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### New York Rapid Transit Plans.

The citizens of New York cannot now complain that the proposals submitted by the Interborough Rapid Transit Company and by the Brooklyn Rapid Transit Company do not offer the opportunity for rapid transit facilities for which they have long waited. The proposal of the former company, made public May 10, comprises not only very extensive additions to the rapid transit system in Manhattan and Bronx Boroughs, but also an important subway and elevated system in Brooklyn and Queens Boroughs, reaching even to Coney Island, and also a subway to Richmond. The question now squarely before the city is to decide between the two proposals submitted, or else to effect some arrangement by which both companies will receive franchises under which they will materially extend their lines. A year ago, or even six months ago, offers such as have recently been made seemed impossible. But the more favorable terms for the advancement of the city's credit to which the city seems now to be at least tacitly committed have allowed the companies a much freer hand in their proposals. New York seems at last to have waked up to a realization of the importance of rapid transit, and we hope that a decision will soon be reached and then that construction work will not be long delayed.

### Transportation of Letter Carriers and Policemen

By decision of the Attorney-General of Massachusetts a proposed act requiring the street railway companies of that State to carry or transport letter carriers free would be unconstitutional, and under the new public utilities commission law in New Jersey the transportation by the companies without compensation of policemen or firemen in that State is now illegal. These decisions put in concrete form a matter on which the practice of electric railway companies has differed. In the majority of cases, probably, the companies have given free transportation to policemen in uniform when they have not exceeded a certain number, say two, per car. A smaller number of companies have accorded the same courtesy to firemen, and a few only have made no charge to letter carriers. The theory which has lain at the bottom of this practice has undoubtedly been that these public servants would reciprocate for this transportation by rendering prompt service when needed. There has been the added reason, in the case of policemen, that the presence on a car of these officers of the law is often of assistance to the employees in suppressing disorderly conduct on the car. The letter carriers, of course, deserve the least consideration because a street railway company has no grant and obtains no favors from the national government. But the present trend of public service legislation seems to be in the direction of cutting off all free transportation except to bona-fide employees of the company. On the whole, this is a desirable step, because when once an exception is made for one class of municipal officers it is difficult to draw the line.

### The New York Reorganization

The plans for reorganization of the Metropolitan Street Railway of New York, which are now before the Public Service Commission of the First District, were formed by a joint committee representing holders of the two principal issues of bonds of the company. This committee assumes direct control over the showing upon which the commission is asked to approve the issue of new securities in order that reorganization may be effected. It had a valuation made covering the physical property together with various elements of intangible value which it considers proper to capitalize, and upon this appraisal the case is based. So far the testimony has consisted of direct evidence regarding the valuation by those who were engaged in it and by supplemental evidence by engineers in reference to various elements of value, principally of a non-physical nature. Such evidence presumably constitutes substantially the case of the committee. The commission, on its part, has cross-examined witnesses and has checked the inventory and analyzed the appraisal. Since the value sought is the cost of reproduction of the property the appraisal shows the estimated expense of creating a system where none existed before. Although the joint committee represents directly the holders of \$29,100,000 bonds, the total amount of securities outstanding and of special items for which provision is to be made, including cash requirements, is \$135,900,000, while the aggregate of new and undisturbed securities proposed under the plan is \$96,300,000. The importance of an early completion of the reorganization is so obvious and the time which has elapsed since the appointment of receivers for this company in September, 1907, is so long that it is greatly to be hoped that no material delay will intervene between the final hearing and the adoption of a satisfactory plan.

### Object Lessons for the Motormen

Modern pedagogics lays great stress upon the principle of the object lesson, namely, the concrete presentation of the thing which is talked or written about. This principle has always been applied in the training of student motormen and conductors, but there is a tendency to overlook its value as a supplement to the standard rules for preventing the thoughtless handling of equipment. Motormen may read or may be told any number of times that they should not run on resistance notches, but they will never fully realize the meaning of this order until they actually see a set of burned-out grids; or the negligence of the individual may be effectively used as an object lesson, as in Toronto, where photographs of damaged armatures and other equipment are shown to the motormen and brief explanations are given as to how the trouble was caused and how it could have been avoided. The United Railways & Electric Company of Baltimore recently has gone even further in educating its men by pointing out the great damage which may be done in time by the cumulative effect of the carelessness of many individuals. As described elsewhere in this issue, the Baltimore management has accomplished this object by distributing a bulletin which contains a series of illustrations of new and worn-out special work. The principal reason for the premature removal of this costly material was rapid running over crossings, switches and curves. This appeal to the men was based on the fair assumption that the unskilfulness of motormen is due to ignorance more often than to carelessness or a desire to injure their employer's property. The men can easily appreciate the significance of a defect which has been caused directly by one

person, but it is much more difficult to make them understand that track work, which is apparently so massive, can be quickly battered into uselessness. In the demonstration of such facts either the ruined object itself or a good illustration thereof is worth any number of abstract injunctions.

### HOURLY SCHEDULES ON INTERURBAN ROADS

An examination of the timetables of a large number of interurban railways in different parts of the country shows that it is the general practice to operate cars in both directions at intervals of even hours, making the leaving time from one or both terminals on the hour. This practice, undoubtedly, is the outgrowth of the development and extension of interurban lines from suburban and city lines. No one will deny that the convenience to the public which an hourly schedule affords has been a large factor in building up interurban traffic in competition with the irregular schedules of parallel steam roads. It is coming to be a question for careful consideration, however, whether regularity of schedules, because it is a traffic-producing asset, is not being maintained at the expense of excessive lay-over time and other objectionable operating practices such as trains running late and the uneven loading of trains.

The 1910 report of the committee on construction of schedules and timetables showed that the lay-over time of a large number of city systems represented on an average 12.5 per cent of the total service time. The percentage is much higher on many interurban roads. One road in New York State, for example, runs from terminal to terminal in 1 hour and 28 minutes, with 6 minutes lay-over at one end and 57 minutes at the other end. The ratio of lay-over time to total time for a round trip is therefore 26 per cent. It seems reasonable to suppose that if only 6 minutes lay-over is necessary at one terminal a large reduction could be made at the other terminal provided an irregular schedule was adopted.

This raises the question as to what is the minimum lay-over time necessary for an interurban car crew on a run of, say, 40 miles. The crew must report to the dispatcher, the conductor must make out his trip report, and the car should be swept out and superficially inspected. Some allowance for delay inbound must also be made, so that a car coming in late can go out on time. Fifteen minutes would seem to be a reasonably fair time for lay-over at each terminal on such a run requiring, say, two hours. This would give a ratio of lay-over time to total time for a round trip of 11 per cent. A shorter time than 15 minutes is allowed by many roads at one, and sometimes at both, terminals, but unless the running time is made considerably slower than the capacity of the car equipment warrants, so that the time lost may be made up on the road, too short a lay-over often results in cars leaving the terminals late and eventually demoralizing the schedule.

From the psychological point of view it is desirable to allow the motorman of a high-speed car some time in which to relax and rest from the nervous strain under which he performs his duties. The length of time which should be allowed for this reason is an open question. Some superintendents claim that an interurban motorman is under less nervous and physical strain while operating his car at 50 m. p. h. or 60 m. p. h. than the motorman on a city car who runs through crowded streets, and that the interurban motorman, therefore, requires no more time, if as much, to relax than the city motorman. Other railway men take an opposite view.

Regular hourly schedules have an important advantage from an operating standpoint, which should not be lost sight of. With uniform headway in both directions on single track the meeting points of all cars are the same at all hours of the day, and certain sidings become known as regular meeting points. There is less danger of running by a siding which is a regular meeting point for all trains than where the meets of each train are at different points. The work of the train dispatcher is lessened and some slightly greater degree of safety is secured.

It will be worth while for the manager of every interurban to give this complex subject of schedules careful study with the view of effecting possible economies in operation. One method, of course, would be that of disregarding the hourly or half-hourly plan of operation and of operating cars every 43 minutes, or every 70 minutes, or with whatever interval would best suit the length of the run. This would mean, of course, that the patrons of the road would have to depend upon a printed timetable for their knowledge of the times of departure of the cars. In some cases such a plan might be the best to adopt, especially on lines where there is much of a morning and evening rush, when it would be desirable for traffic conditions to shorten the headway between cars. For the ordinary interurban railway, however, we believe that most managers would be loath to adopt such a plan except to avoid an extremely long lay-over. Another alternative is to extend the run of the car so as to utilize the wasted time; another is to shorten the time of run by shortening the route, or by omitting a few stops, or by changing the gear ratio. Each case will have to be decided upon its own merits. The principles to be followed are for the company to strike the best balance possible between the various conflicting factors.

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#### STANDARDIZING MOTORMEN

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It is practically the universal rule that the introduction on cars of almost any kind of checking instrument will disclose great differences in the operating characteristics of the motormen. Part of these differences are due to variations in the natural ability of the men, but a larger portion of them undoubtedly are caused by poor training. The work of a motorman is so largely a matter of physical routine that one may well consider the possibility of standardizing his movements. There can be but one best way to manipulate the equipment. That way is the one which should be drilled into the men. Such uniformity is not possible if one follows the present practice of placing the recruits with "experienced" motormen before they have received any theoretical instruction. Motorman instructors are usually chosen for their good transportation records and not for their skill in manipulating the controller and brake. Nevertheless the transportation department is, or should be, as much interested in the economy of power and in the reduction of the cost of maintaining the equipment as any other department in the company. For example, there is no doubt that a great many motormen who are careful to follow the instructions in the standard code of operating rules governing their performance on the road are careless about dragging the brakeshoes, wasting air and doing other things which cause no great immediate damage to the equipment but do prove costly in the end. An engineer who has visited a number of roads and whose work has brought to his attention the subject of brakeshoe adjustment recently said that he be-

lieved many motormen wasted as high as a  $\frac{1}{2}$  kw hour per car mile by operating with brakes which were too tight. The blame for this condition may be due to the inspectors quite as much as to the motormen, but the latter, at least, are on the car constantly and should be able to tell by the "feel" whether the brakeshoes are dragging. Carelessness in this respect, as well as in other phases of car operation, is not only harmful in itself, but if not guarded against it is likely eventually to become widespread.

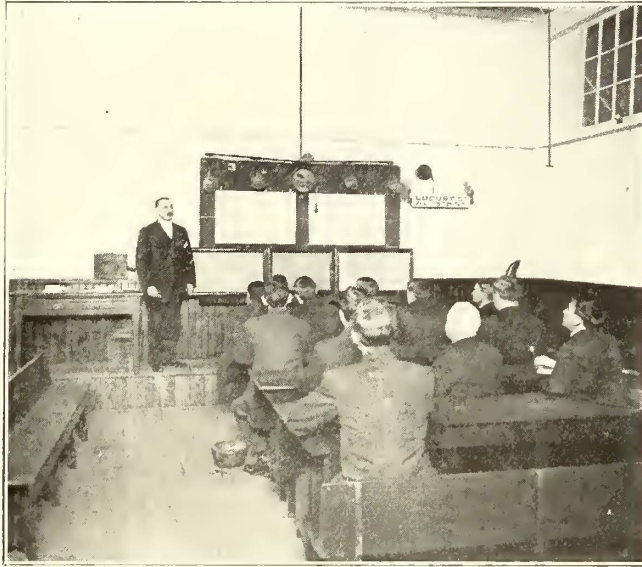
These conditions emphasize the importance of uniformity in the method of breaking in new men, or rather in the method of teaching them the proper way to handle the equipment. Otherwise, even if the motorman instructor has no wasteful habits in car operation, he will probably have his own pet ideas to exploit. The graduates from such a school are very discouraging material for the school-room instructor, to whom they are turned over for final approval. He can perhaps instil into them a few general notions about the nature of electricity, but he cannot even attempt to undo the false training which they have absorbed in the actual running of a car.

The experience of a number of those railways which have given much thought to thorough methods of instruction is that much better results are obtainable when the new men are taught by one scientifically trained teacher in a well-equipped instruction room before they go on the platform. This is the method now followed by the Philadelphia Rapid Transit Company, whose old and new practices are described elsewhere in this issue. On the Philadelphia system a single instructor can take care of as many as a dozen men at a time, showing them how to make in the proper way every possible combination of controller, braking, sanding and signal movements.

Such a teacher can explain the meaning of every step and have the men go through a simultaneous drill so often and so thoroughly that they will do the right thing automatically when they are placed on the car. Under this system all that is left for the motorman instructor is to see that the new man is capable of dealing diplomatically with passengers and drivers of obstructing vehicles, of making out reports and of doing other things which cannot be taken up in the classroom. After this period of probation, the general instructor can give the candidate his seal of approval, after determining that the novice can discover troubles and correct them by carrying out such emergency operations as replacing a fuse, cutting out a defective motor, etc. It must not be forgotten, however, that even if the new men really do know how to handle the car properly there will always be a tendency for them to fall into more or less slipshod ways. This is all the more likely because some transportation departments give little thought as to how a man treats the apparatus so long as he makes his schedule and has no accidents. To avoid this tendency it would be well to have an inspector report on the operating methods of different motormen so that delinquents could be ordered to instruction headquarters for further training. However, such inspection alone will not fulfil the desired end unless it goes in hand with a system of rewarding those who do handle their cars in the most economical manner. A logical reward would be to make motorman instructors of these men and pay them a bonus whether they have a student in charge or not. A reward of this kind would be a real incentive, whereas under present conditions they are all paid without regard to their operating efficiency.

### THE PLATFORM INSTRUCTION SYSTEM OF THE PHILADELPHIA RAPID TRANSIT COMPANY

During the past year the Philadelphia Rapid Transit Company has inaugurated a system of instruction for motormen and conductors of which the fundamental feature is a thorough schooling under a general classroom instructor before any work is done on the platform. The prime object is to teach the men how to perform their duties in a really efficient manner, according to a single standard, instead of placing entire dependence upon a variety of platform instructors to complete the edu-



Philadelphia Instruction System—Enlarged Conductor's Way Bill, Timetables, etc., on Demonstration Board

cation of entirely untrained men. In striving to obtain the desirable end of uniformity in method, it has been found well to have the training system flexible enough to apply to both new and old men, either by sending them to the headquarters school or visiting their carhouses in an instruction car.

#### ARRANGEMENT OF INSTRUCTION CLASSES

In view of the fact that the instruction course is not confined to new men, it was found desirable to arrange the classes so that all men sent to the schoolroom at a certain hour would receive the kind of instruction which would best apply to their particular case. According to the schedule now in force, the recruits who are selected by the employment department on Monday, Wednesday and Friday, the three employing days, must report to the schoolroom on either Tuesday, Thursday or Saturday at 8:30 a. m. Student motormen and conductors who return for examination and final instruction must report to schoolroom either Monday, Tuesday, Wednesday, Thursday, Friday at 1:30 p. m. or 12 noon on Saturday. Experienced motormen and conductors who are to be appointed platform instructors or who are considered in need of special instruction because of improper performance of their duties must report at 8:30 a. m. Monday, Wednesday or Friday. Motormen sent for at this time are usually required to operate the instruction car and are passed on by the chief instructor. The joint instruction of motormen and conductors is given when they are returned for examination and consists of a lecture on prevention and handling of accidents and an explanation of the operating mechanism of the pay-within car door. For the latter purpose a full size pay-within door and step, together with the operating mechanism, have been provided.

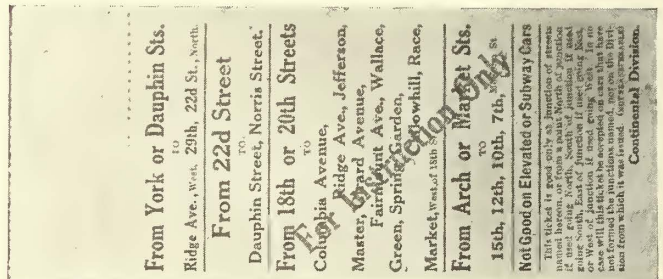
Neither student motormen nor conductors receive pay during the schooling period.

#### INSTRUCTION FOR CONDUCTORS

As shown in the accompanying illustration, student conductors are seated at desks each of which will accommodate five men. At one end of the room is a board, on or near which are

mounted a standard fare register, trolley catcher, destination sign board and framed schedules of various types, time-point tables, etc. The board also carries under spring clips two sheets of thin paper printed as the front and back of a conductor's standard way bill enlarged to 22 in. x 34 in. so that all seated in the room may easily see the different items of the way bill as they are described by the instructor.

The first step in the instruction of student conductors is a brief talk regarding the duties of the position and an explanation of the student conductor's catechism, after which the instructor explains how, when a run number is assigned, the leaving time and block numbers may be obtained from the schedule. He then assumes a run number, finds the leaving time and block numbers from a schedule in front of him and makes the necessary notations on the large way bill, instructing the men to do the same on the standard size way bill with which they are supplied. He next sets the register to "out" and starts ringing fares and tearing off properly punched transfers and exchanges, at the same time explaining why he should issue and receive certain kinds and colors of transfers, exchanges and tickets. He then assumes they are at the end of the line and explains how to find the leaving time from there and why register, transfer and exchange ticket statements should be entered on the way bill. After this he turns the destination sign, shifts the register to "in" and starts on the return trip. This is carried out for four complete trips. After the first trip the instructor shifts the responsibility for each step, by asking questions of the men. After the fourth trip is completed the way bills are balanced as they must be before being turned over to a receiver. This course of instruction, which occupies from three to three and one-half hours, is compulsory for all inexperienced men, but it is optional with ex-conductors to remain for it or not. The student is then sent to the depot to which he is assigned, after being given a conductor's cate-



Philadelphia Instruction System—Back of a Sample Transfer



Philadelphia Instruction System—Front of a Sample Transfer

chism with instructions to memorize the answers to the questions, of which there are twenty-five, as follows:

#### STUDENT CONDUCTOR'S CATECHISM

1. Q.—Upon being assigned to a run by clerk, what material is necessary for you to have before starting to work?  
A.—Way bill, tickets, punch and \$2 in change.
2. Q.—How should you find the starting time of each trip and the block numbers your car is to carry?  
A.—The clerk will assign the run number; the starting time and block numbers should then be read from the schedule of the division on which this run is located.

3. Q.—How will you find the car which is assigned to your run?

A.—By searching in the carhouse for a car on which the proper block number is posted.

4. Q.—After finding car what information should be given to register clerk?

A.—The car number, the register number and the statement shown on register dial.

5. Q.—What should be entered on way bill before leaving carhouse?

A.—Run number, block number, car number, register number, conductor's name and badge number, motorman's name and badge number, and the statement shown on the register dial, together with a statement of the number of each kind of tickets delivered to conductor by clerk.

6. Q.—What inspection of car should be made before leaving carhouse?

A.—See that register is in place, that trip dial of register is at zero, that car lights will burn properly, block and badge numbers are in place and that destination signs are properly set.

7. Q.—Who is responsible for the starting of car from terminal on schedule time?

A.—Both conductor and motorman.

8. Q.—Explain bell signals?

A.—Signals to motorman: one bell to stop, two bells to start, three bells to stop at once. Signals to conductor: three bells, pull down pole; four bells, set rear brakes.

9. Q.—What does one bell from motorman on pay-within car mean?

A.—Person wishes to board car.

10. Q.—What signal is used by motormen to inform conductor of passengers boarding car by way of front door?

A.—Motorman gives bell for each passenger who boards car by way of front door.

11. Q.—What is the rate of fare?

A.—No.

16. Q.—What tickets are not registered?

A.—Transfer tickets.

17. Q.—How should transfers be issued?

A.—When passenger asks for same at time of payment of fare and on cash fare or 5-cent ticket only.

18. Q.—In issuing exchange and transfer tickets, what punch mark is necessary?

A.—The hour only.

19. Q.—In receiving exchange tickets and transfer tickets, what observations should a conductor make?

Conductor		Motorman		Division				
1st Block No.	Badge No.	1st Block No.	Badge No.	Date				
2d Block No.	Run No.							
CAR No.	TRIP	TIME	TOTAL CASH		TICKETS RECEIVED			Transfer Receipts
			\$	Cents	Exchanges	5 ct.	Package-Tickets	
	OUT							
	IN							
	OUT							
	IN							
	OUT							
	IN							
	OUT							
	IN							
	OUT							
	IN							
	OUT							
	IN							
	OUT							
	IN							
Totals								

Philadelphia Instruction System—Back of Conductor's Way Bill

A.—Note if good on your division and offered at right place, also that date is correct and that same is within time limit of punch mark.

20. Q.—In case of your register becoming disabled whom would you notify and what record would you keep of fares collected?

A.—Would notify the office, street superintendent or dispatcher at end of line, and until same was repaired or replaced would punch each fare collected on back of pad of tickets and afterwards register them on the new or repaired register in the presence of person replacing same and make a report of it.

21. Q.—Which is the out trip as shown on the way bill?

A.—The starting time on the schedule is the out trip.

22. Q.—How often is entry made to way bill from register on each trip?

A.—Twice, once at each terminal.

23. Q.—How and where should the register be set?

A.—By turning the key in the register until trip dial stands at zero. It should be set at the end of each half trip.

24. Q.—When and how should receipts be turned in?

A.—At the finish of day's work, to receiver, after being sure that way bill balances correctly and shows the proper amount that has been collected, together with all tickets received and those remaining unissued, together with punch.

25. Q.—What method is used in being relieved on the street?

A.—When being relieved on the street by another conductor fill out O. K. or receipt card, showing conductor's name, run number, register number, commencing and ending statement of same, and have conductor who is making relief sign his name and run number to same and turn this card into office, as this is your receipt showing the statement of register to be correct at that time.

REGISTER STATEMENTS.		Referring to Rule No. 40 in "Book of Rules."																													
Register No. _____	Ending _____	<p><b>IN CASE OF EMERGENCY, CALL</b></p> <p>Bell Phone "MARKET 4407"      Keystone Phone "MAIN 951"</p> <p><i>In making up this Way-Bill all totals must balance correctly.</i></p> <p><b>STATEMENT OF PASSENGERS.</b></p> <table border="1"> <thead> <tr> <th>Passengers</th> <th>Sct. Fares.</th> <th>\$</th> <th>Cts.</th> </tr> </thead> <tbody> <tr> <td></td> <td>Sct. Exchanges Sold,</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Sct. Exchanges Received,</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Sct. Tickets Received,</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Package Tickets Received,</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Free Tickets Received,</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Grand Totals:</td> <td></td> <td></td> </tr> </tbody> </table>		Passengers	Sct. Fares.	\$	Cts.		Sct. Exchanges Sold,				Sct. Exchanges Received,				Sct. Tickets Received,				Package Tickets Received,				Free Tickets Received,			Grand Totals:			
Passengers	Sct. Fares.			\$	Cts.																										
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<b>STATEMENT OF EXCHANGE TICKETS</b>																															
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Total Sold _____																															
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RED	WHITE																														
Ending _____																															
Commencing _____																															
Total Issued _____																															

Philadelphia Instruction System—Front of Conductor's Way Bill

A.—Five cents.

12. Q.—How many kinds of tickets are in use?

A.—Five.

13. Q.—Name each.

A.—Exchange tickets; 5-cent tickets; package tickets; free tickets, and transfer tickets.

14. Q.—What tickets are sold by conductor, at what rate and under what restrictions?

A.—Exchange tickets, at the rate of 8 cents each, and only at time of collection of fare from passenger.

15. Q.—Are all tickets received registered?

The minimum training period for inexperienced conductors is five days, and the maximum any number until given up as hopeless. Ex-employees of the company may be turned in after having made one trip over each line operated from their depot and passing the examination at the instruction room. This examination is given to all students after completing their training on the cars and consists of properly completing and balancing a partly filled way bill and answering questions from the catechism and book of rules. Men who fail to pass this examination may take time to study the catechism and way bill and return at a later date for another examination.

#### INSTRUCTION OF MOTORMEN

The instruction room formerly contained a skeleton car, on which all wiring was exposed. It was found, however, that a knowledge of this wiring was of little value to the motormen of a city car, where the delay necessary to apply any but simple remedies was costly. It was decided therefore to replace this car by enough controller and brake stands to make it possible for one instructor to train ten men at the same time in the

Over the instructor's stand are suspended a gong, circuit breaker and hood switch, a fan which represents No. 1 motor and a lamp which represents No. 2 motor. On the floor in front of the controller are placed two frames of standard grid resistance on which lamps are mounted, to show the cutting out of sections of resistance at various points of the controller. The current is brought into and through the equipment as it is on a car. The effect of fast feeding, defective motors, etc., may be demonstrated by pressing a grounding switch in the floor, thus causing the circuit breaker to blow, while the effect of opening a motor cut-out switch may be shown on the fan and resistance lamps.

#### PRELIMINARY INSTRUCTION OF MOTORMEN

All newly employed men whether experienced or not are sent from the employment department to the schoolroom.

The instructor first delivers a brief lecture regarding the duties of their position and the vital necessity of caution. He then explains the operation of a controller, demonstrating this explanation by means of a board on which lamps take the



Philadelphia Instruction System—Teaching a Group of Motormen Recruits to Manipulate Controller and Brake Handles

operation of controller, hand and air brakes. There are eleven of these stands, ten of which are on a platform built around the wall on three sides of the room. The eleventh stand, which is intended for the instructor, is in the center of the room at one end, so that he may watch the students to the best advantage. The training controllers are all nine-point, fitted with automotoneers, reverse cylinders and cut-out switches. Each hand brake operates against a spring beneath the floor, while the engineer's valve on ten of the stands has reduced openings and feeds directly into pressure gages which are placed in front of the supporting rail. One of these stands is supplied with a standard sander and another with a vertical wheel brake. A complete air brake outfit is placed on the floor of the room and the engineer's valve on the instructor's stands feeds to the brake cylinder. A pressure gage is piped from the end of the brake cylinder and located in plain view of all the students, a helical spring being connected between brake levers to the return piston to release position when the air is released.

place of motors and resistance, clearly explaining the difference between resistance and running points. He also explains the path of current from the trolley to the rail, demonstrating by means of chalk and blackboard. The motor cut-out switches are then touched on but not in detail, as it is not considered good policy to overburden the new man with information at this time. The instructor then gives each man a student motor man's catechism which contains twenty-seven questions and answers as follows:

#### STUDENT MOTORMEN'S CATECHISM

The points on a controller top are arranged in two groups, namely: Series and multiple.

1. Q.—What are series points on a controller?  
A.—All points in the first group.
2. Q.—What are multiple points on a controller?  
A.—All points in the second group.
3. Q.—How does current feed to motors when control handle is on series points?  
A.—Flows through No. 1 motor before reaching No. 2 motor.

4. Q.—How does current feed to motors when control handle is on multiple points?

A.—Flows into No. 1 and No. 2 motors simultaneously.

5. Q.—What is resistance?

A.—Metal strips through which current is passed when it is desired to check full current from entering the motors.

6. Q.—What are resistance points on a controller?

A.—Points on which the control handle is placed when current passes through resistance, thus preventing full current from entering the motors.

7. Q.—What are safe or running points?

A.—Points on which the control handle is placed when current enters the motors without passing through resistance.

8. Q.—What would be the result of allowing the control handle to rest on resistance points for any considerable length of time?

A.—The resistance would become overheated and might set fire to the car.

9. Q.—How may "safe" or running points be known?

A.—The last point in the series group and the last point to which the control handle may be fed are running points.

10. Q.—What is the duty of an automatic circuit breaker?

A.—To act as a safety-valve and protect controllers and motors from a heavier flow of current than they can carry safely.

11. Q.—What are some causes for a heavy flow of current?

A.—Defective motors, power and brakes on at the same time, and fast feeding of controllers.

12. Q.—Should an automatic circuit breaker be prevented from blowing by holding or fastening?

A.—No; it would be dangerous.

13. Q.—If impossible to throw controller off when desiring to stop car, what action should be taken?

A.—Open hood switch.

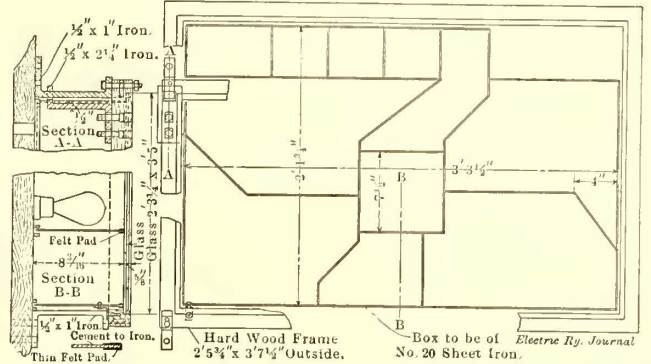
hand brake and open the drain cock under the reservoir, open the overhead switch and place the headlight and handles in their proper place.

18. Q.—Explain bell signals.

A.—Signals to motormen: one bell, stop; two bells, start; three bells, stop at once. Signals to conductor: three bells, pull down pole; four bells, set rear brake.

19. Q.—What does one bell from motorman on "pay-within" car mean?

A.—Person wishes to board car.



Philadelphia Instruction System—Instruction Board Detail of Lamp Box Frame and Support

20. Q.—What signal is used by motormen to inform conductor of passengers boarding car by way of front door?

A.—Motorman gives bell for each passenger who boards car by way of front door.

21. Q.—If car will not start on first, second or third point, but controller flashes or automatic circuit breaker blows, what action should be taken?

A.—Throw controller to off position, see that brakes are released and reverse on

rear controller in center; if so, cut out one motor; if this does not help, replace the cut-out switch and try the other. If car continues to give trouble, let it be pushed by follower.

22. Q.—If car seems dead when controller is fed to first, second and third points, what action should be taken?

A.—Throw controller to off position, see that pole is against trolley wire and turn on car lights. If these do not burn, wait for power to return on line, which will be shown when lights burn.

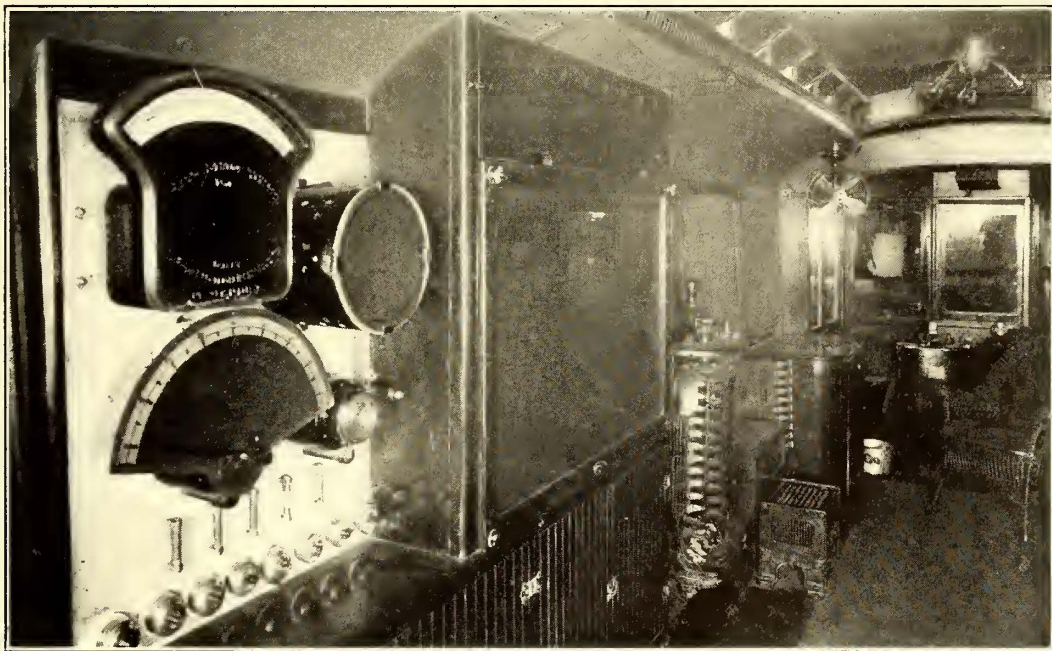
23. Q.—If car seems dead when controller is fed to first, second and third points and car lights burn brightly when

turned on what action should be taken?

A.—See if overhead and automatic switches are on. If so, cut out one motor. If this does no good, replace the cut-out switch and try the other. If car still refuses to move, be pushed by follower.

24. Q.—If the automatic circuit breaker blows three times consecutively while the controller is being fed slowly, what action should be taken?

A.—If brakes are fully released and car not ascending a heavy grade, open the controller and cut out a motor. If the



Philadelphia Instruction System—School Car, Showing Extra-Size Pressure Indicator and Ammeter at the Left

14. Q.—How should controller be thrown off?

A.—Rapidly.

15. Q.—Is it safe to throw controller partly off?

A.—No; it must be always thrown completely off.

16. Q.—Should brakes and power be on at the same time?

A.—No; they perform opposite duties and will not work together, without danger of injury to the equipment.

17. Q.—What should be done to a car when placing out of service in depot?

A.—Turn off power from air pump, release air brake, apply

controller was on a series point when automatic blew, try No. 1 motor switch first. If controller was on a multiple point when automatic blew, try No. 2 motor switch first. But in either case if the first switch tried does not prove right replace it and try the other. If automatic still continues to blow, be pushed by follower.

25. Q.—What is the maximum speed at which a car should cross special work?

A.—That which the second point on a controller would give a car on a level rail.

26. Q.—When may a reverse be used?

A.—Only when necessary to avoid an accident.

27. Q.—If necessary to operate a car through water, how should it be done?

A.—Slowly, drifting without power if possible.

The instructor explains to the men that they must study and be prepared to answer any of the foregoing questions when they are returned to the instruction room for examination. The experienced men are then sent to the depot to which they are assigned, there to make at least one trip over each line, or until the instructing motormen with whom they are placed are satisfied to pass them. Upon this they return to the instruction room for examination and final instructions.

After the old men leave the room the inexperienced men are placed at the controllers, where they are first drilled in feeding up and throwing off. They next take up the hand brake, being taught how to wind up and release, after which they take up both controllers and hand brakes, operating in response to bell signals which are given by the instructor. This training is continued until they are able instinctively to do the right thing at the right time with both controllers and brakes. The instructor then starts the air compressor, explaining how this is done on a car and how the pump is controlled by the governor. He then explains the different positions of the engineer valve, demonstrating by means of the gage on the brake cylinder and the motion of the brake levers how brakes are applied, held and released. Following this, he turns air to the engineer's valve in front of the students and drills them in applying, holding and releasing to such pressure as he may ask for. He explains in the meantime that the gage in front of them corresponds to the gage on the brake cylinder and that the motions they make are the same as will be made when they are stopping an air-brake car. This training is continued until the men can locate application, lap and release positions without watching their hands; in fact, they are kept at both controller and brakes until able to operate them with head up and eyes looking forward.

The students are next taken to the instruction car and shown the location of the various parts of the equipment which have been explained to them; also how to prepare a car for service and what to do when putting it away. This completes their preliminary training. They then go to the depot to which they have been assigned. There they are trained on the cars until satisfactory to the various instructing motormen with whom they are placed. After this they must return to the instruction room for examination and final instruction. All inexperienced

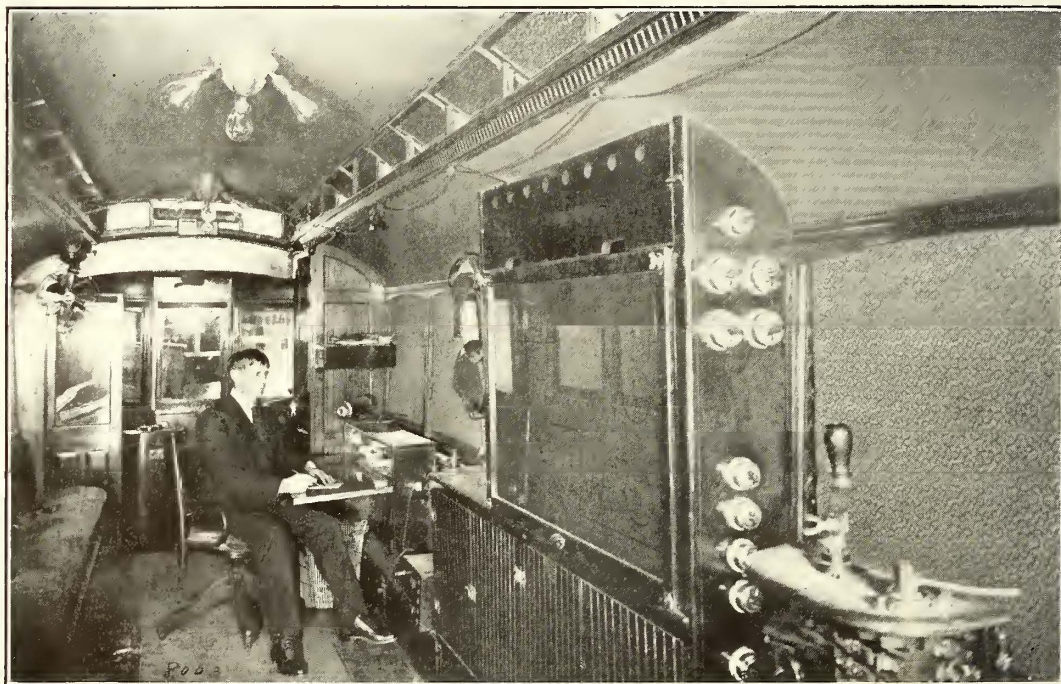
motormen must remain under instruction for a minimum period of eight days.

#### JOINT INSTRUCTION OF MOTORMEN AND CONDUCTORS

After completing their training period on the cars, the motormen and conductors return to the instruction room at the same hour. There they are all seated in one room to receive instructions in such duties as may be common to both positions. After this the motormen are seated in the other room and the examination commences.

#### EXAMINATION AND FINAL INSTRUCTION OF MOTORMEN

The examination is made up of questions from the catechism and questions regarding the application of certain rules. The examiner checks opposite the name of each man the question asked and whether it was answered correctly or not; if not, the question passes to the next man. After the correct answer has been given, the instructor explains in detail the reason for that answer. If it pertains to controllers or motors he demonstrates the explanation on the different types of controllers which are erected in the corner of this room and connected to lamps representing resistance and motors. A thorough explanation of resistance and resistance points is given at this time, the men being shown how resistance will heat more rapidly with the controller on multiple than on series resistance points. It



Philadelphia Instruction System—School Car with Illuminated Circuit Board in the Fore-ground at the Right

is also shown that with motors cut out the resistance will heat more rapidly on series points than with all motors in. How motors are cut out on different types of controllers is covered in detail, while the warning indications that cut-out switches should be used are carefully explained.

The men then have the proper operation of the air brakes explained and demonstrated on the brake system in the room. Every effort is made to discourage the waste of air and the fanning of the air-brake handle, a common fault of motormen, by explaining how the motorman with good judgment can make most service stops with one application and one or two releases. Men who fail to satisfy the instructor as to their competency are not allowed to go to work, but have an opportunity to ask questions and, after additional study of the catechism and book of rules, may return at a later date for another examination. Before leaving the employment department each motorman and conductor is furnished with a printed form on which a record of his instruction is kept. Each instructor who passes him signs his name, badge number, date of instruction, number of trips and, if motorman, whether an air or hand brake car was used. After the student has passed the examination at



the schoolroom the chief inspector signs this paper. The man then receives a badge number and is placed on the books as an employee. A card index is kept in the instruction room on which the dates of instruction of each man and any other information cared for are noted.

**INSTRUCTION CAR**

The instruction car was equipped in order to instruct classes of men without subjecting them to the loss of time necessary for a trip to the headquarters school from carhouses which were, perhaps, many miles away. It has a body of the standard pay-within type with folding vestibule doors and steps. The end bulkheads are absent as in the pay-within car so that men seated in the car may have an unobstructed view of the motor-man. The interior has a longitudinal seat along one side, while on the opposite side are placed the various demonstrating devices and special furnishings. The car may be warmed by electric heaters under the seats and on the platforms or cooled by two electric fans. A cabinet containing a water cooler and wash basin is at one end of the car, water for the wash basin being raised by air pressure from a reservoir on the floor. Next to this cabinet is mounted a six-point controller, which was installed in order to show a method of cutting out motors which differs from that of any other controller on the system. On the floor in front of this controller is a frame of unconnected grid resistance, next to which is a glass-incased compressor governor which is a part of the air-brake circuit. Next in line is the standard K-12 controller which is connected to lamps used to illuminate a chart, on which is shown by lines of light the path of current through resistance and motors on each point of the controller for both four-motor and two-motor equipments. The construction and wiring of this device are shown on pages 833 and 835. The surface of this chart consists of a framed sheet of plate glass 2 ft. 3 1/4 in. high and 3 ft.

the increased danger of multiple over series resistance points, why series resistance points become more dangerous with motors cut out, the changes of current path with motors cut out and the effect of pulling a brush from one motor on a four-motor equipment, whereby one of the others receives double current while the controller is on series points.

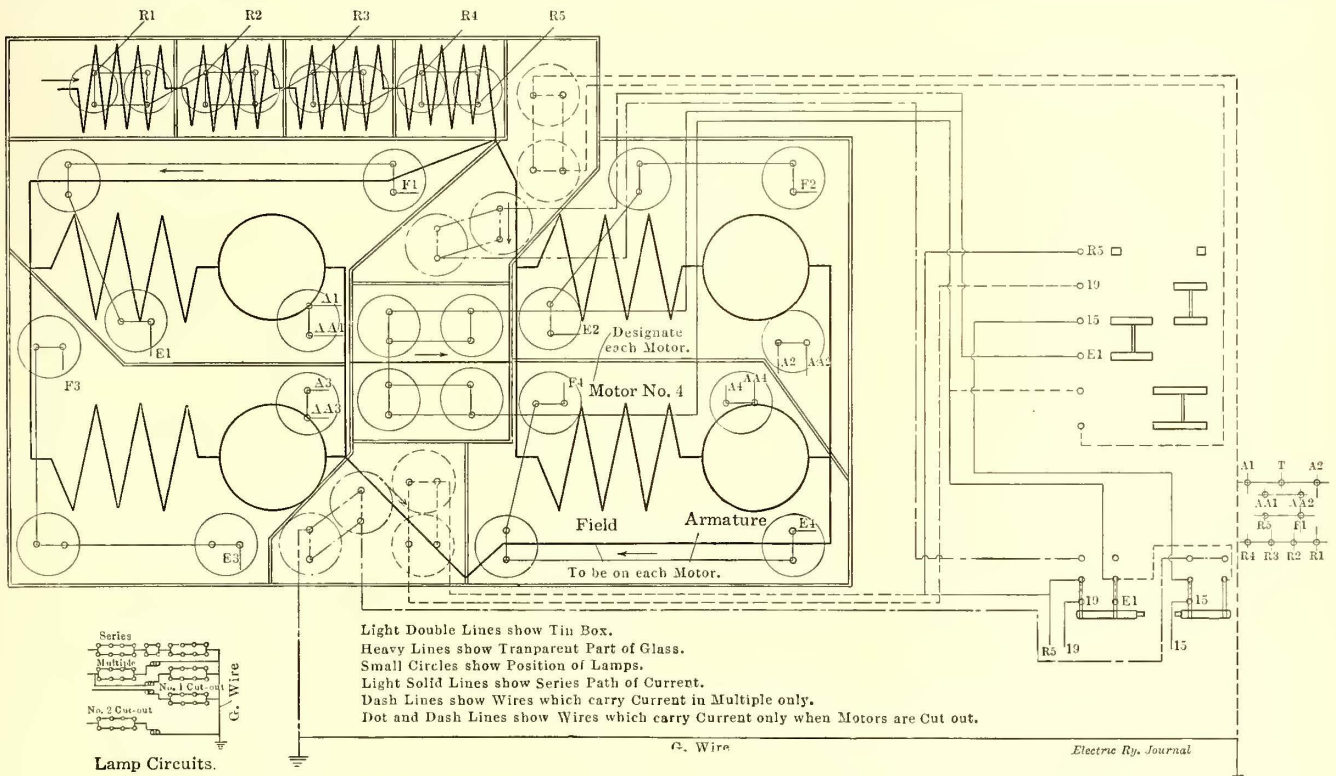
The snap switches at the side of the chart are for the purpose of changing from a two-motor to a four-motor equipment. The controller is also used to show the injurious effects of throw-

REPORT FROM INSPECTOR OF MOTORMEN												
Depot, .....					Date, .....							
NAME	Badge No.	AIR BRAKES				CONTROLLER				Run Number	Month and Day	
		Average No. of Applications	Releases when not necessary	Applies full car standing	Stops with jerk	Feeds fast	Throws off slow	On and off 1 pt. uselessly	Uses power and brakes together			Uses power over spec. work

Philadelphia Instruction System—Report Blank on Motor-man's Treatment of the Equipment

ing off slowly or pinching on and off one point. This is demonstrated by a 2 1/2-amp current, which produces an arc heavy enough to short-circuit from trolley finger to R<sub>1</sub> resistance finger. All concealed lamps necessary for this equipment are placed in the cabinet under the chart.

On the left side of the chart is a board on which are mounted instruments, as shown on page 833. The one at the top on the right side is cylindrical in form and is part of a device to show whether the car wheels are revolving or sliding. This



Philadelphia Instruction System—Wiring of the Instruction Board in the School Car

5 in. long. This glass is painted black with resistance and motor circuits, arrows indicating the direction of current flow, motor numbers, etc., shown by transparent lines which are illuminated by 16-cp lamps placed in variously shaped compartments 8 3/16 in. deep. Each compartment has a sheet of ground glass of the same shape fastened in it between the lamps and the plate glass in order to diffuse the rays of light. Each movement of the controller lights or darkens the proper lamps to show on the chart the changes in the path of current. The chart shows

cylinder is made of sheet iron with a glass front which is painted black except for a ring of clear glass near the circumference. Inside of the cylinder are eight compartments, in each of which is an 8-cp lamp, separate wires leading from each lamp to contact fingers as shown on page 836. The contact fingers are fastened to a stationary fiber disk which surrounds the axle as illustrated. As the axle turns a contact plate fastened thereto grounds one finger circuit just before opening another, thus producing little arcing at the contact and lighting

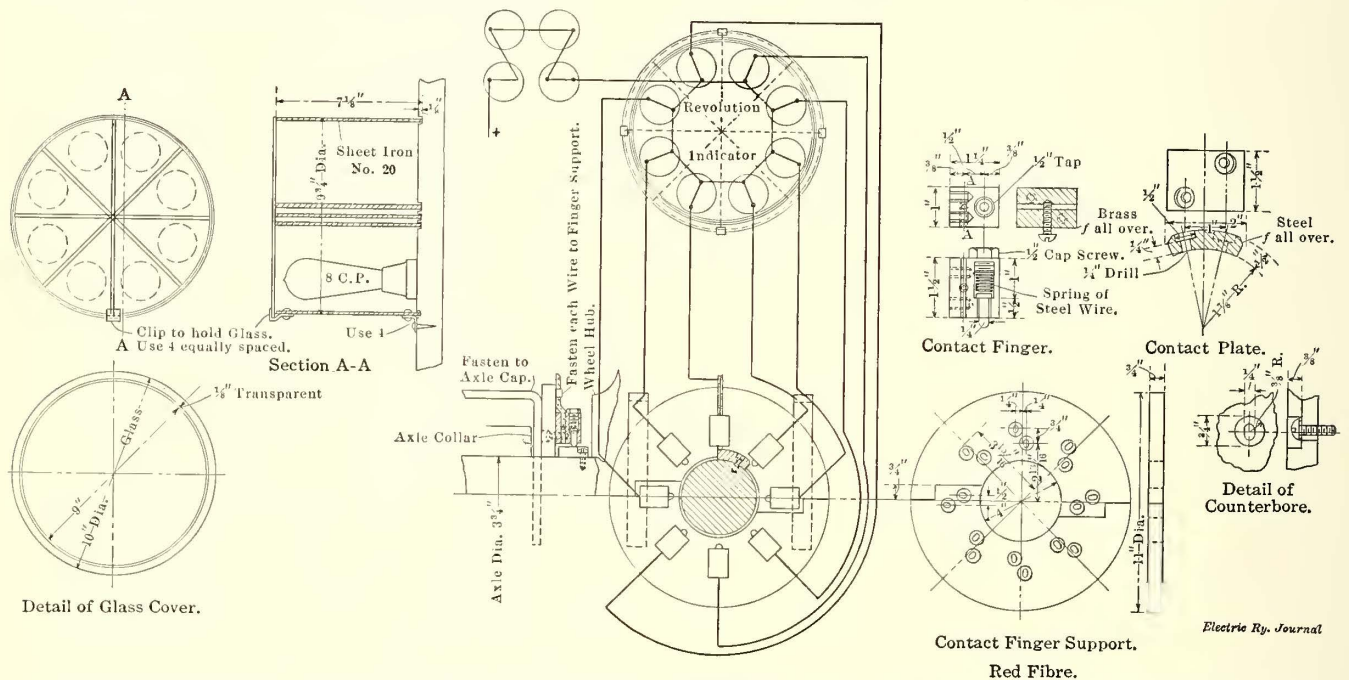
each lamp in rotation just before the preceding one is darkened. The result of this successive illumination is that only one-quarter to one-eighth of the clear circle is illuminated at one time and, if the wheels are turning, this gives the effect of a line of light traveling around the circle. However, if the wheels should slide one or two of the circuits would remain alive, causing the line of light to remain stationary during the continuance of the sliding. This scheme has proved effective in demonstrating how improper use of the brake may cause the wheels to skid.

The illuminated ammeter, which is also at the top of the instrument board, has an extra large scale for long-distance reading. This meter is connected in the motor circuit in order that the effect of power and brakes on at the same time and fast feeding of the controller may be shown. Beneath the ammeter is a pressure gage with a fan-shaped ground-glass dial. The entire instrument is about 15 in. wide and 10 in. high, the indicator being 7 in. long. Large black figures on the ground glass read to 80 lb. and are illuminated by a 16-cp lamp behind the dial. This gage connects to the car brake cylinder and will therefore register each application and release of the air brakes made by the motorman who is operating the car. A reservoir pressure gage is also mounted on this board.

The vestibule and car windows are supplied with shades. The interior of the car is finished in cherry color with light ceiling and presents an attractive appearance.

COURSE OF INSTRUCTION WITH CAR

The equipment of the instruction car was first used to test the ability of all instructing motormen properly to handle a car equipment. In order to do this the car was taken in turn to each of the eighteen depots on the system. All the instructors at the depot were taken on it at one time, each man operating the car in accordance with the rules of passenger service for a sufficient distance to enable the chief instructor to fill out an inspection form which covered the uses of the air brake, controller, etc., as shown on page 835. After completing this record of the faults of each man on the car, the chief instructor pointed out to each one where he could make improvement and operated the car for some distance in order to show clearly how it should be done. There were about 150 instructing motormen. These tests proved conclusively that many were far from first class, but the instructions given at this time have shown satisfactory results and will be repeated. After completing the education of the instructing motormen, the car was taken again to each depot in turn and classes were organized. Each class consisted of twenty experienced motormen who



Philadelphia Instruction System—Cylindrical Lamp Box and Contact Device Details of School Car Revolution Indicator

At the left of the instrument board is an engineer's valve which is connected in the braking system of the car like those on the platform. This valve is used in connection with the fan-shaped gage previously described when the use of air brakes is explained to a class of men. Near by is another engineer's valve which is cut into sections so that the instructor may show the principal wearing parts. The remainder of the car on this side is occupied by the instructor's desk, which is of the folding type, and a combination wardrobe and storage closet. Attached to this closet are card-filing cases for keeping records of the men who have received instructions on the car. Each platform carries the standard controller, air and hand brake equipment and standard sander with an extra pressure gage connected to the brake cylinder. Underneath the instructor's desk in the car is a trigger which is connected to a tripping coil mounted on the automatic circuit breaker. The touching of this trigger closes the circuit through the tripping coil and hence enables the instructor to cause the automatic circuit breaker to open during the operation of the car controller. A circuit breaker connected in the No. 2 motor circuit is also within easy reach of the instructor. The purpose of these is to see what action the motorman operating the car would take in locating and remedying the trouble.

had not passed through the regular instruction course at the headquarters school, many of whom had been hired during the 1910 strike when it was not possible to give them the most thorough training. After completing this course of instruction a schedule was prepared to show the day and hour the instruction car would be at a depot. With this schedule was an announcement that men desiring information would be welcome on the car and that a plea of ignorance would not be accepted as an excuse for failure to locate and remedy simple troubles on the street.

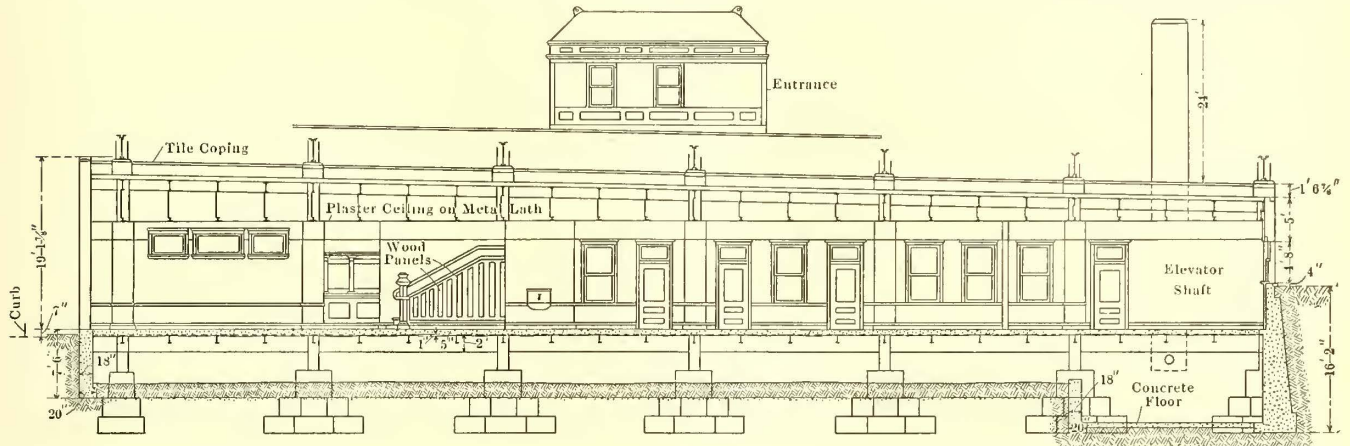
This invitation has been the means of bringing to the car many men who were aware of their inability to cope with emergencies. As previously noted, the movement of the instruction car from depot to depot will be continued, as the results have been gratifying to the management.

It is hoped eventually to appoint as instructing motormen only those who can pass a satisfactory examination as to their ability to meet emergencies and to handle the electrical and braking equipment of a car properly, but at present they are chosen by the division superintendents. Instructing motormen and conductors receive 25 cents a day extra while teaching and are distinguished by a sleeve band carrying the word "Instructor" in gilt letters.

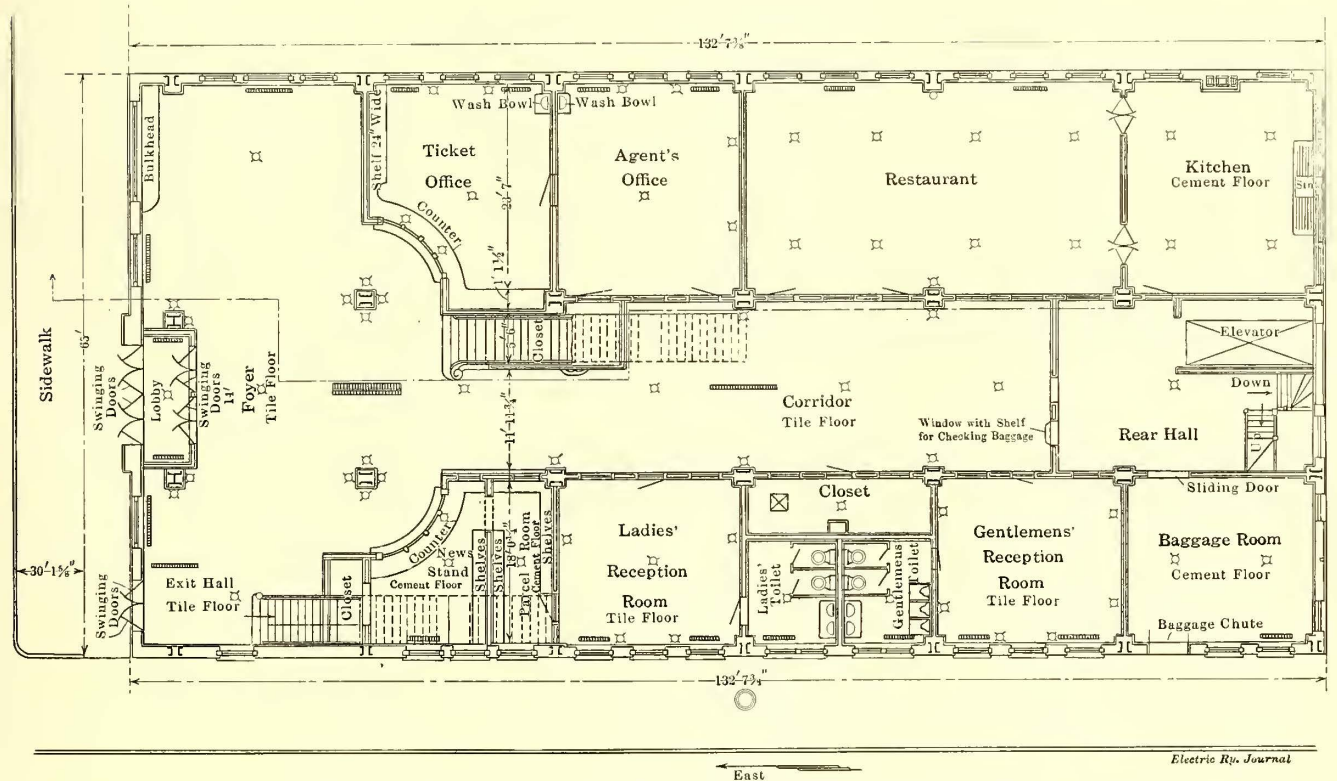
**BROADWAY STATION OF ILLINOIS TRACTION SYSTEM AT ST. LOUIS**

The Illinois Traction System recently completed a very fine passenger station located at the St. Louis end of the viaduct leading to its new McKinley bridge. This station is for the accommodation of city and interurban passengers using the Illinois Traction bridge-service cars and the through interurbans to Illinois. It is located at Salisbury Street, fronting on the Broadway double-track line of the United Railways of St. Louis. Plans for the station were drawn by Francis Bacon,

ground floor underneath a paved deck, on which are the two interurban and city tracks with their loading platforms and shelters. Complete facilities are afforded for handling local and through passengers. The station has a frontage of 65 ft. on Broadway and is 132 ft. 7 in. long. Its interior is subdivided as shown on the accompanying floor plan. The subdivisions include a large foyer from which broad stairways, as shown in the halftone engraving, lead to and from the tracks above the roof of the station. Other subdivisions of the station include a restaurant, retiring rooms, parcel room, news-stand and a baggage room. An elevator with a platform 5 ft.



Illinois Traction Passenger Station—Longitudinal Section



Illinois Traction Passenger Station—General Plan of Ground Floor

architect, Chicago, and the steel work, which includes supports for the double-track approach to the bridge, was designed by Ralph Modjeski, consulting engineer, Chicago. The construction work was handled by the department of bridges and buildings of the Illinois Traction System under the supervision of E. M. Haas, superintendent, the work being done very largely by company forces at an approximate cost of \$27,000.

**BUILDING ARRANGEMENT**

The Broadway station is built beneath the viaduct approach to the McKinley bridge at the point where the approach joins the street level. The station facilities are all located on the

x 14 ft. provides for carrying loaded baggage trucks between the ground level and the level of the station platforms above the building.

The building structure has a frame of structural steel inclosed in brick walls trimmed with cut stone. The interior steel work is incased in brick for providing protection from fire, and interior partitions are made of Mackolite 4 in. thick, bonded and laid in concrete mortar. The roof is made of reinforced concrete having a granitoid sidewalk finish covered with composition to protect it against water.

The interior finish of the station corridor and rooms is plain

oak with a white paste filler and three coats of varnish, the last coat being rubbed dull. The accompanying engraving shows the appearance of the wall finish with its white tile wainscot and the mosaic floor with the monogram of the railroad company inserted opposite the main entrance to the station. The walls have three coats of plaster placed on No. 19 wire cloth. They are tinted in conformity with the light tone of the wains-

**TABULATION OF CAR DEFECTS ON THE BROOKLYN RAPID TRANSIT SYSTEM**

The mechanical department of the Brooklyn Rapid Transit System follows the practice of summarizing on a monthly blueprint the run-in statistics of every car depot on the system. This blueprint is distributed regularly to all interested parties.

The comparisons thus made are not considered absolute because the equipments used on some lines are older than on others aside from wide variations in operating conditions. Nevertheless, these summaries arouse the spirit of emulation, as each foreman is spurred on to improve upon his previous records. On the other hand, the superintendent of equipment can detect the weak spots at a glance and can plan for betterments accordingly.

As the parallel figures for the separate divisions would not be of general interest, it has been deemed desirable to assemble the totalized run-in records of the surface and elevated systems for the half year from Oct. 1, 1910, to March 31, 1911, thereby including all of the winter months. This assembly is given in the accompanying table, which shows that these run-in statistics are kept under three general heads, as follows: "Number of Cars Run In and Result of Examinations," "Mileage Basis" and "Percentage Basis."

The first head has ten subdivisions, among the most interesting being those which give the average daily mileage per car, the number of cars found O. K. upon examination,

and run-ins not due to defects of equipment. It will be noted that the surface cars averaged from 75 miles to 83 miles a day, which is remarkably close to the range of 89 miles to 96 miles made by the elevated or high-speed equipment. The item



Illinois Traction Passenger Station—Foyer Ticket Office

cot, floor and woodwork. The building is heated from a boiler plant located in a basement under the baggage room. The wash basins in the toilet room are piped for hot and cold water, a 30-gal. upright tank having been installed in the base-

CAR RUN-IN RECORD OF BROOKLYN RAPID TRANSIT SYSTEM FROM OCT. 1, 1910, TO MARCH 3, 1911, INCLUSIVE.

Definition of the term "Run-In"—When it becomes necessary for any reason to replace any car in service, the car replaced shall be considered a "Run-In."

Number of cars run in and result of examination—	Surface	Oct.	Nov.	Dec.	Jan.	Feb.	March.
Average number of cars maintained a day.....	Elevated	925	928	928	928	928	928
Total number of cars maintained per month.....	Surface	52,080	49,500	48,608	48,267	43,708	49,073
Average number of cars operated a day.....	Elevated	28,675	27,840	27,840	27,840	25,984	28,768
Total number of cars operated per month.....	Surface	1,407	1,395	1,409	1,402	1,413	1,461
Revenue mileage for month.....	Elevated	781	758	805	788	794	821
Average mileage per car a day of cars maintained.....	Surface	43,615	41,840	43,699	43,444	39,560	45,305
Found defective mechanically or electrically.....	Elevated	24,207	22,737	24,972	24,441	22,230	25,456
Found O. K. on examination.....	Surface	3,931,489	3,800,419	3,841,834	3,945,048	3,554,679	4,082,414
Due to causes not attributable to condition of equipment.....	Elevated	2,574,940	2,483,363	2,699,351	2,664,347	2,401,765	2,706,202
Total of all causes.....	Surface	75	77	79	82	81	83
Mileage basis—total number of revenue miles made per car run in—	Elevated	90	89	93	96	92	94
Found defective mechanically or electrically.....	Surface	473	396	542	688	593	602
Found O. K. on examination.....	Elevated	203	173	240	154	105	66
Due to causes not attributable to condition of equipment.....	Surface	251	236	403	480	491	440
Total of all causes.....	Elevated	19	27	32	26	10	19
Percentage basis—number of cars run in. Defective mechanically or electrically, compared with—	Surface	200	181	323	283	262	265
Total cars maintained.....	Elevated	6	2	2	6	8	7
Total cars operated.....	Surface	924	813	1,268	1,451	1,346	1,307
	Elevated	228	202	274	186	123	92
Found defective mechanically or electrically.....	Surface	8,312	9,597	7,088	5,734	5,994	6,781
Found O. K. on examination.....	Elevated	12,684	14,355	11,247	17,301	22,874	41,003
Due to causes not attributable to condition of equipment.....	Surface	15,667	16,104	9,533	8,219	7,240	9,278
Total of all causes.....	Elevated	135,523	91,976	84,354	102,475	240,177	142,432
Percentage basis—number of cars run in. Defective mechanically or electrically, compared with—	Surface	19,657	20,998	11,894	13,930	13,567	15,405
Total cars maintained.....	Elevated	429,157	1,241,682	1,349,675	444,058	300,221	386,600
Total cars operated.....	Surface	4,255	4,675	3,029	2,712	2,641	3,123
	Elevated	11,294	12,294	9,851	14,324	19,525	29,415
Total cars maintained.....	Surface	0.9	0.8	1.0	1.4	1.4	1.2
Total cars operated.....	Elevated	0.7	0.6	0.8	0.6	0.4	0.2
	Surface	1.1	0.9	1.2	1.6	1.5	1.3
	Elevated	0.8	0.8	1.0	0.6	0.5	0.3

ment. This tank is heated by a coil placed in the firepot of the steam-heating boiler. A drinking fountain has been placed in the main corridor.

The St. Louis, Springfield & Peoria Railway has been approved for membership in the American Railway Association.

entitled "Due to Causes not Attributable to Condition of Equipment" shows a startling difference in favor of the elevated cars, but this is readily explained by the fact that many surface car run-ins are due to outside causes, such as collisions, side-wipes and the like. The real test of the reliability of the car equipment as a whole is given in the last item, which shows

the percentage of operated run-in cars which were found mechanically or electrically defective. These figures are very low, ranging from 0.9 per cent to 1.6 per cent on the surface division and from 0.3 per cent to 0.8 per cent on the elevated division.

It should be stated that the greatest care is taken to insure complete run-in records. Formerly the platform men were supplied by the transportation department with report blanks which were not numbered serially when they were turned in by the motormen. Hence the shop foreman had no means of knowing whether or not all defect reports had been submitted to him. The adoption of serial numbers has eliminated this source of error, since a missing report can be detected at once. The original copy of the defect report is given directly to the shop foreman, who afterward compares it with the like-numbered duplicate which is forwarded to him by the transportation superintendent.

### TIMBER FROM REPLACED BRIDGE OF CLEVELAND, PAINESVILLE & EASTERN RAILROAD

The steel bridge of the Cleveland, Painesville & Eastern Railroad at Willoughby, Ohio, was constructed in the spring of 1910 to replace a wooden structure. In the destruction of the wooden bridge the timber was saved carefully and it has been possible to make use of most of it. The timber bridge was constructed in 1897 of long-leaf yellow pine and its original cost was about \$12,000. A saw was purchased second-hand at a small outlay and used to cut the timber. Although all of



Delegates at Convention of Arkansas Association of Public Utility Operators

the timber has not yet been utilized enough has been cut to build the following: An addition to the shop at Willoughby, 60 ft. x 60 ft., two stories high; an addition to the dance hall at Willoughby Beach Park, 16 ft. x 50 ft.; a two-story station for the Electric Package Agency, 40 ft. x 20 ft., at Willoughby; the guard rail which was placed on the steel bridge; boards and braces for 3500 ft. of snow fence. Some of the timber has also been used in the work of rebuilding cars. This information has been received through the courtesy of E. L. Schmock, assistant secretary and purchasing agent of the company.

The total revenue of the Liverpool Corporation Tramways in 1910 amounted to £614,815. The operating costs, including rental of leased lines, were £405,561, leaving a balance of £209,253. This sum was applied as follows: Interest, £50,344; sinking fund and repayment of loans, £60,643; reserve, renewal and depreciation account, £65,511; contribution in aid of the general rate, £32,755.

### CONVENTION OF ARKANSAS ASSOCIATION OF PUBLIC UTILITY OPERATORS

The fourth annual convention of the Arkansas Association of Public Utility Operators was held at Little Rock, May 3, 4 and 5. There was a large attendance of members from Arkansas as well as from Tennessee, Oklahoma, northern Texas and southern Missouri.

The meeting was called to order Wednesday morning, May 3, at 10 o'clock, when it was found that 178 delegates were registered.

The first morning session began with the roll call and applications for membership. The latter showed an increase of 50 per cent since the last meeting, a gratifying sign of the prosperity of the association.

The report of the executive committee was then presented. It gave an epitome of the activity of the association during the past year and stated that great interest had been taken by the members of the association in everything connected with the welfare of the public service corporations of the State and in the improvement of the services rendered by them. It also stated that public sentiment was growing more favorable to public service corporations. The report of the legislative committee showed that during the meetings of the Legislature now in session several bills had been introduced which, if enacted, would have been very inimical to the public service corporations of the State and of no benefit to the public. The committee, through the presentation of the facts in the matter to the members of the legislative committee before which these bills were brought and to members of the Legislature as a body, was

able to prove the injustice of these bills. Hence they failed to pass.

The report of the secretary and treasurer was also read at this session. The association was in a prosperous condition and had a balance in the treasury and no debts outstanding.

President Fowles, Pine Bluff, then delivered an address. He first referred to the plan to form a twin-State or a tri-State association with the public utility companies of Mississippi and Tennessee. The companies in these States accepted the suggestion courteously but did not generally favor such an organization. The president then complimented the members on the satisfactory condition of their organization and dwelt upon the advantages of association work, especially to the representatives of small companies, who receive the benefit of the experience of the operators of the larger properties. This benefit comes not only at conventions, but during the year, because whenever any member desires special information the question can be taken up through the president of the association. President Fowles also referred to the anti-corporation

bills presented in the Legislature of the State during the past year. In his opinion, however, there was now beginning to be a reaction in the Southwest in favor of corporations, because a great many States had come to realize that anti-corporation legislation discourages the investment of Eastern capital in those States. In conclusion, the speaker expressed his appreciation of the support which he had received from members of the association during his two terms of office.

At the afternoon session the following papers were read: "Effect of Natural Gas Upon Municipalities," by W. L. Wood, Jr., general manager Texarkana Gas & Electric Company; "The Rate Question," by J. M. Hewitt, manager Mariana Light & Power Company, and "Water," by W. C. McGuire, manager Arkadelphia Electric Lighting Company.

In the afternoon the ladies in attendance at the convention enjoyed an automobile ride around the city and to Fort Logan H. Roots. In the evening there was a theater party at the Majestic Theater. The performers got off many skits on different delegates in the audience.

#### THURSDAY'S SESSION

The session on May 4 began at 10 a. m. and the following papers were read and discussed: "New Business," by M. Q. Woodward, new-business manager Pine Bluff Corporation; "Road-Bed Construction," by D. A. Hegarty, vice-president and general manager Little Rock Railway & Electric Company.

At the afternoon session the following papers were read: "Relation Between Contractors and Central Stations," by E. C. Bragg, manager Electric Construction Company, Little Rock; "Municipal Plants of Arkansas," by W. H. Walkup, superintendent Batesville Water & Light Company.

In the afternoon the ladies were entertained with a trolley ride to Forest Park, where an informal entertainment was held for them. They also participated in an auto ride around the city.

In the evening an informal banquet was given at the New Capitol Hotel by the Class B members of the supply men. Different members of the Legislature, then in session, attended and made speeches, and 255 members and guests were present. D. A. Hegarty acted as toastmaster and introduced each speaker with appropriate remarks. The following representatives of operating companies, members of the association, spoke: B. C. Fowles, Pine Bluff; S. A. Stearns, Little Rock; J. M. Hewitt, Mariana; E. T. Hardin, Hot Springs; C. J. Griffith, Little Rock; W. C. McGuire, Arkadelphia; J. W. McClendon, Fayetteville; W. L. Wood, Jr., Texarkana; W. M. Kavanaugh, Little Rock. Speeches on behalf of the supply men were made by Lewis Hunt, Commercial Electric Company, St. Louis; Clifford R. Croninger, General Electric Company, St. Louis; George Leak, Westinghouse Electric & Manufacturing Company, Memphis, and Walter Kleinschmidt, Electric Supply Company, Memphis. The toastmaster also called upon Hon. Kemp Toney, president of the Arkansas Senate, and Hon. Arthur Turner, State Senator from Jonesboro. The speeches referred to legislative matters and brought forth great enthusiasm. They stated in effect that, among the States which have great undeveloped resources, those which had shown the greatest growth are the ones which have invited corporations and capital to develop their resources; that corporations which treated the public fairly should receive every encouragement, and as the corporations of Arkansas were of that nature they should have fair treatment.

On the same evening the ladies were entertained at a banquet at the Marion Hotel. The entertainment committee in charge consisted of Mmes. D. A. Hegarty, E. C. Beach, S. A. Stearns, W. J. Tharp, C. E. Rose and C. J. Griffith.

#### FRIDAY'S SESSION

At the morning session on Friday a paper on "General Accounting of Public Utility Corporations" was read by W. J. Tharp, auditor Little Rock Railway & Electric Company. After the discussion of this paper an executive session was held at which new business was discussed. The election of officers for the ensuing year resulted as follows: President, J. M. Hewitt, manager Mariana Light & Power Company; first vice-

president, W. L. Wood, Jr., manager Texarkana Gas & Electric Company; second vice-president, J. W. McClendon, superintendent Fayetteville Light & Power Company; third vice-president, W. C. McGuire, manager Arkadelphia Electric Company; secretary, W. J. Tharp, auditor Little Rock Railway & Electric Company; treasurer, E. T. Hardin, superintendent Hot Springs Railway Company.

The following executive committee was elected: D. A. Hegarty, chairman, Little Rock; S. A. Stearns, Little Rock; A. E. Main, Hot Springs; W. H. Walkup, Batesville; W. C. McGuire, Arkadelphia; B. C. Fowles, Pine Bluff; J. W. McClendon, Fayetteville; Mrs. LaSalle Stoops, Stuttgart. The legislative committee is the same as the executive committee, but is a flexible committee, and can be increased in size at any time if necessary.

Mrs. LaSalle Stoops, manager of the Stuttgart Water & Light Company, is said to be the only lady successfully managing a light and water company in the country. She is a very active member of the association. The papers presented at the convention by Messrs. Hegarty and Tharp were the only ones of railway interest, and are published in abstract in this issue.

The place of the next convention of the association will be selected by the executive committee at its meeting in February, 1912.

## CONFERENCE ON SIGNALS IN INDIANA

The Indiana Railroad Commission called a conference for May 4, 1911, of the special committee which is investigating block signal systems for installation on the interurban railways of the State. On that day the committee and members of the commission inspected the Kinsman block signal system installed on the Plainfield division of the Terre Haute, Indianapolis & Eastern Traction Company's line between Plainfield and Cartersburg. The special committee asked for further time in which to present its final report. The commission acceded to this request, and fixed June 1 as the date on which the final report is to be submitted.

Since the last conference of the committee with the commission the members of the committee have studied the exhibit of railway appliances and signal systems in connection with the meeting of the American Railway Engineering & Maintenance of Way Association and of the Railway Signal Association in Chicago. The committee has also inspected the installation of Nachod signals on the Chicago & Milwaukee Electric Railway near Racine, Wis.

## HEARING TO REQUIRE ELECTRIFICATION OF WEST SIDE FREIGHT LINE IN NEW YORK

A hearing was held before Commissioner Eustis of the Public Service Commission of the First District of New York on May 5, 1911, to determine whether or not an order should be issued to require the New York Central & Hudson River Railroad to change its motive power from steam to electricity on its West Side tracks from Spuyten Duyvil south. After several witnesses had been called Mr. Eustis adjourned the hearing for two weeks, suggesting to Counsel Lyman of the New York Central & Hudson River Railroad that the company's engineers should take up the question of electrifying the West Side tracks.

The *Tramway and Railway World* in its issue of March 25, 1911, commented editorially on the campaign to prevent accident which is being carried out by the Portland Railway, Light & Power Company, Portland, Ore., and suggested that notices embodying the cautions to passengers mentioned by the Portland Railway, Light & Power Company in its campaign might well be posted in shelters on tramways in England where passengers sometimes have to wait for trains and cars and where they might be induced to study instructive literature designed to promote their safety and to prolong their life.

## BALTIMORE BULLETIN ON CARE OF SPECIAL WORK

The United Railways & Electric Company of Baltimore has recently issued to its motormen the following common-sense bulletin on the conservation of special work:

"In the rear of the Carroll Park shops there is a lot upon which is stored special work—frogs, mates, switches and crossings—out of shape and out of service because it has become cracked, chipped and broken. Anyone not familiar with the operation of a street railway system might suppose that this discarded special work had lived its natural life and served as long as could be expected. But while it is true that the life of special work must necessarily have a limit, it is also true that its life is dependent largely upon the manner in which cars are operated over it. Whenever a motorman runs his car carelessly through a switch or over a crossing or too rapidly around a curve he helps to send some special work to the Carroll Park scrap heap. Special work is made of finer steel and is of higher grade than straight rails, and, being of special design, must be made to order. The high-grade steel and special workmanship make it far more expensive than ordinary track. In addition



Views of Damaged Special Work Used as Object Lessons

tion there is the expense of laying it. The old work has to be removed and the new installed, requiring a gang of workmen; the streets must be torn up and repaved; it causes wear on other parts of the track by removing a vital part of the line; and it interferes with traffic on the street.

"To keep a piece of special work in its place, in active service, does not cost much—just a little thoughtfulness and care on the part of motormen.

"Special work is expected to bear a greater strain than the rest of the track, and for this reason it is made of harder steel, in order that it may live as long as straight rails; and it will do so if subjected only to ordinary wear. If a car is carefully operated, the special work will not be damaged. But when a motorman runs his car rapidly, bumping the heavy trucks of his car over special work, he puts the track to a test no steel can long stand. If one could beat with great force upon the most costly steel with a huge 20-ton or 30-ton sledge hammer, that steel would be broken to pieces. This is exactly the effect produced on special work by a motorman who runs his car rapidly through switches, curves and over crossings.

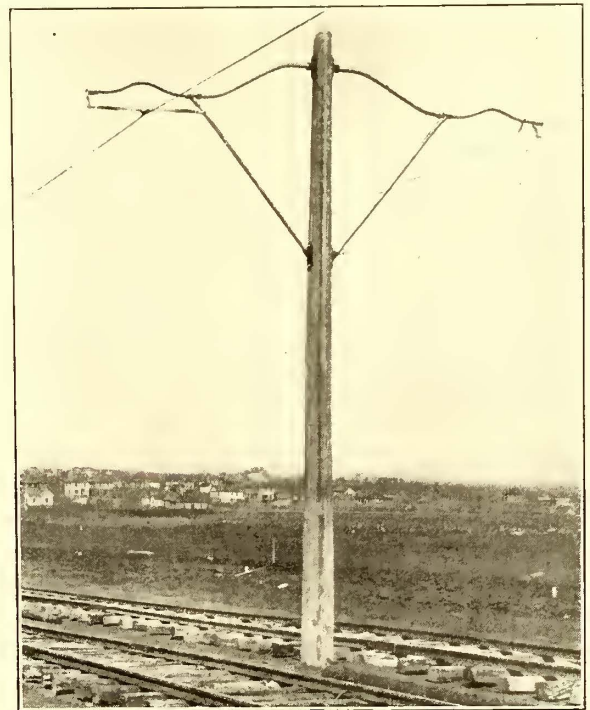
"This company buys the very best of special work, and, with care, it should last for a considerable time. But if proper care is not exercised in operating cars over it, it wears out more

quickly than it should; and, as its life of usefulness is shortened, the cost of maintenance is correspondingly increased. A motorman can do much to prolong the life of special work. If whenever a motorman approaches special work he will think of that Carroll Park scrap heap and what it means, the special work will soon give a much greater amount of service. Run slow through switches, curves and over crossings."

The bulletin contained illustrations of new and discarded special work, together with a note on the cost of renewals. The views of the old special work are reproduced in the accompanying cuts. The management finds that the men appear to have been impressed with the bulletin and its illustrations from the fact that a noticeable improvement in running over special work is apparent all over the system.

## CONCRETE POLE CONSTRUCTION IN OKLAHOMA

The accompanying illustration shows one of the interurban lines of the Oklahoma Railway as equipped with reinforced concrete center poles with semi-ornamental pipe brackets. This



Reinforced Concrete Center-Pole Construction

is an experimental equipment of twenty poles installed late in 1910. These poles are of the hexagonal type 30 ft. high with 7-in. tops and with reinforced walls  $3\frac{3}{4}$  in. thick. The manufacturing cost per pole was \$8.50.

## BUSHING ARMATURE HEADS

A new method of bushing armature heads has just been put into use at the Chicago Railways shops. When an armature head or its seat becomes so worn that the frame does not clamp it tightly and the position of the armature cannot be easily maintained between the pole pieces the heads are bushed. A V-shaped groove about  $\frac{5}{32}$  in. deep is cut in the edge of the armature head. A ring of cold-rolled steel is sprung into this groove. The stock from which the rings are made is beveled on one side to fit the seat turned in the armature head. The bushings as applied restore the original diameter of a rigid surface for holding the heads tightly in the frames. The electrical department has gages with tool-steel points so fixed as to show the correct diameter to which the V-shaped groove must be turned in order that the armature head with its new bushing in place shall have its original diameter.

## GENERAL ACCOUNTING OF PUBLIC UTILITY CORPORATIONS\*

BY W. J. THARP, AUDITOR LITTLE ROCK RAILWAY & ELECTRIC COMPANY

Since the passage of the Hepburn bill, placing public service corporations under governmental control, and the formation of the Interstate Commerce Commission and many public service state commissions, much more time and careful thought are being given to the accounting system, and this is rightly so, for after all it is the books of the company which reflect the net results achieved.

The backbone of the accounting system is the general ledger, cash book, bank book and journal.

*No. 1. Construction and Betterment Accounts.*—The first step to be taken after a franchise is secured is to construct the system. The construction register shows in detail the cost of your property account. I believe that the form almost universally used is a bound book, providing, first, the voucher number; second, total charge; third, a succession of blank unit columns making possible any division of distribution desired.

No charges should be made to construction account without written approval from the proper officials. A very convenient form for keeping in touch with the construction expenditure is a loose-leaf sheet, showing the actual cost of construction for the current month and an estimate of the construction expenditures for the three following months. The form in detail is as follows: Job number; date issued; estimated date of completion; description, original estimate; estimate at date of report; amount expended for current month; amount expended in current year; total expended; needed to complete; four blank unit columns, the first three being the estimated construction expenditures for ninety days, and the last column the amount necessary to complete the job. By taking the totals of the estimated construction expenditures and combining the figures with a short and concise report of the net cash receipts and operating expenses for ninety days, a most excellent record for the manager is obtainable, as it gives him time to make whatever financial arrangements are necessary.

*No. 2. Income.*—First I will take up the books and records most generally used by a street railway system. A convenient form for the railway earnings register is a bound book, giving the date, trips, car hours, transfers, deadheads, tickets, cash fares, policemen and firemen, a blank column for any extra occasion, and total passengers registered, earnings per car mile and car hour and weather. At the bottom of the page are three total columns, the first showing the total receipts for the month, the second the amount brought forward from the previous month and the third the total for the year to date. From this record a daily statement of the railway earnings is made up. This statement accumulates for the month to date and the year to date. The temperature and the weather are also shown on the report. Mention is also made of any special occasion.

The starter gives each conductor, upon taking his run, a trip sheet, transfer envelope and time sheet. The trip sheet provides for the trip number, time, register reading, necessary columns for the different classes of fares and money, a place for the names of the crew running the car, and also space for the relief crew to sign the register reading at the time the car is turned over to the relief crew, thereby preventing any dispute between the two crews.

When the run is completed, the conductor totals up his trip sheet and turns in his money and tickets to the receiver, who, after verifying the correctness of the returns, issues a receipt, which is in duplicate form, the amount of money and conductor's badge number being shown by numbers, which are cut out by a punch. The duplicate is sent to the office with the trip sheet.

After the returns are all in, the money counted and the bal-

ance obtained, the money is put away in a safe, and the first thing next morning is taken to the bank. An arrangement is made with the bank to have the money counted immediately, and, as the bank has a Johnson coin-counting machine, it takes but a short while.

The item "chartered cars" represents the amount received for the use of special cars.

The item "advertising in cars" represents the amount received for the advertising space in the cars, the exclusive privilege with most companies being covered by one contract.

The item "miscellaneous income" represents sums received from other sources, such as power furnished from the railway circuit.

The income from electric, gas and water companies is, in most instances, obtained by an abstract of the consumers' ledger. In regard to the form to be used, where the electric, gas and water companies are under one management the three combined together in one book is preferable to separate books for each department. I also prefer one bill, showing, of course, the amount for gas, water and electricity, to three separate bills, as it is much more economical and is more convenient to the customer.

The receipts from lighting customers are deposited in the bank daily, and all payments made by the cashier for petty cash purposes are made from a petty cash fund.

*No. 3. Expense.*—Practically all items of expense are recorded in the accounts payable book where the voucher system is used. The accounts payable book provides for the voucher number, name, amount and any number of unit columns required; the totals only of each column being posted in the general ledger.

The system of the Little Rock Railway & Electric Company provides thirty-seven accounts for the expenses of the railway department and thirty-one for the lighting department. The specific headings for the railway department are as follows: Maintenance, consisting of nine accounts; transportation, consisting of fifteen accounts; general expense, consisting of thirteen accounts.

The specific headings for the lighting department are as follows: Total manufacture, consisting of nine accounts; total distribution, operation and maintenance, consisting of ten accounts; general expense, consisting of twelve accounts.

In order that a company may know what it has really earned each month it should exert every effort to voucher all expenses incurred during the month. In case large sums are expended, which cover several months or a year, the amount should be charged to suspense account and the proper amount charged into expense each month by a journal entry.

In the accounts payable book are provided a column for the expenses of the railway department and a column for the lighting department. For the details of the expenses of each department there are two separate books, which provide for the voucher number, total charge and a separate column for each item of expense. Another item which should be provided for each month in expenses is the damage account. You should charge into expenses each month enough to maintain always a good damage reserve account.

*No. 4. Deductions from Income.*—Under this heading are found interest on funded debt, interest on current liabilities, taxes—real and personal taxes—privilege and any other deductions required or desired, such as sinking fund, reserve and emergency fund or depreciation fund.

The above items should be deducted monthly in order that your surplus or deficit may represent, as nearly as possible, the true result accomplished for the month. It is very desirable where the earnings of the company are such as to justify you to set aside a certain amount each month for depreciation, for it is certainly taking place daily.

*No. 5. Surplus or Deficit.*—This item should represent the net earnings of the company. It should be the amount over and above all operating expenses, taxes, interest on bonds, notes, reserves for slow and bad accounts, depreciation, etc. It should represent the amount available for dividends.

\*Abstract of paper read at the annual meeting of the Arkansas Association of Public Utility Operators, Little Rock, May 3, 4 and 5, 1911.



There is just one other book to which I should like to call attention, and that is a bond coupon filing book. At the top of the page is the serial number of the bond, and, as each coupon is numbered consecutively, spaces the actual width and length of the coupon are ruled on the sheet, and as soon as the coupons are paid and canceled they can be pasted in this book.

Other items which must not be lost sight of are mechanical machines, slide rules and wage tables. The posting to the customer's ledger, including both debits and credits, is proved daily by the use of a fifteen-bank Burroughs adding machine. The expenses per car mile, per car hour and per cent of increase and decrease, on the daily railway earnings statement, are obtained by the use of a Thatcher cylindrical slide rule. The payrolls of all the employees of the company are very quickly and readily calculated by the use of a daily and hourly wage-computing table. The monthly trial balance of the consumer's ledger is also obtained by the use of the adding machine, it being necessary to go through the ledger only twice in order to secure a complete trial balance. In the lighting department quite a saving is made by the use of a modern addressograph, which is electrically operated. The addressograph mentioned is a machine which has just been installed. Its main feature is that the address plate is held in the holder, consisting of three parts, the upper plate being for the name, the lower plate for the address and the other plate for the account number. This makes the operation of the addressograph very easy, as when a customer moves and a successor goes in, it is only necessary to take out the nameplate and insert the name of the new customer. This plate is made of cheap metal, which costs only \$1.25 per 1000. The system just mentioned costs practically one-third as much as the old rubber-type system to operate.

Another item, which I am mentioning practically last, but by no means least, is the monthly operating report. The Little Rock Railway & Electric Company makes up monthly a statement consisting of fourteen pages which gives on the front page the gross income for the month, the operating expenses and taxes, the deductions from income and net surplus. It also shows the per cent of operating expenses and taxes to gross income, the earnings on both preferred and common stock, the car miles, car hours, kw-hours, passengers carried, gross income per car mile, per car hour and per kw-hour. On this page the increase or decrease, as compared with the same month a year ago, is shown, and also on the same page are shown the items above accumulated for the year to date and compared with the same period for the previous year. On the following pages the income and expenses by departments are given in detail. On the last page is shown the trial balance for the current month, also the trial balance for the preceding month, together with the increase or decrease between the two months.

In addition to this report the company gets out monthly a payroll and statistical report which gives in detail the number of employees, rate, occupation, the number of accidents, specifying whether caused at street crossings, or while boarding or alighting from the car, or by collision, etc. It also furnishes a vast number of data, such as meters repaired, cars repaired and painted, kilowatt output of the power house, oil and waste used, the number of cars on hand and type, the number of boilers, horse-power and make, number of generators, kilowatt capacity and type, and, in fact, almost all data pertaining to the company's payroll and physical property.

In regard to apportioning expenses where water, electric railway and gas companies are combined several methods are used, some being arrived at by the per cent of the earnings of each department of the total earnings; some on the basis of the cost of investment of each department, and some on the output of the power house.

The Galt, Preston & Hespeler Street Railway, Ltd., Galt, Ont., and the Berlin & Waterloo Street Railway, Berlin, Ont., are being operated with power from Niagara Falls supplied by the Hydroelectric Commission.

## ROADBED CONSTRUCTION AT LITTLE ROCK

At the annual meeting of the Arkansas Association of Public Utility Operators, held in Little Rock, May 3, 4 and 5, D. A. Hegarty, general manager of the Little Rock Railway & Electric Company, read a paper on roadbed construction in city streets. He described the method of installing T-rail track in Little Rock substantially as noted in the *ELECTRIC RAILWAY JOURNAL* for Nov. 20, 1909, on page 1061. The Little Rock company uses a 72-lb. T-rail laid on 6-in. x 8-in. x 8-ft. creosoted ties and ballasted with 8 in. of broken stone. Soft places in the sub-grade are filled with coal cinders. The rails are connected with six-bolt Continuous rail joints suspended between the ties. After the track is tamped and surfaced, concrete is poured in up to the top of the ties and covered by a 1-in. sand cushion for the brick paving. The rails are bonded with two No. 0000 soldered and compressed terminal bonds placed under the angle plates. The track is cross-bonded every 300 ft. with two No. 0000 tinned copper conductors and is also connected every 300 ft. to a 1,000,000 circ. mil tinned copper wire ground return. Mr. Hegarty said that whenever possible the ground return cable should be laid in concrete to protect it from contact with the ground, where it would soon deteriorate. Large ground return plates should be buried at the ends of all terminals and placed in water, if possible—if not they should be put in a space lined with charcoal and cinders. These plates should be buried at least 8 ft. or 9 ft. below the ground and distant from any service pipes.

The rails should be spiked to the ties with standard 5½ in. x-9/16 in. spikes with a chisel point in order to keep the ties from being crushed when the spike is being driven. Mr. Hegarty recommended a concrete mixture of the following proportions: One part Portland cement, two parts clean sharp sand and four parts crushed stone. The mixture should be used as wet as possible. If brick or block paving is laid the space on each side of the web of the rail should have pure cement, so as to give a smooth surface of the same width as the rail head for placing the block, except on the inside of the gage line of the track where the rail is high enough to allow the block to be set under the head of the rail. The block should be laid on a 1-in. sand cushion and rolled with a roller weighing not less than 10 tons. It should then be thoroughly grouted with cement grout, paving pitch or asphaltum tar. After the grouting has set the paving should receive a final rolling. Instead of using grooved block on the gage side of the rail the Little Rock company finds it better to use the ordinary block. This is placed under the head of the rail where there is sufficient space, and crowned toward the center. This construction avoids the undue wear to which grooved block is subjected from vehicles turning in and out of the track.

Mr. Hegarty said that he was opposed to putting asphalt on any part of the roadbed. He found that the T-girder or shanghai rail holds its alignment perfectly, as its vibration is so slight that the pavement does not break away from it as it does with other rails. Mr. Hegarty concluded with a reference to special work, which he said should always be made with large leads. Where possible the tongue of the switch should be placed on the side where it will get the least running wear. All rail tongues, frog points and the surfaces of the special work which receive the wear should be of hard material.

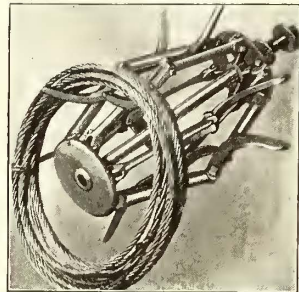
The report of the Brisbane (Australia) tramways shows that the receipts for 1910 amounted to £222,637, an increase of £23,302 over the year 1909, while the expenses had increased by £10,740, showing an increased net profit of £12,562. The total number of passengers carried was 32,419,276, an increase of 2,686,938, equivalent to carrying the whole population of Brisbane about 230 times during the year. The increase in car miles was 202,233, or 6.09 per cent. The increase in working expenses amounted to 10.18 per cent due to the increased mileage and to the increased cost of materials due to the general rise in wages consequent upon labor legislation.

### IMPROVED LINE CONSTRUCTION TOOLS

There is an old saying that no workman should be the servant of his tools, and this saying aptly fits those men engaged in the work of railroad construction. If, for example, a lineman, or any other workman, for that matter, regularly uses some tool or instrument that is not fully suited to his needs, he must either exert additional muscular effort or give some mental attention to the use of that tool. Thus the quality of the construction tools used by railroad linemen and trackmen and their adaptability to the service for which they are intended has a great deal to do with the efficiency of the work performed by them. In pursuance of this policy the Oshkosh Logging Tool Company, Oshkosh, Wis., is making a set of linemen's tools designed by men actually engaged in different kinds



Pole Climber



Collapsible Reel

of railroad construction. These tools include digging tools for pole and post-holes, carrying hooks and canthooks, timber and pole dollies, wire-stringing tools, such as reels, come-alongs and climbers, and hand tools, such as pliers, connectors, splicing

the Roberts pole-climber. One important claim made for this climber is safety, because each climber is forged complete with its spur from a single piece of crucible steel; thus the possibility of loose spurs is avoided. In the proportioning of the parts the spur and stirrup are arranged so that climbing is easy, yet the user can walk over rough ground without dulling the point. Another feature is the arrangement of the straps, which join at the bottom in a three-way ring on the outside of the foot. In this way they conserve the comfort of the wearer, because they lie smoothly around the ankle.

### MORE ELECTRIC EMERGENCY TRUCKS FOR THIRD AVENUE RAILROAD, NEW YORK

The Third Avenue Railroad, New York, has just purchased from the General Vehicle Company, Long Island City, N. Y., three 2-ton emergency wagons of the storage battery type. These wagons will replace an equal number of four-horse vehicles which cost the company a total of about \$3,500 a year for the maintenance of the horses alone. The decision in favor of the electric truck was also influenced by the company's experience with its first auto-truck, which has not cost a cent for straight maintenance during its first year. The electric trucks, which weigh 3 tons each, have a range of 35 miles to 40 miles on a single charge. The motive equipment of each truck consists of a battery of forty-four cells, one GE-1022, 85-volt, 40-amp, 1200-r.p.m. motor which gives a speed of 15 m.p.h. to 16 m.p.h. on level roadways and 8 m.p.h. on a 5 per cent grade; a Morse chain for the motor drive to the jack shaft and roller chains from the jack shaft to the wheels; also regular and emergency brakes. Each truck is also supplied with an ambulance foot gong, alarm horn, headlights, sidelights, tail-lights, etc., in accordance with standard automobile regulations. Towing hooks are attached to the underframes. The wagons are painted the Third Avenue Railroad Company's standard red with black and silver striping with silver letters and numbers. Polished



Three Electric Emergency Wagons for Third Avenue Railroad, New York

clamps, etc. An accompanying illustration shows one of the latest designs of these line construction tools—a folding take-up reel. Another shows a pole climber.

The Oshkosh folding take-up reel is designed to facilitate wire stringing by lessening the time required for putting wire on and taking it off the reel. When a coil has been wound on the reel the mere removal of a pin permits the reel to collapse so that the coil can be removed easily, as shown in the illustration. The reel-stand folds compactly, as does the wheel, and thus requires little room in a line car or on an emergency wagon.

Another popular device manufactured by the company is

brass handles are installed on each side. The electrical equipment includes Sangamo amp-hour meters.

The report of the Birmingham (England) tramways for the year ended Dec. 31, 1910, shows that after providing £12,000 for interest on debentures and £10,000 for dividends on preferred stock—the common stock earned 10 per cent—there was a surplus of £44,327. The traffic receipts show an increase of £3,766, while the receipts from advertising and interest on investments show an improvement of £4,156. The number of passengers carried by the tramways during the year was 37,051,126, against 35,700,193 in the year 1909.

# News of Electric Railways

## Report of Cleveland Chamber of Commerce Committee Submitted

The special committee of the Cleveland Chamber of Commerce appointed to investigate the needs of the Cleveland (Ohio) Railway reported to the board of directors of the chamber on May 3, 1911, and its finding was unanimously approved. The effort of the committee was simply to bring about conditions that would enable the company to carry out the plans of Judge Tayler in formulating the grant, since he did not live to suggest such changes as experience had shown were necessary. The committee found no necessity for an increase in the maximum rate of fare, but opposed an arrangement that would extend the present rate of 3 cents to the suburbs as they are annexed to the city. It was suggested that the increase in the length of the haul would necessarily have to be limited to prevent an increase in cost of operation that would make it impossible to maintain the present rate. In order to carry out the purpose of the grant the committee believes that the city should control renewals and replacements and should have the power to propose extensions and betterments to be made with funds raised by the sale of stock or bonds or by increasing the floating debt. If the company should advance the plea that money cannot be secured the matter is to be referred to arbitrators. An amendment is suggested that would require the company to agree to spend at once not less than \$2,500,000 in extensions, betterments and permanent improvements designated by the city. To protect the investment the committee believes that the grant should be so amended as to require the city to pay the capital value for the property if taken over at the expiration of the franchise, the same to hold good in case the city nominates a purchaser. In order that deficits may not occur in the operating funds during the period of the year when operating cost is greatest, it is suggested that the surplus arising from operation be transferred to the interest fund annually instead of every six months, as provided in the original Tayler grant. The interest fund should be invested in non-taxable securities instead of being maintained as a savings fund in the banks. The report follows:

"Your committee appointed to consider what, if any, amendments in the interests of the city should be made in the franchise granted to the Cleveland Railway and whether the present is an opportune time to present such amendments submits the following report. The essential features of the Tayler grant, as we understand it, contemplate:

- "1. Securing to the public the largest powers of regulation in the interest of public service.
- "2. Securing the best transportation at cost.
- "3. Giving to capital the certainty of a fixed income and no more.
- "4. Securing so far as practicable certainty of return of investment at expiration of grant.

"In considering what amendments ought to be made your committee has been guided by the resolution appointing it. All recommendations made are in the interests of the city. None jeopardizes the present operating rate of fare; none weakens or impairs the city's right to control or its right of purchase. Certain of the amendments suggested will aid in relieving against the threatened impairment of capital and facilitate the obtaining of money for needed improvements. No amendments are recommended except such as should be made at the present time. The experience of the past year has developed two difficulties:

- "1. Lack of power in the city to secure needed additions and betterments, including additional cars and power.
- "2. Inadequacy of the provisions for the return of capital at the expiration of the franchise.

"To a certain extent the company could have procured funds to make extensions and betterments by the sale of bonds, but deemed it inadvisable to do so because of fear that it would not only impair the value of outstanding stock but affect its ability to sell additional stock. The present grant authorizes the purchase at expiration, at appraised value of physical property, no allowance to be made for the

franchise and pavement value included in Judge Tayler's valuation, both of which are now represented by issued securities. The grant further provides that from such appraised value all surplus earnings accruing during the last fifteen years of the franchise shall be deducted.

"Future extensions and improvements will necessarily depreciate, but the franchise makes no provision for maintaining the property beyond 70 per cent of its reproduction value. Should the price of labor and material entering into the cost of the property remain the same and the appraisement at the end of the grant be correctly made, a loss of capital would inevitably result in an amount equal to the franchise and pavement value and the unprotected depreciation. This is so serious a defect that we believe it must have been incorporated through inadvertency.

"Your committee recommends the following changes, some of which will increase the city's power of control and give to it the right to compel the making of extensions and betterments—others will relieve against the threatened impairment of capital at the expiration of the franchise, without impairing any right secured to the city or jeopardizing the present rate of fare:

"1. Section 21 should be amended so as to provide that no renewals or replacements shall be made without the consent of the city or of the city street railway commissioner if authorized by the city to act; the difference, if any, as to the propriety or necessity of making such renewals or replacement to be arbitrated in accordance with the general arbitration provisions of the ordinance; a detailed report of such expenditures to be filed with the city every month.

"2. Section 28 should be amended so as to confer on the city the right to propose extensions, betterments or permanent improvements. The propriety or necessity of making the same to be subject to arbitration in accordance with the general arbitration provisions of the ordinance. In event the city and company agree with respect thereto, or if there should be a disagreement, and the award be favorable to the city, such improvements shall be made, if the company, acting in good faith, can procure the necessary money therefor by the sale of stocks or bonds, or by an increase of its floating indebtedness; and if the company assigns its inability to procure the necessary money as a reason for not making such improvements, the question of its ability to procure the same by any means open to it under the ordinance shall be subject to arbitration. This right of the city to propose and compel the making of such extensions, betterments and permanent improvements shall continue until the franchise has less duration than five years.

"3. Section 28 should be amended so as to require the railway company, before the amended or renewal ordinance shall become operative, to agree to make immediately such extensions, betterments and permanent improvements as may be designated by the city, costing not to exceed \$2,500,000, and to furnish satisfactory assurances to the city that it has or will have available as needed the above amount.

"All parties who appeared before your committee agree that changes are necessary to protect capital investment at the expiration of the franchise against the hazards above referred to. Various amendments were proposed, among them that a sinking fund be created to amortize the items included in the Tayler valuation not represented by physical property and the depreciation on new property; that right of purchase at expiration of franchise be changed from appraised value to capital value and that an increase be made in the maximum rate of fare.

"The basis of purchase at the expiration of the grant should be changed from appraised value to capital value. This can be effected by repealing Section 36 and amending Sections 32, 35 and 40. Section 36 provides for a physical valuation in case of purchase after expiration of franchise. If the basis of purchase be changed to capital value, this section should be repealed. Section 32. This section prescribes the terms of purchase during the life of the fran-

chise. It should be amended to make clear that it applies to purchase during the entire term of the grant and, further, a provision should be inserted giving the city the right to compel the application of assets in the sinking fund to a reduction of the purchase price.

"Section 35. The existing section provides for purchase of the property within the city limits after the expiration of the franchise. The section should be amended so as to provide for purchase by the city at capital value under the terms of Section 32, except that 10 per cent shall not be added. The section should preserve to the city the right to purchase the whole system or the portion within the city limits and give the city the right to nominate a purchaser for the portion of the system lying outside the city limits should the city be by law unable to acquire such outlying portion, or should it deem the purchase of such outlying portion undesirable.

"Section 40. The last two paragraphs of the existing section are not aptly expressed nor are they in harmony with the plan proposed to change the basis of purchase after expiration of the franchise to capital value, nor do they clearly define how the assets in the sinking fund are to be applied in case of purchase during the fifteen-year period or in event of a renewal. This section should be amended by redrafting the last two paragraphs. No reference should be made to options of purchase; this should be fully covered by Sections 32, 33 and 35. The new paragraph should relate solely to the question of renewal of the grant within the last fifteen years of its life and make definite provision for the application of assets in the sinking fund either to a reduction of capital value or to paying for additions and betterments without addition being made therefor to capital value.

"Section 16 should be amended as follows:

"(1) So as to provide that there may be paid out of the interest fund that rate per cent upon refunded bonded indebtedness which the refunding bonds may bear and such rate as may be necessary to amortize the discount if bonds issued for that purpose are sold at a discount; the total rate, however, not to exceed 6 per cent on par.

"(2) So as to permit the company to issue bonds for other purposes on a basis which, together with the amount necessary to amortize discount, if sold at a discount, will not exceed a rate of 6 per cent on par.

"(3) So as to provide that if bonds are sold at a premium the premium shall be used for extensions, betterments and permanent improvements, or for refunding the then existing indebtedness of the company without additions to capital value.

"(4) By striking out in line 3 in the second paragraph of Sub-section 'c' and words 'provided that.'

"Section 19 should be amended as follows:

"(1) So as to permit the interest fund to be invested in such readily marketable, non-taxable, interest-bearing securities as may be approved by the city and railway company.

"(2) So as to provide that the surplus referred to in said section remaining unexpended for operating expenses shall be transferred annually instead of every six months to the credit of the interest fund.

"Section 29 should be amended by striking out the first line, as follows: 'The company may alone propose extensions, betterments or permanent improvements.'

"Section 31 should be amended by inserting in line 18, after the words 'or any wastefulness in the purchase,' the words 'or use.'

"Section 37 should be amended by striking out the following words in the last line: 'Sections 35 and 36 hereof,' and adding in lieu thereof the following: 'Section 35 hereof.'

"Section 44 should be amended as follows:

"(1) By inserting in the thirteenth line before the words 'value thereof' the word 'physical.'

"(2) By striking out in lines 13 and 14 the following words: 'determined as provided in Section 36 hereof plus 10 per cent.'

"(3) By inserting in the eighteenth line after the words 'with regard thereto' the following: 'and in the event that the city and the company disagree as to the physical value of the St. Clair Avenue line, the same shall be determined by arbitration in the manner provided in Section 11 hereof.'

"Section 45 should be amended so as to require the com-

pany to surrender all rights held by it under the present grant in event a renewal ordinance is enacted. In that event proper changes in Section 44 with respect to dates of expiration should be made.

"(1) The suggestion that Section 30 be amended so as to provide that if suburbs are annexed the City Council shall have the right to compel operation over lines in the annexed territory at the prevailing city rates of fare until the franchise is of less duration than fifteen years is not recommended.

"A request was also made that Section 30 be amended so as to permit the extension of the city rate of fare over that portion of the company's lines which is located in the former village of Collinwood.

"The adoption of either suggestion, if acted upon by the Council, would increase the cost of operation, which would have to be borne by car riders residing nearer the center of the city and tend to imperil the continuance of operation at the then rate of fare. If the present rate of fare is to be continued, and we believe under favorable conditions it can be, some limit must be placed upon the length of haul. There is no sufficient reason for reopening at this time a question to the solution of which so much consideration was given at the time the ordinance was drafted.

"(2) A sliding scale of return on capital invested was suggested and considered as a means of securing greater economy and efficiency in management and operation. We are of the opinion that any scheme of rewards and penalties would necessitate fundamental changes in the plan proposed by Judge Tayler.

"(3) A suggestion was made that a sinking fund be created to amortize the franchise and pavement values included in the Tayler valuation but not represented by physical property, also to care for depreciation on new property.

"Provision for such a sinking fund might impose such a burden on operating cost as to endanger, if not make impossible, a continuance of the present rate of fare, and for that reason is not recommended.

"(4) Further to protect capital investment, it was suggested that the maximum rate of fare be increased. Entertaining the opinion as we do that the present maximum rate will provide ample security if the amendments recommended are enacted, we think no change should be made.

"We briefly summarize the evidence upon which we have relied in reaching this conclusion.

"If the maximum rate of fare were charged at this time the surplus earnings would amount to nearly \$1,000,000 a year. Assuming no increase in traffic and the same ratio of operating expense and interest charges, there would be a surplus of \$15,000,000 earned during the last fifteen years of the grant without any additions for interest. If interest were added at the rate of 5 per cent per annum, compounded annually, the surplus would amount to about \$21,000,000.

"J. T. Ross, employed by the city street railway commissioner as traction expert, estimates that the surplus earnings, plus interest, during the last fifteen years, conservatively estimated, will amount at least to \$25,000,000.

"H. J. Davies, secretary of the Cleveland Railway, stated that the average rate of interest in traffic between 1902 and 1910 was 8 per cent compounded annually; that the increase in operating cost during the same period was about 8 per cent compounded annually; that the interest charges for capital required to care for the increased traffic were slightly less than 5 per cent compounded annually. He further stated that, based on the assumption that the increase in traffic during the last fifteen years would be only 4 per cent compounded annually, or one-half the amount of the increase during previous years, and that the operating cost and interest charges would increase 4 per cent compounded annually, which would be considerably in excess of the rate of increase during previous years, the surplus earnings would amount during the last fifteen years to more than \$25,000,000 without computing interest on the annual surplus. Adding interest on this at the rate of 6 per cent compounded, the surplus would amount to about \$40,000,000. Computing interest, however, at the rate of 5 per cent, compounded annually, which we deem the fairer rate, in view of the fact that the company is required to use its surplus earnings for the retirement of bonded and floating debt, the surplus would amount to over \$35,000,000.

"If the increase in traffic, in operating expenses and in interest charges should continue during the last fifteen years at the rates obtaining during the period from 1902 to 1910, the surplus earnings would amount to over \$75,000,000, as estimated by Prof. E. W. Bemis. While we think this is more than can be reasonably expected, we are satisfied that the factors of safety will remain the same; that earnings will increase relatively as fast as, if not faster than, the increase of operating and interest charges.

"If the estimate submitted by Mr. Davies is conservative, and we believe it is, more than \$25,000,000 would be available at the expiration of the grant after providing for the items in the Tayler valuation not representing physical property, as well as depreciation on new property, to provide for depreciation in the value of property at the expiration of the grant, if the franchise is not renewed.

"The ordinance contains some obsolete provisions, notably in Sections 16 and 46, having to do with matters now completely settled and adjusted. It would make for brevity and simplicity if these were eliminated. We recommend that this be done and that a renewal ordinance be enacted.

"We believe that the suggested changes should not be made without the fullest understanding and approval of the voters; to that end we recommend that careful public explanation of any amendments adopted be given by the city solicitor and street railway commissioner, so that the voters may be fully advised of the meaning and purpose of all changes and thus be better able to exercise the right of referendum if desired.

"Your committee is greatly indebted and desires to express its grateful appreciation to the city solicitor, the street railway commissioner, the Cleveland Railway Company and its counsel for the many courtesies shown and the assistance rendered by them to the committee.

"F. H. GOFF,  
"CHARLES E. ADAMS,  
"JAMES R. GARFIELD,  
"H. H. MCKEEHAN,  
"G. B. SIDDALL,  
"HENRY W. STECHER,  
"WARREN S. STONE.

"I believe that the City Council should have the power to extend the city rate of fare to Collinwood and to other suburbs as they are admitted. With this exception I concur in the report.

"W. S. HAYDEN.

"I concur in all the conclusions and recommendations of the report, except as to referendum on the proposed amendments. These amendments are vital and important. I, therefore, deem it unwise to set a precedent at this time of amending the Tayler ordinance without the amendments being submitted to and approved by a vote of the people. Accordingly I urge that the amendments, if any are adopted by the Council, should become effective only after acceptance by the company and approval by the people at a referendum vote thereon.

"D. C. WESTENHAVER."

At the regular meeting of the City Council on the evening of May 1, 1911, a resolution was adopted increasing the operating allowance 1 cent per car mile for the period which ends on Jan. 1, 1912. The proposed connection of east and west lines to make them through lines was discussed at a meeting of the street railway committee of the City Council recently. Mayor Baehr and Commissioner Dahl opposed the plan. The author of the resolution, Mr. Haserodt, maintained that the lines would yield more income when connected than they do operated separately. Mr. Dahl believed that the loss of transfers would be more than offset by the increased patronage. Mayor Baehr feared that such an arrangement would increase congestion at the Public Square.

#### Philadelphia Rapid Transit Loan Before Councils

The loan bill of the Philadelphia (Pa.) Rapid Transit Company to enable the company to raise \$10,000,000 for rehabilitation came before the Councils on May 5, 1911. The Common Council alone acted on the measure, the introduction of the bill in the Select Council being forestalled by a motion to adjourn, which was put in the Select Council as soon as the result of the vote in the Common Council had been announced. The Common Council, before it

passed the measure, adopted the following amendment:

"Whereas, The Philadelphia Rapid Transit Company, through its president and general manager, Charles O. Kruger, in a written communication, dated April 25, 1911, addressed to J. R. C. McAllister, chairman of the finance committee of Councils, concerning the \$10,000,000 bond issue which Councils are asked to approve, has outlined the policy and purpose of the company to be to use the proceeds of the bonds in such manner as to give Philadelphia the best possible transportation facilities, and to undertake and push to completion the extensions mentioned in Thomas E. Mitten's letter to Edward T. Stotesbury, and stating further that the company accepts as fixed the present system of fares, exchanges and transfers, and that it will not make any change in the number of transfer points, or its present exchange system and basic fare charges, without the formal consent of Councils as required by city contract; therefore,

"Be it ordained by the Select and Common Councils of the city of Philadelphia that the consent of the city of Philadelphia is hereby given to the Philadelphia Rapid Transit Company to increase its indebtedness by an issue of \$10,000,000 of 5 per cent gold bonds secured by mortgage or deed of trust containing such provisions, conditions and stipulations as may be approved by the board of directors of the Philadelphia Rapid Transit Company."

No changes were made, however, in the sections of the bill which cite the character of the securities to be pledged by the company for the payment of the projected loan.

The executive committee which represents the employees of the Philadelphia Rapid Transit Company who seek an increase in wages met on April 25, 1911, to consider the matter and announced after the meeting that "the motormen and conductors are determined to have their demands complied with." The statement which was issued after the meeting follows:

"The correspondence in the matter of the wage increase with the Philadelphia Rapid Transit Company was discussed by the local executive board of the carmen's union, Division 477, and the sentiment of the members was that the demand for the increase in wages will be insisted upon more strongly.

"Every depot was reported to be in a healthily organized condition, and the motormen and conductors are determined to have their demands complied with.

"Every carman is earnestly awaiting the general meeting to be held Thursday night to definitely consider the situation."

At a meeting of the employees on April 28, 1911, at which upward of 1500 men are said to have been present, the following resolution was adopted:

"Resolved, That we instruct the officers and executive board members to inform the company that we insist upon a wage increase to 28 cents an hour. If refused, that they proceed with our international officers in accordance with the laws of our association, and that we instruct our committee if its demands for a peaceable solution of the situation along constitutional lines be refused, it shall immediately call a special general meeting of the division to take final action in the matter."

The sentiment expressed in this resolution was communicated to the company, and under date of April 3, 1911, Charles O. Kruger, president of the company, replied as follows:

"Your communications of April 20 and 28 received. The company's position in the matter of wages was clearly set forth in my letter of April 19, 1911. The agreement provides for an increase in wages effective July 1 next. This advance will increase the payroll to an amount exceeding \$100,000 during the year following, with similar increases each of the next three years.

"From the company's side it may be stated positively that the present financial condition of the company does not justify any further increase in wages than those already promised. From the side of the men it may be stated with equal positiveness that the supply of labor is much greater and the cost of living materially less than when, a year ago, the men returned to work under terms which fixed the scale of wages for a period of five years. Any further or faster increase in wages must follow greater earnings on the part of the company.

"I quote the expression contained in your last communication that it is not your desire or sentiment to further embarrass the company in carrying out the many propositions and solving the problems in which it is involved."

"It must be apparent to all that to attempt to enforce the demands which you have made, or even to agitate the question of increased wages at a time when new interests are about to take charge of this property in the hope of making it successful, is doing the exact opposite from this protestation on your part.

"The company must therefore refuse your demands and decline to keep alive the agitation by discussing them further."

#### Amended Subway Proposal from Interborough Rapid Transit Company

The Interborough Rapid Transit Company, New York, N. Y., submitted on May 9, 1911, an amended subway and elevated extension offer. The principal features of the amended offer follow:

First—The expenditure of \$67,559,000 of its own money in construction of new lines, and \$31,965,000 of its own money in equipment, raising the city's contribution from the \$53,000,000 contemplated in the company's offer of Dec. 5, 1910, to \$67,559,000, and the company's contribution from \$75,000,000 contemplated in that offer to \$99,524,000. Thus a total proposed cost of new construction of \$135,780,000, and a total cost construction and equipment of \$167,745,000 is involved in the proposition.

Second—Construction of a two-track subway from a junction with the Lafayette Avenue line in Brooklyn, through the Eastern District of Brooklyn, and under the East River to Broadway in Manhattan; thence under Broadway to Fifty-ninth Street, and under Fifty-ninth Street to the Queensboro Bridge.

Third—Construction of two-track elevated extensions in Queens, one running from the Long Island City end of the Steinway Tunnel to the Queensboro Bridge Plaza, and thence to Woodside; the other from the Queensboro Bridge Plaza north to Astoria.

Fourth—Construction of the proposed Bronx elevated extensions, to become a part of the subway, and not extensions respectively of the Ninth and Third Avenue elevated lines, as laid down by the company in its offer of Dec. 5.

Fifth—The company's profits on the extensions, after all operating expenses are paid and the interest and sinking fund on both the company's and the city's investment provided for in that order of preference, to be restricted to 3 per cent additional on its investment, until such time as the city may have made up any deficit on extensions to be built in future, or on lines operated under a guarantee to the company, like the Fourth Avenue (Brooklyn) line; the city, however, to apply any profits which it might realize from the original extensions operated as a part of the main system to the deficits on the possible new extensions, or on its guarantees to the company against loss on the Fourth Avenue (Brooklyn) line.

Sixth—The city to have the right to retake after ten years either the present subway south of Forty-second Street or the present subway in Broadway north of Forty-second Street, upon payment of the difference in value, this to be adjusted by agreement between the company and the city, or to be settled by arbitration.

Seventh—Provided the city reacquires half of the present subway as above described, the city to have the right, at the end of thirty-five years from the commencement of operation, to acquire the rest of the present subway upon tendering to the company a sum equivalent to the estimated net profits for the remainder of the lease, this estimate to be based upon the average annual net profits for five years preceding the date of such acquisition.

Eighth—Construction to be begun in all boroughs at once; the elevated extensions in the Bronx and Queens to be put in operation in two years from the beginning of construction, as well as a shuttle subway line between Times Square and the Pennsylvania Station at Seventh Avenue and Thirty-first Street.

Ninth—If the public authorities prefer an offer upon the basis of the terms recently proposed to the city by the Brooklyn Rapid Transit Company, the Interborough Rapid

Transit Company, upon those terms, will undertake to build any road in any of the five boroughs that the public authorities may designate, including one or more through lines to Coney Island and Staten Island, and operate them all in connection with its present subway system for a single 5-cent fare.

The amended offer says that the company will not accede to the suggestion of the city's transit conferees that an arrangement be made for sharing profits on the elevated third tracks with the city. No concession is made from the request for 99-year franchises for the third tracks on the elevated structures.

Further than this the offer does not modify the demand of the Interborough in its first proposal that the city guarantee it against loss on the operation of the Fourth Avenue (Brooklyn) subway, under a separate contract from the rest of the system, and that such a guarantee be given on any future extensions, including those to Coney Island and Fort Hamilton.

#### Progress of Negotiations in Toledo

At a meeting of the Council committee of the whole at Toledo on the evening of May 1, 1911, Mayor Brand Whitlock suggested that his original idea of having a committee of experts appraise the property of the Toledo Railways & Light Company should be followed. The Council had, however, already designated City Engineer Tonson to value the physical property, but Albion E. Lang, president of the company, objected to this. Mayor Whitlock had agreed to an appraisal by Mr. Tonson in the interest of economy. It was decided finally to have E. W. Bemis talk matters over with Council. He named as terms for services as an expert the remuneration which he had received from other cities, ranging from \$40 to \$75 per day. H. E. Riggs, of Riggs & Sherman, Toledo, agreed to serve on the committee for \$35 per day. The Council will also confer with him. If it is thought best to have experts do the work the city will announce its selection and after the company has named its engineer the two will select the third member.

When the negotiators met on the morning of May 1, 1911, Mr. Lang contended that the proper way to make an appraisal was to employ experts. He proposed that the city employ an engineer and that the city's engineer and the company's engineer select a third member, their report to be binding only after its acceptance by the city and the company. Mayor Whitlock stated that the city would refuse to delegate authority to an individual, but that the Council probably did not understand Mr. Lang's proposal when first made to it, since no power would be delegated if the committee simply made the appraisal and submitted a report to guide the city and company in a final decision.

Mr. Lang suggested that the third man should be paid by both the city and the company. He desired to arrive at conclusions that will be mutually advantageous to the city and the company, but he wanted to profit by the experience of Cleveland and Detroit.

On April 29, 1911, City Solicitor Schreiber and Attorney Rathbun Fuller, acting for the company, reported that they had failed to agree upon the demand that the interurban railway should give up their contracts with the local company and make new agreements satisfactory to the city administration before the proposed new franchise becomes operative. They decided to send the question back to the negotiators when they met on May 1. Mr. Fuller insisted that the section be omitted and Mr. Schreiber refused to accede to this request.

In a general way the forfeiture clause agreed upon by the attorneys is the same as the original Schreiber draft. It provides that if the company fails to comply with all the terms of the franchise or with any general ordinance of the city the Council shall have the right to declare the franchise forfeited. This opinion of Council, it is stipulated, shall not prejudice the right of the City Solicitor to bring a forfeiture action in court. If any portion of the ordinance is declared invalid or inoperative by a court at the instance of the company the whole ordinance shall become invalid at the option of the Council. In that case the company shall not have any further rights under the new franchise nor can it revert to any of the rights under its unexpired franchises, but must still bear its obligations to the city. The clause pro-

viding that the tracks shall become the property of the city at the expiration of the franchise was stricken out, and it was agreed that the company should remove its tracks by paying the city an amount that will put the streets in good condition, unless the railway property passes to the possession of the city in the meantime.

The attorneys will report on a number of other questions at a later date.

#### Annual Convention and Annual Meeting of American Institute of Electrical Engineers

The annual convention of the American Institute of Electrical Engineers will be held in Chicago, Ill., June 26 to 30, 1911. The headquarters will be at the new Hotel Sherman. The committee on meetings and papers has arranged an attractive program of technical papers on a wide variety of subjects. Dugald C. Jackson, president of the Institute, has appointed the following convention committee, which will have charge of the local arrangements: Louis A. Ferguson, chairman; W. L. Abbot, B. J. Arnold, H. M. Byllesby, W. L. Campbell, T. P. Gaylord, W. B. Jackson, J. W. Johnson, John D. Nies, W. P. Sidley, B. E. Sunny, Fay Woodmansee, P. B. Woodworth and J. G. Wray. Three papers on railway subjects are announced as follows: "Electrification Analyzed and Its Application to Trunk Line Roads," by W. S. Murray (this is an abstract of a paper presented before the Institute meeting at Toronto on April 7 and already published in this paper); "The Costs of Railway Electrification," by B. F. Wood; "Induction Motor for Single-Phase Traction," by E. F. W. Alexanderson.

The annual meeting of the Institute will be held in the auditorium of the Engineers Building, New York, N. Y., on May 16, 1911, at 8:15 p. m. The board of directors will present its report for the fiscal year ended April 30, 1911, and the result of the vote for the offices to be filled for the ensuing administrative year will be announced. The feature of the evening will be the presentation ceremonies in connection with the award of the Edison medal to Frank J. Sprague. The program includes the presentation of the medal and certificate of award by Prof. D. C. Jackson, president of the Institute. Addresses will be made as follows: W. B. Potter, of the General Electric Company, "The Development of the Electric Railway"; F. H. Giddings, professor of sociology at Columbia University, "Social Results of the Introduction of the Electric Railway"; George F. Swain, professor of civil engineering at Harvard University, "The Relation of Governmental Control to the Development of Electric Railways and the Electrification of Steam Lines"; Commander S. S. Robison, of the Bureau of Steam Engineering, Navy Department, Washington, "The Results of the Use of Electricity in the Navy."

**Subway Plans to Be Taken Up in Chicago.**—On May 9, 1911, Mayor Carter Harrison of Chicago ordered Alderman Peter Reinberg, chairman of the local transportation committee, to appoint a sub-committee of three to take up at once plans for a subway in Chicago and report recommendations for starting work. Plans prepared by City Engineer John Ericson, Bion J. Arnold and others for subway construction will be considered. The city has a fund of \$6,000,000 available for subway construction.

**Progress of Southern Pacific Electrification.**—Julius Kruttschnitt, vice-president and director of maintenance of the Southern Pacific Company, who is now in the East, referred recently as follows to the electrification work of the company: "Electrification around San Francisco is progressing favorably. The power house has been finished and orders have been placed for equipment for some 120 coaches and trailers. Outside of that no equipment has or will be ordered this year. Some 10,000 freight cars and a couple of hundred passenger cars ordered some time ago are now being delivered."

**Annual Report of Indiana Railroad Commission.**—The annual report of the Indiana Railroad Commission shows that eleven interurban roads out of the thirty-six operating in the State declared dividends during the fiscal year ended June 30, 1910. The authorized capital stock of these companies was \$137,116,000, of which \$109,181,585 was outstanding. The authorized funded debt was \$115,689,000, of which

\$70,695,500 was outstanding. The total operating revenues amounted to \$14,010,798. The operating expenses amounted to \$7,598,578. The passenger car mileage was 41,883,408 miles, and the freight car mileage 2,601,035. The total number of passengers carried during the year was 115,626,481. The operating expenses per car mile were \$0.1996.

**Convention Bulletin by Manufacturers' Association.**—George Keegan, secretary of the American Electric Railway Manufacturers' Association, has issued a circular to the members in regard to the Atlantic City convention. He states the Manufacturers' Association has again secured the use of Young's Million-Dollar Pier, that satisfactory hotel accommodations are assured and that the usual guarantee has been secured against any advance in the regular hotel rates. Accompanying this letter is a copy of the circular issued by H. C. Donecker, secretary of the American Electric Railway Association, published in the *ELECTRIC RAILWAY JOURNAL* of May 6, 1911, page 803, and a pamphlet on the Manufacturers' Association which gives a short history of the association, a list of the officers and members, a copy of the constitution and by-laws and a copy of the report of the treasurer for last year.

**New Hampshire Public Service Commission.**—The measure to create a public service commission in New Hampshire, urged by Governor Robert P. Bass, has been passed. The commission is to have authority over all public utilities, including electric railways, railroads, electric light and power companies, gas companies, etc. It is to be composed of three members to be appointed by the Governor. The members are to be a chairman at a salary of \$3,500 a year, a clerk at \$3,200 a year and a third member at \$3,000. The terms of the first members are to terminate in 1913, 1915 and 1917 respectively. Thereafter appointments are to be made for a term of six years. The commission is authorized to expend \$4,000 annually and with the approval of the Governor and Council such further sums as may be necessary. The law provides that the commission must investigate complaints if made by city councils, mayors or selectmen, or upon the complaint in writing of 100 or more customers or subscribers in cities of 20,000, or not less than twenty-five in all other cities or towns.

**Proposed Lines in Toronto.**—Some time ago the city of Toronto, Ont., submitted preliminary construction plans to the Ontario Railway and Municipal Board for new street railway lines, but the board does not seem disposed to approve the plans until the details are given, including estimates of the cost of operation. The city cannot do this at present. While \$1,157,293 was voted in January, 1911, to build the lines, it has not been settled whether they are to be operated by the city or by the Toronto Railway. Negotiations are under way to have the Toronto Railway operate the lines in connection with its system, but the company has not yet signified the terms upon which it would agree to do this. It was stated that if the Toronto Railway should refuse to operate the lines proposed by the city their construction would be deferred and probably abandoned. It is regarded as almost certain that the Ontario Railway and Municipal Board will refuse to approve the plans of the city unless satisfactory evidence is forthcoming that the lines can be operated economically.

**Ruling by Supreme Court on Portland Fender Ordinance.**—The Supreme Court of Oregon has supported the lower court in the case of Edward Plinkiewisch, administrator of the estate of Otto Brandes, against the Portland Railway, Light & Power Company and the verdict for the defendant company is sustained, but the court has upheld the right of the Mayor and City Council to prescribe the type of fender that shall be used in the city. Judge McBride, who wrote the opinion, said in regard to the act in general: "It is not disputed that the fender actually in use on the car in question was of the design and character prescribed by this resolution, but it is contended that the proviso in the act is unconstitutional in that it gives the Mayor and Council the right arbitrarily to set aside the State law. We do not take this view of the act. The intent of the act is purely to prescribe in general terms what shall constitute a sufficient fender until each distinct locality shall have seen fit to legislate for itself on that subject. This court has upheld local option in regard to the sale of liquor and we see no reason why Portland or any other municipality may

not be permitted to exercise the same right in regard to fenders. The principle is the same; the regulation of each is the exercise of the police power for the benefit of the public."

**Arguments Against Tax Assessments in Indiana.**—Representatives of a number of interurban electric railways in Indiana appeared before the Indiana Tax Board recently to protest against the assessments fixed by the board. According to J. M. Barrett, general counsel of the Ft. Wayne & Northern Indiana Traction Company, the financial and industrial depression in the communities through which the interurban railway operates had tended to reduce the income and the assessment levied by municipal corporations for paving between tracks had cost the company which he represented \$150,000 during the last year. The 3-mile gravel road law had likewise cost the interurban railways of the State a large sum in special taxation, many towns having taken advantage of the law to pave streets occupied in part by street railways and interurban lines. Ferdinand Winter, who appeared for the Terre Haute, Indianapolis & Eastern Traction Company, declared that changes in the grades of public highways now partially occupied by tracks and the arbitrary orders of the County Commissioners had affected the securities of the electric railways. He cited one case where the Terre Haute, Indianapolis & Eastern Traction Company had been ordered to move its tracks off the highway for a distance of 23 miles. C. L. Henry, president and general manager of the Indianapolis & Cincinnati Traction Company, said the new employers' liability law would double the expense of the damage account and that the block signal and other requirements of the Indiana Railroad Commission would affect the interurban railways by increasing their expenditures materially.

#### LEGISLATION AFFECTING ELECTRIC RAILWAYS ILLINOIS

A bill which will permit the consolidation of the elevated railways of Chicago has been favorably acted upon by the committee of the House on corporations. The bill exempts railroads and other public service corporations from the provisions of the law covering corporate consolidations. The House has gone on record in favor of electing the State Board of Railroad & Warehouse Commissioners.

#### MASSACHUSETTS

The committee on street railways has voted leave to withdraw House Bill 1369, providing for the State and city ownership of street railways, and the House has refused to discharge the report from the orders of the day. The committee on railroads and street railways, sitting jointly, have voted adversely on House Bill 1360, accompanying the petition of William B. Lawrence, Medford, to determine the value of shares of stock of consolidated railroads and street railways. The committee on street railways has sent in an adverse report on House Bill 1365, for legislation to create a commission to investigate the affairs of the Boston Elevated Railway. The committee believes that the company's policy of publicity and its complete returns to the Railroad Commissioners leave concealed nothing which is of the slightest public interest. The report of the Boston Transit Commission and Massachusetts Railroad Commission, sitting as a joint board upon the Riverbank subway investigation, has been referred to the committee on metropolitan affairs. The report favored a subway under Boylston Street and the repeal of the Riverbank subway act of 1907. The Senate and House have accepted in concurrence the adverse report of the railroad and street railway committees on House Bill 1359, which provides for free transportation of United States letter carriers by railroads and street railways. The committees on street railways and labor have reported adversely on House Bill 524, which provides that conductors and motormen employed by street railways shall have one day off in fifteen. The Senate has accepted the adverse report of the committee on street railways on the bill to require companies to provide special service for workingmen and workingwomen between 5 a. m. and 8 a. m., and 5 p. m. and 7 p. m.

#### NEW YORK

The Assembly Committee on Railroads has reported favorably on two resolutions directing the Public Service

Commission of the First District to furnish information to the Assembly in reference to the transfer situation in New York. One of the resolutions asks the commission to report the result of its investigation relative to the restoration of the transfer system in the boroughs of Manhattan and the Bronx, and the other asks that the commission report as to its action on the application for a certificate of public convenience and necessity for railroads across the Queensboro Bridge.

The Senate has passed the bill for the removal of the tracks of the New York Central & Hudson River Railroad on Eleventh Avenue in New York City. The measure would compel the company to remove its tracks within six months unless the company in the meantime should reach an agreement with the city for some plan which would effect the required change after the proposed law goes into effect. The bill to require the Long Island Railroad to establish a 5-cent fare over its Atlantic Avenue division between Flatbush Avenue and Railroad Avenue has passed both branches of the Legislature. The fourth and final report of the employers' liability commission was made to the Senate on May 3, 1911, by Senator Wainwright, chairman of the commission. It recommends the adoption of a constitutional amendment that will meet the objections which caused the liability law passed at last year's session to be pronounced unconstitutional by the Court of Appeals.

#### OHIO

It is claimed that the Edwards subway bill was formulated by W. R. Hopkins, of the Cleveland Underground Rapid Transit Company; that its enactment into a law would give that company exclusive control of the streets under the surface and that it would also guarantee to the company the franchise it now holds, whether any construction work was done or not. Mayor Baehr, of Cleveland, objects to the bill, and the daily papers have reported quite fully the arguments and discussions. On the evening of April 1, 1911, the City Council of Cleveland adopted a resolution asking the House to delay action on the bill until an investigation could be made. At a meeting in Mayor Baehr's office on May 3, 1911, Mr. Hopkins accused the Cleveland Electric Illuminating Company of trying to block the passage of the bill. Samuel Scovil, vice-president of this company, who was at Columbus, said that he considered the bill iniquitous. Mr. Hopkins said that the bill was merely to legalize the agreements in the franchise and to remove all doubt of the right of city councils to grant franchises for underground roads. He offered to eliminate the portion which it was thought took away city control of the streets and to insert an amendment giving the right to lease space for wires and pipes. Another meeting was held on May 5, 1911. Mr. Hopkins and Mr. Scovil attended but nothing was agreed upon. Mr. Hopkins asserted that he was asking nothing in the bill that the city had not granted in the franchise.

#### PENNSYLVANIA

After being amended in committee in over one hundred instances, chiefly typographical corrections, the administration public service commission bill has been reported favorably to the House and will be made a special order so as to have it reach the Senate not later than May 15. The amendments of importance remove storage warehouses from the classes of public service business coming under the jurisdiction of the commission and provide that authority shall be exercised over municipal corporations only in so far as they are engaged in supplying gas or electricity, water or the means of sewage disposal. Reasonable service is defined as what the commission may require of corporations. The commission would be given authority to require interchange of business by telephone lines, the provision that it should extend only to non-competing lines being stricken out. All securities issued or provided under agreements or mortgages made prior to the act are to be exempted from its provisions and the families of railroad men are placed upon the list of those who may receive railroad passes. The terms of the commissioners are to begin June 1, 1911, instead of a month later, and the commission is given authority to dispose of costs. The Senate bill to allow street railways to construct and operate tracks in boroughs without consent of Council was defeated in the House, but was later reconsidered.



# Financial and Corporate

## ANNUAL REPORTS

### New York Stock and Money Markets

May 9, 1911.

While trading in the bond market has been brisk during the greater part of the week, trading to-day has been marked by a decreased demand for long-term issues and an increased interest in short-term securities. Public interest in the stock market will be slight until the tariff legislation is more clearly defined and publication is made of the decisions of the Supreme Court in the trust cases. The trading in bonds has not caused any marked change in rates. Quotations to-day were: Call, 2¼@2½ per cent; 90 days, 2½@2¾ per cent.

### Other Markets

In Philadelphia, Philadelphia Rapid Transit and Union Traction declined slightly early in the week, owing to the failure to put through the loan ordinance.

In Chicago, Northwestern Elevated common advanced a point early in the week on advices that the Northwestern Elevated first mortgage 4 per cents would be refunded.

Trading in the Boston market has been light since the last report and transactions have been of a professional character. To-day's market has a strong undertone, however, and the trading was well distributed with prices higher.

Transactions in Baltimore have been devoid of feature and sales have been in small lots. With an increase of ⅝, Fairmount & Clarksburg Traction 5s reached 100½, making a new level for the year.

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

	May 2.	May 9.
American Light & Traction Company (common).....	292	a288
American Light & Traction Company (preferred).....	*106	a106
American Railways Company.....	44	a44
Aurora, Elgin & Chicago Railroad (common).....	a44	a44
Aurora, Elgin & Chicago Railroad (preferred).....	a86	a86
Boston Elevated Railway.....	127	a127½
Boston Suburban Electric Companies (common).....	a15	a15
Boston Suburban Electric Companies (preferred).....	a75	a75
Boston & Worcester Electric Companies (common).....	a10	a10
Boston & Worcester Electric Companies (preferred).....	44	a48
Brooklyn Rapid Transit Company.....	78¾	78¾
Brooklyn Rapid Transit Company, 1st ref. conv. 4s.....	84½	85
Capital Traction Company, Washington.....	a130	130
Chicago City Railway.....	a190	a195
Chicago & Oak Park Elevated Railroad (common).....	3	3
Chicago & Oak Park Elevated Railroad (preferred).....	6	7
Chicago Railways, ptcptg., ctf. 1.....	a85	a85
Chicago Railways, ptcptg., ctf. 2.....	a22	a22
Chicago Railways, ptcptg., ctf. 3.....	a8¾	a8¾
Chicago Railways, ptcptg., ctf. 4.....	a5	a5
Cincinnati Street Railway.....	*131	*131
Cleveland Railway.....	a96¾	a97
Columbus Railway (common).....	*96	*96
Columbus Railway (preferred).....	*100	*100
Consolidated Traction of New Jersey.....	a76	a75
Consolidated Traction of N. J., 5 per cent bonds.....	a105	a105
Dayton Street Railway (common).....	a30	a30
Dayton Street Railway (preferred).....	100	a100
Detroit United Railway.....	71	71
General Electric Company.....	158	156
Georgia Railway & Electric Company (common).....	a133	134
Georgia Railway & Electric Company (preferred).....	91	a93
Interborough Metropolitan Company (common).....	18¾	19¾
Interborough Metropolitan Company (preferred).....	51¾	53½
Interborough Metropolitan Company (4½s).....	79	79¾
Kansas City Railway & Light Company (common).....	20½	a21
Kansas City Railway & Light Company (preferred).....	a68	a67½
Manhattan Railway.....	137½	139
Massachusetts Electric Companies (common).....	a18¼	a18½
Massachusetts Electric Companies (preferred).....	a88	a88
Metropolitan West Side, Chicago (common).....	a25	a24
Metropolitan West Side, Chicago (preferred).....	a68	a68
Metropolitan Street Railway, New York.....	*15	*15
Milwaukee Electric Railway & Light (preferred).....	110	110
North American Company.....	73½	73..
Northern Ohio Light & Traction Company.....	44	*44
Northwestern Elevated Railroad (common).....	a20½	a21½
Northwestern Elevated Railroad (preferred).....	a65	a63
Philadelphia Company, Pittsburgh (common).....	a52¾	a53
Philadelphia Company, Pittsburgh (preferred).....	a43	a42¾
Philadelphia Rapid Transit Company.....	a18	a17¾
Philadelphia Traction Company.....	82½	a83½
Public Service Corporation, 5% col. notes (1913).....	100½	a100½
Public Service Corporation, ctf. s.....	a106	a106½
Seattle Electric Company (common).....	a107	a109½
Seattle Electric Company (preferred).....	a98	100
South Side Elevated Railroad (Chicago).....	a72	a72
Third Avenue Railroad, New York.....	11½	11¾
Toledo Railways & Light Company.....	a7½	a8
Twin City Rapid Transit, Minneapolis (common).....	a109½	a108½
Union Traction Company, Philadelphia.....	46	a46
United Rys. & Electric Company, Baltimore.....	18¾	a18¾
United Rys. Inv. Co. (common).....	42	42
United Rys. Inv. Co. (preferred).....	71¼	71..
Washington Ry. & Electric Company (common).....	a35½	35½
Washington Ry. & Electric Company (preferred).....	89¾	89¾
West End Street Railway, Boston (common).....	a90	a90
West End Street Railway, Boston (preferred).....	a103½	a103¾
Westinghouse Elec. & Mfg. Co.....	69½	68¾
Westinghouse Elec. & Mfg. Co. (1st pref.).....	a118	a117

a Asked. \*Last sale.

### United Railways & Electric Company of Baltimore

The income account of the United Railways & Electric Company of Baltimore for the year ended Dec. 31, 1910, was as follows:

Gross earnings.....	\$7,687,894
OPERATING EXPENSES:	
Conducting transportation.....	\$1,553,579
Motive power.....	588,174
Maintenance of way.....	287,033
Maintenance of cars.....	413,725
General expenses.....	759,385
Total operating expenses.....	\$3,601,896
Net earnings.....	\$4,085,998
Income from other sources.....	2,490
Total net income.....	\$4,088,488
FIXED CHARGES, ETC.:	
Interest on bonds.....	\$2,043,839
Park and other taxes.....	705,292
Ground rents and other rentals.....	7,567
Interest on car trust certificates, Series "A".....	8,313
Interest on car trust certificates, Series "B".....	24,437
Interest on car trust certificates, Series "C".....	12,187
Total fixed charges, etc.....	\$2,801,635
Balance.....	\$1,286,853
Deduction from income—rental account—1½ per cent sinking fund, Maryland Electric Railways	
5 per cent. bonds.....	60,000
	\$1,226,853
Amount written off for extraordinary expenditures, subject, however, to final distribution by the board of directors.....	864,048
Balance to the credit of profit and loss account.....	\$362,805

W. A. House, the president, says in his report in part:

"Comparing 1910 results with those of 1909, we have the following: Increase in gross earnings, \$477,910, or 6.63 per cent; increase in operating expenses, \$240,024, or 7.14 per cent; increase in fixed charges, \$82,447, or 3.03 per cent; increase in amount carried to credit of profit and loss for the year, \$259,803, after deducting \$60,000, representing 1½ per cent, sinking fund on the \$4,000,000 Maryland Electric Railways 5 per cent bonds for the year.

"The percentage of operating expenses to gross earnings was 46.85 per cent, as compared with 46.63 in 1909.

"The average earnings per car mile were 27.54 cents, an increase of 0.95 cent (due to increased efficiency resulting from large expenditures upon the property), and the cost of service 12.9 cents (exclusive of taxes and rehabilitation charges), an increase of 0.51 cent.

"The number of car miles run was 27,911,573, an increase of 787,917 miles. The total number of revenue passengers carried was 154,928,785, an increase of 9,326,795. The number of transfers used was 60,789,807, an increase of 3,759,251.

"In submitting this report it is proper to note the substantial consummation of the plans for the rehabilitation of the property.

"The great fire of February, 1904, which destroyed very valuable property of the company and interfered greatly with the traffic receipts, instead of proving a discouragement to the management stimulated its determination to pursue plans then under consideration for bringing the property up to the highest standard of efficiency.

"The company stopped paying interest on its income bonds and began applying all of its surplus over and above the interest on the first consolidated and underlying bonds to the plans of rehabilitation. In July, 1906, a financial plan was adopted whereby your company was enabled to provide funds for special capital expenditures through a leasing agreement with the Maryland Electric Railways Company and at the same time to fund the income bondholders' coupons from June, 1904, up to and including December, 1910, in the 5 per cent funding bonds of your company.

"The company thereafter continued to expend its surplus income upon the property, but as this income became available only as earned the management incurred a floating debt in anticipation of the earnings. This floating debt has now been paid.

"Of the 401.164 miles now operated by the company 234.075 miles are city lines; 180.613 miles are now laid with 9-in. girder rails, substantially all of which is within the city; 142.155 miles have been cast or electric welded. The

167,089 miles of suburban lines are, with few exceptions, in excellent condition.

"The company's generating capacity is 45,105 kw, as compared with about 12,000 kw at the time of the consolidation. Its present Pratt Street power house is a thoroughly equipped up-to-date plant, which will be further reinforced by electric energy to be furnished by the Pennsylvania Water & Power Company under contract concluded with that company Feb. 8, 1911. There are also five modern fireproof substations with a capacity of 28,000 kw. The company has erected under the arrangement with the Maryland Electric Railways six new fireproof carhouses of reinforced concrete or brick construction. It has also completely remodeled two of the older carhouses. In the last few years the company has placed in service 440 double-truck semi-convertible cars and 150 single-truck cars equipped with the most modern appliances, or more than the average number of cars operated at the time of the consolidation.

"As illustrating the heavy cost of street railway improvements it may be stated that the amount expended upon the property since the date of consolidation has been nearly \$18,000,000. It will be noted that interest on this expenditure at 5 per cent would equal about \$900,000, compared with the total fixed interest charges of the company paid in 1910, amounting to \$2,043,838.84.

"The property as a result of these expenditures is in excellent physical condition, probably on the whole better than that of any street railway in the country.

"The financial plan of 1906 is consummated. The company itself has a clean balance sheet and has no bills payable or accounts payable except current monthly accounts. This result has been accomplished in the face of the great industrial depression of 1908, when the company suffered a loss in gross revenue estimated to have amounted to over \$525,000.

"The total amount of taxes and public charges, including park tax, cost of paving streets, track changes necessitated by regrading of streets and highways, sewerage commission work, widening of streets, etc., was \$812,673 (an increase of \$77,606, or 10.56 per cent), or more than 10½ per cent of the gross revenue of your company, and about 20 per cent of the net receipts after paying the costs of operation. In other words, the total amount of taxes and other public charges paid by your company represents the gross earnings of about one in every ten cars operated, and the total net earnings (after paying costs of operation only) of about one car in every five.

"The park tax for the year was \$495,960, as against \$469,379 in 1909, an increase of \$26,580. The federal excise tax, imposed under an act of Congress, amounted to \$6,070 for the year. The easement tax controversy over 14,157 miles of private rights-of-way of your company has been settled.

"There were sold during the year thirty-five old cars to net \$10,426. Since the substitution of the semi-convertible air-brake cars for the smaller cars 170 of the latter have been sold to net \$77,404.

"After exhaustive examinations made of the working of the pay-as-you-enter type of car operated in several of the larger cities it was deemed advisable to equip one of your lines with cars of this type. Accordingly a contract was concluded covering the use by your company of this type of car and thirty-two of the large semi-convertible cars were remodeled at your company's shops by lengthening the platforms, changing means of entrance, exit, etc., and placed in operation Jan. 1 on the Pennsylvania Avenue line.

"On account of the growth of traffic on the Gilmor Street and Guilford Avenue line an order was placed in September for sixty double-truck semi-convertible cars of the pay-as-you-enter type. These cars were acquired under the arrangement with the Maryland Electric Railways Company, leased to your company and assigned to service on the line named.

"The prepayment method of collecting fares was introduced in the United States several years ago and its advantages have led to its adoption in a number of cities. In 1910, out of a total of 3571 cars ordered for electric railway service in the various cities of the United States 1878 were of the prepayment type.

"With this in view, your company entered into a contract with the Pay-As-You-Enter Car Corporation whereby that company licenses your company to build, rebuild, alter, or

equip its cars for pay-as-you-enter service when deemed desirable.

"At the last session of the Legislature an act was passed creating and establishing a Public Service Commission for the State, and providing for the regulation and control of public service corporations, public utilities, etc. Since its organization there have been filed with the commission a number of complaints affecting your company, notably the petitions requesting the commission to reduce the rates of fare from 15 cents to 10 cents on the Ellicott City and Sparrows Point lines, both of which have since been refused after hearings by the commission on the ground that the fares charged were reasonable for the service rendered.

"With a view to reducing the fire hazard to a minimum, contract was awarded in March covering the installation of complete automatic sprinkler systems of the latest design in the following carhouses: North Avenue and Gay Street, York Road and Arlington Avenue, Lombard and Seventh Streets, Electric Park. The total cost of this work was \$67,084, and was paid for out of proceeds from sale of Maryland Electric Railways Company's bonds. The Park terminal and Edmondson Avenue carhouses were equipped with sprinkler systems at the time of their erection. As a result of these improvements your company has been able to obtain a very material reduction in its insurance rate."

#### American Cities Railway & Light Company

The income account of the American Cities Railway & Light Company for the year ended Dec. 31, 1910, shows dividends received of \$878,446, interest on loans to local companies of \$12,157, and interest on bank balances of \$2,582, a total of \$893,185. Expenses and taxes were \$40,967, leaving net earnings of \$852,218. Dividends on the preferred stock were \$414,366, and dividends on the common stock \$430,444, leaving \$7,408 surplus. The previous surplus was \$556,925, and there was added \$100,000 "special income from earnings of previous years," making a final surplus on Dec. 31, 1910, of \$664,333.

A condensed income statement of the local companies for two years is as follows:

	Year Ended December 31,	
	1910.	1909.
Gross earnings.....	\$6,503,113	\$5,801,237
Operating expenses and taxes.....	3,721,468	3,360,944
Net earnings.....	\$2,781,645	\$2,440,293
Interest charges.....	1,289,192	1,251,542
Sinking funds.....	51,642	25,500
Surplus over fixed charges.....	\$1,440,811	\$1,163,251
Dividends paid.....	997,477	799,433
Surplus over dividends.....	\$443,334	\$363,818

J. K. Newman, the president, says in part: "If the proportionate interest of your company in the undivided surplus earnings of the local companies were added the results for the years 1910 and 1909 would be as follows:

	1910.	1909.
Net earnings of the American Cities Railway & Light Company.....	\$852,217	\$686,162
American Cities Railway & Light Company's proportionate share of the undivided surplus earnings over dividends.....	403,779	328,015
Total.....	\$1,255,998	\$1,014,177
Preferred stock dividends (5 per cent.).....	414,366	414,366
Surplus above preferred dividends, divided and undivided.....	\$841,632	\$599,811

"The total surplus, divided and undivided, after providing for the preferred stock dividends, was equivalent in 1910 to 7.82 per cent upon the outstanding common stock, as compared with 5.58 per cent in 1909 and 3.38 per cent in 1908.

"Out of the undivided surplus earnings shown above the local companies set aside as reserve funds for renewals, betterments and contingencies \$132,791 in 1910, as compared with \$170,740 in 1909.

"Your company now owns in the aggregate 84.1 per cent of the preferred stock and 89.5 per cent of the common stock of the following companies: Birmingham Railway, Light & Power Company, the Memphis Street Railway Company, Little Rock Railway & Electric Company, Knoxville Railway & Light Company, and the Houston Lighting & Power Company, 1905.

"The improvement shown for 1909 in the operation of the several companies was continued throughout 1910. The

gross earnings show an increase of over \$700,000, or 12.10 per cent, as compared with an increase of \$360,524 in operating expenses and taxes, thus making an increase of \$341,351 in net earnings.

"The reserve equipment and facilities acquired by the properties in previous years in anticipation of future requirements enabled them to take care of the large increase in business without as great expenditure for additions as would otherwise have been required. In consequence, the interest charges for the year exceeded the corresponding sum for 1909 by only \$37,650, or 3.01 per cent.

"A sinking fund of \$25,000 per annum in the Memphis company, coming into operation in 1910, accounts for most of the change from the previous year in the sinking fund deductions. These sinking fund payments are annually reducing the indebtedness ahead of the stock, and thus increasing the equity represented by the stock.

"The reduction in platform accidents resulting from the installation of gates on the cars in Birmingham has made a marked saving in the amounts paid by the Birmingham Railway, Light & Power Company for damages. Late in the year similar gates were installed upon the cars of the Memphis Street Railway, where the damage claims have also been heavy, and a material reduction in these expenses is expected in consequence of this step.

"During the year the Supreme Court of Tennessee rendered a decision favorable to this company in the suit instituted by some minority stockholders of the Memphis Street Railway, attacking the organization of this company and the legality of its acquisition of the stock of the Memphis Street Railway. The decision sustained this company in all its contentions.

"Notwithstanding the fact that the reserve equipment of the various properties enabled them to care for the large increase in business during the past year without all the expenditure that would otherwise have been required, the various companies spent about \$1,400,000 for new equipment, extensions, etc., to take care, not only of the business now being done, but the increased business expected in the immediate future. Of this \$1,400,000 construction expenditure about \$900,000 was provided by sale of bonds and nearly \$500,000 came from surplus earnings.

"Your company has had no occasion to borrow either to finance its own requirements or to assist the local companies. The latter have been able to sell bonds for a considerable part of their construction requirements, and to care for the balance thereof out of their undivided surplus earnings, except in the case of the Houston company, where \$500,000 new common stock has been sold for cash during the last two years and purchased by the American Cities Railway & Light Company.

"As a result the properties are free from floating indebtedness, except for some small temporary loans carried, pending sale of construction bonds. Your company is itself carrying the larger part of these temporary loans."

A combined statement of the five properties shows that in the seven years from 1903 to 1910 gross earnings increased from \$2,993,864 to \$6,503,113, or 117.2 per cent. Operating expenses and taxes increased from \$1,676,864 to \$3,721,468, or 121.8 per cent. Net earnings increased from \$1,317,000 to \$2,781,645, or 111.2 per cent. Interest rose from \$700,604 to \$1,289,192, or 84 per cent. The surplus increased from \$616,396 to \$1,492,453, or 125.8 per cent. Sinking fund requirements increased from nothing to \$51,642, and the final surplus from \$616,396 to \$1,440,811, or 133.7 per cent.

**Angola Railway & Power Company, Angola, Ind.**—Judge Yapple, in the Superior Court at Ft. Wayne, has appointed Fred S. Hunting, Ft. Wayne, receiver of the Angola Railway & Power Company, on the application of Sol A. Wood, a stockholder of the company.

**Berkshire Street Railway, Pittsfield, Mass.**—The following statement was made public on May 3, 1911, in regard to the affairs of the Berkshire Street Railway: "At a meeting to-day of the directors of the Berkshire Street Railway the stock of which was acquired by the New York, New Haven & Hartford Railroad by legislative authority last June, the organization in the interest of the New York, New Haven & Hartford Railroad was completed, and the directors and officers are now as follows: Directors: Wil-

liam L. Adams, Pittsfield; Charles F. Brooker, Ansonia, Conn.; Timothy E. Byrnes, Boston; Frank Curtiss, Sheffield; William Skinner, Holyoke; Charles S. Mellen, Stockbridge; Robb de P. Tytus, Tyringham. Officers: President, Charles S. Mellen; vice-president and clerk, C. Q. Richmond, Pittsfield; treasurer, Augustus S. May, New Haven; controller, H. M. Kochersperger, New Haven; assistant clerk, Arthur E. Clark, New Haven.

**Columbus, Delaware & Marion Railway, Columbus, Ohio.**—The coupons due on Nov. 1, 1910, on the \$1,000,000 of first mortgage 5 per cent bonds of the Columbus, Delaware & Marion Railway were paid on May 1, 1911, the six months' limit under the mortgage. It is expected that the interest on the \$920,000 of first refunding 5 per cent. bonds of the Columbus, Delaware & Marion Railway which was due on Feb. 1, 1911, will be paid on Aug. 1, 1911.

**Hudson Companies, New York, N. Y.**—Harvey Fisk & Sons, New York, N. Y., are offering for subscription at 98½ and interest \$1,000,000 of the Hudson Companies' 6 per cent secured convertible gold coupon notes due on Feb. 1, 1913, but redeemable at 100 per cent on any interest date on thirty days' notice. The notes are part of the original issue of \$10,136,000 sold by the company in 1910, and are specifically secured by the pledge of 150 per cent in first-mortgage 4½ per cent bonds on the Hudson & Manhattan Railroad, due in 1957.

**Indianapolis & Louisville Traction Company, Scottsburg, Ind.**—A plan has been formulated for the reorganization of the Indianapolis & Louisville Traction Company. The company has outstanding at present \$1,250,000 of first-mortgage bonds: \$100,000 of preferred stock and \$2,500,000 of common stock. It is proposed to issue new securities as follows: \$1,500,000 of 5 per cent thirty-year first-mortgage bonds dated Jan. 1, 1911; \$600,000 of 6 per cent cumulative preferred stock and \$600,000 of common stock.

**Lake Erie, Bowling Green & Napoleon Railway, Bowling Green, Ohio.**—Judge Killits, of the Federal Court at Toledo, Ohio, appointed Albert E. Royce and B. C. Harding, Bowling Green, receivers of the Lake Erie, Bowling Green & Napoleon Railway, on May 2, 1911, on a petition filed by Edmund C. Ebert, Detroit, Mich., who owns a judgment for \$325, secured against the company in January, 1910. Mr. Ebert claims that the company is insolvent, and that it has defaulted in the payment of interest on its bond issue of \$400,000, of which the Union Trust Company, Detroit, Mich., is trustee.

**Lynchburg Traction & Light Company, Lynchburg, Va.**—The Lynchburg Traction & Light Company has called for redemption at 103 and interest on June 1, 1911, at the office of the Logan Trust Company, Philadelphia, Pa., its \$250,000 of 6 per cent general mortgage convertible ten-year gold bonds of 1907.

**Manistee Light & Traction Company, Manistee, Mich.**—The property of the Manistee Light & Traction Company was sold under foreclosure on May 6, 1911, by order of the United States District Court, and was purchased in the interest of the bondholders.

**Northern Texas Electric Company, Ft. Worth, Tex.**—An issue of \$1,000,000 of three-year 5 per cent coupon notes has been sold by the Northern Texas Electric Company to Estabrook & Company and Parkinson & Burr, Boston, Mass., jointly. The notes are the direct obligation of the Northern Texas Company, and are to be secured by a first mortgage upon the property of the Ft. Worth Southern Traction Company, practically all of the stock of which will be owned by the former company. The Ft. Worth Southern Traction Company is to be organized under laws of Texas and is to own and operate an interurban electric railway of standard construction between Fort Worth and Cleburne, Tex., a distance of about 30 miles.

**Philadelphia (Pa.) Rapid Transit Company.**—Stern & Silverman, Philadelphia, Pa., have announced the terms of reorganization of the Philadelphia & Chester Railway. The Philadelphia Rapid Transit Company has received 51 per cent of the stock, or a controlling interest, in the new company to be called the Chester & Philadelphia Railway. The Philadelphia Rapid Transit Company is to keep 65 per cent of the gross income, maintain the property and assume all responsibility for operation.

Scranton & Binghamton Railroad, Scranton, Pa.—Fredrick Cohen & Company, Philadelphia, Pa., offer at par and interest the unsold portion of \$3,800,000 of first-mortgage, fifty-year, 6 per cent gold bonds of the Scranton & Binghamton Railroad, dated June 1, 1910, and due June 1, 1960, but redeemable at any interest period after five years at 105 per cent and interest. The Anthracite Savings Bank, Wilkes-Barre, Pa., is trustee of the mortgage.

Seattle (Wash.) Electric Company.—Lee, Higginson & Company, New York, Boston and Chicago, and Higginson & Company, London, Eng., recently offered for subscription on a 5.15 per cent basis \$1,500,000 of the first mortgage 5 per cent gold bonds of the Seattle Electric Company, dated 1909 and due March 1, 1939, but callable at 105 and interest on or after March 1, 1914. The trustee of the issue is the City Trust Company, Boston. The authorized issue is \$5,000,000, but there is outstanding, including this issue, \$3,100,000.

Springfield Railway & Light Company, Springfield, Mo.—The Federal Light & Traction Company, New York, N. Y., has taken over the Springfield Railway & Light Company, which controls the Springfield Traction Company and the Springfield Gas & Electric Company.

United Railways Investment Company, San Francisco, Cal.—Emil Loeb and Eben Richards have been elected directors of the United Railways Investment Company to fill vacancies caused by the resignation of M. Kubierschky and C. S. Shepard.

Valley Traction Company, Harrisburg, Pa.—The Valley Traction Company has filed with the Secretary of State a certificate certifying to an increase in the authorized capital stock of the company from \$1,000,000 to \$2,000,000 by raising the amount of the common stock from \$500,000 to \$1,500,000.

Virginia Railway & Power Company, Richmond, Va.—N. W. Halsey & Company, New York, N. Y., are offering for subscription at 97½ and interest the unsold portion of \$1,786,000 of 5 per cent gold bonds of the Virginia Railway & Power Company, dated July 1, 1909, and due July 1, 1934; interest payable Jan. 1 and July 1 at the office of the Equitable Trust Company, New York, N. Y., trustee. The bonds are in the denomination of \$1,000, and are callable at 105 on any interest date, and are being issued to retire the entire underlying debt of the company, with the exception of \$80,000 of prior lien bonds secured on a part of the property by a closed mortgage. The total authorized issue of these bonds is \$15,000,000, of which amount \$4,778,000 is reserved for additions and extensions to the property.

West Penn Traction Company, Pittsburgh, Pa.—The West Penn Traction Company has issued its report for the year ended March 31, 1911. The gross earnings for the year ended March 31, 1911, were \$2,059,227, as compared with \$1,828,391 for the previous year, an increase of \$230,835. The net earnings for the year ended March 31, 1911, were \$1,056,700, as compared with \$872,530 for the previous year, an increase of \$184,170. The statement for the year ended March 31, 1911, follows: Gross receipts, \$2,059,227; operating expenses and taxes, \$1,002,527; net earnings, \$1,056,700; fixed charges, \$475,821; surplus, \$580,879.

Worcester (Mass.) Consolidated Street Railway.—The Massachusetts Railroad Commission has approved the application of the Worcester Consolidated Street Railway to acquire the Worcester & Southbridge Street Railway, the Worcester & Blackstone Valley Street Railway, the Marlborough & Westborough Street Railway and the Worcester & Holden Street Railway, and to issue \$1,562,000 of stock share for share for the stock of the several companies. This will increase the stock of the Worcester Consolidated Street Railway to \$5,212,000.

Yonkers (N. Y.) Railroad.—The Public Service Commission of the Second District of New York has authorized Leslie Sutherland, receiver of the Yonkers Railroad, to issue \$1,000,000 of receivers' certificates payable in not more than two years from date, to bear interest not to exceed 6 per cent.

Portland Railway, Light & Power Company, Portland, Ore., quarterly, \$1 a share.  
St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., quarterly, ½ of 1 per cent, common.  
Tampa (Fla.) Electric Company, quarterly, \$2.  
West Penn Traction Company, Pittsburgh, Pa., quarterly, 1 per cent, common.

**ELECTRIC RAILWAY MONTHLY EARNINGS.**

BANGOR RAILWAY & ELECTRIC COMPANY.							
Period.			Gross Revenue.	Operating Expenses.	Net Revenue.	Fixed Charges.	Net Income.
1m.,	Mar.	'11	\$43,146	*\$24,718	\$18,428	\$12,498	\$5,930
1 "	"	'10	42,229	20,800	21,429	11,712	9,717
9 "	"	'11	440,553	*203,448	237,105	109,084	128,021
9 "	"	'10	425,651	*193,842	231,809	105,616	126,193
CHATTANOOGA RAILWAY & LIGHT COMPANY.							
1m.,	Mar.	'11	\$72,395	*\$42,545	\$29,850	\$19,400	\$10,450
1 "	"	'10	67,580	42,374	25,206	18,161	7,045
3 "	"	'11	215,193	*124,802	90,391	57,824	32,567
3 "	"	'10	194,649	*119,942	74,707	53,956	20,751
COMMONWEALTH POWER RAILWAY & LIGHT COMPANY.							
1m.,	Mar.	'11	\$455,032	*\$261,327	\$193,705	\$105,303	\$88,402
1 "	"	'10	413,866	239,210	174,656	104,339	70,317
3 "	"	'11	1,351,837	*754,375	597,462	303,133	294,329
3 "	"	'10	1,221,158	*692,386	528,772	305,955	222,817
DETROIT UNITED RAILWAY.							
1m.,	Mar.	'11	\$788,328	\$490,269	\$298,058	\$177,567	\$120,491
1 "	"	'10	737,307	470,407	266,900	161,871	105,030
3 "	"	'11	2,225,592	1,403,433	822,159	527,571	294,588
3 "	"	'10	2,029,041	1,294,590	734,451	479,669	254,782
EAST ST. LOUIS & SUBURBAN COMPANY.							
1m.,	Mar.	'11	\$176,892	*\$104,914	\$71,978	\$45,850	\$26,128
1 "	"	'10	200,254	106,317	93,937	45,526	48,411
3 "	"	'11	534,296	*307,265	227,031	136,289	90,742
3 "	"	'10	563,681	*308,841	254,840	135,561	119,279
GRAND RAPIDS RAILWAY.							
1m.,	Mar.	'11	\$89,706	*\$51,683	\$38,023	\$15,066	\$22,957
1 "	"	'10	86,211	47,200	39,011	14,979	24,032
3 "	"	'11	263,609	*151,406	112,203	45,288	66,915
3 "	"	'10	251,031	*141,116	109,915	46,102	63,813
LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY.							
1m.,	Mar.	'11	\$37,046	*\$26,763	\$10,283	\$13,292	\$3,009
1 "	"	'10	37,609	23,390	14,219	15,060	†841
9 "	"	'11	396,278	*251,550	144,728	118,326	26,402
9 "	"	'10	395,669	*232,680	162,989	131,114	31,875
NORFOLK & PORTSMOUTH TRACTION COMPANY.							
9m.,	Mar.	'11	\$1,561,877	\$887,316	\$674,561	\$562,396	\$112,164
9 "	"	'10	1,438,188	816,048	622,140	578,429	43,711
PENSACOLA ELECTRIC COMPANY.							
1m.,	Feb.	'11	\$22,320	\$13,383	\$8,937	\$5,813	\$3,123
1 "	"	'10	19,812	11,725	8,086	4,825	3,262
12 "	"	'11	277,372	162,348	115,024	62,902	52,122
12 "	"	'10	248,219	143,507	104,712	53,467	51,245
PORTLAND RAILWAY, LIGHT & POWER COMPANY.							
1m.,	Mar.	'11	\$515,753	*\$239,916	\$275,837	\$122,050	\$153,787
1 "	"	'10	435,652	*211,896	223,756	114,223	109,533
3 "	"	'11	1,505,640	*751,971	753,669	370,275	383,394
3 "	"	'10	1,259,739	*604,098	655,641	334,455	321,186
PUGET SOUND ELECTRIC RAILWAY.							
1m.,	Feb.	'10	\$132,135	\$102,749	\$29,386	\$53,004	†\$23,618
1 "	"	'10	131,219	96,883	34,337	50,220	†15,883
12 "	"	'11	1,914,088	1,271,411	642,676	608,941	33,736
12 "	"	'10	1,896,408	1,263,789	632,620	582,137	50,483
ST. JOSEPH RAILWAY, LIGHT, HEAT & POWER COMPANY.							
1m.,	Mar.	'11	\$87,728	*\$54,524	\$33,204	\$19,381	\$13,823
1 "	"	'10	82,459	*50,200	32,259	18,142	14,117
3 "	"	'11	261,842	*154,385	107,457	57,950	49,507
3 "	"	'10	251,038	*148,725	102,313	54,026	48,287
SAVANNAH ELECTRIC COMPANY.							
1m.,	Feb.	'11	\$51,301	\$32,942	\$18,359	\$18,351	\$8
1 "	"	'10	45,130	27,365	17,765	17,752	13
12 "	"	'11	643,431	425,783	217,648	216,548	1,100
12 "	"	'10	602,000	390,293	211,707	210,341	1,366
UNION RAILWAY, GAS & ELECTRIC COMPANY.							
1m.,	Mar.	'11	\$253,439	*\$147,294	\$106,145	\$59,782	\$46,363
1 "	"	'10	246,120	*142,534	103,586	57,924	45,662
3 "	"	'11	781,506	*458,439	323,067	178,601	144,466
3 "	"	'10	752,605	*452,152	300,453	174,222	126,231

**Dividends Declared**

Federal Light & Traction Company, New York, N. Y., quarterly, 1½ per cent, preferred.

J. J. Sullivan, president of the American Railways, Philadelphia, Pa., says of the business situation: "That the railroads of the country shall keep up to the highest state of efficiency and at the same time keep their rates down to the very lowest point, when all the costs of equipment and operation are constantly increasing, is what the public and the State and the United States government officials seem to require. Instead of enforcing the laws on the statute books we are constantly making new laws further to complicate the situation, and by the addition of many expenses, including an army of clerks to compile reports which are seldom read, are helping to eat up the revenue produced from increased taxation. The business interests are of the opinion that we have too much meddling."

## Traffic and Transportation

### Fare Complaint Against Washington (D. C.) Roads

Charles S. Moore, attorney for residents of Somerset, Drummond and Friendship, Md., filed a complaint with the Interstate Commerce Commission at Washington, D. C., on May 4, 1911, in which it is alleged that the Washington Railway & Electric Company, the Georgetown & Tenleytown Railway, the Washington & Rockville Railway and its receiver, George Weems Williams, are violating the act to regulate commerce passed by Congress in 1887 and its amendments. The attorney for the petitioners claims that as an inducement to persons locating in the sections named the railways about twelve years ago extended the one-fare zone from the District line to Somerset, taking passengers at the rate of a 5-cent cash fare or a car ticket sold at the rate of six for a quarter from these points to points in the District of Columbia, and that on June 1, 1910, the companies did away with this rate and made it a cash fare of 5 cents or a monthly commutation rate of \$1.73 from Somerset and Friendship Heights to the District line, and from there on the additional fare as charged in the District of Columbia. The restoration of the old rate is asked.

In the petition the alleged grievance is set forth as follows:

"That the defendants, about twelve years ago, on solicitation of the owners of subdivisions of land at Somerset, and for the purpose of encouraging development near their lines, extended the one-fare zone from the District line to Somerset, charging a fare of 5 cents or one car ticket at the rate of six tickets for 25 cents in either direction between Somerset and points in the District of Columbia. With the understanding that this rate of fare was to be permanent, and was to the mutual advantage of the residents of Somerset and said defendants, the entire community has been developed, and at the present time there are about 500 persons residing in the subdivisions of Somerset, Drummond and Friendship Heights.

"That said defendants maintained said rate of fare between Somerset and Friendship Heights and points in the District of Columbia for twelve years without any change of rate, and by so doing have represented to these citizens and the public that said rate of fare was a reasonable one.

"That July 1, 1910, said defendants increased the rate of fare between said points to a cash fare of 5 cents, or a monthly commutation rate of \$1.73, from Somerset and Friendship Heights to the District line, and from there on to points in the District a fare of 5 cents, or tickets at the rate of six for 25 cents, with like fares in the opposite direction.

"That the rate of fare now charged between said points is unreasonable, excessive and unjust, for the service performed, and in violation of Section 1 of said act to regulate commerce.

"Wherefore the complainants pray that the defendants may be required to answer the charges herein, and after due hearing and investigation an order be made commanding the defendants to cease and desist from said violations of the act to regulate commerce; that the former rate of fare of 5 cents or one car ticket at the rate of six for 25 cents be prescribed between said points of Somerset and Friendship Heights and points in the District of Columbia, and for such other relief and further order as the commission may deem necessary in the premises."

### Rules Prescribed by Indiana Commission for Change of Crews

Under date of May 3, 1911, the Railroad Commission of Indiana addressed the following circular to all interurban railways:

"The interurban railways whose lines extend from Indianapolis, Ind., to Louisville, Ky., have petitioned the Railroad Commission of Indiana to approve the following rule, to take the place of the existing rule on this subject. The commission after full consideration has granted the petition of said companies, and now recommends to all interurban railways in this State the adoption of the same rule, as follows:

"In case it becomes necessary either from an emergency or when provided for in the assignment of crews, or by permission from proper authority, for crews or any member of the crew to change off between the initial and terminal points, the persons being relieved must deliver to the ones relieving them all unfulfilled orders affecting the movement of their train. One member of the crew receiving the unfulfilled order must call the dispatcher at the nearest telephone and repeat same to him, initialing and timing the order in the same manner as when taking an original, and have the same read to him and signed by the other member of the crew. The dispatcher will O. K. order and note same on his order book, giving the time and name of the member of the crew repeating.

"In the event of the telephone line being down and the crew being unable to reach the dispatcher in a reasonable time they may proceed on the order delivered to them by the crew they relieved, who must know that the relieving crew thoroughly understands same. In the event of their proceeding without having reached the dispatcher they must endeavor so to do at each succeeding siding."

"Please advise that you will accept and act in accordance with this rule."

### Annual Meeting of the Stone & Webster Club of the Northwest

The first annual meeting of the Stone & Webster Club of the Pacific Northwest was held recently in the Viking room of the Tacoma Hotel, Tacoma, Wash. About 200 officials and employees of Stone & Webster attended. Officers were elected as follows: Hugh A. Tait, attorney for Stone & Webster for the Northwestern district, Seattle, president; J. M. Wilmot, Seattle, claim agent of the Seattle Electric Company, secretary; A. W. V. Ford, Tacoma, auditor of the Tacoma Railway & Power Company, treasurer. Vice-presidents—E. H. O'Dell, claim agent of the Tacoma Railway & Power Company; C. W. Howard, attorney of the Whatcom County Railway, Light & Power Company; A. M. Chitty, sales manager of the Everett Railway, Light & Power Company; W. R. Locke, engineer of the Stone & Webster Engineering Corporation. Trustees—F. Dabney, comptroller of the Stone & Webster Corporation of the Northwest; K. C. Schluss, superintendent of power and equipment of the Tacoma Railway & Power Company; E. C. Allen, engineer of the Stone & Webster Engineering Corporation, and K. K. Carrick, general traffic agent of the Seattle-Everett Traction Company. Among the prominent Stone & Webster officials who were present as guests of the evening were A. S. Michner of Boston, comptroller of the Stone & Webster Corporation; Judge John A. Shackelford, president of the Tacoma Railway & Power Company; Judge H. S. Elliott, Seattle, attorney for the Stone & Webster Corporation, and H. A. Tait, the new president of the club. The retiring president, A. L. Kempster, superintendent of transportation of the Seattle Electric Company, presided as toastmaster.

**Service Resumed in Bangor.**—The Bangor Railway & Electric Company, Bangor, Maine, on May 6, 1911, partially resumed service which had been suspended since the fire of April 30, 1911.

**Through Service Between Cleveland and Marion, Ohio.**—The Cleveland, Southwestern & Columbus Railway has arranged to operate its cars over the Columbus, Marion & Bucyrus Railway between Marion and Bucyrus. Service to Bucyrus was established some time ago.

**Uniforms for Assistant Division Superintendents.**—The Detroit (Mich.) United Railway has decided to require the assistant superintendents of its various divisions to wear uniforms hereafter. This will lead to their ready identification by citizens and by public officials, and it is thought will aid them materially in such work as directing the employees in blockades and in handling extraordinarily heavy traffic.

**Increase in Wages in Norfolk.**—The Norfolk & Portsmouth Traction Company, Norfolk, Va., has announced that on July 1, 1911, it will increase the wages of motormen and conductors who have been in its employ more than four years from 20 cents to 21 cents an hour. On May 1, 1911, the company presented a new uniform to

every motorman and conductor who had been in its employ more than four years.

**Accidents in Pennsylvania in 1910.**—The report of the Pennsylvania Railroad Commission for the year 1910 contains the following summary of persons killed and persons injured on the street railways of the State: Employees killed, 16; employees injured, 232; passengers killed, 18; trespassers killed, 27; others killed, 126; total, 187; employees injured, 232; passengers injured, 2,151; trespassers injured, 148; others injured, 1,585; total, 4,116.

**Service Agreement in Shreveport, La.**—An agreement has been entered into between the Shreveport (La.) Traction Company and its employes by which the men will be paid 21 cents per hour for the first six months, 22 cents for the second six months, 23 cents the second year, 24 cents the third year, 25 cents the fourth year and 26 cents thereafter. No run is to be less than nine hours and none more than ten hours. The agreement went into effect on May 1, 1911.

**Willow Grove Park.**—The summer season at Willow Grove Park, which is operated by the Philadelphia (Pa.) Rapid Transit Company, opens on May 27, 1911. The company has announced the following band and orchestra engagements for the season: Ohlmeyer and his Coronado Band, May 27 to June 10; the Theodore Thomas Orchestra, Frederick Stock, conductor, June 11 to July 1; Stewart's Boston Concert Band, July 2 to July 15; Russian Symphony Orchestra of New York, July 16 to Aug. 5; Leps and his orchestra, Aug. 6 to Aug. 19; Creatore and his band, Aug. 20 to Sept. 10.

**To Divert Freight at Portland.**—The Oregon Electric Railway and the United Railways, Portland, Ore., plan to route all eastbound freight originating in the Willamette Valley and in the territory between Portland and Tillamook Bay over the new Willamette River bridge without going through Portland and work it into trains in the Vancouver yards, thus eliminating the haul through Portland and avoiding congestion at the local terminals. A short connecting link will have to be built between Orengo on the Oregon Electric Railway's Forest Grove line to Helvetia on the United Railways.

**Public Service Railway Not Required to Sell Tickets.**—The Board of Public Utilities Commissioners of New Jersey have dismissed the petition asking that the Public Service Railway be compelled to resume the sale of tickets. The complaint sets forth that the carrying of tickets would be a convenience and would assist in the quick loading of cars. The company alleged that the printing and sale of tickets entailed a heavy expense and that the tickets are likely to be counterfeited. The company exhibited samples of devices to register fares in boxes and explained that the mechanism could be worked only by the use of coins.

**P. A. Y. E. Cars in Milwaukee.**—The Milwaukee Electric Railway & Light Company, Milwaukee, Wis., placed in service in Milwaukee on Sunday, April 30, 1911, fifty-two of the 100 pay-as-you-enter cars ordered some time ago from the St. Louis Car Company under license from the Pay-As-You-Enter Car Corporation. The cars are all of the double-end, double-truck type and are 59 ft. long over all. They are all equipped with Hedley anti-climbers. Several of the cars were stationed in different parts of the city before the service was begun and the public was invited to inspect them and become acquainted with their workings.

**Long Island Railroad Record.**—On May 8, 1911, the Long Island Railroad issued a statement to the effect that more than one-third of a billion passengers had been carried in eighteen years and a half and not one killed as the result of train accident. The official figures show that this road has carried exactly 335,148,826 passengers since June 1, 1893. The density of the traffic is shown by the fact that the number of passengers carried one mile since 1893 is 4,904,736,994. In 1900 the number of passengers carried was 12,387,649. Five years later it was 18,199,162; in 1907 it was approximately 24,000,000; in 1909 more than 27,000,000, and last year it reached 31,000,000.

**Freight Service Between Philadelphia and West Chester.**—Announcement has been made that the Philadelphia (Pa.)

Rapid Transit Company and the Philadelphia & West Chester Electric Railway have entered into a contract whereby they will operate a joint freight service from Market Street ferry, Philadelphia, to West Chester. According to the plans freight from Philadelphia may be shipped on cars of the Philadelphia Rapid Transit Company to the terminal station at Sixty-third and Market Streets, where it will be transferred to cars of the Philadelphia & West Chester Electric Railway, by which the freight will be carried and distributed as far as West Chester. The process will be reversed on freight coming into Philadelphia from West Chester and intermediate points. Plans have been drawn for a freight transfer station at Sixty-third Street and Market Street.

**Report of Interborough Rapid Transit Company Voluntary Relief Department.**—The report of the Interborough Rapid Transit Company Voluntary Relief Department, composed of employees of the Interborough Rapid Transit Company, New York, N. Y., for the year ended Dec. 31, 1910, was made public recently. The statement shows that there was a net increase of 434 in membership during 1909, and that about 57 per cent of the employees of the company are members of the association. During 1910 the medical examiners made 4436 calls on disabled members, and examined for admission to the fund 2513 applicants. The operating expenses of the association from its organization to Dec. 31, 1910, paid by the company, amounted to \$64,482. During 1910 a total of 77 death claims were paid, amounting to \$36,283. Thirty-two members who have been disabled one year were drawing half-rate benefits when the report was made. The receipts previously reported were \$204,840, the total receipts were \$286,485, the total payments were \$223,556, and the balance of cash on hand at the close of business on Dec. 31, 1910, was \$63,569.

**"No-Seat-No-Fare" Ordinance in San Francisco.**—At a meeting of the Board of Supervisors of San Francisco on April 24, 1911, Supervisor Walsh introduced a no-seat-no-fare ordinance and had it referred to the Public Utilities Committee. The bill as sent to the committee follows: "Section 1—It shall be the duty of any person or corporation operating a street railway within the limits of the city and county of San Francisco between the hours of 6 and 9 o'clock in the forenoon and between the hours of 4:30 and 7 o'clock in the afternoon to furnish and operate a sufficient number of cars to provide a seat for every person from whom a fare is demanded. Section 2—No person desiring transportation shall be kept waiting for a car longer than 10 consecutive minutes, except in cases of accident resulting in the suspension of traffic. Section 3—Any person or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$50 nor more than \$500, or by imprisonment in the county jail for a period of not more than six months, or by both such fine and imprisonment."

**School Tickets in New Jersey.**—The Board of Public Utility Commissioners of New Jersey has issued the following order restoring the sale of school children's tickets by the Public Service Railway and calling for a public hearing on the subject: "The Public Service Railway having discontinued the sale of tickets at a reduced rate for the transportation of children to and from school over its several lines, and such discontinuance resulting in the increase of the then existing rate for the transportation of children to and from school, the Board of Public Utility Commissioners, of its own initiative, hereby calls a hearing upon the question whether such increased rate is just and reasonable, and hereby fixes May 17, 1911, at the hour of 10 o'clock in the forenoon of such day, at the court house in Newark, as the time and place of such hearing. And said board hereby orders the said Public Service Railway, pending such hearing and determination therein, to suspend the said increased rate for the transportation of children to and from school for the period of one month from the date hereof, and during the period of such suspension to continue the sale of tickets at the rate prevailing at the time of such increase to such children for such transportation. And it is further ordered that this order be forthwith served by the secretary of the board upon the Public Service Railway."

## Personal Mention

**Mr. Charles Winter** has resigned as master mechanic of the Rockford & Interurban Railway, Rockford, Ill.

**Mr. C. Q. Richmond**, general manager of the Berkshire Street Railway, Pittsfield, Mass., has also been elected vice-president of the company.

**Mr. A. S. May**, treasurer of the Connecticut Company, New Haven, Conn., has been elected treasurer of the Berkshire Street Railway, Pittsfield, Mass., to succeed Mr. L. Candee.

**Mr. John A. Shackelford**, who was recently appointed counsel for the Tacoma Railway & Power Company, Tacoma, Wash., has been elected president of the company to succeed Mr. Russell Robb.

**Mr. Edwin Main** has resigned as chief engineer of the Rockford & Interurban Railway, Rockford, Ill., to become city engineer of Rockford, a position which he held prior to engaging in electric railway work.

**Mr. G. A. de Hasseth**, who has been connected with the Seattle (Wash.) Electric Company, has been appointed engineering superintendent of the railway lines of the Galveston (Tex.) Electric Company.

**Mr. A. M. Hunt** has been appointed by the Board of Public Works of San Francisco, Cal., as consulting engineer to direct the reconstruction of the Geary Street, Park & Ocean Railway as a municipal enterprise.

**Mr. F. V. Skelley** has been appointed assistant superintendent of the Moline, East Moline & Watertown Railway, Moline, Ill. Mr. Skelley was formerly connected with the Western Electric Company and the Tri-City Railway, Davenport, Ia.

**Mr. F. I. Annabel**, who has been general superintendent of the Arizona & Swansea Railroad, Swansea, Ariz., has been appointed assistant superintendent of the north division of the Pacific Electric Railway to succeed Mr. J. C. McPherson.

**Mr. F. H. Cutshall**, formerly auditor and purchasing agent of the Chicago, South Bend & Northern Indiana Railway and the Southern Michigan Railway, South Bend, Ind., has been appointed general manager of the Lima (Ohio) Gas Light Company.

**Mr. James E. Burr** has been appointed assistant claim agent of the Eastern Pennsylvania Railways, Pottsville, Pa. Mr. Burr became connected with the company as a clerk in the transportation department in October, 1906. Prior to entering the service of the Eastern Pennsylvania Railways Mr. Burr served for two and one-half years in the transportation department of the Public Service Corporation of New Jersey at Camden.

**Mr. C. T. Chapman**, for the last six years traffic manager of the Toledo & Western Railroad, Toledo, Ohio, a subsidiary of the Toledo Railways & Light Company, has resigned to accept a similar position with the Interurban Railway, Des Moines, Ia. Mr. Chapman began his railroad career as a telegraph operator and agent of the Clover Leaf Railroad and later served in the general passenger and freight department of that company as a clerk.

**Mr. C. S. Mellen**, president of the New York, New Haven & Hartford Railroad and the Connecticut Company, New Haven, Conn., has been elected president of the Berkshire Street Railway to succeed Mr. L. S. Storrs, president of the New England Security & Investment Company, Springfield, Mass., the stock of the Berkshire Street Railway having been acquired by the New York, New Haven & Hartford Railroad by authority of the Massachusetts Legislature in June, 1910.

**Mr. Fred A. Stowe** has resigned as assistant to Mr. T. E. Mitten, president of the Chicago (Ill.) City Railway, having successfully concluded the work which devolved upon him in connection with the rehabilitation of the physical property of the company. Mr. Stowe was born in Chicago on Aug. 29, 1872, and was graduated from the collegiate department of the University of Iowa in 1892. Later he took a post-graduate course in political economy and political science at the University of Chicago and in law at Northwestern University, Evanston, Ill. After leaving college Mr.

Stowe became connected with the *Chicago Tribune*. Subsequently he served the *Chicago Chronicle* for ten years as political editor. Mr. Stowe became connected with the Chicago City Railway as assistant to the president in the fall of 1907.

**Mr. Charles J. Davidson** has resigned as chief engineer of power plants of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., to become associated with Mr. Fay Woodmansee as consulting engineer in Chicago. Mr. Davidson became connected with the Milwaukee Electric Railway & Light Company ten years ago. He was formerly chief engineer of the Sioux City (Ia.) Traction Company. While in Milwaukee he superintended the construction of the Commerce Street plant, the rebuilding of the Oneida Street plant, the creation of the plant in the public service building occupied by the company for offices, the reconstruction of the Racine plant and the building of the various substations. Mr. Davidson was also superintendent of the Central Heating Company, Milwaukee. He is a member of the American Society of Mechanical Engineers, the American Society of Naval Engineers and other scientific bodies. He organized and was one of the first presidents of the Milwaukee branch of the A. S. M. E.

**Mr. Thomas A. Cross**, general manager of the United Railways & Electric Company, Baltimore, Md., was also elected second vice-president of the company at the recent annual meeting of the company. Mr. Cross is a native of Baltimore and has been connected with the street railways in that city since a young man. His first work was with the North Avenue Electric Railway, the service of which he entered in 1890. This company was succeeded by the Lake Roland Elevated Railway and Mr. Cross was advanced until in 1893 he was selected by the Baltimore Traction Company to take charge of its overhead work, motor equipment and power stations. When this company was consolidated with the City & Suburban Railway as the Consolidated Electric Railway Mr. Cross' duties were further increased and in 1899, when all the lines were merged as the United Railways & Electric Company, Mr. Cross was appointed to the position of superintendent of overhead work, cables, etc. In April, 1907, he was appointed general manager of the company.

**Mr. J. H. Pardee**, operating manager of J. G. White & Company, Inc., New York, N. Y., has been elected a vice-president and director of that company and will continue to have charge of the operating department as formerly. Mr. Pardee has been connected with J. G. White & Company, Inc., since January, 1907. He was born at Lysander, N. Y., in 1867, and was graduated from Hamilton College in 1889. In 1891 he was admitted to the bar of New York and began practice as a member of Petrie, Zimmerman & Pardee, with whom he continued until 1898. Meanwhile Mr. Pardee perfected the reorganization of the railway lighting and gas company at Canandaigua, N. Y., and was appointed general manager of the Ontario Light & Traction Company and the Canandaigua Gas Light Company. In 1898 he was appointed general manager of the Rochester & Eastern Rapid Railway and continued in this position until he became connected with J. G. White & Company, Inc. Mr. Pardee is a member of the board of directors and an officer in most of the companies operated by J. G. White & Company, Inc. Mr. Pardee has been connected with the Street Railway Association of the State of New York as an officer since 1903. He was secretary of the association from November, 1906, until June, 1910, when he was elected president of the association.

## OBITUARY

**Sidney M. Bamberger**, vice-president and general manager of the Salt Lake & Ogden Electric Railway, Salt Lake City, Utah, died on May 9, 1911, in Baltimore, where he underwent an operation.

**Charles J. Larson**, chief engineer of the power stations of the Union Electric Company, Dubuque, Ia., since 1908, is dead. Mr. Larson was born in River Falls, Wis., on March 2, 1872, and was graduated from Rose Polytechnic Institute at Terre Haute, Ind., in 1900, as a mechanical engineer. He was connected with the Allis-Chalmers Company for seven years.

## Construction News

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

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

### RECENT INCORPORATIONS

**Colorado Interurban Railroad, Denver, Col.**—Application for a charter has been made in Colorado by this company to build an electric railway in the northern part of Colorado to connect Denver, Fort Lupton, Greeley, Eaton, Ault, Pierce, Fort Collins, Firestone, Longmont and Idaho Creek. Surveys have been completed and right-of-way secured and construction will begin within three months. The line will carry passengers and freight. Capital stock, \$6,000,000. Incorporators: E. Armour, Charles H. Pierce, Irving Hale, James Leonard, O. S. Storrs, E. B. Reaser, D. E. Young, James W. Owen, William H. Davis, Samuel F. Eaton, A. H. Williams, Clarkson N. Guyer and Emil J. Reithman. [E. R. J., Aug. 14, '11.]

**\*United Public Utilities Company, New Orleans, La.**—Application for a charter has been made in Louisiana by this company to own and operate electric railways. Capital stock, \$1,257,600. Directors, Lynn H. Dinkins, Silas I. Hyman, Max Schwabacher, S. B. Sneath, A. C. Wuerpel, S. Wexler, P. H. Saunders and Charles P. Fenner.

**North Carolina Interurban Railway, Raleigh, N. C.**—Chartered in North Carolina to build an electric railway from any point on the Atlantic seaboard to Asheville and to connect Charlotte, Gastonia, Dallas, Cherryville, Shelby, Boiling Springs, Rutherfordton, Chimney Rock, Hickory Nut Gap, Fairview and Asheville. This company was formerly known as the Isothermal Traction Company, Rutherfordton. Capital stock, \$100,000, with the right to increase it to \$10,000,000. Incorporators: John C. Mills, L. L. Jenkins, W. A. Harrill, J. T. Gardner, M. L. Mauney, P. B. Babington, E. L. Wilson, J. Y. Hamrick, K. S. Finch and George L. McKay, Rutherfordton. [E. R. J., Dec. 17, '10.]

**Northumberland County Traction Company, Sunbury, Pa.**—Chartered in Pennsylvania to build an interurban railway to connect the electric lines in the counties of Northumberland, Union, Snyder, Montour, Columbia, Lycoming, Luzerne and Schuylkill. J. F. Schaffer, Sunbury, and John C. Johnson, Philadelphia, are the solicitors. [E. R. J., April 15, '11.]

**\*Washington & Old Dominion Railroad, Richmond, Va.**—Chartered in Virginia to build an electric railway from a point in Virginia opposite the District of Columbia to Winchester, Va., via Alexandria, Fairfax, Loudoun, Clarke and Frederick Counties. Maximum capital stock, \$3,000,000. Minimum, \$1,000,000. Headquarters: Rosslyn. Officers: Charles M. Henckley, president; W. B. Emmett, vice-president; George Howard, treasurer, and Charles E. Howe, secretary, all of Washington, D. C.

**\*Federal Electric Utilities Corporation, Richmond, Va.**—Incorporated in Virginia. Capital stock, \$6,000,000. Headquarters: Mutual Building, Richmond. Officers: E. Gregg Latimer, president; Dennie K. Keller, treasurer, and John E. Marsh, secretary, all of New York City, N. Y.

**\*Fairmont, Clarksburg & Grafton Railway, Grafton, W. Va.**—Incorporated in West Virginia to build a 30-mile electric railway to connect Grafton, Fairmont and Clarksburg. Construction will begin at once. Headquarters: Grafton. Capital stock, \$500,000. Officers: Charles F. Sutherland, Morgantown, president; John H. Roberts, general manager; C. Lee Reynolds, Pittsburgh, Pa., vice-president; A. B. Corder, Grafton, treasurer, and Charles C. Benton, Pittsburgh, Pa., secretary.

### FRANCHISES

**Berkeley, Cal.**—The Oakland Traction Company has received a franchise from the City Council to extend its Euclid Avenue line north to the hills and also for the extension of the Bay View Avenue line east to Euclid Avenue, in Berkeley.

**Corona, Cal.**—The Pacific Electric Railway will ask the Board of Supervisors for a franchise to build its tracks from Arlington, the terminal of the Riverside line, to Corona.

**Modesto, Cal.**—The San Joaquin Valley Electric Railway

has received a twenty-five-year franchise from the Trustees to build a single or double-track railway between Modesto and Stockton.

**Gary, Ind.**—The Calumet United Railways, Indianapolis, has received a fifty-year franchise from the Board of Public Works to build its tracks through Gary. This line will connect Michigan City, Gary, Chesterton, Aetna, East Chicago and Hammond. James A. Slattery, Philadelphia, is interested. [E. R. J., April 29, '11.]

**Mt. Carmel, Ind.**—The Evansville, Mt. Carmel & Olney Traction Company, Evansville, has received a franchise from the City Council to build its tracks through Mt. Carmel. This projected 65-mile electric railway will connect Mt. Carmel, Highland, Darmstadt, Cynthiana, Owensville, Lancaster, Friendsville, Berryville and Olney. It is expected to begin construction shortly. E. Q. Lockyear, secretary. [E. R. J., Jan. 14, '11.]

**Des Moines, Ia.**—The Des Moines City Railway has asked the City Council for a franchise to rebuild and double-track some of its lines in Des Moines.

**\*Frankfort, Ky.**—Local interests have secured a franchise from the Council to build an electric railway from the forks of the Elkten River to Frankfort, a distance of six miles.

**New Orleans, La.**—The New Orleans Railway & Light Company has asked the City Council for a fifty-year franchise to build a double-track line on Claiborne Street, from Napoleon Avenue to the upper portion of New Orleans.

**North Adams, Mass.**—The Berkshire Street Railway, Pittsfield, has asked the Councils for a franchise to extend its line in North Adams to the Red Mills in Clarksburg and from there to Wilmington, Vt.

**Ocean City, N. J.**—The Ocean City Electric Railway has asked the Council for a franchise to extend its tracks on Eighteenth Street from Bay Avenue to Centre Avenue, and on Ninth Street from Wesley Avenue to the boardwalk in Ocean City.

**Buffalo, N. Y.**—The International Traction Company, Buffalo, has received a franchise from the Board of Aldermen to extend its tracks on Abbott Road, between Cazenovia Street and the city line in Buffalo.

**Fremont, Ohio.**—The Lake Shore Electric Railway, Sandusky, has asked the County Commissioners for a twenty-five-year extension of its franchise to build its railway through Fremont County. The company agrees to build a new bridge over the Sandusky River at Fremont, to cost \$25,000, if given the extension of time.

**New Castle, Pa.**—The New Castle & Beaver Falls Street Railway has asked the Council for another six months' extension of time in which to begin work on its proposed 22-mile electric railway to connect New Castle and Beaver Falls. [E. R. J., Dec. 31, '11.]

**Philadelphia, Pa.**—The Philadelphia Rapid Transit Company has received a franchise from the Select Council to extend its tracks on Bustleton Avenue to the county line road and to extend its lines on Red Lion Road to the Montgomery County line in northern Philadelphia.

**Wilkes-Barre, Pa.**—The Wilkes-Barre & Wyoming Valley Traction Company has asked the County Commissioners for a franchise to enlarge the West Market Street Bridge and to build a double track across the bridge in Wilkes-Barre.

**Chattanooga, Tenn.**—C. E. James and associates have received a franchise from the City Council to build an electric railway over the principal street in Chattanooga. Work must be begun within six months. [E. R. J., April 22, '11.]

**Gallatin, Tenn.**—The Nashville-Gallatin Interurban Railway, Gallatin, has received a franchise from the Board of Aldermen to build its tracks over certain streets in Gallatin. This 30-mile line will extend from Nashville to Gallatin. H. H. Mayberry is interested. [E. R. J., Feb. 25, '11.]

**Centralia, Wash.**—The Chehalis & Cowlitz Railroad, Chehalis, Ore., has asked the City Council for a fifty-year franchise to build its tracks in Centralia. This railway will connect Chehalis and Cowlitz, Ore., and Centralia, Wash. Geo. A. Robinson, Chehalis, is interested. [E. R. J., Feb. 4, '11.]

### TRACK AND ROADWAY

**Argenta (Ark.) Railway.**—This company has been authorized to build a bridge over the Arkansas River, connecting Little Rock and Argenta, to be used as a street car bridge.



\***Harrisburg, Ark.**—L. D. Freeman and J. D. Gant are preparing plans for building a 50-mile electric railway from Marked Tree to Harrisburg and Newport, Ark.

**Los Angeles (Cal.) Railway.**—This company has begun the reconstruction of its tracks on Broadway and on Central Avenue, in Los Angeles.

**Sacramento Valley Westside Electric Railway, Sacramento, Cal.**—This company, which is projecting a 50-mile railway between Red Bluff, Willows, Woodland, Colusa and Redding, is having surveys made, financial backing secured, and has organized by electing the following officers: C. L. Donohoe, Willows, president; W. N. Woodson, Corning, vice-president; J. F. Campbell, Colusa, treasurer, and E. L. Sisson, Red Bluff, secretary. [E. R. J., May 6, '11.]

**Peninsular Railway, San José, Cal.**—An extension will be built by this company from Santa Clara to Meridan Corners in the near future.

**Groton & Stonington Street Railroad, New London, Conn.**—A petition filed with the Secretary of State by this company asking for an amendment to its charter for an extension of its line in Mystic to Old Mystic, also an extension in Mystic, has been granted and a bond issue of \$100,000 authorized.

**Boise & Interurban Railway, Ltd., Boise, Idaho.**—Plans are being made by this company to build an extension from Boise to Roswell, via the Deer Flat country.

**East St. Louis & St. Louis Traction Company, East St. Louis, Ill.**—This company has been organized in the interests of the East St. Louis Railway, and proposes to construct some track in East St. Louis to connect with the new municipal bridge being built by the city of St. Louis. The details have not yet been completed, but it is probable that the new line will run for several blocks over the tracks of the East St. Louis Railway.

**Gary, Hobart & Eastern Traction Company, Gary, Ind.**—Contracts will be let about May 20 by this company for building a 5-mile line from Hobart to Broadway, Gary. W. P. Hood is interested. [E. R. J., April 1, '11.]

**Arkansas City, Wellington & Northwestern Railway, Wellington, Kan.**—This company advises that this railway will be operated by steam and not by electricity, as stated in the *ELECTRIC RAILWAY JOURNAL* of April 22, 1911. George H. Hunter, president.

\***Owensboro, Ky.**—E. F. Wheaton plans to build a 51-mile electric railway to connect Owensboro, Madisonville, Utica and Calhoun.

**Bangor Railway & Electric Company, Bangor, Maine.**—This company will soon relay some of its tracks in Bangor with heavier rails.

**Portland, Gray & Lewiston, Lewiston, Maine.**—Work has been resumed by this company on its extension between Portland and Lewiston.

**Towson & Cockeyville Electric Railway, Cockeyville, Md.**—J. T. Harlow Contracting Company has been awarded the contract by this company to build its 8-mile electric railway between Towson and Cockeyville, via Lutherville, Timonium, Texas and Marble Hill. Construction has been begun. J. Alexis Shriver, Belair, president. [E. R. J., April 29, '11.]

**Miller's River Street Railway, Orange, Mass.**—This company advises that it will begin construction as soon as it receives franchises for its 14-mile electric railway to connect Miller's Falls, Erving, Farley, West Orange and Orange. The company will purchase power. Daniel P. Abercrombie, Jr., is interested. [E. R. J., May 6, '11.]

**Duluth (Minn.) Street Railway.**—This company has begun to rebuild its Woodland Park line with 80-lb. rails.

**Metropolitan Street Railway, Kansas City, Mo.**—Work has been begun by this company on the extensions of its Chelsea Street and Eighteenth Street lines in Kansas City.

**Springfield & Western Railroad, Springfield, Mo.**—This company is said to have awarded the contract for building its 60-mile electric railway to connect Joplin and Springfield via Pierce City, Paris Springs, Mount Vernon, Monett, Wentworth, Plano and Diamond. The surveys for a branch line to extend from Paris Springs to Joplin via Carthage, Carterville and Webb City will be completed within the

next two months. Mortimer M. Hollenback, Springfield, chief engineer. [E. R. J., April 8, '11.]

**Columbia Falls, Mont.**—Right-of-way and financial backing have been secured as far as Big Fork to build a proposed electric railway to connect Columbia Falls, Polsen, via Big Fork. James A. Talbot is said to be interested. [E. R. J., Jan. 7, '11.]

**Helena Light & Railway Company Helena, Mont.**—The directors of this company have authorized a bond issue of \$100,000, to be used to build a double-track extension from Helena to the fair grounds.

**Suffern (N. Y.) Railway.**—Maher & Ackerman are said to have been awarded the contract by this company for building an electric railway from Suffern, N. Y., to Mahwah, N. J. Work will begin at once. H. H. Parmlee, Paterson, N. J., is interested. [E. R. J., Sept. 17, '10.]

**North Carolina Public Service Company, Greensboro, N. C.**—Work will soon be begun by this company on three extensions. One branch will be the extension of the Lindley Park line in Greensboro, a distance of 3 miles, to the Masonic Home and Pomona cotton mills. Another extension will connect with the line on Elm Street and extend along Mendenhall Street to Spring Garden and connect with the Lindley line near the State Normal & Industrial College. A third extension will be from the present line at the intersection of Church Street with Elm Street, along North Elm Street to a point beyond the city limits near the proposed Greensboro Country Club.

**Grand Forks (N. D.) Street Railway.**—This company is preparing to extend its lines over a mile from Grand Forks into East Grand Forks, Minn. This will include the reinforcing of a bridge across the Red River.

**Ohio Electric Railway, Cincinnati, Ohio.**—This company has completed and placed in operation a new bridge across the Four-Mile Creek at Ohlinger. It will be used exclusively by this company.

**Hocking-Sunny Creek Traction Company, Nelsonville, Ohio.**—Charles Carr, Sugar Grove, has been awarded the contract by this company to deliver before August 30,000 ties and 600 poles, to be used for a 3-mile extension from Nelsonville to Athens. A meeting of the stockholders will be held on May 22 to consider the completion of the line to Athens and extending it to Lancaster, also the extension of a line from Chauncey to Glouster. It is expected to increase the capital stock to \$900,000. Bonds to the amount of \$200,000 have been sold.

**Sand Springs Interurban Railway, Tulsa, Okla.**—This company has begun the construction of its 6-mile electric railway from Sand Springs to Tulsa. Sixty-five-pound rails will be used. W. H. Henderson, First National Bank, Tulsa, chief engineer. [E. R. J., March 4, '11.]

**Guelph (Ont.) Radial Railway.**—Bids are being received by this company for building about a mile of new track in Guelph.

**Niagara Falls, Welland & Lake Erie Railway, Niagara Falls, Ont.**—Hendrick H. Leach & Company have been awarded the contract by this company to build an extension through Welland. Work has been begun. The line will connect Niagara Falls, Welland and Port Colborne, with branches to Port Dover on Lake Erie, and to Fort Erie on the Niagara River, opposite Buffalo. The Ontario Power Company will furnish the power. C. J. McLaughlin, Toronto, Ont., is interested. [E. R. J., March 4, '11.]

**Indiana County Street Railway, Indiana, Pa.**—Right-of-way is being secured by this company for building an extension from Clymer to Dixonville. A further extension of four miles from Dinonville to Marion Centre is being considered.

**Ephrata & Lebanon Street Railway, Lebanon, Pa.**—Surveys have been completed, financial backing secured and contracts will be awarded by this company shortly for building its 22-mile electric railway to connect Ephrata, Lincoln, Clay, Hopeland, Schaeffertown, Kleinfetterville, Reisterville and Lebanon. M. H. Shirk, Lincoln, secretary. [E. R. J., April 29, '11.]

**Philadelphia & Western Railway, Philadelphia, Pa.**—A contract has been awarded to the Keystone State Construction Company by this company for grading and masonry

work for its double-track extension between Villanova and the Schuylkill River. The Pennsylvania Steel Company has the contract for building the bridge over the Schuylkill River, which with its viaduct approaches on each side will be 3800 ft. long and about 40 ft. high.

**West Penn Railways, Pittsburgh, Pa.**—This company has ordered 500 tons of steel rails from the Carnegie Steel Company.

**Pottstown & Phoenixville Railway, Pottstown, Pa.**—This company advises that it has begun construction and will buy material for 6 miles of track for its 14-mile electric railway to connect Pottstown, Sanatoga, Linfield, Spring City, Royersford, Parkersford, Phoenixville and Valley Forge. The company will operate twenty-nine cars. The power stations will be located at Pottstown and Phoenixville, and the repair shops at Sanatoga and Bonnie Brae. Capital stock, authorized, \$800,000; capital stock, issued, \$374,000. Bonds, authorized, \$800,000; bonds, issued, \$230,000. Officers: George N. Malsberger, Pottstown, president; C. Taylor Leland, 2215 Land & Title Building, Philadelphia, secretary, treasurer and purchasing agent; Harry F. Swinehart, Pottstown, general manager and superintendent, and Charles Johnson, Pottstown, electric and chief engineer. Headquarters, 2215 Land & Title Building, Philadelphia, Pa. [E. R. J., April 20, '11.]

**Scranton & Binghamton Traction Company, Scranton, Pa.**—Work has been begun by this company on its 62-mile electric railway between Scranton and Binghamton, via Brooklyn, Hart Lake, New Milford, Montrose and Factoryville. W. L. Connel, Scranton, president. [E. R. J., Feb. 18, '11.]

**Somerset (Pa.) Railway.**—It is reported that this company has secured capital and is now making surveys for its 11-mile electric railway between Somerset and Rockwood. Contracts will be awarded about June 15. J. A. Berkey, Somerset, president. [E. R. J., Dec. 3, '10.]

**Chambersburg, Greencastle & Waynesboro Street Railway, Waynesburg, Pa.**—This company has completed and placed in operation its extension from Pen Mar to Highfield.

**Sioux Falls (S. D.) Traction Company.**—This company will expend \$20,000 extending its tracks to the plant of the Morrill Packing Company.

**Nashville-Gallatin Interurban Railway, Gallatin, Tenn.**—H. H. Mayberry, president of this company, announces that plans and specifications will be ready within thirty days and work will be begun next month for building this 30-mile railway between Gallatin and Nashville. [E. R. J., April 29, '11.]

**\*Johnson City, Tenn.**—Plans are being considered for organizing a company with a capital stock of \$100,000 to build a 55-mile electric railway between Johnson City and Newport, via Conkling.

**\*Dallas-Denton Interurban Railway, Dallas, Tex.**—Plans are being considered for the organization of this company to build an electric railway between Dallas and Denton, via Grapevine and Irving. Much of the right-of-way has been promised and some financial backing secured. Capital stock, \$1,000,000. Among those interested are: Alvin C. Owsley, Denton; Curtis Hancock and J. B. Nelson, Western Heights; E. A. Gebbard, Irving, and P. B. Hunt, Dallas.

**Houston (Tex.) Electric Railway.**—This company has completed and placed in operation its new Leeland Avenue line in Houston.

**Lynchburg Traction & Light Company, Lynchburg, Va.**—This company has completed and placed in operation its extension to Fairview Heights.

**Seattle, Wash.**—Homer Crosby, 423 Hinckley Building, Seattle, is said to have been awarded the contract for building a 7-mile electric railway from Seattle to Lake Burien. F. E. Sander, Seattle, is interested. [E. R. J., Dec. 17, '10.]

**Fairmont & Pittsburgh Railway, Fairmont, W. Va.**—Contracts will be awarded during May by this company for building the first section of its 13-mile double-track railway to connect Waynesburg and Blacksville. Work will begin at Blacksville, on the State line between Pennsylvania and West Virginia. From Blacksville the company, under different charters, has built and is operating a railway to Fairmont and Morgantown. Right-of-way has been secured

from Waynesburg to Bridgeville, where a connection is to be made with the Wabash-Pittsburgh Terminal Company, which is to be electrified into the Liberty Avenue terminal. J. F. Seatty, general manager. [E. R. J., July 16, '10.]

## SHOPS AND BUILDINGS

**British Columbia Electric Railway, Vancouver, B. C.**—It is reported that this company will soon build a new station at New Westminster. The cost is estimated to be about \$30,000.

**Cincinnati, Louisville, Lexington & Maysville Traction Company, Dry Ridge, Ky.**—Plans are being considered by this company for building a union depot at Dry Ridge. W. T. S. Blackburn, Dry Ridge, president. [E. R. J., May 11, '11.]

**Rockland, Thomaston & Camden Electric Railway, Rockland, Maine.**—This company has fitted up a new waiting room at Thomaston, Me., at the terminus of the main line, and close to the terminus of the extension to Warren.

**Old Colony Street Railway, Quincy, Mass.**—It is reported that plans are being considered for the construction of a freight depot on Washington Street, in Quincy, by this company.

**Detroit (Mich.) United Railways.**—This company has purchased the old armory on Huron Street, in Ann Arbor, next to its present waiting room, and some time during the summer will build an up-to-date interurban station.

**Public Service Railway, Newark, N. J.**—F. D. Hyde has been awarded a contract by this company for building its new carhouse on the north side of Springfield Avenue, near Fifty-third Street, Newark. The structure will be 200 ft. x 362 ft., and of brick, steel and concrete construction. It will include an office building and repair shops. The cost is estimated to be \$150,000. [E. R. J., Jan. 14, '11.]

**Richmond & Henrico Railway, Richmond, Va.**—An addition will be built by this company to its brick carhouse on Government Road, between Gillies Creek and Thirty-sixth Street, in Richmond. The cost is estimated to be about \$5,000.

**Greenville Railway & Light Company, Greenville, Tex.**—This company has about completed its carhouse on North Walnut Street, in Greenville. [E. R. J., Dec. 31, '10.]

## POWER HOUSES AND SUBSTATIONS

**British Columbia Electric Railway, Vancouver, B. C.**—This company has placed an order for a new electrical unit to cost \$10,500 at Lake Buntzen. The hydraulic energy will be generated by means of a watershed for which the contract has been awarded to McDougall & Company, while the generator will be supplied by the Canadian General Electric Company.

**Minneapolis, St. Paul, Rochester & Dubuque Traction Company, Minneapolis, Minn.**—It is reported that this company will build its new power house on Twenty-sixth Street, in South Minneapolis, between the tracks of the river division and those of the Iowa & Minnesota division. The cost is estimated to be about \$100,000.

**St. Paul Southern Electric Railway, St. Paul, Minn.**—Plans are being considered by this company for building new power houses at Hastings and at Lake City. W. L. Sontag, 810 Metropolitan Building, St. Paul, general manager. [E. R. J., April 15, '11.]

**Tidewater Power Company, Wilmington, N. C.**—This company will install additional machinery, including a 400-hp boiler, gas-plant improvements, etc. A. B. Skelding, Wilmington, purchasing agent.

**Dayton & Troy Electric Railway, Dayton, Ohio.**—This company will build additions to its power house in Tippecanoe instead of building a new power house at Tipp City. The plant will be used jointly by the Dayton & Troy Electric Railway and the Oakland Street Railway.

**Oakland Street Railway, Dayton, Ohio.**—Plans are being considered by this company for building additions to its power house in Dayton.

**Knoxville Railway & Light Company, Knoxville, Tenn.**—This company has placed smoke consumers in service at its power house in Knoxville.

# Manufactures & Supplies

## ROLLING STOCK

**Oakland (Cal.) Traction Company** is reported to be in the market for fifteen cars.

**Schenectady (N. Y.) Railway**, it is reported, will soon close contracts for twenty-four new cars.

**Buffalo & Lake Erie Traction Company, Buffalo, N. Y.**, is reported to be in the market for twenty-five new cars.

**Connecticut Company, New Haven, Conn.**, has ordered two 41-ft. express car bodies from the Wason Manufacturing Company.

**Jersey Central Traction Company, Keyport, N. J.**, is in the market for five pairs of second-hand Brill 27 G-1 standard gage trucks.

**Altoona & Logan Valley Electric Railway, Altoona, Pa.**, has ordered five single-truck pay-within motor cars from the Cincinnati Car Company.

**Des Moines (Ia.) City Railway** has ordered twenty 28-ft. 10-in. closed motor car bodies mounted on Brill 22-E trucks from the American Car Company.

**Fonda, Johnstown & Gloversville Railroad, Gloversville, N. Y.**, has ordered one single-truck centrifugal sprinkler car body from The J. G. Brill Company.

**Texarkana Gas & Electric Company, Texarkana, Ark.**, has ordered three 21-ft. semi-steel cars with turtle-back roofs from the St. Louis Car Company.

**Benton Harbor & St. Joseph Railway & Light Company, Benton Harbor, Mich.**, has ordered eight Brill 27-M.C.B.-2 trucks from the G. C. Kuhlman Car Company.

**People's Street Railway, Nanticoke, Pa.**, has ordered two 28-ft. semi-convertible motor car bodies complete with Brill 27 G-1 trucks from The J. G. Brill Company.

**Saginaw Valley Traction Company, Saginaw, Mich.**, has ordered four 20-ft. vestibuled car bodies with trucks and seven 22-ft. vestibuled car bodies with trucks from the G. C. Kuhlman Car Company.

**Comestoga Traction Company, Lancaster, Pa.**, has ordered three 30-ft. 8-in. closed vestibule motor car bodies, six Brill 27-M.C.B.-1 trucks and three 30-ft. 8-in. steel underframes from The J. G. Brill Company.

**Boston (Mass.) Elevated Railway** has ordered twenty motor and twenty trailer trucks from the Baldwin Locomotive Works. The motor trucks are to be Baldwin class 72-30-A and the trailer trucks are Baldwin class 66-30-T, both of the M. C. B type.

**Atlantic Coast Electric Railway, Asbury Park, N. J.**, noted in the *ELECTRIC RAILWAY JOURNAL* of April 29, 1911, as having ordered three 28-ft. closed vestibule motor cars from The J. G. Brill Company, has decided upon the following details:

Seating capacity .....	40	Curtain material...	Pantasote
Bolster centers, length..	17 ft.	Gears and pinions....	West.
Length of body.....	28 ft.	Gongs .....	Dedenda
Over vestibule .....	37 ft.	Hand brakes...vertical shaft	
Width over sills....	8 ft. 2 in.	Headlights .....	Kirby-Neal
Over all .....	8 ft. 4 in.	Motors,	
Body .....	wood	West. 12-A-4, outside-hung	
Headlining .....	birch veneer	Registers .....	Sterling
Roof .....	monitor deck	Seats .....	Brill "Winner"
Axles .....	Brill	Springs .....	Brill
Bumpers ....	Brill angle iron	Trolley base .....	Union
Car trimmings...solid bronze		Trucks .....	Brill 27 G-1
Couplers .....	Brill	Ventilators .....	Brill
Curtain fixtures...Cur. S. Co.		Wheels .....	33 in. cast iron

## TRADE NOTES

**Robert T. Lozier** has become connected as engineer with the firm of Kountze Brothers, bankers, of New York.

**Detroit Steel Products Company, Detroit, Mich.**, has moved its New York offices from 2 Rector Street to 225 Fifth Avenue.

**Western Lumber & Pole Company, Denver, Col.**, has moved its offices from the Charles Building to the new Electric Building, Denver.

**Indianapolis Brass Company, Indianapolis, Ind.**, has appointed the Southern Railway Supply Company, St. Louis, Mo., agents to handle its overhead line material.

**Scullin-Gallagher Iron & Steel Company, St. Louis, Mo.**, has appointed W. T. Hays general superintendent of its St. Louis plant, to succeed F. G. Dunbar, resigned.

**Sprague Electric Company, New York, N. Y.**, has moved its Boston office from the Weld Building to 201 Devonshire Street, where larger floor space has been secured.

**Pittsburgh Testing Laboratory, Pittsburgh, Pa.**, has moved into its new five-story office and laboratory building at Seventh Avenue and Redford Avenue, Pittsburgh.

**General Electric Company, Schenectady, N. Y.**, at the annual meeting of its stockholders, elected M. F. Westover, secretary, a director to succeed C. P. Hamilton. Other directors were re-elected.

**Beck Automatic Electric Safety & Signal Switch Company, St. Louis, Mo.**, has been incorporated to deal in safety appliances. The incorporators are Charles Beck, Arthur Beck and Morris Tucker.

**Murray Iron Works Company, Burlington, Ia.**, has just completed an extensive addition to its boiler shops at Burlington. It is a steel frame building 140 ft. x 120 ft. and contains several traveling cranes.

**Pittsburgh Steel Company, Pittsburgh, Pa.**, has appointed E. Sidney Lewis special sales agent with headquarters in Pittsburgh. Mr. Lewis was formerly sales agent for the Standard Steel Works Company, Philadelphia.

**F. J. Mawby**, of the Van Dyke Churchill Company, has resigned to become connected with the Peterson Engineering Company, New York, N. Y., which handles a line of continuous oiling systems and lubricating devices.

**Walter B. Snow, Boston, Mass.**, publicity engineer, has recently added to his staff Mr. John S. Mitchell, late of the New York Edison Company, and formerly acting manager for F. W. Horne, importer of American machinery, Yokohama, Japan.

**Canadian Car & Foundry Company, Montreal, Que.**, suffered the loss of the forge shops, machine shop and one of the iron foundries at its Amherst (N. S.) plant as the result of a fire on April 27. The damage is estimated to be \$200,000.

**W. J. Jeandron, New York, N. Y.**, exclusive agent for Le Carbone brushes in the United States, sailed on Thursday of this week on the steamer *Provence* for Paris, where he will spend a few weeks looking over the manufacturing plant of the Le Carbone Company.

**American Journal Bearing Company, Portland, Maine**, has been incorporated to make bearings for locomotives, cars and machinery. The authorized stock issue is \$250,000. The officers are: Clarence E. Eaton, president; Albert F. Jones, treasurer; James E. Manter, clerk, all of Portland.

**Call Switch & Frog Company, Denver, Col.**, the organization of which was noted in the *ELECTRIC RAILWAY JOURNAL* of April 22, 1911, has been incorporated as a subsidiary of the Call Switch Company, to make switches and track supplies. The company's plant at Denver is about completed.

**S. J. Hall**, until recently sales engineer in the Chicago branch of the Gould Storage Battery Company, has resigned his position with that company and has become associated with the Vivax Storage Battery Company as vice-president, with offices at 2228 Michigan Boulevard, Chicago.

**McKeen Motor Car Company, Omaha, Neb.**, has shipped a 70-ft. motor car to the Ann Arbor Railroad via the Chicago & Northwestern Railway and the Manitowoc car ferry. Four more cars of the same size are on order for the Ann Arbor Railroad and will be delivered within the next month.

**Indian Refining Company, Cincinnati, Ohio**, has moved its general offices from Cincinnati to 123-133 William Street, New York, N. Y., where J. V. Smith, manager of the railway lubrication department, and F. W. Cherrington, manager of the wood-preserving department, will make their headquarters.

**Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.**, advises that the 10,000-kva water-cooled transformers described in the *ELECTRIC RAILWAY JOURNAL* for May 6 on page 805 are of the shell type and not of the core type, as was erroneously stated in the original manuscript.

**William C. Wilson**, for several years past representing Bingham & Taylor, Buffalo, N. Y., in the steam and electric railway field in Eastern territory, has severed his connection with that firm and has accepted a position in the sales department of the Transportation Utilities Company, with headquarters at 30 Church Street, New York.

**Hall Signal Company, New York, N. Y.**, will readjust its finances so as to permit it to extend its field. A committee consisting of J. S. Bache, Newman Erb, W. F. Morgan and W. P. Hall has been named to formulate plans for the reorganization of the company. Holders of the company's stock have been requested to deposit their certificates with the Empire Trust Company.

**Lee's Railway Switch Device Company, San Diego, Cal.**, has been incorporated with a capital stock of \$500,000, to manufacture a device for opening switches on electric railways which has been patented by Thomas E. Lee. The incorporators are Thomas E. Lee, president; James W. Hastain, secretary and treasurer; J. C. Hocker, W. A. Browne, D. S. Miller, C. F. Mohnike and W. V. O'Farrell.

**E. W. Clark & Company, Philadelphia, Pa.**, announce that George W. Kendrick, third, has been admitted to partnership in their firm. Redmond & Company have discontinued their Philadelphia office and have made arrangements with E. W. Clark & Company to handle all their Philadelphia business. Casper W. Hacker, formerly with Harvey Fisk & Company, has also become associated with E. W. Clark & Company.

**Southern Car Company, High Point, N. C.**, was formally reorganized on May 1 in accordance with the plans referred to in the *ELECTRIC RAILWAY JOURNAL* of April 29, 1911. The following officers and directors were elected: J. Elwood Cox, chairman; R. W. Morrison, president; Abraham Cook, vice-president and treasurer; J. L. Morrison, secretary; E. T. Robinson, general manager in charge of shop operations; Colonel Wescott Roberson and C. H. Hobbs.

**Allis-Chalmers Company, Milwaukee, Wis.**, has appointed W. M. White manager and chief engineer of its hydraulic turbine department. During the past ten years Mr. White has been closely in touch with hydraulic turbine development in this country and for the past five years has had entire charge of the designing for the I. P. Morris Company, in which position he designed the hydraulic machinery for some of the largest installations in the country.

**Nova Scotia Car Works, Ltd., Halifax, N. S.**, formed to take over the business of the Silliker Car Company, Halifax, has completed its organization. The new company is capitalized at \$2,415,800, which is divided into \$600,000 of 7 per cent cumulative first preferred, \$220,600 of 7 per cent non-cumulative second preferred, \$345,200 of 6 per cent non-cumulative third preferred and \$1,250,000 of common stock. There is also a \$115,000 4½ per cent mortgage loan outstanding, which was issued to cover a loan of this amount from the city of Halifax to the Silliker Company, which was assumed by the new company. New machinery is being installed to increase the capacity of the plant from four cars a day to ten cars.

**Baldwin Locomotive Works, Philadelphia, Pa.**, through Alba B. Johnson, vice-president of the company, has issued the following announcement in regard to the admission of new interests into the company to be represented by Drexel & Company, Philadelphia, Pa., and White, Weld & Company, New York, N. Y.: "At a meeting of the directors and stockholders of the Baldwin Locomotive Works held on May 3 it was decided to reconstruct the present close corporation in such a way as to admit new interests into our company. No change, however, in policy or management is contemplated. This business has long been one of the standard industries of Philadelphia, and the same principles of management which have built up the property to its present proportions and have always yielded adequate profits to the owners will continue to prevail. Drexel & Company, Philadelphia, and White, Weld & Company, of New York, will act as bankers in connection with this matter."

**Pennsylvania Steel Company, Steelton, Pa.**, in its annual report for the year ended Dec. 31, 1910, shows income from operations of \$3,779,824, a decline of \$29,634 from 1909. Other income increased, however, from \$196,821 to \$249,370, bringing the total income to \$4,029,125 against \$4,006,279 in

1909. Interest and depreciation charges increased, as did the requirements for preferred dividends, to an extent which reduced the surplus for the period from \$883,044 in 1909 to \$58,581 in the year just closed. The increases in these items were: Interest on bonds from \$1,441,379 in 1909 to \$1,702,918, and depreciation from \$526,854 to \$855,403. Preferred dividend disbursements from \$1,155,000 to \$1,412,293. The company produced 757,000 tons of pig iron in 1910, against 700,000 tons in 1909, and 847,000 tons of steel ingots, compared with 797,000 tons. During the year the equipment and extension to its manufacturing plants have progressed steadily. A new plant for the manufacture of frogs, switches, crossings, etc., was built at Steelton. A structural shop, with a capacity of 60,000 tons a year, has also been added to the Steelton plant. An ore crushing and concentrating plant has been constructed at Lebanon. New open hearth plants have been added to the Sparrow's Point and Steelton works. A new steel foundry has been built at Steelton, and mechanical ore unloaders and new wharves constructed at Sparrow's Point.

#### ADVERTISING LITERATURE

**Frank Ridlon Company, Boston, Mass.**, has issued its list of second-hand electrical machinery for May, 1911.

**Arthur S. Partridge, St. Louis, Mo.**, has issued list No. 27 for May of second-hand electrical and steam machinery.

**Pfannmueller Engineering Company, Chicago, Ill.**, has issued a catalog for May giving a list of second-hand power equipment.

**George Bender, New York, N. Y.**, is mailing a list of second-hand 500-volt to 550-volt direct-current shunt-wound motors for use in parks and shops which he has on hand for immediate shipment.

**C. W. Hunt Company, New York, N. Y.**, has issued Catalog 114, which describes and illustrates several types of its coal tubs, grab buckets, coal chutes and screens.

**MacGovern, Archer & Company, New York, N. Y.**, are mailing a circular which calls attention to two engine-driven centrifugal circulating pumps which they have on hand for immediate delivery.

**George J. Stocker, St. Louis, Mo.**, has issued Catalog No. 32 which describes and illustrates the Stocker cooling towers. The illustrations show several of the recent installations of this type of cooling tower.

**Sangamo Electric Company, Springfield, Ill.**, has issued Treatise No. 28, which describes the application and use of trip reading watt-hour meters. A number of schemes also are suggested for comparing equipment, operators, checking line losses, etc.

**Railway Improvement Company, Chicago, Ill.**, is mailing a circular which calls attention to its coasting time recorder. It also contains a reproduction of a letter from the London (Eng.) Underground Electric Railway commending this type of recorder.

**Ohmer Fare Register Company, Dayton, Ohio**, has issued an eight-page booklet which describes and illustrates the Ohmer turnstile register combination as installed on car No. 205 now operating on one of the lines of the People's Railway, Dayton, Ohio.

**Barrett Manufacturing Company, New York, N. Y.**, is mailing a card on which are printed the Barrett specifications for felt, pitch and gravel or slag roofing over boards or concrete. A diagram is printed on the other side of the card which shows approximately the increased cost of constructing steep roofs as against those of flat surfaces. It also shows rise or pitch of roofs in inches and degrees.

**The J. G. Brill Company, Philadelphia, Pa.**, in the April issue of the *Brill Magazine*, has, among other articles, the following: "Conditions Which Govern the Type of Car for City Service, Brooklyn, N. Y.;" "Interurban Cars for United Railways System of Portland, Ore.;" "Cars for the Michigan United Railways;" "One-Man Prepayment Cars for Selma, Ala.;" "Combination Cars for Ontario, Cal.;" "Prepayment Cars for Chattanooga, Tenn.;" "Rolling Stock for Lake Charles, La.;" "A Popular Type of Combination Car," and Part IV of "A History of The J. G. Brill Company." The magazine also contains an additional supplement which shows the plan, details and parts of the Brill No. 22 truck.