Joyce-Cridland Company, Dayton, Ohio, has just published a new catalogue describing various jacks of the lever type manufactured by this company, and also the mechanisms by which many of the automatic features are accomplished. Recent improvements in automatic geared jacks are also described.

Allgemeine Elektrizitäts-Gesellschaft, Berlin, Germany, has issued a descriptive pamphlet on d.c. turbines from 45 kw upward, and another publication describing the power house of this company's turbine works in Berlin. The company has received orders for 18,782 kw in d.c. turbines, of which machinery totaling 9658 kw is in service.

Duff Manufacturing Company, Pittsburgh, Pa., has printed a new 16-page catalog describing the Duff-Bethlehem forged steel hydraulic jacks. The company is prepared to furnish jacks in all styles and capacities for a vertical or horizontal lift. Many of the different types are illustrated. Tables giving complete information for prospective purchasers accompany the text.

MacGovern, Archer & Company, New York, N. Y., show in their July list of electrical and steam machinery considerable apparatus directly applicable to railway work. Among these are G. E. Nos. 57, 1000 and 800 street railway motors, Westinghouse Nos. 56, 49 and 68 railway motors, and d.c. 500-volt generators up to 500 kw. The company also shows several types of cars which it has on sale.

Root Spring Scraper Company, Kalamazoo, Mich., shows its latest railway spring scrapers in a pamphlet which has just been issued. The scrapers are of several types to meet all city and interurban conditions. The spring attachment is one of the strong features of this device, as it will hold the scraper free from the track when not in use and is said to reduce the maintenance cost of scrapers fully 50 per cent. The company has also issued a circular giving a list of the repair parts of its five types of scrapers.

NEW PUBLICATION

Westinghouse ET Air Brake Instruction Book. New York: The Norman W. Henley Publishing Company, 1909; 242 pages, with index. Price, \$2.

This is a manual on the No. 5 and No. 6 Westinghouse locomotive air brake equipment. It is printed in large, clear type and contains many excellent color plates which do much to make the subject matter clearer for the student who is unfamiliar with the details of the apparatus.