

Electric Railway Journal

Consolidation of STREET RAILWAY JOURNAL and ELECTRIC RAILWAY REVIEW

Vol. XLII

NEW YORK, SATURDAY, DECEMBER 13, 1913

No. 24

PUBLISHED WEEKLY BY

McGraw Publishing Company, Inc.

JAMES H. MCGRAW, President. C. E. WHITTLESEY, Secretary and Treas.
239 West 39th Street, New York.

CHICAGO OFFICE.....1570 Old Colony Building
PHILADELPHIA OFFICE.....Real Estate Trust Building
EUROPEAN OFFICE....Hastings House, Norfolk St., Strand, London, Eng.

TERMS OF SUBSCRIPTION

For 52 weekly issues, and daily convention issues published from time to time in New York City or elsewhere: United States, Cuba and Mexico, \$3.00 per year; Canada, \$4.50 per year; all other countries, \$6.00 per year. Single copies, 10 cents. Foreign subscriptions may be sent to our European office.

Requests for changes of address should be made one week in advance, giving old as well as new address. Date on wrapper indicates the month at the end of which subscription expires.

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Entered as second-class matter at the post office at New York, N. Y.

Of this issue of the ELECTRIC RAILWAY JOURNAL, 8000 copies are printed.

ENFORCEMENT OF THE LAW

A striking example of two different views of the possibilities of the office of a mayor has occurred during the past few weeks in Indianapolis. We hope that the moral will sink deep into the minds of those city officials who hope to win popular favor and increase their political prestige by failing in their duties in times of emergency. The vigorous action of Mayor Wallace to maintain the supremacy of law in Indianapolis during the present teamsters' strike is in strong contrast to the supineness of ex-Mayor Shank during the street railway strike of a month ago, an attitude which was naturally reflected by his subordinates and undoubtedly led to the refusal on the part of a portion of the police force to protect the property of the railway company against assault. Fortunately the leading citizens of Indianapolis appreciated the seriousness of the situation and demanded the resignation of the Mayor, which was finally secured under threat of impeachment. Under the city comptroller, who automatically succeeded to the office of mayor, a different situation is prevailing, and the city is being spared a repetition of the disgrace which it suffered during the first part of last month. It is unfortunate that under our system of government the most available man for nomination to high office often seems to be the trimmer who has offended no considerable portion of the body politic. But when the test comes it will be found that the real favorite of the American people is the man who has the courage and ability to perform his duty, even if it means unpopularity among a single class or group. This is a lesson which the politicians seem to take a long time to learn. It is not inappropriate to quote here the policy of the new Mayor, as expressed by him when taking office, because it was his readiness to carry out these principles which led to his elevation to the office of chief

magistrate. He said: "I shall do my duty impartially and fearlessly. Life and property must be protected at whatever cost and the fair name of our city restored. Every person has a right to conduct his own business in his own way so long as he does it lawfully, and I will not tolerate any interference with it by others."

THE SUBJECT OF PUBLIC RELATIONS

It is undoubtedly more than a coincidence that the subject of public relations of public utility companies occupied almost exclusively the attention of three important conferences this week in New York. One was the meeting on Tuesday of the New York Electric Railway Association, where this was the only topic considered and where the program included addresses by representatives of lighting companies, railway companies and holding companies and the chairman of the Public Service Commission, First District, New York. A full report of this meeting is published elsewhere in this issue. The second meeting which we have in mind was the annual meeting and banquet of the Railway Business Association, where the two speakers of the evening were Howard Elliott, of the New York, New Haven & Hartford Railroad, and Governor Cox of Ohio. The third assemblage was the annual meeting of the National Civic Federation on Thursday and Friday. These meetings, following so closely as they did other important conferences of public utility operators at which the same subjects were discussed, signify, as we have said, more than a coincidence. They show that the public utility operators of the country realize as never before the necessity of meeting the criticisms which have been directed against them in the past and of securing the support of the thinking public in the future. In other words, they feel that they must go more than half way in proving to the public their sincerity in the policy of the mutual consideration of each other's interests.

THE "NEW SPIRIT"

The situation which we have been discussing is not one which is confined exclusively to the electric railway field. It concerns every public utility and every large corporation. But the electric railway companies suffer perhaps more than some other public utilities because of the feeling that in their past history there have been instances of over-capitalization, of valuable franchises secured without adequate compensation and of the subordination in many cases of public interests to private gain. These facts have been and still remain a serious handicap to a better condition of affairs at present. It will be difficult to overcome this record unless the public utilities can convince the public that they are

animated by a different impulse—by a “new spirit,” as Mr. Allen appropriately expressed it this week at the meeting of the New York Electric Railway Association. This does not mean that the electric railways ought not to be allowed to make a profit on the service which they provide. No enterprise which is conducted at a loss will attract new capital, and the community as a whole is practically as much interested as is the company itself in the prosperity of the local railway, because unless it grows and prospers the community cannot prosper. But the “new spirit” means that the company is prepared to give the best service which its means afford; that it welcomes constructive suggestions, criticisms and complaints; that the company will conduct all of its corporate affairs in a manner which will stand the full light of day. This is not the complete code of ethics, but these ideas form an essential part of the new spirit which should animate all public service companies. Then if they will explain the position of the railroads as frankly as did Mr. Elliott at the meeting of the Railway Business Association on Thursday evening, a great deal of the present misunderstanding will disappear.

ACCIDENT PREVENTION MADE A CITIZENS' MOVEMENT

In our editorial columns for Nov. 1 reference was made to the attractive methods which had been adopted by the Brooklyn Rapid Transit System to present accident-prevention material by means of trained lecturers and moving pictures. These methods are described in detail in an article in the present issue. It will be seen from the latter that two other striking features are characteristic of the accident-prevention campaign in Brooklyn, namely, that it has received the title of “Children's Safety Crusade” and that the company has obtained the active co-operation of many citizens who are noted for their connection with public welfare movements.

It was a happy thought that an accident-prevention campaign ought primarily to be directed toward the education of the child who is not experienced enough to realize the dangers of that recklessness all too common to vivacious Young America. The title, however, has the further value of reaching, by indirection, the equally thoughtless adult, on the principle that “Men must be taught as if you taught them not.” Similarly, wisdom has been shown by the company in its enlistment of the help of influential persons who are outside of its own ranks. It is not enough for a railway to limit its safety work to the maintenance of the best equipment standards and to the instruction of its employees. It must go still further by demonstrating to the best elements of the public that in this work it is guided by humanitarian motives rather than by the selfish desire to reduce accident expenditures. One way that has been taken to prove this point has been to make the accident talks cover other common forms of dangerous thoughtlessness, such as the improper use of illuminating gas. By this method emphasis is placed upon the general virtue of caution rather than upon the effort to avoid railway accidents alone. The goal of “Safety first” is one which seemingly should be sought by all rather than singly.

GOOD OR BAD PUBLIC RELATIONS

In his talk before the New York Electric Railway Association Mr. Allen drew a distinction between good public relations and bad public relations. He did not define bad public relations at length, but he very properly outlined the ways in which good public relations may be furthered. It is not so important to talk about bad public relations as about good public relations, because the former ought not to exist and the latter should be promoted in every possible way. Where unsatisfactory public relations do exist the problem of changing them is greater than any other problem of the management.

Electric railways would like to have the good will of their communities. They ought not to expect to capitalize that good will, but they ought to have it. If they do have it, it is just as much an asset as if they did capitalize it. It is, in fact, an asset without which they cannot do business satisfactorily for any great length of time. Good public relations are worth all of the trouble it takes to develop them. They cannot be developed without trouble. If they are not an asset worth having, much time, thought and money have been recklessly wasted by managers of public service corporations throughout the country.

Mr. Allen plainly says that relations that are not good are bad. No doubt he would agree that there are good relations which may be made better, and that there are bad relations which might easily become worse. If, however, the relations of the public utility and its public are satisfactory, this fact will be clearly evident to the officials and employees, to public authorities and to visitors in the city. If the relations between the two are bad, evidences of this fact will also leak out continually. They will hurt the corporation and they will hurt the city. The step from bad relations to good relations is a long and hard one to take, but the step from good relations to bad relations is a short one, and it is such an easy way that care is necessary constantly so that it shall not be taken by any slip or misstep.

We should define bad public relations as a state of affairs that, unwholesome as it is, always appears to be much worse than it really is. Faults on both sides are magnified. Differences are allowed to grow. Complaints are unanswered or unsatisfied. Service conditions are not bettered when they could be bettered. Trainmen do not try to please the public. They do not answer inquiries as they should. They are not careful to stop cars when signals are given. They jostle people unnecessarily. Where conductors and motormen give the company a bad name it is either because the management for years has not given the heed to public relations that it should have done or because the management really does not care. In either case, if the company is to make the success that it should make, the policy should be changed.

When we come to the question of good public relations, the remedy proposed by Mr. Allen is, in effect, to put the railway side before the public. The company would say to the newspapers in its community: “We have a great deal of material here that is of real news value to you. We will provide you with all the facts about it. We will be ready to give facts in reference to our business at any time. Not only are we ready to give them but we want to give

them, because there is a great deal about our business that the public would like to know. For what we have withheld from publication in the past we want to give double now, because we realize now that there is a legitimate public demand for interesting news about our property."

There are other ways in which the company can spread public knowledge of its affairs and show its interest in the community. Its money contributions for such purposes should not be less, if it can afford to make them, than those of other industries of equal importance. More than that, its active officials should have a recognized part in movements looking to the betterment of civic conditions. The name of the railway and its officials should be connected with the progress of the city.

No one act will make public relations satisfactory to both the public and the company. But the adoption of a policy that can be carried out by all departments through both officials and employees will help. As a means toward this end, Mr. Allen suggested the adoption of a platform or a plank in the platform by the association, to be used as a creed by the member companies. The result of this would be good, and we regret that the association adjourned without taking definite steps at this meeting to carry the suggestion into effect. This should be done as a constructive upward step at the next meeting. The good lessons of this week's discussion should not be lost.

MEETING THE COMPLAINTS OF THE PUBLIC

Beyond all the possibility of a doubt, the proper manner of meeting verbal and written complaints from the public is a topic that well deserved the emphasis bestowed upon it by various speakers at the New York Electric Railway Association quarterly meeting. The generic subject of establishing a better public relationship between electric railways and the traveling populace is, of course, important; but the eternal difference between general forensic theorizing and specific practical application makes the discussion of such concrete points as the correct manner of meeting complaints one of absorbing interest and instant value. The gist of the whole matter, as one speaker said, is that, whereas once the public viewed railway construction and operation as an interested but chiefly curious outsider, today it has assumed the position of partner in such affairs. Such being the case, the frankness, consideration, unanimity of thought and concert of action that invariably characterize successful partnerships are necessary requisites for the establishment and maintenance of a more cordial feeling between the public and its common carriers.

The various speakers mentioned several concrete ways of meeting frankly, considerately and rapidly these complaints. From all the discussion, however, two fundamental principles stand out in clear relief—principles that may be applied to all companies, irrespective of their size, geographical location or organizational system. These are: first, that the executive and especially the managerial officials of a company should personally attend to all public complaints, and, second, that they should not only give such matters their direct attention but should settle them by means of personal interviews. The first point does not require an extended discussion. Our attitude thereon is

most ably summed up by the forceful statement of Frank Hedley to the effect that the manager or a man who has been imbued with the manager's ideas should personally attend to complaints, and any property with a scope of operations too large to permit the manager to do this is large enough to allow the assignment of a special agent for this purpose.

We fully concur, too, in the second postulate, that an interview in person with complainants offers the best method for adjusting satisfactorily all disputes. The remarks of Ernest Gonzenbach relative to the use of such measures on the property under his direction are fully indicative of their efficacy. Business-letter writing is a cold science, one which rarely allows the winning personality of a manager to be displayed, and frankly spoken words, an open countenance and the intimacy of a personal interview will do more to dispel the clouds of distrust and dissatisfaction than pages of letter paper and columns of newspaper talk. In a large city, of course, it may be practically impossible to answer every trivial complaint, but the manager of the largest electric railway can at least see that any necessary letters are signed by him and not spoiled by expressions such as "dictated but not signed" and other evidences of office haste. In any company, large or small, the general attitude should be a desire to spread the scope of personal interviews as far as possible.

The point is of particular interest in connection with the "chronic kicker." With such a man the only question is one of endurance. As Mr. De Long pointed out, the proper way to treat such a customer is to exercise particular pains to investigate and settle every complaint—the first, the second, the third, or even the ninety-ninth. Then, suddenly, either devoid of ammunition or believing himself flattered by the attention, the "chronic kicker" is won over. The process may be long, but experience has shown it to be both practicable and conducive to highly valuable results, for the "chronic kicker" invariably becomes as loyal as a friend as he was vindictive as an enemy. Patience, in the electric railway world as elsewhere, is sure to have its reward.

Finally, it is always desirable to have a definite rule of conduct. This is supplied in the paper by Mr. Sims. There is nothing revolutionary in this code. Each rule, if analyzed separately, will be found to be similar in import to that which any retail merchant who wishes to be successful would enforce in his relations with those who patronize his store. All may be summed up in the statement that if a person wants to attract customers he must treat them courteously and, so far as he can, give them the service which they desire and for which they pay. If this policy had been appreciated to a greater extent in the past by public utility companies the question of public relations would not be so important with them now as it is. Too often these companies have acted upon the principle that their service was a monopoly which the public was obliged to patronize, and if they didn't like it they could go without. This attitude can no longer be assumed, and such rules as those enunciated by Mr. Sims for the guidance of the officers and trainmen will go a long way toward bringing about a better feeling between a public utility and its patrons.

Accident Talks to the Children of Brooklyn

The Brooklyn Rapid Transit Is Conducting a Children's Safety Crusade in Which Effective Use Is Made of Moving Pictures by Lecturers Who Are Specialists in Talking to School Children Along Pedagogical Lines—The Work of the Company Has the Indorsement and Co-operation of Prominent Citizens

In the spring of 1913 the Brooklyn Rapid Transit System made arrangements for the inauguration of a "Children's Safety Crusade," which, as the name implies, was to be directed toward instructing children how to avoid accidents while on the streets or vehicles. The Board of Education,

turn for discussion, and the talks were given in conversational form. To broaden the scope of the crusade, the lectures included talks on other dangers—hence the gas stove.

The character of lecture is so different from the usual



Brooklyn Accident Campaign—Slide Showing Boy Stealing a Ride



Brooklyn Accident Campaign—Slide Showing a Careless Boy Crossing Street and Another Stealing Ride

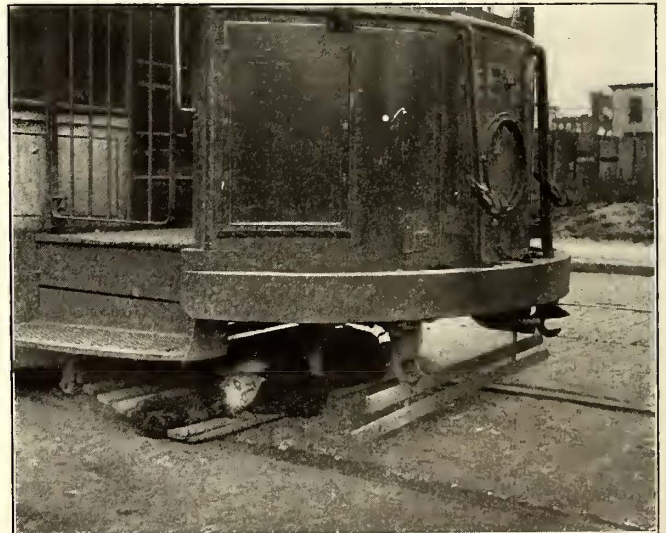
city of New York, expressed sympathetic approval of the proposed safety campaign and gave the necessary authorization for lecturers to give talks on safety in the public schools.

Objective teaching was decided upon, and the lecturers

form of instruction on the subject of accidents and has proved so successful in holding the attention of the children that the following abstracts of two typical talks by Mrs. Jessica P. McCall, supervisor, bureau of public safety, will surely be found of interest. The first talk is usually



Brooklyn Accident Campaign—Boy Who Stole Ride Knocked Down by Car Going Other Way



Brooklyn Accident Campaign—Slide Showing How the Wheel Guard Saved the Careless Boy

were provided with a model trolley car, a gas stove, caution signs and a large number of original accident drawings. With this assistance the lecturers found it easy to hold the attention of even the kindergarten children for the thirty-minute period which had been allowed for the presentation of the subject. The objects were taken up in

given to the younger children only, except in districts with a large foreign element. The second talk is for older children and others.

A TALK TO YOUNGER CHILDREN ON AVOIDING ACCIDENTS

"My dear children, you have a guard for your bodies. Where is he? Your brain or mind. Would you be sur-

prised if I told you that your bodies are like machines that need engineers or drivers? You cannot see your engineer or driver, as we do one that drives a big locomotive or an automobile, or the motorman that drives this car [pointing to trolley car].

"Your engineer sits silently behind two little windows, your eyes, and looks out, but no one can see him, and if you don't keep him busy he gets very sleepy and lazy and can't think quickly.

"Shall we call your head the cab, or the box, in which the engineer sits and looks out through the window? These windows are more wonderfully made than any other windows in the world, and they are so placed in your cab that your engineer can make them turn in any direction he wishes to look. They have curtains that close over them when your engineer wants to shut out the light and rest or sleep. Let me see you draw those curtains and rest a moment.

"Now these windows are very delicate and need careful protection, need to be guarded, because if they are injured the curtains have to be drawn over them all the time, and your engineer can't do as good work for you as when he had the windows to look out through.

"Did you ever see a blind boy feeling his way across the sidewalk with a cane? He has to find in that way where all



Brooklyn Accident Campaign—The Heedless Driver Gets Between Elevated Pillar and Car

the crossings, sidewalks, posts and trees are, so he goes very slowly. He can't see holes in the sidewalk, runaway horses or other dangers.

"Now if your driver doesn't think quickly, don't you see that your machine is in danger of meeting with an accident, of losing some of its parts and of being smashed up? [Lecturer turning to model trolley car]: Suppose we lost a wheel from this car. What could we do? Yes, we could send to the factory and get another—very easy, isn't it? And we could replace any part of this car with a new part from the factory and make this car as good as it is now, couldn't we? But if you lost a leg or an arm or an eye, where could you send to get another as good? A glass eye would help your appearance, your looks, but you could not see with it. A wooden or cork leg would cost you from \$75 to \$175, and you wouldn't find it as good as the one of flesh and blood that you have.

"Is your driver always wide-awake, always on the sharp look-out? Does he think quickly? Is he a safety driver? If he isn't all this, he can't guard your body well, so begin to-day to train him. You don't have to pay him wages to drive your machine as we have to pay a man to drive an automobile or a motorman to drive this street car, so you shouldn't be too lazy to train him.

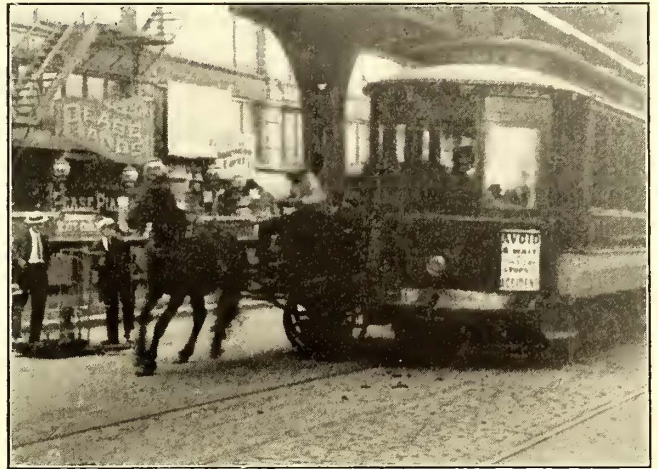
"A motorman has to be trained to drive this car. [Lecturer turning to some boy]: Suppose after you grow up,

you should want to become a motorman on a street car—what would be your duties?"

Child—"I'd have to run the car."

Lecturer—"Yes, and that means control the car, work the brakes, ring the gong, watch the traffic and the traffic policeman's signals, and listen for the signals from the conductor. What are those signals?"

Child—"Bells."



Brooklyn Accident Campaign—The Heedless Driver Is Wedged Between Car and Column

Lecturer—"Yes, but how many times is the bell sounded for the motorman to stop?"

Child—"Once." (Lecturer rings bell.)

Lecturer—"Right. What will two bells tell the motorman?"

Child—"To go ahead."

Lecturer—"Suppose I was a passenger on this car and wanted to leave it, had stepped out on the platform, was ready to get down and suddenly heard two bells [rings bell], what should I do?"

Child—"Stay on."

Lecturer—"You see, children, when we understand sig-



Brooklyn Accident Campaign—The Heedless Driver Has Paid the Penalty of Thoughtlessness

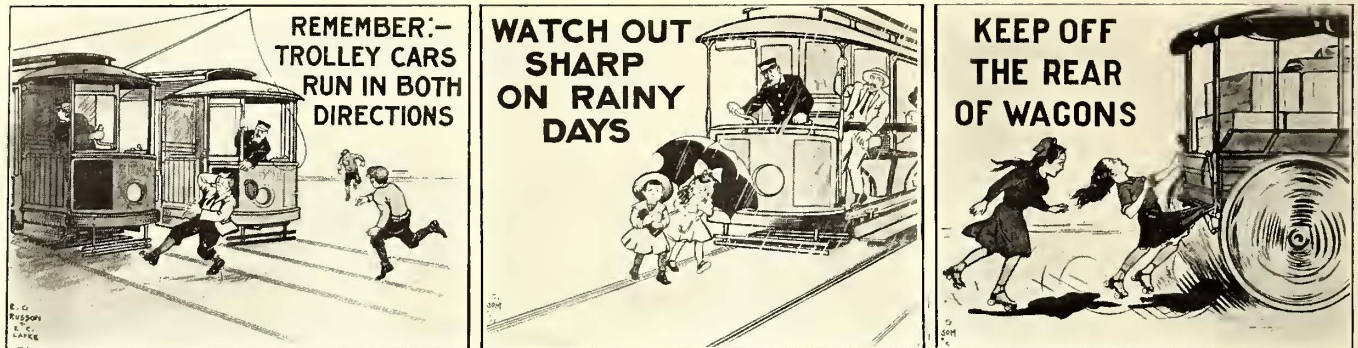
nals and obey them, we can safeguard our own lives. [Lecturer turning to a boy]: Suppose when you grow up, you should want to become a conductor, what would be your duties?"

Child—"I'd have to take the money."

Lecturer—"You mean collect the fares, and you would have to do more than that. You would have to see that people got on and off the car in safety, give transfers

and give the motorman his signals to stop and start the car. What could we call the motorman and conductor? Guards! They are put on the cars to guard the lives of the people inside the cars, and when we stop to think about it we can understand they are pretty busy men. Suppose a boy should 'hitch on' here [pointing to rear of model car] to steal a ride, fall off and get hurt, whose fault would it be?"

"One hundred and twenty-five dollars for a cork leg when he had one of flesh and blood! I don't believe he would be selling papers to-day if he had two good legs. I think he would be doing something with more money in it. Let's get busy, girls and boys, and use our minds as safeguards for our bodies. 'Safety first' is a simple habit—isn't it?—a mighty good habit to cultivate. Every lesson learned for your safety is time and money earned. 'Safety



Brooklyn Accident Campaign—Reproductions of Three Colored Posters of Original Design

Chorus—"The boy's own fault."

A TALK TO OLDER CHILDREN

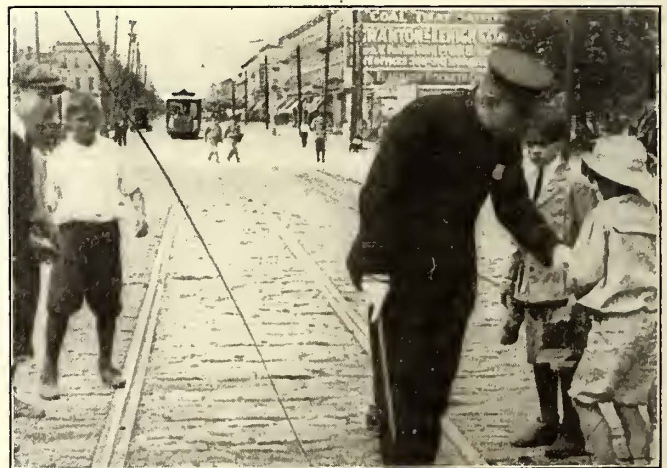
"Why do you think we are giving you these talks on safety? We want to decrease the ranks of the army of cripples. It's a large army already. We do not want any more of our splendid girls and boys to join it. We need you boys and girls. You are going to take our places in the world and we are trying to help you understand the value of a whole body and a strong, alert mind. A large number of the cripples are beggars or engaged in some sort of work in which there is very little money. I know a boy who sells papers at the Seventy-second Street subway station. I have been buying papers from him three years and can still find him at his old stand receiving pennies for papers with one hand, while with the other arm he leans on a crutch. I asked him one day to tell me the story of his accident, and I am going to read you the note he handed me the next morning with my newspaper." (Reads letter telling how

first' is a subject that is engaging the attention of all thoughtful people and we want to get in that class and stay there, don't we? How many of you ever had an illness in your homes? No doubt every one of you. First, there was the doctor at \$1, \$2, \$3 or \$5 a visit. The next item is money for special food, then perhaps the hospital and more money for a stay in the country, if the patient has to have it to get well, or still more money for the funeral, if the patient dies. Is there a boy or girl in this assembly who ever had to give up something he wanted because sister, mother or father was sick?

"It is very much like that with a railroad company. In a city like New York the number of people requiring service is constantly increasing, and as the districts through which trolley and rapid transit lines are operated become more and more congested operation becomes increasingly expensive. These costs run into enormous figures. In a small country town, where trolley service fills the needs of



Brooklyn Accident Campaign—A Wise Boy Knows that a Broken Wire May Be Dangerous



Brooklyn Accident Campaign—The Policeman Keeps the Children Away Before Line Wagon Arrives

boy had his leg crushed because he jumped off a moving car in front of one passing in the opposite direction.)

"To what army does he belong?"

"Cripples." (Chorus.)

"I asked him why he did not buy a cork leg. 'I've got one,' he said, 'cost me \$125, but my leg was cut off so near the hip that I have to use two canes when I wear my cork leg.'

the community, construction cost, exclusive of power and equipment, is in the vicinity of \$15,000 a mile. In Brooklyn it costs over \$50,000 a mile to build a trolley. An elevated railroad built to-day for districts which have outgrown trolley transportation costs more than \$500,000 a mile, and a subway costs the enormous sum of from \$2,000,000 a mile to \$5,000,000 a mile to build and equip ready for the operation of cars. In many other ways the

ever-increasing demands of city traffic are placing an extra burden of expense upon street railroads.

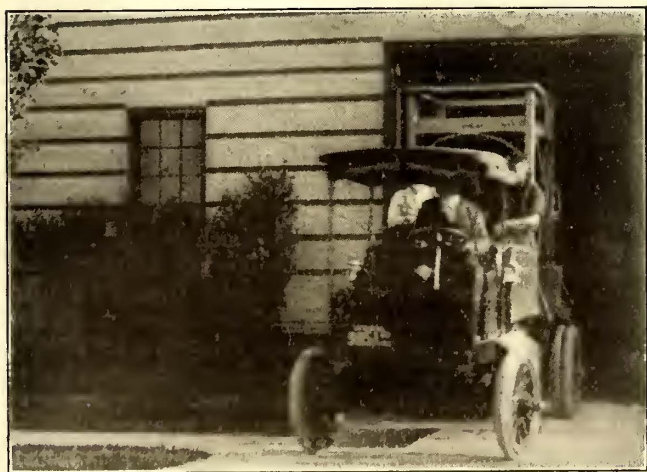
"Now, what would you do if you were a grocer, or a baker, or a coal dealer, and your expenses increased in any such way? Raise your prices, wouldn't you? But the street railroad cannot do this. In Brooklyn, in the last fifteen years, fares have been reduced from 15, 20 and 25 cents to 5 cents, and from 25, 30 and 35 cents to 10 cents. On the new rapid transit lines, as you know, a 5-cent fare will be practically universal.

"So the only way in which the railroad can meet the increasing demands of the public is by making operation more and more efficient. And this explains the business motive behind all the activities of the railroad in the field of public safety. There is also, of course, the humane motive, the desire to prevent so far as possible, loss of life and injury of those who must use the public streets. But the business motive is worth considering also. And as you go out to earn your living, remember that in proportion as you can help the railroads prevent the awful cost of accidents, to that extent do you provide them funds from which they can meet your own increasing demands for quick and comfortable transportation. We want the girls and boys of Brooklyn to help us make a safer Brooklyn.

"I am going to show you some pictures illustrating accidents from the four general causes I have given you. What are they? Carelessness. Recklessness. Undue haste. Thoughtlessness.

"For instance, here is a boy on a bicycle colliding with a trolley car. You can see that it did not occur to this boy, who has met with a serious accident, that a street car cannot turn out to pass man or child or vehicle or to avoid a collision. It can run only on its tracks.

"Then there is another common-sense thing to observe. If a smaller machine collides with a bigger, which suffers the greater damage? When moving rapidly, a trolley car is under tremendous momentum and cannot be brought to an immediate stop. It is in your interest that the trolley car should have the right-of-way over other vehicles on its own track. The motorman not only has his hands full to control his car, but he must also watch every vehicle he passes and every one coming toward him and every person



Brooklyn Accident Campaign—Motor Tower Truck Off to Repair the Broken Wire

on the street. Your watchfulness will help him as well as safeguard yourself.

"Railway companies at all times do their utmost to avoid accidents of any kind. But the only thing that can prevent accident is co-operation for safety, and we want yours."

SOME RESULTS OF LECTURE WORK

After one of the foregoing conversations a little girl five years old stood up and in a perfectly unconscious way

said: "I know a little girl, my size, who told me she was going to throw herself in front of a trolley car so her mother could get a hundred dollars."

The statement was startling, but the lecturer answered: "What good would the hundred dollars do the mother after the child was killed? It would cost her that much to have a funeral, and then she would not have a lovely little daughter to help her about the house."



Brooklyn Accident Campaign—The Lineman Makes the Repair but Is Careful to Use Rubber Gloves

The very small child answered: "No, for she'd be dead."

The greatest encouragement received in response to the talks were hundreds of letters from children in various schools expressing appreciation in the work.

The work aroused interest in other ways. After the safety talk in Public School No. 147, Brooklyn, a safety committee was formed, a "Safety Day" arranged for, and the next issue of *The Leader*, a school publication, was featured as a "Safety" number. Many of the subjects chosen for the pupils' composition therein bear evidence that the children had paid careful attention to the lecture. This paper reaches about 5000 families.

At the close of the safety talks short stories on safety in the form of illustrated leaflets were distributed, and each child received a button as a reminder of the lesson in caution. The principals and teachers gave the movement their hearty co-operation and encouraged it by having the pupils write compositions and letters on safety. By special invitation, talks were given at mothers' meetings and at an evening truant school, proving that in a very short time great interest was created in the work.

As the school campaign progressed safety plays were written and a performance was given in two schools. Safety committees were also formed in many schools.

THE USE OF MOVING PICTURES

The especially interesting new feature of the work is a motion picture, "The Price of Thoughtlessness," prepared by E. C. Clarke, supervisor inspection bureau Brooklyn Rapid Transit System, and Roy F. Hanaford, of the Vitagraph Company of America. The idea of using the motion picture as a supplement to the classroom instruction developed out of the school campaign and the summer playground work of last spring. The picture was produced with the co-operation of the Vitagraph Company of America, and it proved an excellent medium to illustrate how children meet with accidents through carelessness and thoughtlessness. Two views from this picture are shown, and the plot is well described in the following résumé prepared by the producer:

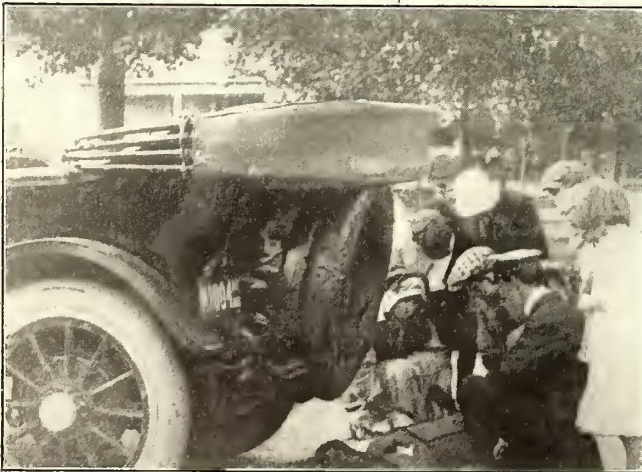
"*The Price of Thoughtlessness*.—The children are gathered in the schoolroom listening to a lecturer, who, with a pointer and charts, discourses upon the dangers of the city street and shows how to avoid them. When he is through

he presents each child with a safety button as a reminder of his advice. Howard, Mabel and Bobby remain after the other children to ask a few additional questions. After school Bobby lives up to the button by notifying the police of a live wire he discovers on the car track. He is praised by the crowd on the scene for his thoughtfulness. Through Howard's carelessness little Mabel narrowly escapes death when she falls in front of a street car and is saved by the



Brooklyn Accident Campaign—This Boy Succeeded in Escaping the Car

safety device on the car. She is crossing the track with Howard. Both are on roller skates. Running in front of a northbound car, they suddenly discover that a car coming south is heading them off. Howard jumps to safety, but his sister is not so quick and falls before the car. An automobile coming south on the avenue stalls, forcing a wagon to cut in to the left between the elevated railroad posts onto the car track in order to pass. Just as the wagon is hauled onto the track the car crashes into it, crumbling it to pieces and crushing the driver beneath the wreckage, all due to thoughtlessness. Some boys are playing ball on a side street. Howard, the catcher, misses the ball, which bounds away across the car track on the avenue. He runs after it



Brooklyn Accident Campaign—He Did Not Succeed in Eluding the Unexpected Automobile

blindly and suddenly realizes that he is between two cars. Bewildered, he leaps for safety, jumping in front of a speeding automobile, which runs over him. Howard is crippled for life. After many days of suffering he is taken from his bed in the hospital for a ride in a roller chair. He sees boys and girls playing tag and leapfrog on the hospital lawn, and, with tear-filled eyes, realizes the terrible price of his thoughtlessness."

ORGANIZATION OF BUREAU OF PUBLIC SAFETY

Each lecturer is provided with the services of a man who drives the safety wagon that carries the objects from school to school. The lecturers begin their work in the schools at the 9 o'clock morning assembly and give four lectures each day.

The work in the schools last spring proved so successful that the Brooklyn Rapid Transit System determined to enlarge its scope very materially and to make permanent provision for this systematic study of the question of public safety. To this end a Bureau of Public Safety was organized to take charge of all the work relating to the education of the general public in matters of safety. Through this bureau the company invited a number of Brooklyn citizens occupying leading positions in various phases of the life of the borough to co-operate in forming the Brooklyn Committee of Public Safety. On Oct. 20 the first meeting of this committee was held. Addresses were made by Col. T. S. Williams, president of the Brooklyn Rapid Transit Company, and General George W. Wingate, who presided at the meeting. Steps were taken for the permanent organization of the committee with thirty-three members, the body being divided into sub-committees as follows: Schools and playgrounds, public and sectarian; boy scouts; church and civic organizations; public institutions, other than schools; vehicular and pedestrian traffic; structures, pavements and excavations; street railways; explosives, fireworks and firearms; law and legislation; hazardous occupations; publicity; permanent officers; executive committee.

Great interest has been shown by the press and public generally in this enlargement of the safety campaign, and it is anticipated that the committee named will play an important part in safeguarding the lives of both children and adults in the territory which its activities cover.

ICE MAKING AT DURHAM, N. C.

The Durham Traction Company, which has recently been taken over by H. L. Doherty & Company, operates a combination lighting, railway and ice-making plant at Durham, N. C. The ice-making equipment consists of a 50-ton machine operating non-condensing, but at the present time the company is installing a 50-ton condensing machine and redesigning the ammonia condensers and tank rooms. The Shipley double-tube condensing system of the York Manufacturing Company is being installed with an accumulator for pre-cooling the water. The new unit will enable a great saving to be effected, inasmuch as the old unit required from 30 lb. to 32 lb. of steam per hp-hr. while the new unit is guaranteed to operate on 16 lb. of steam per hp-hr.

The condensation from the ice machine and the main generating unit which is in operation will be sufficient to make 100 tons of ice a day. The water from the reboiler is forced through four coolers and then through a set of three cloth filters. It passes thence through a set of charcoal-brick filters and then through three batteries of charcoal and silica-sand filters, whence it reaches the pre-cooler. The latter is a double-pipe arrangement in a tank, wherein ammonia is expanded directly so that the water on its way to the freezing cans reaches a temperature of 40 deg. Fahr. or lower. There is a 6-ft. x 6-ft. x 14-ft. storage tank which is also piped with coils sufficient to maintain the temperature of the water a few degrees above freezing before it reaches the cans. Storage space is provided for 150 tons of ice without stacking. The storage room is insulated with 4 in. of cork covered with cement.

No data are available on the cost of manufacturing the ice other than that it can be manufactured for less than it can be delivered. The ice is retailed by the company at the rate of 40 cents per 100 lb. in small pieces and 30 cents per 100 lb. in cakes. If two cakes are sold at one delivery, the rate is 25 cents per 100 lb.

Public Relations Discussed by New York Electric Railway Association

At This Meeting, Which Was Held in New York on Tuesday, There Were Addresses by the Chairman of the Public Service Commission, First District, New York, and by a Number of Prominent Public Utility Operators

The eighteenth quarterly meeting of the New York Electric Railways Association was held on the fifth floor of the United Engineering Societies Building, 29 West Thirty-ninth Street, New York, on the morning of Dec. 9. About 125 were present.

President Frank Hedley called the meeting to order about 10:15 a. m., and after welcoming the delegates introduced as the first speaker Hon. Edward E. McCall, chairman Public Service Commission, First District, New York. An abstract of Judge McCall's remarks follows:

ADDRESS OF JUDGE M'CALL

"My main motive for appearing here is to extend to the New York Electric Railway Association the warm welcome of the Public Service Commission for the First District of New York. The commission realizes that meetings of this character must necessarily tend to bring about results beneficial to it, because where questions of import in the conduct of electric railways are made the subject of discussion by men engaged in the activities of that work the results are bound to make more easy the settlement of questions that come before the commission.

"If there were no other reason or incentive for the existence of your organization, your quarterly or annual meetings would be amply justified through the discussion of such topics as the one to-day, the relations between yourselves as operating companies and the public whom you serve.

"The old order of events in the operation of electric railways has come to an end, and a new and perhaps a wiser method is in vogue. No longer in the operation of railways can officials find any justifiable reason for not playing their game with the cards on the table. There is no need for concealment of any kind and no justification for secretive methods. An open, frank dealing with the traveling public will bring to you in the management of your roads a far greater degree of comfort and a more proper realization of the great work you are doing than was possible in the former days of studied efforts to conceal your reasons for certain actions or keep secret the cause of certain omissions.

"Under the present laws publicity in regard to corporation affairs is practically compulsory. There is not a single act that can for a moment now, in the operation of electric railways, be concealed. The records and acts of your companies are public documents and public acts in the fullest sense, because the supervising boards and the so-called public service commissions, acting either for themselves or in the interest of the public, can find out even your innermost secret and publish every operating act. It is my contention and my belief that the major part of the men engaged in the management of railways in this state agree with me that the good which will follow from this publicity will redound to you as electric railway officials, because it will bring the public to see just what you are doing and why you are doing it.

"When you appear before the Public Service Commission do not walk in like cowering slaves, bending the knee for a favor, metaphorically speaking, but go in as men with capital invested in public service corporations, as citizens of the State demanding your rights. The commission over which I preside will ever be an open place where a man representing a railway or a complaining citizen can come, and in all instances there will be a fair

application of judgment to the real facts as they are presented. The question of individual or corporation, of clamor or prejudice, will find no lodgment in the minds of the commissioners, to affect the disposition of the matters brought before them. A fair, upright treatment, the recognition of the rights of all these, will be the guiding rules in the disposition of all cases."

At the conclusion of Judge McCall's remarks the association, upon motion of President Hedley, gave him a rising vote of thanks. The speaker expressed his appreciation of this action. Following Judge McCall, President Hedley requested C. Loomis Allen, president Syracuse & Suburban Railway, to make some remarks. Mr. Allen's address was followed by those of J. H. Pardee, president J. G. White Management Corporation, and C. S. Sims, second vice-president Delaware & Hudson Company. Abstracts of these addresses follow:

ADDRESS BY MR. ALLEN

Mr. Allen first said that it was extraordinary, in the history of the New York Association, to hear a man of the standing of Chairman McCall speak so unqualifiedly of the change in public relations that had taken place and was taking place in the railroad world to-day. Many railroad commissioners and public service commissioners had entertained the association with narratives of their experience, both serious and humorous; from others there had been tirades. But the chairman of the Public Service Commission, First District of New York, had spoken in terms of the new spirit that is in existence to-day, a spirit that is manifested not only in an altered manner of living and new manner of thought but also in a changing attitude in our own industry regarding the question of public relations.

Mr. Allen said that the relations which a railway corporation had with the public were classified sometimes under the caption of good public relations, and when they were not of this order they were called bad public relations. The term "public relations" was a collection of two words which was on a parity with the words "public service." Mr. Allen, for the purpose of the discussion, divided "good public relations" into two parts, as follows:

(1) A fair understanding by the management of a corporation of what the public wants in the shape of service.

(2) A fair understanding by the public of the details that are necessary to be carried out in order that the corporation can provide the service demanded by the public.

If the facts were placed squarely on these two propositions, if the public and the corporation through its management were inclined to deal fairly and equitably, it should not be a very difficult matter for the public and the corporation to establish the relation between them as good public relations. On the other hand, if there was a lack of facts or there was a spirit of unfairness on the part of either party, the roads were divergent and there would be bad public relations.

Historically it was interesting to note, Mr. Allen said, that in the early days of mechanical power the energy, brains, ability and personnel of all of the representatives of the corporation were employed in the consideration of the mechanical steps and apparatus needed. The mind of the public was occupied by the novelty of the new method of rapid transit. Before the novelty had worn off entirely there were new developments in tracks and power and larger cars. Then changes and prepayment equipment

came, and again the public mind was occupied by the novelty of the new developments in rapid transit. It was fair to say, in passing, that money came easy for the men engaged in developing the properties, as compared with to-day.

The press, for many years the institution used by the public as a method of obtaining information and news, was used freely by individuals, associations and municipal officials. The political demagogues and the ambitious citizens always had their views in the news columns and some pretty rough things were said that all must acknowledge were not far from the truth at the time.

But, Mr. Allen asked, did the corporation put its affairs forward in the news columns as a defence of its service and acts? At a late day the corporations were awakened to the fact that the public throughout the years had been reading—what? Facts? No, but material that the public had accepted as facts had been presented fully. Now those who were engaged in public service as operating men for public service corporations knew that at this late day they must secure the attention of the public and their patrons. They must state fairly the facts in relation to the business. The truths that were old stories and humdrum in the lives of the operating officials could be made news of reading value to the public. This material would be useful to the newspapers if the right road was followed. In this work it was not possible to talk satisfactorily in the language of transportation officials, engineers, accountants or claim agents. The language that the newspaper man talked when he told his readers the story or wrote the news item that attracted attention and interest must be used.

Continuing, Mr. Allen asked if the railways had anything of interest to tell. What about an item showing how many miles of electric railroad were built in New York State from 1901 to 1907 and the number of miles that had been built from 1907 to 1913? Mr. Allen asked his hearers if they knew. Did their patrons know? Did they know the reason why there had been practically no development in electric railroads? Was not that a news item that interested every village, city and township in the State that was desirous of development?

Mr. Allen said that there were plenty of news items if only the operators would devote attention to the details of producing them and then, having produced them, see that they were prepared by men who knew how to place them in news form. This could not be done by a layman. The preparation of items of news was a business just as technical as that of the electric railway, and it involved a knowledge of human nature that most railway men lacked.

In conclusion, Mr. Allen said that bad public relations could be eliminated and good public relations could be established easily. First of all, the company must have the facts in relation to its business. It must be willing to state the facts frankly and all of the facts in terms that the public would understand.

ADDRESS BY MR. PARDEE

In the early days of street railway development the difficulties and problems which confronted the promoters and operators of traction properties were not entirely of a technical nature, Mr. Pardee said. The general public stood on the side lines, always interested in the progress made by those who were struggling with the adaptation of the electric motor to the propulsion of public carriages, but assuming no particular risk excepting perhaps that which they considered involved in the granting of franchises for the distribution and use of the deadly electric current. The public during those years never considered itself as a partner in the development of traction properties, but looked upon the movement as one belonging entirely to a few outsiders and affecting itself only through the required grant for the use of the streets.

To-day the situation is very different, for the public is indeed considered a partner in the management of the

affairs of public service properties. Under the new phase of utility regulation, the public has assumed a direct relationship to public utilities. The public has found, after many costly trials of municipal ownership, that the most expedient and practical means of controlling public service corporations lies in their development by private capital, together with proper and fair commission regulation representing the public interest.

With this comparatively new system of utility regulation there have come a great many abuses of the regulatory power. Prompted by an ill-advised public opinion, and in some cases ignorant of actual conditions, commissions have been known to impose upon electric railways very onerous conditions, limitations, etc., which have so seriously burdened the companies as actually to set back their development by inspiring the ever cautious money lender with fear. Unreasonable regulation can, in the long run, harm no one but the public itself, for it automatically increases the rate at which money can be drawn into this field of investment, and hence the rates which the public must pay for service. It was the speaker's confident belief that, in the abuse of regulatory powers, the pendulum has now commenced to swing back and that public service commissions are coming more and more to realize their obligations to security holders as well as to the sovereign partner, the public.

Most of the unfair burdens which have been saddled upon street railway companies with the consent of public opinion have been the result of gross misconceptions concerning the affairs and conditions of operation of such companies. Most people do not know, or at least stop to think, that street railway companies pay taxes, offer and give employment to citizens and often pave streets and assist in the development of communities by offering industries cheaper power than could be generated in isolated plants of small capacity. On these points the general public must be educated if street railway companies are to obtain a cordial, harmonious relationship of co-operation with the public, which is the most valuable of all assets and the most difficult to obtain. It is only through the establishment of better public relations that electric railway men may expect to be relieved of burdensome and unjust regulatory mandates such as those calling for unreasonable extension of fare zones, extension of lines into territory not offering sufficient traffic inducement, and the unwarranted rehabilitation of road and equipment.

The fact that the public is inclined to view public utilities with disfavor is made worse because it is taken advantage of by everybody who desires either to make some private political capital or to stand before the world as a reformer. Another class, which is made up of real socialists, attack public utilities because they are really opposed to them. A ray of hope comes from the fact that these same people are attacking almost every business, and public utilities will soon have the assistance of the business men of the country to protect themselves and the utilities.

The criticism against electric railways comes from avowed enemies, who cannot be convinced of public utility rectitude. The value of publicity in the improving of public relations, therefore, is to get facts and arguments into the hands of the friends of the companies and the people who are inclined to treat everybody fairly. There are no cut and dried rules for establishing good public relations. With every community the situation is different. Things that will serve the purpose in one community will not do at all in others. More depends on the personality of the men who operate the company than on all arguments. The great point is that the officials should study human nature, the community and the conditions therein and give friends the facts so that they will have a sound basis for supporting the company.

ADDRESS OF MR. SIMS

Your relations with the public are many times closer than those of the other public utility companies with the possible

exception of water and lighting companies, which are comparatively easy to maintain and satisfactorily perform public service. All the public use the trolley. All the public are discommoded by your failures. You take them to work in the morning; you take them home for lunch; you carry them home in the evening; your cars constantly pass their dwelling houses. The slightest disarrangement in your service is noticed almost automatically by all your patrons, and all of them seem to have more or less ability in managing your affairs. Men who have not even thought about the trolley situation are most prolific in their suggestions as to how the line can best be operated. Rarely do these men realize that a broken-down coal wagon, a fire, a stalled truck or a thousand and one things over which you have no possible control may and do greatly inconvenience and disarrange your service.

Comparatively few people use the steam railroads and fewer still see their failures and criticise their service. This is also true of the telegraph companies, of the express companies, of the telephone companies, of all the other public utility companies. None of them have, comparatively, your difficulties. Regardless of this, I am sure that we all admit that a trolley company to be successful must be operated in the interest of the public and must perform a satisfactory service. Its relationships must be close to the people. Its manager must meet their wishes, and, with your permission, I should like to give a few of the reasons why the public criticise us.

On a wet afternoon hundreds of people who usually walk to their homes from business take the trolley cars and, naturally, are angered because the cars are crowded. The cars are damp and uncomfortable and the company and its manager are severely censured. You should make a great effort to increase your service at times when the weather conditions will greatly add to your patronage. It will not cost you anything and will win in the end.

During the evening, the morning and, if you have it, the noon-hour rush periods your cars are crowded. You should increase your service as much as you can. But, more than that, you should get in such close touch with the manufacturers, with your chambers of commerce and your other civic bodies, that your influence and theirs shall, where possible, have the larger factories begin work at slightly different hours in the morning and close at slightly different periods in the evening, thus giving you a better opportunity to handle your traffic properly.

Try to educate your passengers not to get on a crowded car but to wait for the next car. The delay will not be great, and your passengers will be very much more comfortable. Better still, it will enable you to quicken your schedules, make a greater use of your cars and run up your earnings per car hour.

It is important in the case of large interurban companies that they have in each large town a man of authority who is acquainted with all the people, who has their confidence, who when he makes a statement will be believed, and who will see that the service rendered by his company is satisfactory to the people. He should call upon them, talk over their complaints and do away with the writing of letters. Criticism of poor service can best be answered by looking the man in the face, explaining to him frankly the cause of the trouble and what you are going to do to rectify it.

Keep an accurate record of the number of failures and of accidents of each employee every year. You will find that practically all your accidents and failures come from the carelessness of 10 or 15 per cent of your employees. Call these men into the office, talk to them kindly, show them what they have done and what they have cost your company. Show them what the desirable employee has done. Make it clear to them that unless they improve you will have to drop them from the service. Unless they do improve, get rid of them; they are dangerous. You owe this to the public.

Train your motormen so that they will run their cars carefully and will not jerk passengers off their feet. You will save power, avoid accident claims and add greatly to the comfort of your passengers. You owe this to the public.

Keep your cars always in a clean and sanitary condition. Keep them in good repair. See that they are painted and look attractive and that your men are not sloppy or careless in their apparel. It will add a good deal to the standard of your service.

See that your employees do not attempt to flirt or carry on a conversation with passengers. It is dangerous in the case of the motorman and will add to the cost of your accidents in the case of the conductor.

Watch your paving and renew the rough or worn-out spots. It will surprise you how kindly the people will take to a policy of this kind. It costs less in the long run and will please the public.

See that your track rides well. It will save repairs to your motors and cars. It will require less power, will make the riding of your cars more comfortable and will please everyone. The saving in car and motor repairs will at least offset the added track cost.

See that the cars are not bunched. It brings about a great deal of criticism, and, while difficult to avoid, the trouble can always be bettered.

Keep your cars well lighted. Your passengers like good lights, and the increase in expense will not be great.

Employ only new men and make it a point in hiring your motormen and conductors to pick out cheerful, bright, pleasant fellows. Do not hire a man with a grouch, one who is continually disagreeable or one with unpleasant manners or unpleasant voice. They will make a bad impression, while the bright fellow will subdue any existing antagonism. And when you get this cheerful fellow treat him kindly.

In streets where your feeders are cared for by conduits do away with the trolley pole and attach your cross wires to the buildings. It will greatly improve the appearance of the street and will please everybody.

Unfortunately, some few of the new public service commissioners feel that they are retained to defend the public, while actually they should act as arbitrators between you and the public, and as the commissioners are changing almost constantly you usually get just a little worse treatment than you should. It is, therefore, quite important that you make your service so satisfactory that you will not be called before the commissions to defend it.

The advancement of your art has been so rapid that the period between that which is modern in trolley practice and that which is completely obsolete is probably less than ten years. I would judge that this period to-day on the American steam railway is at least thirty years. You will, therefore, until your great advancement stops or slows up, be handicapped with more or less obsolete facilities—facilities which the public will criticise and which, necessarily, you must wear out. It will require the greatest care on your part to meet this situation. The public demands new facilities; your company cannot afford them. It is then that the value of a satisfied public will come to you.

I do not think that you need fear municipal ownership. I greatly doubt the advantage to the public or to the individual from the municipal ownership of your companies. It would be almost impossible to operate them without political influence, and with political influence they would be operated so poorly that all would suffer. The cost of operation would enormously increase and the class of service would deteriorate. One of our great Eastern cities recently started a municipal ferry, and I believe its annual deficit is greater than its gross receipts, while the predecessor of this ferry, owned and operated as a private venture, was quite successful. This same condition to some extent would be followed were municipal ownership applied to the trolley lines.

You are absolutely public companies, owned and directed

by the people. The people give you their franchises, they own your securities, and even in the case of a trolley company absolutely owned by some other corporation or company, these securities are in the end owned by the public. The great life insurance companies own them, the fire insurance companies own them, the endowed hospitals own them, the great universities own them, and the number of stockholders of these companies is enormously increasing every year, so that in the end it is the public that actually owns them.

It is truly a harm to the public for you to run one more mile of street car service than you should, and a greater harm I think than for you to run one less mile than you should, as you have absolutely wasted the people's money in the former case, they in the end paying all the costs and receiving all the gain.

The strong, rich and profitable trolley companies—and I hope there are some few of them in the State of New York—will always be prevented from paying out in dividends more than they fairly should by the pressure of the public to keep them modern in every way, and in the case of the weaker companies, it will always require the greatest effort on the part of the trolley manager to earn fair dividends. The public, when you truly analyze the situation, is not in any danger of unfair treatment in either case.

DISCUSSION

J. P. Barnes, Syracuse & Suburban Railroad, in opening the discussion, said he came to the meeting to learn all that was possible on what he considered the most important subject before the association. He felt deeply and keenly the importance of satisfactory relations with the public. It was most essential that the public should be taken into the confidence of the companies on matters of routine that developed from day to day and week to week. If this policy was followed it would mean that the public would appreciate that the company was telling the truth in regard to its affairs, and when the company had an important issue to meet the public would still know that it was presenting its side truthfully, just as it had done in the past with other matters.

Before calling on the next speaker, President Hedley said that the accident side of the issue was a very important one. In his mind it was one of the principal matters to be considered. Upon the treatment of claims rested, to a large extent, the feeling of whether the company left behind it a record of satisfaction with the individual affected and also of whether the company was in the habit of doing the fair thing.

William H. Hyland, Fonda, Johnstown & Gloversville Railroad, said that the conditions of railroad management had undergone great changes. The affairs of the company were now open to the public. The claim agent who was a good representative of his company paved the way for satisfactory public relations. He could not only pay money to satisfy legitimate claims but he could pay the respects of his corporation where he went and leave a feeling behind that it wanted to do what was right and fair.

A. K. Baylor, General Electric Company, then said that the speakers had not gone far enough to get to the root of the difficulties in public relations. The necessity for improved operating details was obvious, and managers invariably tried their best to carry out such a policy. On the other hand, the abandonment or serious crippling of any public service utility, no matter how badly it was operated, would be a calamity to the public. The time had come for public service men to emphasize the point to the public that fair treatment must be accorded to public service corporations if their operation was to go on. As a matter of fact, the public did not know what it wanted, and if agitators were not checked, if political leaders were not checked, the public service was bound to suffer. As an example he cited the stunting of public utilities in England by interference on the part of the authorities, stating that

there were 50 per cent more cars within a radius of 50 miles of New York City than in the whole of Great Britain. Public service men, therefore, should take an offensive and not a defensive attitude with the public. It seemed to be the present policy of the government to attack the principles of the holding company, but this form of corporate management was a great boon to the smaller communities, and through its means the little towns were enabled to have service corresponding to that given in metropolitan centers. This was possible because holding companies, by means of the "diversity factor" in their investments, were able to finance their undertakings better than could a local enterprise.

Chairman Hedley approved Mr. Baylor's suggestion to get out, figuratively speaking, with guns and to go for the public aggressively when it took an unreasonable attitude. It was, of course, impossible to satisfy all customers, but it was possible to have the things which redounded to the credit of the public utility corporations made public as well as accounts of occurrences which were detrimental to them.

Mr. Sims said that he was much interested in Mr. Baylor's suggestion regarding the possibility of taking an offensive and not defensive position with regard to public complaints, but he asked how the policy of telling the public to "take this service or none" could be carried out, in view of the activities of the public service commissions.

Mr. Baylor answered that in large towns, if too many burdens were placed upon them, the public service corporations would have to go through bankruptcy and eventually would have to be supported by the communities themselves. In small towns, he said, they did go out of service when pressed too hard. In effect, the corporations should explain to the public that if the next generation was to have good service the existing generation would have to respect the fundamental facts of public utility operation and accept conditions necessary to the permanent life of such properties.

Mr. Sims then said that his company always answered every untruthful statement which appeared in the daily newspapers, and that this course had been very successful in establishing better relations with the public.

Chairman Hedley, with reference to Mr. Sims' suggestion, remarked that in small towns it was possible to give close attention to complaints and to keep in touch with the local press. In large cities, however, it was impossible to attack all known untruths which appeared in the daily newspapers.

J. C. De Long, president Syracuse Lighting Company, was then introduced. An abstract of his remarks follows.

ADDRESS BY MR. DE LONG

A great many of the difficulties in the electric railway field, concerning relations with the public arise, Mr. De Long said, from a lack of knowledge on the part of the public of the peculiar conditions under which the electric railway business must be handled. They do not understand why railway companies make certain rules and regulations, which seem to them irksome and arbitrary, but his company has been able to accomplish much by cultivating newspaper men and by explaining various points in the papers and in public service talks.

The "chronic kicker" is an extremely interesting subject, said Mr. De Long. He can be made a very excellent advertisement for the company if properly handled. In his own organization every man is drilled to the idea that chronic kickers are the important people to deal with. All chronic kickers are followed up and every complaint they make is always investigated, with the result that they are finally won over as the best friends of the company.

Every company has neighbors in the public utilities business, and every public utility man should help his neighbor, because sooner or later agitation against one will spread to the other.

One difficulty often encountered is a feeling on the part of employees in handling the public that the company is always right. This is a wrong attitude or frame of mind

for employees to have. Where public utilities are in the wrong, the best thing is to confess and clear up the situation.

To the heads of a company the question of the employed organization is important. In Mr. De Long's company all the employees, even down to the lowest, come together in monthly meetings, and the officers impress upon them that they are the ones who make or break the reputation of the company in the community. Managers generally accomplish little with the public. The employees are the ones with whom the public comes in contact, and the more they are brought into touch with the management and made to feel that they are a part of the management, the more the handling of the public will be improved and the better will be the public relations established.

Bodies such as chambers of commerce should be cultivated, for through these the company can get in touch with the men of the town or community who are really worth while. They are the ones who in time of trouble can always come to the aid of the company. The whole proposition can best be covered by these axioms, that a public-utility official must study local conditions, study human nature and "watch his step."

CONTINUATION OF DISCUSSION

L. S. Storrs, vice-president Connecticut Company, said that the roads were passing through a period of very rapid change, and the question of satisfactory public relations was the most serious problem to be dealt with at the present time.

E. F. Peck, of Allen & Peck, said that electric railway development could be divided into three periods—namely, the inventive period, the period of development and the period of refinement. During the inventive period public relations were naturally very weak. Jealousy of inventors and the competition of manufacture made this, in fact, a natural condition. During the period of development all of the companies grew at such a rapid rate that the entire time of the management was devoted to the establishment and maintenance of reasonably satisfactory service, so that but little time could be devoted to such questions as the one under consideration. During the existing period, that of refinement, the cordial relations with the public had become a necessity, and during the past five years these had been improving very rapidly.

Chairman Hedley then remarked that there must be some reason why the railroads had, to use a colloquialism, "got in bad." If the principal reasons for this condition was analyzed, a large part of the question of public relations would answer itself. There were several good explanations for this condition in the past, but there was no reason now.

Ernest Gonzenbach, president Sheboygan Railway & Electric Company, Sheboygan, Wis., said that at one time the management of his company had been greatly interested in politics. Later, another policy, that of excessive concessions to the public on every point, was followed. In recent years the company had endeavored to steer a middle course between these, and during the last nine years it had made many friends in the community. Whenever a mistake due to any fault of the company was made the justification of the complaint was directly acknowledged and an effort was made to conciliate the complainant in any reasonable way, sometimes even by the presentation of some minor electrical device. The employees, he said, were instructed not to get into disputes with patrons.

H. W. Blake, editor of the *ELECTRIC RAILWAY JOURNAL*, referred to the remark made by Mr. Allen in regard to the "new spirit" of public relations, and said that the effect of this new spirit must be felt by the three parties to the situation, the public service commissions, the public and the electric railway companies. As regards the first of these, Mr. Blake stated that if all public service commissions exhibited the attitude shown by Mr. McCall the question was capable of easy settlement so far as they were concerned.

When commission regulation was first proposed some hesitancy was manifested by thoughtful people because the move was a new experiment in government and the commission form of organization seemed to connote a czar-like ruler acting under arbitrary rules with no necessary basis in precedents. There was no doubt that public service commissions had made mistakes, but the speaker believed that electric railway men generally recognized the fact that commission regulation was desirable in principle. The ideal public service commissioner possessed a logical and analytical mind and plenty of experience, and it was the duty of electric railways to influence as far as possible not only the selection of such men for office but also their retention in office. Concerning the second party to this question of public relations, the public itself, Mr. Blake stated that it might be reached by direct, concrete means, such as were embodied in the exemplary suggestions of Mr. Sims, through the newspapers as mentioned by Mr. Allen, and in other ways. The news service, mentioned by Mr. Allen, could not properly be handled by an electric railway publicity man only. The manager of the railway himself must also exhibit friendship and cordiality toward the newspapers and, even when assisted by a publicity agent, should give some time to answering the legitimate inquiries of the papers. The electric railway itself is the third party concerned in the establishment of better public relations. The speaker believed that the railways were thoroughly imbued with the "new spirit," but in effecting more friendly conditions they must always act through the public, which, as the body politic, dictated the character of men appointed to the public service commissions and also was ultimately responsible for all reforms.

Mr. Hedley, in commenting on public service regulation, said he believed that commissions had come to stay, and with members of the proper type they were one of the best mediums for the establishment of better public relations, especially through their actions as arbitrators for the official settlement of disputes. Mr. Hedley remarked that in recent cases before the Public Service Commission for the First District of New York decisions had been rendered after public hearings which could never have been obtained unless some body through state or municipal authorization had received power to settle such points once and for all. Furthermore, Mr. Hedley was of the opinion that the publicity given to unreasonable complaints before commissions would also ultimately benefit public utility companies.

H. H. Vreeland, vice-president Interborough-Metropolitan Company, New York, said that the principal reason for an unsatisfactory relation between public utilities and the public was that until recently the subject of public relations had been treated by executives and managers of electric railway properties in much the same way as a man calls in a doctor to treat a physical ailment after it has well started on its course. It was much simpler to stop the course of the disease at its source, and control over it was then easily obtainable. Mr. Vreeland stated that in 1893 one of the best men possible had been secured by his company to study the question of public relations from the standpoint of the public, the laboring classes and the newspapers, and that this man was treated as one of the executive staff of the company. This idea followed out for several years succeeded in establishing good relations between the company and the public. In Mr. Vreeland's judgment, the trouble to-day was that managers and executives were too busily engaged in their daily work to give any time to publicity. A man was needed who could keep in close touch with the organization heads of the company while studying public relations and act in an advisory capacity on this supremely important question. In the case of the small company, the manager had more time; he was more intimately connected with the local people, and his relation to the public had certain ministerial aspects. In large cities, however, a supplementary organiza-

tion was the best device to foster the proper public relations. In this connection Mr. Vreeland said that the choice of the right kind of men was the kernel of the public service commission question, and he pointed out that terms of short duration make reappointment entirely dependent upon public sentiment. This resulted in a study on the part of the commissioner as to how he could establish such a relationship between himself and the general public that he would be assured a reappointment.

E. S. Fassett, formerly general manager United Traction Company, Albany, took up the question of personal contact between officers of a company and the public. He stated that when a complaint was received a personal visit by an officer of the company in answer thereto was the best practice. Even in the case of a large company, where an officer could not find time for such visits, a representative with his ideas should be sent. The meeting of the complainant face to face and the personal settling of his grievance was far better than long-distance correspondence or newspaper talk.

Mr. Hedley then outlined the system used by the complaint bureau of the Interborough Rapid Transit Company. This bureau was stationed three desks from him, and all complaints in person were adjusted there. Complaints in writing needing investigation were acknowledged by correspondence, and after the investigation was completed another letter was sent showing the disposition of the case. If the matter was important, a man from the department obtained the views of the management and interviewed the complainant a number of times, if necessary, until the latter was satisfied. The personal interview was by far the best means of settling disputes, and if any company was too large for the manager to attend to such work it was large enough to have a special person assigned to it.

Mr. Hedley then discussed the important part played in the establishing of better public relations by the employees of a company. Trouble for motormen and conductors started early in the morning with the passenger who perhaps left home without his breakfast, and it lasted practically the day through. This condition prevailed over all the country, but particularly in large cities. Too much importance, therefore, could not be attached to the necessity of having as employees men of the best class, who were above resenting the insults of disgruntled passengers. Extraordinary care in selecting such men was more than repaid through the effect they produced in the way of a better public opinion toward the company.

S. P. Smith, superintendent of transportation Manhattan Elevated Railway, New York, stated that during the last six or seven years every public service corporation had been trying to win public favor, but that so far the public had quite successfully dissembled its love. His company was doing all in its power to establish a better public opinion, but as yet the public had not responded with affection, to say nothing of admiration, respect and regard. Furthermore, Mr. Smith believed, while the best class of men was desirable for employees, a man cannot be judged by his exterior, and poor men would always be employed to some extent. This necessitated a constant weeding process which could not be entirely eliminated by watching more closely the type of men employed.

J. J. Dempsey, superintendent of elevated lines Brooklyn Rapid Transit Company, told how for several years his company had used every possible publicity method such as advertising, advance publicity concerning developments and anticipated delays and the like. The Brooklyn Rapid Transit Company had been able to utilize advantageously the countless civic bodies of the city, and it endeavored to have complaints brought through these bodies directly to its notice. These local bodies had been found to possess more than a local outlook, too, for often when they had asked for improvements at a certain point which would work out as a detriment to the system as a whole, no great

difficulty had been experienced in making them see this point.

In closing the discussion Mr. Allen said that if any one thing was evidence that the subject of public relations was one of very large importance, it must be to sit at the meeting and hear the diverse opinions and ideas that were advanced. Many theories and suggestions had been advanced to show what the companies ought to do. It was surprising that each man who rose had something to suggest that would improve public relations. The younger men of the association should express their ideas freely. The association needed their ideas and the results of their experience.

Continuing, Mr. Allen said that the New York association was a voluntary organization for the free expression of opinions on the part of officials of its member companies. However, it had no direct control over or power to influence the policies of those companies, unless its action was concurred in voluntarily by the members. It occurred to him that better results could be obtained if a platform or a plank in a platform could be drafted and made acceptable to all of the members. This would present the views of the association and the companies on the principles which the companies should follow in their relations with the public. Greater strength would be given to the work of the association and the companies if such a platform could be adopted as part of the motive for the existence of the association. In the management of industrial enterprises it was frequently found that companies adopted creeds or statements of policy, and these were used and quoted by officials and employees as principles they believed in.

Mr. Allen referred to a misleading editorial published in a daily newspaper, which was based on a misunderstanding of some of the figures given by Gen. George H. Harries in his address as president of the American Electric Railway Association at Atlantic City in October. When attention was called by the association to the misleading interpretation placed upon the figures the daily newspaper immediately published a correction, thus showing every willingness to set the facts straight. Mr. Allen said that if the companies had the facts accurately placed before the newspapers it was always possible to get a fair hearing in the public press.

Mr. Allen also mentioned the power that employees in the electric railway industry could exert to create more favorable conditions. He called attention to the welfare work of some of the companies and said that such work was an undeniable force in the creation of better relations. If closer relations with the employees could be developed by the companies they would have a support whose full strength could not be measured.

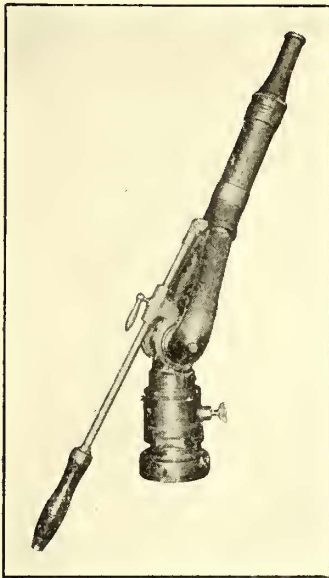
Mr. Allen spoke of the importance of reducing to practice all of the valuable suggestions that had been presented before the association. He said that any one who did not believe that better public relations could be produced could not expect to produce them. The companies should tell the public what they wanted to have done. Under the laws of New York as they had existed for the last few years it was almost impossible to do pioneer work in the construction of new electric lines.

At the conclusion of the meeting a lunch was served to the delegates in attendance. The next quarterly meeting of the association will be held in March, 1914.

The question of a central authority for London's electricity supply was again revived at a recent meeting of the London City Council. The question at issue is whether, in time, London's electricity supply shall be controlled by the London County Council or by a corporation consisting of the thirteen existing companies. The idea of linking up all these companies is not a new one. It was discussed in 1895, and since then there has been a proposal for the London County Council to build generating stations at Battersea and Barking.

IMPROVED CAR YARD FIRE PROTECTION AT CLEVELAND

The Cleveland (Ohio) Railway, which was one of the first electric railway companies of the United States to install fire-protection equipment on a large scale, both in carhouses and yards, has recently made a number of im-

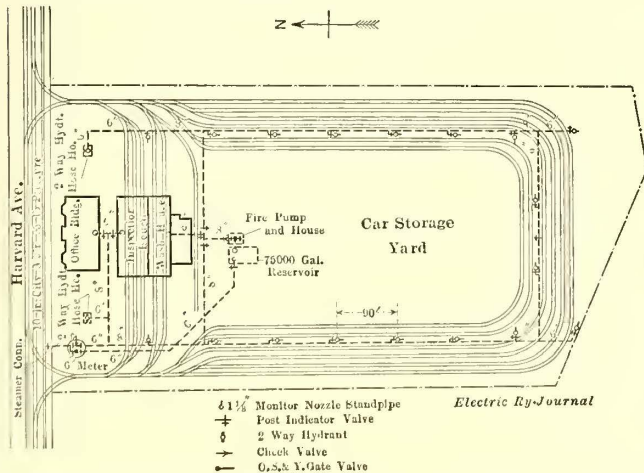


Standard Nozzle

provements in its installations of the latter type. The latest yard to be furnished with standpipe fire protection is that at Harvard Avenue, which has a present capacity of 150 cars, valued at \$1,350,000, and an ultimate capacity of 175 cars. This gives the company four car yards with three more under way. The Cleveland Railway will continue the use of the present sprinklered carhouses, but as the number of car yards increases it is probable that eventually some of the buildings will be made over for other purposes.

The later standpipe equipments embody some important improvements, one being the substitution of reinforced concrete for steel in the construction of the standpipe platform supports and another being the use of an improved nozzle. As in the original form, the nozzle platform is 20 ft. above ground level and is reached quickly by means of a permanently attached iron ladder. Two set screws in the new nozzle permit the operator to adjust and lock it for the most effective angle, depending upon the location of the fire. One of the accompanying halftones shows how the operator has set the nozzles to obtain streams at the desired angles.

The pump which supplies the monitor nozzles is started

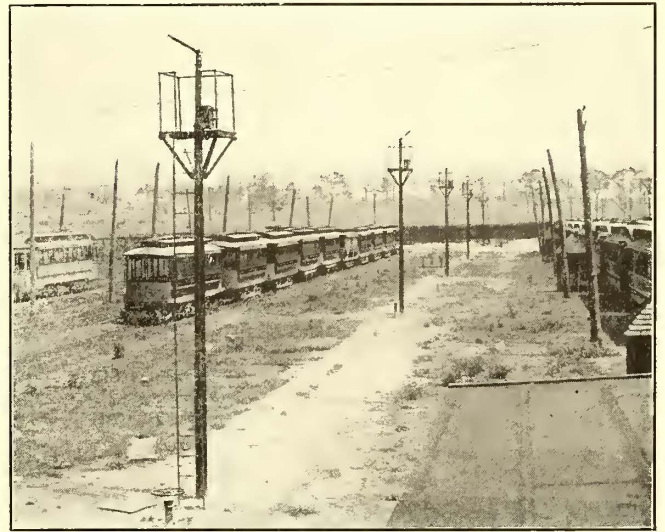


Cleveland Fire Protection—Proposed Plan for Standpipes at Harvard Avenue Car Yard

by means of a switch placed in a box on the platform at the base of the nozzle, thus insuring the immediate operation of the pump and application of the water.

The fire-protection equipment of the Harvard Avenue car yard, which may be considered a typical installation, is shown in the accompanying plan. The yard is 750 ft. long x 454 ft. wide, including car inspection structure, offices

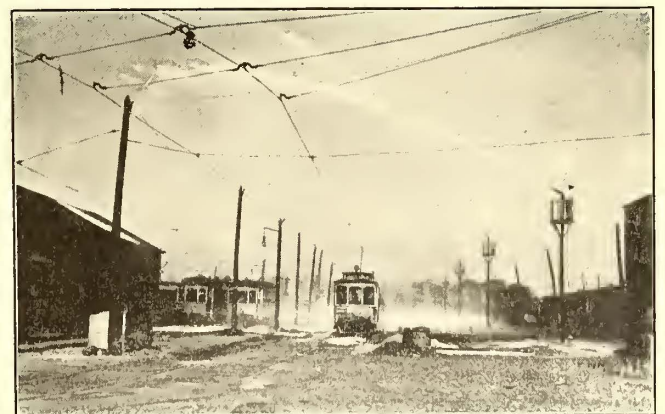
and utilities buildings. The eighteen standpipes are located around the yard at intervals of 90 ft. The standpipe nozzle tips are 1 1/8 in. in diameter and the supply mains are of 8-in. and 6-in. diameter. Two hydrants are also installed to reinforce the interior sprinkler protection of buildings. The water supply is forced through the mains by a 750-gal. electrically driven underwriters' pump of centrifugal type,



Cleveland Fire Protection—General View of Yard, Showing Standpipes

taking suction from a 75,000-gal. reservoir maintained on the premises. Under maximum pressure the fire pump will deliver 1000 gal. of water per minute, which can be concentrated on any one car in the yard. The installation cost of protection for the ultimate capacity of 175 cars will be about \$20,000.

This plan of equipment has great advantages over the ordinary plan of yard hydrants and hose, as in case of fire one man can handle the streams to advantage. Under the ordinary plan of hose and hydrants, much difficulty is experienced in carrying the hose underneath the cars or over the platforms to reach a car that might be burning in a distant part of the yard. The plans for the work were made by W. G. Asmus, chief engineer, and Henry N.



Cleveland Fire Protection—View Showing Standpipes in Operation

Staats, insurance expert bureau of insurance American Electric Railway Association.

Correspondence has passed between the Dunfermline Town Council and other local authorities with reference to the construction of a tramway between Dunfermline and Rosyth, the new naval base on the River Forth.

Standardized Maintenance

A Detailed Statement of the Division of Maintenance Labor, Which Has Been Standardized at Nine Inspection Points in Brooklyn—A Comparison of the Practice of Other Companies

BY J. L. INGOLDSBY, ASSISTANT TO THE SUPERINTENDENT OF EQUIPMENT BROOKLYN RAPID TRANSIT SYSTEM

In connection with the maintenance of electric car equipment the two terms most frequently used are "inspection" and "overhauling." But as yet these terms do not mean the same thing on all properties, although much has been done in this direction through the efforts of the American Electric Railway Association and the ELECTRIC RAILWAY JOURNAL.

The dictionary definition of "inspection" is "a close examination; to look upon; to examine for purpose of determining quality, detecting what is wrong." It is necessary that this examination should be made with such care that it will be possible for a car to operate from one inspection to the next with the least possibility of interrupting scheduled service through any defect in the equipment. With this end in view, the basis selected must allow an ample margin of protection. The mileage basis is, of course, the most efficient and economical. However, the mileage that a car may run between inspections is governed in most instances by the necessity for adjusting brakes. As all other parts of equipment can remain in service longer than the brakes without any attention, it follows that only the installation of automatic slack adjusters could increase the mileage between inspections.

In the following paragraphs the writer will describe the standard arrangement of organizations at the carhouse shops of the Brooklyn Rapid Transit System. The term "carhouse shop" is understood to mean a shop which is devoted to maintenance work but not a large general shop where extensive repairs, rebuilding or painting work is done. The Brooklyn Rapid Transit System has nine such maintenance shops for surface passenger cars. The work done at these shops constitutes an "inspection." The number of cars assigned for service from each carhouse varies from 116 to 346. The organization at each is as follows:

MAINTENANCE CARHOUSE ORGANIZATION

Day foreman	Fendersmith
Assistant foreman	Machinist
Night foreman	Motor repairman
Clerk	Motor repairman helpers
Stockman	Blacksmith helper
General repairman	Oilers
Air brakeman	Trolley repairman
Blacksmith	Electrical repairman
Carpenter	Brakemen
Carpenter helper	Brakemen helpers
Controllerman	Truckman
Circuit-breaker repairman	

The number of men in each classification depends on the number and class of cars assigned for care. All inspection is done in the daytime only and with the cars over the pits.

DIVISION OF LABOR ON CAR FOR INSPECTION

When a car has arrived for inspection it is placed over the pit by the crew of the transportation department. Then the shop foreman or assistant hangs a blue-backed, white-lettered "Out of Service" sign in a conspicuous location on both dashes as evidence that the car is now out of the jurisdiction of the transportation department. After this the several inspectors go to work on the car in accordance with the book of rules and instructions which governs the employees of the mechanical department.

The carpenter and helper inspect steps, platforms, flooring, grab-handles, seats, sash and glass, destination signs, curtains, roofs, trolley boards, headlights, bell and register cords or rods and bars, handstraps, sand boxes, foot gongs, woodwork and car hardware. They also look for all defects, such as loose screws or any protruding parts from seats that would have a tendency to injure the clothing or person of passengers.

The air brakeman inspects the governors, motorman's brake valves, emergency valves, gages, piping, automatic slack adjusters, reservoirs, pressure cylinders and compressors. The work to be done on the compressor consists of blowing accumulations of dust, etc., from the motor with compressed air, wiping with cheesecloth, cleaning brush holders, adjusting brushes and providing proper brush tension, taking armature clearances, looking over valves, oiling and, finally, trying out all parts under pressure. This man also cares for arc headlights on such few cars as carry them, inspects their mechanical and electrical parts and installs and adjusts carbons.

The controllerman inspects all platform controllers, whether of series parallel or master types, and also the unit switch group attached to the underside of the car body. This work consists of blowing out accumulations of copper dust, etc., with compressed air, filing pitted spots from contact plates and wipers and adjusting tension to give the proper contact on main and reverse cylinders or groups of switches and reversers as the case may be. He must see that cylinder segments are tight on the drum shaft, that the connections on connecting board are correct and secure, that shafts are not worn beyond the gage limit at the point where the handles fit them, that motor cut-out switches are in good condition, that cover, cover hinges and thumb screws or latches holding the cover closed are in order, and that the brackets or hangers that hold controller to the dash or to the underside of the car body are tight. This man also rubs contacts with a piece of felt that has been moistened with vaseline and places a few drops of oil on shaft bearings. Such work as the foregoing is part of a regular inspection, but where extensive changes are found necessary, the platform controllers are removed to the main electrical shops and replaced by local spare controllers. Once every two years every platform controller is removed from the cars for complete general overhauling at the main shops. The controller man also inspects incandescent lighting circuits, replacing burnt-out or defective lamps, watching for lamps with loose sockets, etc., and caring for light switches. He co-operates with the circuit-breaker man in the inspection and adjustment of circuit-breakers or line switches.

The circuit-breaker repairman, in addition to seeing that breakers operate properly and making minor replacements and adjustments, removes all breakers from cars sent to the shop for motor and truck overhauling. He cleans the breakers by blowing them out with compressed air and wiping with cheesecloth, removes pits from contacts by filing them and makes adjustments. He then sets and calibrates the breaker to a predetermined voltage by means of a water rheostat.

The electrical repairman inspects motor leads to see that insulation is not chafed beyond a safe point and that connections are secure and correct where the lead end is soldered into knuckle-joint connectors. Two-way connectors are not used under any circumstances in the Brooklyn Rapid Transit shops as it has been found that they cause endless trouble with any kind of car wiring. This repairman also sees that the leads are being properly held apart by wood spreaders and that rubber bushings at the point where leads pass through the motor shell are affording the protection for which they were installed. He also inspects resistance connections and makes such minor repairs as replacing insulating washers, etc. If grids are burned out

or require replacement, the whole frame is removed and forwarded to the grid specialists at the department of electrical repairs to eliminate the possibility of wrong resistance steps. He also inspects lightning arresters, adjusting to proper gap if necessary, and looks over fuses, fuseholders and bases to see that none are blown, that the proper type and capacity fuse is in use in various circuits and that the connections and contacts are correct.

The trolley repairman inspects all trolley stands, bases, tension springs, poles and wheels, as well as connection leads at the stands, seeing that trolley bases swivel properly and that wheel or any other replacements necessary are made. Wheels are gaged on inspection for excessive or improper wear and pole tension is adjusted in accordance with outstanding instructions by hanging a prescribed weight from the end of the pole and adjusting the springs, if necessary. Lubrication is also cared for at this time. This man also maintains the carbon brushes, brush holders and commutators of the car motors. He replaces brushes if excessively worn, sees that holders are in good condition and maintains proper tension on each brush in accordance with the pounds pressure specified. Tension is measured with a spring balance scale in case of doubt. This inspector keeps commutators clean by wiping them with cheesecloth and reports the need of regrooving mica if copper bars are worn too far.

The brakeman and helper inspect and adjust brakes and rigging. The helper applies brakes from the platform while the brakeman watches the travel of the levers previous to making adjustments from the pit. These men (the brakeman being held responsible for the work of his helper) look over rigging to see that staffs, chains, rods, levers, pins, brakeshoe heads and all other rigging are perfectly safe for service, replacing any parts that may be worn to the limit of safety. They also replace brakeshoes, lubricate the rigging and inspect hand-brake handles and parts, including star wheels and dogs and the whole emergency hand-brake rigging and apparatus on air-brake cars.

The truckmen look over and tighten bolts on trucks and motors. In addition, they inspect motor-axle and armature bearings and gage armature clearances to make sure that the bearing is not worn low enough to allow the armature to strike the fields. These men also replace truck end frames when necessary, renew side bearing pedestal bushings on maximum traction trucks and inspect center and side bearings to see that they are properly lubricated and that specified clearances are provided.

The fendersmith inspects wheel and truck life guards and projecting fenders, making repairs when necessary and adjusting them to specified clearance above the rails. He also conducts pressure tests with a spring balance scale to make sure that the automatic guards will trip at the pressure specified in the company's instructions and sees that each car is provided with an emergency drawbar, which must be hung on hooks provided for the purpose.

Each man at the nine maintenance carhouse shops is provided with a red flag with a brass plate attached, on which the individual's name is plainly stamped. This flag is hung on the controller or dash before the man starts to work on a car and is removed when he leaves the car. This plan serves as protection because no man is permitted to remove other than his own flag; therefore no person is likely to start a car as long as it shows a flag to indicate that an employe is working somewhere on or under it. The removal of red flags by individuals and "out of service" signs by the foreman or his assistant is evidence that the car is O. K. and ready again for service.

OTHER LABOR, SUPERINTENDENCE, RECORDS, ETC.

As the work done by men engaged on inspection has already been detailed, a brief description of work done by the other men in the organization follows:

The shop foreman supervises all maintenance inspection and overhauling work.

The assistant foreman acts as foreman in the absence of the latter. Otherwise he assists the foreman in supervision, particularly in regard to inspection, as it is his duty to check each car pronounced "complete" by the inspectors. The night foreman is in charge of the shop during the night hours to answer any calls which may be received for the wrecking tool car, to care for minor car defects that may be reported during the night hours, to supervise the two night oilers and to see that all cars due for inspection and overhauling on the following day are properly placed and made ready for the day workers to start promptly at 7 a.m.

The shop clerk collects and typewrites detailed records of the work performed each day, writes car inspection reports for the use of the claim department, keeps the office neat and orderly, answers telephone calls, etc. He also cares for the shop foreman's correspondence and other clerical work, thus allowing the latter to devote all of his time to supervision and betterments.

The stockman maintains an ample but not an excessive quantity of supplies. In addition to the usual duties of a storekeeper, he assists in maintaining standards by satisfying himself that the applicant receives exactly the right part no matter what he may call for.

The work of the general repairman, as his name indicates, is of a miscellaneous nature, consisting principally of correcting defects on cars which have been removed from service and in repairing between regular inspections such items as are reported by the motormen on defect reports. During the absence of the foreman he helps the assistant foreman, who is then in charge.

The blacksmith and helper make all welds, replace bushings in holes of brake levers, replace dowel pins in motors and straighten bent trolley poles, wheel guards and fenders. The helper also assists the machinist when necessary.

The machinist turns all armature and motor-axle bearings to fit individual shafts and axles when cars are in for equipment overhaul. He replaces all tape bands on ends of commutators, looks after condition of all shop tools and machinery and does any machine work necessary. The last includes some lathe, bench, drill press and grinding work, but the principal machine jobs are cared for by specialists at the large general repair shops.

The oilers lubricate all armature and motor-axle bearings, adding specified quantities of oil at stated periods in accord with a detailed "lubrication schedule." These men are held accountable for any hot bearings that may be caused by insufficient or improper lubrication, either in respect to the quantity of oil or to the manner in which waste packing has been cared for. No lubrication and packing of truck journal bearings are done at inspections but only when cars are shopped for motor and truck overhaul.

The motor repairmen and helpers work in crews of two and care for work termed "overhauling," i.e., "a close examination with a view to correction or repairs." The wear of armature and motor-axle bearings determines the overhaul mileage basis for motor and truck equipment. The work consists of jacking up or raising the car bodies, running trucks out to a large free space where the motors are removed from the truck frames. The motors are then opened up and the carbon dust accumulations are blown out with compressed air, armatures are taken out and cleaned, brush holders removed and cleaned, fields tested, etc. Motor-axle and armature bearing housings are repacked and bearings renewed. After the interior of the motors has been cleaned, the armatures, fields and inside of motor shells are coated with an insulating paint and final adjustment made before closing and bolting the motors for replacement in the trucks. As to trucks, the wheels are replaced if necessary after having been gaged as to flanges and rims and the distance between gage lines; bolts are examined and tightened, while worn journal bearings,

pedestal wearing shims, rods, levers, hangers, brakeshoes and the like are replaced and bearings are repacked and oiled.

COMPARISON OF PRACTICES

The foregoing paragraphs give details of what constitutes "inspection" and "overhauling" at maintenance carhouse shops on the Brooklyn Rapid Transit System. The mileage basis between the inspections ranges from 600 miles to 900 miles while that for overhauling ranges between 7000 and 15,000 miles, the variations depending on the type, age and class of equipment.

On some systems cars are placed over pits at stated periods for brake adjustment only and the general inspection is deferred to a greater mileage. Where this arrangement is in effect it is usual to take cars in for the replacement of armatures and motor-axle bearings only in accordance with the wear shown by clearance gages, while the work termed "overhauling" is deferred until a greater mileage has been attained.

On still other systems every car assigned for service is looked over every night or once every twenty-four hours. While this arrangement seems to satisfy its users, it is difficult to see how a proper inspection can be made in the very short time that is available when so many cars must be handled.

In some places the overhauling period is fixed entirely by the pole piece clearance gage or overhauling is done when cars come in for a change of armatures, wheels and the like. Again, some companies do inspection work at terminals where cars have some lay-over time, and the rolling stock comes into shops only when it is necessary to renew bearings, armatures, wheels, etc.

On our property all work is done during the day so that practically all equipment is available for heavy evening rush-hour service. Of the total cars assigned for service from each carhouse the number placed for inspection ranges from one-sixth to one-tenth, based on variations in mileage, and no shop ever has more than four cars to overhaul in one day.

Each inspector makes his own repairs, adjustments or replacements as found necessary on examination. Defects are not found by one set of men and reported for repairs by others, although the latter arrangement is in effect on some properties with excellent results.

It will be observed that many maintenance plans are in effect. While most of them are giving results satisfactory to the executives in charge, it is an open question whether some one plan would not be found more economical than the rest, excepting such variations as might be required by the location and size of the property. In any event, would it not be of great advantage to have the several terms of maintenance practice so clearly defined that accurate comparisons would be more practicable than is now the case?

ESTIMATED VALUE OF PREPAYMENT OPERATION IN ENGLAND

Henry Mozley, general manager Burnley (Eng.) Corporation Tramways, recently prepared for the *Tramway and Railway World* the accompanying table to show what the annual gains of the several systems named would be if they were to install prepayment operation, assuming that the missed fares so recovered were equivalent to 2½ per cent of the annual gross earnings.

Mr. Mozley points out that even if the loss was only half the amount shown the leakage would still be worth the serious consideration of railway managers. Two ways, he says, are open to prevent missed fares: the passenger might pay on entering a car, or the conductor might demand a ticket from each passenger who left the car en route and also from all passengers who were still on the car at the terminus. As the conductor was the only person responsible for seeing that all passengers paid fare, he should

be on the rear platform at every stop. Mr. Mozley favors the use of an assistant conductor for extraordinary traffic. His belief was that it was advantageous for the conductor to collect the fare tickets, since this enabled him to know where each passenger desired to get off; that the

Name of System	£	Name of System	£
Accrington	685	Liverpool	15,776
Ashton-under-Lyne	556	Manchester	22,217
Birkenhead	1,531	Nottingham	4,179
Blackburn	1,586	Oldham	2,700
Blackpool	1,836	Preston	1,074
Bolton	3,378	Rawtenstall	650
Bradford	7,240	Rochdale	1,993
Bury	1,690	Rotherham	1,005
Chester	306	Salford	6,492
Darwen	365	Sheffield	8,964
Doncaster	498	Stockport	1,578
Halifax	2,625	Sunderland	1,712
Huddersfield	2,695	Wallasey	1,450
Hull	3,929	Warrington	572
Lancaster	139	Wigan	1,756
Leeds	10,188	York	549

collection of tickets prevented over-riding; that while ticket collection might involve more work for the conductor, it minimized the loss of fares on crowded cars, and, finally, that collection was desirable because of the great variety of reduced fare tickets in use.

SCHOOL FOR TRAINMEN AT BUFFALO

Applicants for positions as motormen and conductors on the various lines of the International Railway Company are trained in a school located near the Niagara Street power house in Buffalo. Each applicant reports at the school for preliminary instructions as to his duties before being sent out on the road for a ten-day practice. During the practice period he travels with a regular crew and in spare time studies the rule book. This gives explicit instructions in regard to methods of operating cars, routes, transfers, reporting accidents, records, etc. After the practice period the applicants assemble in small classes for more detailed instruction and for examination of the results of the ten days' study and observation. A full working day is consumed in this way, motormen and conductors being instructed and quizzed separately.

The school occupies the entire ground floor of a brick building, about 40 ft. x 60 ft. in area, located on one of the principal lines of the system. It is admirably arranged for purposes of instruction as is evident from the accompanying diagram. On the north side of the room is a standard 21-ft. car, fully equipped and with its trucks mounted on blocks so that the wheels clear the floor. On the south side is a skeleton double-truck car with all details exposed for convenience of inspection and for tracing out the wiring. About the walls are sample parts of a car equipment, mostly exhibiting defects which develop in service. In one corner is an elevated platform for the instructor with a blackboard on the wall behind. On the platform is a desk where records are kept. Comfortable chairs for the class are provided on the floor below. A small toilet room occupies a convenient position near the front entrance to the building.

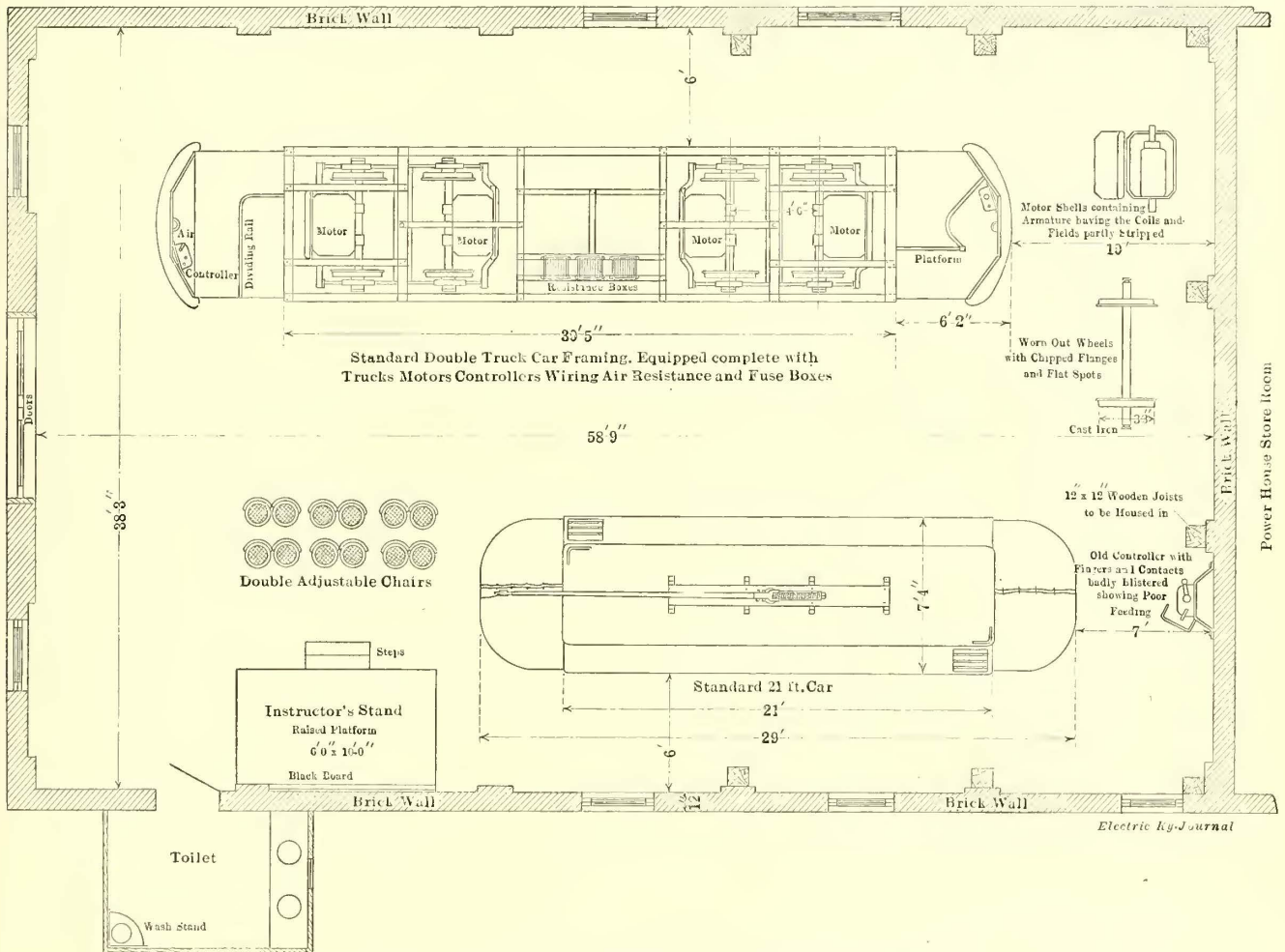
The instructor, Mr. Ruberry, is a practical railway man who has served as motorman and conductor in the company's service. He is thoroughly familiar with the streets of the city, with the company's rather complicated system of transfers and with the duties of motormen and conductors. He drills his classes thoroughly on the rules given in the book and puts to them practical questions such as they will meet in their work. For example, if the pupil is a conductor a question like this may be asked: "A man boards your car on Main Street at Seneca, going north. He wishes to go to Caroline Place and Forest Avenue. Where should you tell him to transfer, and how would you punch his transfer?" A typical question to a motorman might be: "If your car is climbing a hill and suddenly the power goes off, and, on trying to apply the brakes, you find you have no air pressure, what would you do?" "Well,

suppose that the hand-brake would not work, either?" Or he might be asked what he would do if the air compressor governor failed to work and he noticed that the pressure was mounting to a dangerous value. On replying that he would cut off the compressor current, he might be asked further: "But suppose that the switch is defective and fails to open the circuit?"

After a long quiz without apparatus before them, the men are taken on one of the school cars and a practical test is made of the results of the study. One exercise consists in sending a man to the controller and telling him that when the instructor gives a bell signal he is to carry out the operations called for by the signal. The instructor pulls the bell twice, the brakes are released and the controller handle is pulled around a notch or two. The motors do not respond. With the aid of the class, if necessary, the pupil

Finally the car comes to speed and brake applications are made, with the caution that a poor stop may mean a damage suit. A backing signal is then given, and the motor-man, if careless, reverses and starts backward without looking toward the rear. He is halted and reminded that the rule book requires him to back slowly, not more than 10 ft., and then only after he has seen the conductor put his head out of the rear window. These illustrations will serve to show the manner in which important rules are brought out and the reasons for them emphasized.

Applicants are rated at all stages of their progress. In addition to the features described, the forms which have to be filled in for various purposes are studied and used. Particular attention is given to the accident report, a sample of which is filled in by each pupil. This written work is an excellent gage of intelligence. After the instruction work



Floor Plan of Instruction School for Trainmen in Buffalo

finds that the overhead switch is open. He closes it and tries again with no result. After further investigation he learns that the switch at the rear end of the car is open. This is closed, but with no result. He finally recalls that the rule book requires the turning on of the lighting circuit when there is trouble with the power. He does this and finds that there is no power and, on looking outside, notes that the trolley wheel is off. After these and possibly other tribulations on the student's part the motors finally start, but the instructor immediately gives a stop signal, asking the neophyte how long he waited on the first notch. He replies that he forgot that the rule book told him to wait on this notch while he counted eight. After a new start the controller handle refuses to go by the fifth notch. Another search for trouble is made until one of the more careful students remembers that a motor is possibly cut out. Investigation shows this to be the fact.

has been completed, if the work is reasonably satisfactory, the applicant is returned to the employment division of the transportation department for final examination and assignment to duty. If he gives no promise of attaining proficiency in a reasonable time, he is dismissed. If below standard but promising, he may be returned to the school for further instruction. Otherwise he is put to work.

In the school instruction a great many practical suggestions are given by the instructor to emphasize the underlying principles of success in car platform work. The avoiding of accidents is urged as a first object, and, close to it, courtesy to the public is insisted on as of vital importance. Economy in the use of power, close following of the company's rules and other elements of good service are dwelt upon. The results of all of this are very satisfactory, and the company is securing an increasingly satisfactory and loyal body of men.

Meeting of National Civic Federation

Emerson McMillin Presents Report on Model Public Utility Bill—August Belmont Reads Paper on Workmen's Compensation—Government Ownership of Railroads Discussed by Seth Low

The annual meeting of the National Civic Federation was held in the Hotel Astor, New York, on Dec. 11 to 13. The subjects considered included the model public utility bill and workmen's compensation, while government ownership of railroads was discussed in the report of President Seth Low.

The model public utility bill was not made public, but President Low asked that the thanks of the federation be given to the members of the committee who took part in the work incident to its preparation and that it be referred to the executive council with power to act. Upon motion, this was done.

MODEL PUBLIC UTILITY BILL

Emerson McMillin read a report as chairman of the department on regulation of interstate and municipal utilities. An abstract follows:

"That the regulation of public utilities is necessary is no longer a debatable question. The business which they conduct is closely related to the public welfare. The best interests of the public will be conserved ordinarily by the conduct of such business only as a monopoly. Managers of public utilities no less than other members of the public realize that without recognition of the common interest in the conduct of such business conditions might eventually become intolerable; in fact, it has come to be generally believed that regulation of public utilities is the alternative to public ownership and operation. No one of the important public utilities has reached a point where in the interest of the public it can dispense with the initiative, zeal, enterprise and courage which in the past have characterized American business methods.

"Accordingly the bill which we have prepared is an endorsement of the principle of state regulation of public utilities. It stands squarely for the public interest in these matters. Unhesitatingly and without equivocation it gives to a public commission powers of the greatest importance to the well-being and prosperity of the companies. The commission may investigate and fix absolute rates. It may prescribe absolute standards of service and require adherence thereto. It is required to provide uniform accounting and statistical methods, and companies are obliged to make such reports to it as the commission may desire. It is charged with the responsibility of approving issues of stocks and bonds and the transfer of property and franchises from one company to another. These powers and others are conferred on the commission in the firm belief that their exercise is required under a system of adequate regulation, but with the belief that their abuse will be as destructive, ultimately, to the public interest as it may be immediately to the private interests of the companies regulated.

"The bill provides for a single state commission to undertake the regulation of all utilities within the state. This plan is believed to be eminently preferable to any scheme of divided jurisdiction whether on territorial lines or on business lines. Municipal regulation of local utilities must necessarily be expensive and probably inefficient. Utilities no longer are confined to the limits of municipalities. Of even greater concern, however, is the difficulty, if not impossibility, in a majority of cases of obtaining through a municipal regulating body the degree of scientific accuracy and judicial impartiality and fairness which is necessary to a proper solution of public utility problems.

"The bill throws about existing investments the protection from competition offered by the requirement that a certificate of public convenience and necessity issue from

the commission before a new enterprise is begun in competition with an old one. This provision summarizes the experience of a number of states. Competition in a field which lends itself naturally to a monopoly is economically and socially wasteful. The rule applies as well whether the proposed competitor is a private company or a municipality. So long as an existing agency is furnishing adequate service at just and reasonable rates in all respects in compliance with the provisions of the public utilities law, there can be no justification for the introduction of competing agencies.

"The bill strikes a blow at another abuse which has cost the people of this country humiliation, political disease and the propagation of graft, which results from the short-term franchise requiring renewals at periodical intervals. A modification of the Massachusetts plan with respect to new franchises granted after the passage of the act, and slightly less extreme than the Wisconsin plan with respect to franchises existing when the act takes effect—the bill takes a long step in the direction of sanity in the adjustment of the important franchise relationship.

"An important feature of the indeterminate franchise principle is the provision made for the termination of franchises by municipal purchase. Full opportunity is afforded municipalities to purchase the property of utilities operating under indeterminate grants for a price and on reasonable terms and conditions determined by the commission. Municipalities are authorized either to operate public utilities so acquired or to contract with private companies for their operation. Every municipality that owns a public utility is required to keep uniform accounts prescribed by the commission and to report to the commission as private companies are required to do.

"The model bill is the result of arduous and long-drawn-out investigation and consideration. It is of necessity a compromise production. Each and every member of the council objects to some feature of the bill, but, as a whole, it has finally received the vote of the entire council, with one single exception."

WORKMEN'S COMPENSATION

August Belmont, chairman of the workmen's compensation department, presented a report on this subject in which he said:

"While there is some difference of opinion as to the form which legislation shall take, the federation has found unanimous agreement upon the following essential points in the interest of both employer and employee:

"(1) That the right to compensation and the amount of it for particular injuries or death should be so definite as to leave as little as possible for controversy or difference of opinion as to the amount of compensation to which the injured workman is entitled;

"(2) That the workman or his family should be so protected in the making of their settlement after injuries that advantage cannot be taken of them or an unjust or delayed settlement be forced upon them;

"(3) That the workman or his dependents should be secured against the insolvency of the employer or other contingency, so that the payment of his compensation will be prompt and certain; and,

"(4) That there should be no question as to fault, as to contributory negligence, the assumption of risk, or the so-called fellow-servant rule.

"Practice, as it has thus far gone, points to the desirability of the employer's making payments direct to his employees or their dependents."

SETH LOW ON GOVERNMENT OWNERSHIP

In his presidential address Seth Low spoke about railroad conditions, saying in part:

"The actual situation of the railroads at the moment seems to me so serious that if this application for an increase of freight rates is declined I fear the impulse that will be given to the demand for the public ownership and operation of the steam railroads of the country will be inevitably strengthened.

"I wish to point out that in our country, by reason of its vast extent and by reason of its federal government and its historic evolution, the problem of public ownership, and not less the problem of public operation, are surcharged with difficulties that do not exist under different conditions.

"Assuming for a moment that this great economic and social change had been sanctioned and actually put into force, try to imagine, if you can, how the conflicting interests of different parts of the United States could be harmonized when the same government is responsible for railroad operation everywhere. The annual bill for the construction of public buildings for the federal government has acquired the popular name of 'pork barrel,' because it is so universally recognized that appropriations for this purpose are made to gratify local sentiment and to promote the interests of individual Congressmen more than upon the merits of the matters as determined by careful inquiry. What possibility is there that the administration of a system of national railroads would be, or could be, carried on under our democratic government in any other spirit? And in what possible way could the general interest of the people of the United States, in the matter of transportation, be less well served? Furthermore, the political consequences of centering such power in Washington are beyond calculation.

"The argument against the nationalization of the railroads is so strong that it is worth while to try to define to ourselves why any one should think that it is worthy of serious consideration. The arguments in favor of government ownership and operation of railroads I take to be mainly three: First, that government will treat every one alike and will not discriminate between shippers, as the privately owned railroads in the United States in the past have grievously discriminated; second, that government ownership, even if it does result in higher freight rates, is likely to mean lower passenger rates for the masses of the people; third, that government ownership, however costly it may be, at least makes it unnecessary for the public who use the railroads to pay dividends on vast volumes of watered stock.

"Our privately owned railroads are themselves largely responsible for the strength of the popular feeling in the United States under all three of these heads. The feeling in favor of public ownership and operation of railways is strengthened, no doubt, by the large element in our population which comes to us from countries where the railroads are publicly owned and operated. Without public ownership but through public regulation, we have substantially secured equality of treatment at the hands of the railroads for every shipper, large or small, in whatever state he may be.

"I wonder if our railroad managers have ever noticed that where government ownership obtains passenger fares for the multitude are less than the passenger fares in the United States, although in the United States the freight rates are only one-half the rates paid in some countries, while our railroads pay double the wages. First-class passenger rates abroad are apt to be higher than the prevailing rate here. This only emphasizes how much more cheaply the multitude travel, who travel third class, when the average passenger fare in Germany, for instance, is only half what it is in the United States. It is perfectly possible, without reducing the net return to

the railroads, to reduce passenger rates importantly, without any division of passengers into classes, if freight rates are correspondingly advanced. Our railroad managers, if they would think for a moment as government officials think, when they are charged with the duty of operating railroads, would realize that passengers vote but freight does not. Any policy, therefore, which reduces the passenger rates is likely to be universally popular, and I take it that is why passenger rates are so low where the State owns the railroads; whereas the policy which reduces freight rates while keeping passenger rates high is popular only with the shipper. I appreciate that the consent and co-operation of the Interstate Commerce Commission must be had for the introduction and successful installation of such a policy. I submit, however, that just because it is a policy that would benefit the great masses of our people, our Interstate Commerce Commission, being a government board, would be as likely to facilitate such a policy as any administrative board in a country which itself owns the railways.

"It is hard to speak with moderation of the financial abuses connected with railroad management which have done so much to create and to strengthen the demand for the public ownership and operation of railroads. The public has seen railroads loaded with charges for the profit of individuals responsible for the conduct of the roads, charges which add permanently to the cost of transportation. Increases of value, largely created by the public, have been absorbed entirely for private benefit, and all of this has gone on upon so great a scale and for so long a time as to have cost railroad management to a great extent, but often unjustly, both the respect and the confidence of the people. It is a case where the innocent suffer with and for the guilty. If government regulation can successfully put an end to these evils, no doubt private ownership and operation of railroads may long continue in the United States; but if government regulation falls short of being as effective in these directions as it has fortunately been in the ending of rebates, the tendency toward government operation, despite all its difficulties and dangers, is not unlikely to grow, unchecked. If the railroads wish to escape public ownership they must consent to the public regulation, for the future, of the issue of stocks and bonds, and it is greatly to be hoped that instead of placing every imaginable difficulty in the way of such legislation, they will cordially cooperate to see that effective and fair legislation to prevent the repetition of the abuses of the past is quickly made a part of the law of the land.

"If not completely, still very largely, the actual management of railroads in this country has passed, and is constantly passing, out of the hands of financiers and into the hands of practical railroad men who are less and less affiliated with the stock market. It is reasonable, therefore, to hope that we are passing out of the old era into a better order of things.

"There is one aspect of public ownership and operation which it seems to me legitimate to point out to the railroad employees who are so largely represented in our membership, and that is its probable effect upon wages. Railroads that are publicly owned have available for wages only such sums as are appropriated by law. In a country of the vast extent of the United States it will always be difficult to secure any change in wages, as established by law, when they have once been fixed. Working conditions will also then be much more difficult to change than when the railroads are under private management. The cost of living is so different in different parts of the United States that this difference is substantially certain to be reflected in an average wage below that which the railroads can pay under private management. The agricultural interests of the country are enormous, and one of their greatest difficulties comes from the fact that agriculture cannot afford to pay as large wages as transportation and many other

occupations pay now. This is, in fact, one great reason for the high cost of food products, that agriculture cannot command the labor that it needs in order to cultivate as it should and to produce and to harvest larger crops. As long as railroads are privately owned, agriculture must take its chances; but, in this country, if railroads were publicly owned, the granges and other combinations of farmers would certainly be on the job to keep railroad wages as low as possible. They would have to be, or they could not work their farms at all. There is a rigidity about law that makes it difficult to change conditions once established, and it is equally hard, under the provisions of law, to take into consideration local qualifying conditions. Such considerations as these satisfy me that railroad employees are not only better off now, under the private administration of railroads, than they would be likely to be under public administration; but also that, under existing conditions, they can hope for a betterment in pay and rules of service which it would be vastly harder to realize from a federal government constituted like ours."

INDUSTRIAL ARBITRATION*

BY CHARLES MURPHY, MEMBER OF PUBLIC SERVICE COMMISSION OF INDIANA

In the evolution of the relationship of capital and labor, industrial arbitration becomes a necessity. In the beginning, combinations of wealth came first as a great organization. Large properties and interests combined naturally as the resources and means for wealth production of this country came into the hands of a few cool, calculating men, whose motto has ever been "We are masters of our own house," and gave to these groups of men such unlimited influence that the organization of labor unions came from the necessity of forming a combination to fight the combination already in existence. So, in every dispute, on one side is the company, on the other are the workers, one great combination of power making absolutely necessary the opposing combination of force.

Between these two is the public and the public interest is as great as that of either the company or the workers.

Now, let me say that in my judgment any remedy which would try to solve the problem of the conflicting interests by suppressing the union would meet with the same disfavor from the citizenship of the state as would the suppression or destruction of the capital invested in our various industrial institutions.

On the other hand, the conduct of some of the walking delegates or agents is as bad and as much against public policy as one could possibly find any conduct to be, and the unions should eliminate from their payrolls the hot-headed, overfed, overpaid delegates whose only counsel is to "fight to a finish." Yet the employer who can see no solution to the problem except that he shall be the sole judge of whatever questions or differences arise between the workers and the company, and that his solution of the problem is the final one, had better be eliminated from the position of dictator, and his elimination is just as necessary as the elimination of the walking delegate.

When you have a board of arbitration whose judgment shall be final you will eliminate the necessity of the walking delegate. You will also eliminate the man who thinks that he is to be the sole judge of the destiny of any dispute that may arise between the workers and the employers.

I want to call attention to the position that was taken by a group of railway men and railway financiers some few years ago, when the agitation first began as to the regulation of service and rates of the railroads of this country. This group of the greatest builders and financiers in the world took the position that any regulation of their affairs

was an encroachment upon property rights and that such encroachment would not be tolerated as it meant ruin to the country. In the earlier stages some of the courts took the same position, but regulation came and the Interstate Commerce Commission was formed. At first it was weak, made so in many instances by the interpretation of the statute by the courts, but the necessity for this regulation increased, and in a short time even the men who loudly denounced the scheme have come to agree that it was exactly the solution of the problem. So it is with industrial companies and organized labor. The necessity for compulsory arbitration is at hand, and instead of fighting the enactment of such legislation, it would be better to assist in its enactment.

Consider the meaning of a general strike to the users of the service of any public service corporation. In but a few days the main question under dispute is always forgotten, and the bitterness and animosity between the workers and the company are uppermost in the minds of the parties interested, resulting in untold suffering among the general public, at least in large communities. Indeed, in this progressive age the time is past for lock-outs or tie-ups. Public opinion will no longer sustain a lock-out nor will it sustain a general tie-up of business.

In Canada in 1900 the first attempt was made toward a law for regulating such differences. It attempted to settle matters only so far as railroads were concerned. In 1906, six years later, an act applying to all public utilities, transportation companies, and also all coal and metal mines, was passed by the Canadian Parliament, making it unlawful in these industries and occupations for employers to lock out their workmen or for employees to strike until an investigation of the dispute had been made by a government board appointed for this case and a report of the result of arbitration had been published. Under this law the proceedings necessary in making changes in wages or conditions affecting either employers or workers must be preceded by thirty days' notice, and application must be made to the Dominion labor department, which shall appoint three members as a board, one member upon recommendation of the workers, one on recommendation of the employer and a third to be appointed by the two members of the board, or if they cannot agree, then by the government. The penalty for instituting a lock-out before bringing the dispute to the board is a fine of from \$100 to \$1,000 on the company, and a fine of from \$10 to \$50 is imposed upon each striker if the workmen strike before submitting their dispute in proper form to the board. The act has been amended and changed, but the main features are the same now as they were in the beginning. It is very popular with the citizens of the country and is recommended by a large percentage of unions. It also has the support of most of the industrial companies of Canada. The statistics of the cases brought before the boards of arbitration show that all cases were settled except two in each thirty, which failed in arbitration.

In New Zealand, perhaps, the boards of arbitration have made the greatest number of decisions, and they have the support and friendship of both workers and employers. Neither were wholly satisfied with the early results, as shown in the statistics of the first cases, for out of the first 100 cases arbitrated there were seventy-three appeals taken to higher courts. But in most of these appeals the boards of arbitration have been finally sustained. In all of the statistics the method of forming the boards of arbitration seemed to be the problem that was hardest to solve. In New Zealand there were seven boards, each consisting of five members, of whom two were elected by unions of workmen and two by the union of employers. The four men elected a chairman, who had the deciding vote only. The orders of the board were enforced by a fine of not more than \$500 on employers and in case of workmen's unions not more than \$10 on each individual.

*Abstract of a paper read before the Central Electric Railway Association at Indianapolis, Ind., Oct. 21, 1913.

Judge Alfred P. Backhouse, of New South Wales, who, as a commissioner appointed to investigate the law of arbitration in force in New Zealand, spent several months studying the question and the results obtained by its working, said in his report to his government: "The working of the law in the main has rendered great good to the workers, to the employers and to the general public."

MEETING OF RAILWAY BUSINESS ASSOCIATION

The annual meeting of the Railway Business Association was held in New York Dec. 11 and was followed in the evening by the fifth annual banquet, which was held at the Waldorf-Astoria. At the business session George A. Post was re-elected president of the association. In the evening the two addresses at the banquet were made by Howard Elliott, chairman New England lines, and James M. Cox, Governor of Ohio. Mr. Post, president of the association, presided.

The report of the executive committee, presented at the annual meeting in the morning, called attention to various important matters of interest not only to steam railroads but to all public utilities. It expressed an opinion of optimism on the future of the railway industry and approval of the idea of public regulation. Among other favorable signs mentioned by the committee the report cites recent requests to the Interstate Commerce Commission from shippers that a general increase in transportation charges should be permitted. The report deprecates the idea which it says has been advanced that such an increase should be postponed until the railways introduce various specific theories of conduct. It says that railway managers are energetically striving to improve their standards, both of efficiency and propriety. The report urges a longer term and retention in office of public service commissioners to avoid the danger of mistakes by new commissioners and secure greater freedom from politics. Statistics are published showing a constantly decreasing net income on the part of the railways and a consequent decrease in extensions and improvements. The report urges Congress to go slowly in ordering the substitution of steel cars for wooden cars, calls attention to burdens imposed on the railway companies by recent state legislation and suggests a further amendment to the general federal railway labor arbitration law to make it more nearly like the Canadian law on this subject.

ADDRESS OF MR. ELLIOTT

Mr. Elliott's address was a vigorous defense of the demand of the railroads for more favorable consideration. After quoting statistics in regard to the extent of the railroads and the number of the individuals who are engaged in that work directly or through the supply of material, he showed that the interests of a very large proportion of the country were closely associated with those of the railroads. He then quoted some figures showing that, while gross earnings had increased, net earnings had decreased and declared that this was due in part to the great increase in cost of labor and materials and in part to the elaborate and luxurious facilities which the people demanded. The seriousness of the situation, the speaker said, would be admitted by all thoughtful and candid persons. A great many demands were made that the railroads should introduce economies, but somewhat inconsistently objection was made to the economy of combinations of railroads which under suitable management could be made to serve the ends of efficiency by more economical operation and better service.

Mr. Elliott also spoke about the multiplicity of laws and the conflicting statutes of the different states and said that the effect of this heterogeneous regulation was to compel the railroads to serve forty-nine masters, although the possibility of serving only two masters had been crystallized into a proverb. On the question of efficiency, Mr. Elliott

compared the efforts of the railroads in this direction with the waste in the government service and said that the number of employees in the executive civil service, excluding the army and navy, had increased 100 per cent in the last fourteen years, although the population of the country had shown no such increase. Yet the regulation of this matter was in the hands of the public which was attempting to criticize the railroads.

Mr. Elliott also referred to the position taken by the government in regard to the payment to railroads for the mails and asked whether the government exemplified in its own dealings the principles of justice and morality which the people, through the government, exacted from others. While paying for the mails on the basis of weight made some time ago, the Post Office Department is continually increasing its parcel post and deliberately taking service worth at least \$15,000,000 a year to the railroads. Mr. Elliott quoted an editorial from a daily paper which held that anyone now receiving a postal package was a receiver of stolen goods. He then said that it was claimed that the management of some railroads had not been honest, but while dishonesty should be rooted out, this was no reason for calling a halt on the development of the country. Clergymen, doctors, senators and cashiers sometimes go wrong, but that is no reason for abolishing all these callings. Another claim was that if securities were sold over the counter, the banker's commission would be saved. But railroads must have financial experts as well as engineering experts and must pay a fair price for their services. Not even city, state or federal governments, whose credit is based on taxing power, have always been able to float popular loans without the aid of bankers. In conclusion, he said that the railway managers of the country welcomed just criticism based on real knowledge of all facts and were doing all they could to improve their men, methods and facilities, but many economies can be adopted only by discarding old appliances and buying new ones, and if the roads have no money for the new tools, they must get along with the old ones. He asked the patient good will of the public and its assistance in solving this important problem.

ADDRESS OF GOVERNOR COX

Governor Cox of Ohio, who delivered the only other speech, illustrated the dependence of the community upon adequate railway transportation by referring to the Ohio floods last spring when his State lay helpless until railroad communication was re-established. He spoke of the large gross business done by the railways but said that the service was becoming congested and the rolling stock was becoming inadequate because the needed increased facilities could not be supplied for lack of funds. These could not be secured because railway credit had become impaired. He did not believe this condition had been caused by the present policy of governmental regulation. If any mistake had been made in regard to regulation, it was that it had not come soon enough, but the transactions of yesterday could not and should not be measured with the ethical yardstick of to-day. Many practices were formerly accepted which would be shocking to present ideals, but the existing stockholders should not be punished for the abuses committed by former owners. The government itself and the people who selected the authorities cannot be held blameless. Necessary extensions could not be built unless new securities could be sold on such a basis that the public would be assured of a return on its investments. He believed that ultimate relief would come only when the Interstate Commerce Commission should pass upon the issue of securities. He also suggested the issue of securities of smaller denominations. In conclusion, he said that the roads should be permitted to put living rates into force and should not be held down to rates established years ago. If society insists upon better accommodations and higher prices to labor, society should defray this expense.

SAMPLING COAL DELIVERIES

BY MORGAN B. SMITH, CHIEF CHEMIST DETROIT UNITED RAILWAY COMPANY

Sampling may easily be said to be the most difficult step and in many ways the most important factor in the final acceptance or rejection of materials purchased and used in commercial practice, and it is a matter which has received very careful attention on the part of all scientific societies in this and other countries. In the United States the Bureau of Mines, the Bureau of Chemistry, the Bureau of Standards and other bodies have devoted much time and thought to this matter of sampling, for the value of the ultimate analysis of the material in question depends absolutely on the integrity of the sample received.

It is comparatively easy to get a fair sample when the conditions are such that considerable time is available and the material readily accessible for sampling. On the other hand, conditions are often such that fair sampling becomes very difficult if not wholly impossible. Such a condition exists in the matter of sampling coal received at power stations in cars, in which case the material is not readily accessible nor can a great deal of time be taken, for the cars must be emptied as rapidly as possible and moved out of the way.

Because of the manner of loading cars it is generally found that the coal varies throughout the car and that this variance is by no means constant. Cars are sometimes loaded at the tipple and again under the spouts of storage hoppers. In the latter case the car may contain as many as six different qualities of coal varying with the number of spouts from which the car was filled. Evidently it will be difficult for such a car to be sampled in a manner to obtain a fair average of the contents. In consequence the following series of tests on coal received in cars at several power stations was carried out to find the best means for rapidly sampling coal in cars.

The coal received was known as Hocking Valley slack. The cars, as received, were sampled in five different ways, of which four are shown diagrammatically in the accompanying illustration. In each case six samples were obtained and in method A these were taken in staggered rows on each side of the car. In method B six samples were taken at equal distances along one side only at a distance of 18 in. from the side. In method C three samples were taken along the center in staggered rows. In method D the six samples were taken along the center line of the car. In method E the six samples were taken at the coal-elevating conveyor during the process of unloading the car. These cars had previously been sampled in one of the specified manners mentioned above.

The sampling was carried out thus: A so-called sampling ram was made from 1½-in. wrought-iron pipe, 5 ft. long, welded at one end with a plug about 6 in. long and ground to a long taper at the opposite end to give a good sharp cutting edge. This ram was then driven down through the coal at the specified points in the car and filled with coal. It was then withdrawn and emptied into a pail. Six such samples gave about 40 lb. of coal per car. This sample was then crushed and quartered down in the usual manner, after which it was tested for ash and for heat value. The ash was determined in a gas-fired muffle furnace at a temperature of 750 deg. C., the heat value being determined in a standard Atwater bomb calorimeter, corrected in the usual manner. In all forty-three cars were sampled and tested.

A summary of the results of these tests showed that the highest heat values and the lowest ashes were found in the coal along the sides of the cars. The next highest heat values were found in samples taken along one side only. The next highest heat values were found in samples taken along one side and center. The next highest heat values

were found in samples taken along the center. The lowest heat values were found in the samples taken at the conveyor buckets, in which case every part of the car was reached, including the dirt and fine coal in the bottom of the cars.

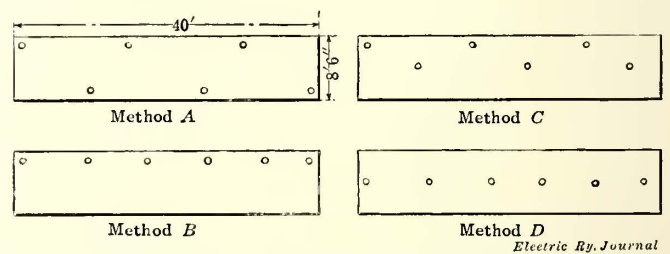
From this the conclusion is evident that a fair sample can only be taken while the car is being unloaded, since that is the only manner in which every part of the carload can be reached, and while ram sampling gives very fair average results it invariably gives figures higher than the actual average heat value of the coal contained in cars because of the fact that the ram does not reach the poorer coal contained in the bottom of the cars.

Method A, as shown in the illustration, was finally adopted as the best method of ram sampling with the proviso that frequent check sampling should be done from the conveyor buckets taking the coal from the crusher to the hoppers. This manner of sampling actually gives the coal companies a shade the better of the testing, but this seems justifiable in view of the extreme difficulty found in taking fair samples in a very short time.

TABLE I—SUMMARY OF COAL-SAMPLING TEST DATA

Method	Number of Cars	Heat Value, B.t.u.	Ash, Per Cent	Averages	
				B.t.u.	Ash, Per Cent
A	{ 10	12,576	11.40	12,540	11.62
	{ 5	12,508	11.77		
	{ 11	12,481	11.95		
B	{ 10	12,510	11.83	12,490	11.90
	{ 5	12,586	11.39		
	{ 11	12,427	11.45		
C	{ 10	12,544	11.61	12,450	12.20
	{ 11	12,234	13.53		
D	{ 10	12,353	12.75	12,345	12.80
	{ 5	12,378	12.71		
	{ 11	12,323	12.85		
E	5	12,125	12.10	12,125	14.10

In the summary given in Table I it is needless to say that the results were obtained from the same cars, making the figures strictly comparable. The ten cars spoken of above are identical cars throughout, likewise the five cars and the eleven cars.



Coal Sampling—Plans of Coal Car, Showing Different Methods of Taking Samples

It is well to point out the fact that much poor coal is generally found in the bottoms of cars as received after transportation for some distance from the mines. The constant jar en route and while switching is being done in the railroad yards tends to shake the finer coal, and the dirt from the tipples and hoppers, down into the bottom of the cars. As cars are now handled, for the most part at least, there is no way to prevent this poorer coal and refuse from going into the crushers and on into the storage bins of the plant. Consequently any method of sampling which does not take into account this poorer coal will give results higher than the average quality of the car's content really warrants. The results given in Table II for five cars, in which sampling by method A above is compared with the results of sampling by method E, show at a glance the truth of the above statements.

It is very evident from these figures that the coal as burned in the boiler furnaces will not come up to the

standard shown by the sample taken by method A. The coal will be poorer in heat values and there will be more ashes to handle as well.

TABLE II—COMPARISON OF RAM SAMPLING WITH CONVEYOR SAMPLING

Car No.	Method A		Method E	
	B.t.u.	Ash, Per Cent	B.t.u.	Ash, Per Cent
1	12,489	11.87	12,056	14.58
2	12,590	11.27	12,375	12.30
3	12,387	12.48	12,136	14.02
4	12,476	12.00	12,350	12.79
5	12,598	11.22	11,708	16.78
Average	12,508	11.77	12,125	14.10

By grouping the tests with regard to the method of sampling and the heat values found, calling the highest heat value 1, the next highest 2, the next highest 3, the next 4 and the lowest heat value 5, the results shown in Table III were obtained.

TABLE III—COMPARATIVE RESULTS GIVEN BY FIVE DIFFERENT METHODS OF SAMPLING

Method	A	B	C	D	E
Highest	3	6	0	2	0
Next highest	7	1	1	2	0
Next highest	1	2	3	5	0
Next highest	0	2	7	2	0
Lowest	0	0	0	0	1

From this it will be seen that in the eleven cars sampled in all four ways method A gave the highest heat value three times out of eleven, the next highest seven times out of eleven, etc., and did not give the lowest value at all. On the other hand, the method of sampling known above as C gave the highest heat value not once, but gave instead the lowest heat value seven times out of the eleven cars sampled. The samples taken from the conveyor buckets in every case showed extremely low results compared with any of the four other methods.

ASSOCIATION COMMITTEE MEETINGS

Several important committee meetings were held in New York this week.

The meeting of the committee in charge of the dinner arrangements of the American Electric Railway Association and the American Electric Railway Manufacturers' Association occurred on the evening of Dec. 9 at the Engineers' Club. The full membership was present. Mr. Stott, Mr. Donecker and Mr. McGraw were also in attendance. Reports were received from the three sub-committees as follows: Mr. McConaughy, of the committee on announcement, said that a notice of the dinner had been sent to all member companies of the association, and he was instructed to send similar announcements to all individual members. The committee on speakers reported progress. Mr. Conwell, of the committee on arrangements, reported that satisfactory arrangements were being made with the Waldorf-Astoria. It was decided to send a second letter the first week in January, this letter to contain the complete program of the midyear meeting as well as the program for the dinner. Application blanks will accompany that letter.

The committee on compensation for carrying United States mail of the American Electric Railway Transportation & Traffic Association met at the headquarters of the association in New York on Dec. 11. It was decided to send to Congressman John A. Moon, chairman of the House committee on post offices and post roads, which has jurisdiction over appropriations for carrying United States mail, a letter outlining the position of the association on the matter. This letter has already been delivered to Congressman Moon at Washington. A copy of the letter will be forwarded by the association to member companies which operate a railway mail service. It will be accompanied by statements made by the Brooklyn Rapid Transit System and the Boston Elevated Railway in reference to the costs of this service to them.

The executive committee of the Traffic & Transportation

Association met on the morning of Friday, Dec. 12. M. C. Brush, vice-president Boston Elevated Railway; H. A. Nicholl, general manager Union Traction Company of Indiana, and J. K. Choate, vice-president J. G. White Management Corporation, of the committee, were present. H. C. Donecker also attended the meeting to act in place of R. E. Danforth, general manager Public Service Railway, who was unable to be present. The subjects committee of the Transportation & Traffic Association met during the afternoon of Thursday, Dec. 11, and made a report to the executive committee of the association on Friday morning, presenting, through Chairman L. H. Palmer, of Harrison Williams, New York, a proposed list of subjects to be taken into consideration by the various standing committees of the Transportation & Traffic Association during the coming year. This paper went to press before the close of the meeting.

COMMISSIONER HALE ON NEW ENGLAND RAILROAD PROBLEMS

Public Utility Commissioner J. H. Hale, of Connecticut, delivered a vigorous pronouncement on behalf of the railroads of New England at a meeting of the Massachusetts State Grange at Boston this week. "I would be remiss in my duty at this time," said the commissioner, "if I failed to call your attention to the great calamity that now confronts the leading railroad interests serving this New England agricultural territory. Crushed between professional agitators, financial pirates, labor unions and threatened prosecutions by the government at Washington, these noble truck horses of ours, with greater burdens to carry than ever before, are to be separated in their work and allowed no extra feed in the way of increased freight rates to make up for the extra strain of an overload of expenses.

"Their side-line feeders, the electric railways that pass our farms and are only just beginning to serve us so cheaply and well, are to be cut off. And all for what? Who is to be benefited? Certainly not the stockholders, or the train employees, or the traveling public, or the receiver or shipper of freight. No one is to be benefited that I can discover, and all are to be injured, except possibly the vultures that pick the remains.

"Probably some of the purchases, mergers and consolidations of the past were technically wrong, too high a price paid for some of them, and those who led in this have paid, or must pay, the penalty. And yet, in spite of all this, the total result was to give all New England better and increased service at no extra cost, and I am clearly of the opinion that a complete separation of all these interests and going back to the old way, as now demanded, will mean turning back the clock of New England's prosperity twenty-five years."

The American officers of the Anglo-American Exposition, to be held in the year 1914 in London, have recently distributed a circular letter urging the hearty and interested support of the people of the United States. The object of this exposition is to celebrate the centenary of peace and progress in the arts, sciences and industries of the United States of America and the British Empire. It will aim to present with definiteness and with comprehensiveness a historic summary of what the two nations have achieved in their relations to education, to art, to science, to industry and to commerce. In the exhibits, large space will be given to the products of inventive genius and to industry, because it is in these fields that the spirit of advance offers the most tangible and visible evidence of its activity. These evidences of manufacturing enterprise will help to strengthen the present bond of commercial union between the United States and the United Kingdom, and will, in so doing, serve to insure the continuance of peace and good will between them.

MONTREAL APPARATUS FOR TESTING CIRCUIT-BREAKERS

The apparatus shown in the accompanying half-tone illustration has been installed in the Youville shops of the Montreal Tramways to test and set circuit-breakers while in position on cars. Current is used at 600 volts because a circuit-breaker which will successfully break a heavy cur-

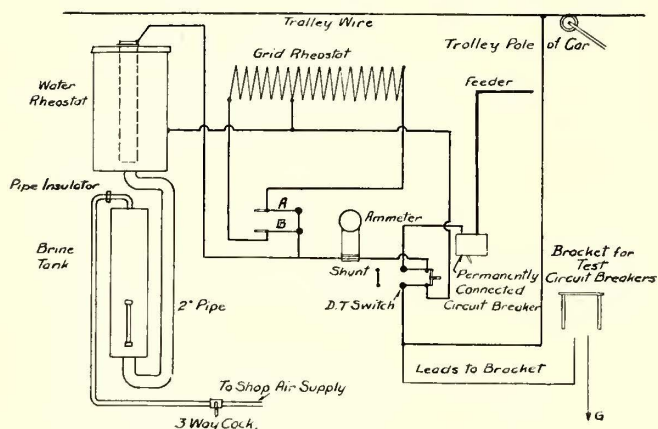


Diagram of Wiring Connections for Circuit-Breaker Testing at Montreal

rent at low voltage will not necessarily break it at trolley voltage. The apparatus is mounted on the wall beside the most accessible shop track, and circuit-breakers in any car on this track can be tested with a minimum of labor and without danger to the employees.

All circuit-breakers which are sent to the carhouses to be there mounted in cars are first tested by means of this apparatus, as well as all circuit-breakers mounted in the cars before they leave the shops. The unmounted circuit-breakers are clamped to a bracket on the wall. This bracket is so arranged that the circuit-breakers are clamped in the same position as in the cars. This is a necessary precaution because in some types of circuit-breakers the weight of the armature is so great in comparison to the pull exerted by the calibration spring that the position of the circuit-breaker materially affects the calibration. The leads for use in connection with this bracket are shown in the accompanying diagram. The source of current is a shop feeder, and when the apparatus is not in use this feeder is connected direct to the trolley wire by means of a double-throw switch.

Referring to the diagram, it will be seen that when the knife switches *A* and *B* are closed the current after passing through the ammeter shunt follows three parallel paths; that is to say, the two legs of the grid rheostat and the water rheostat. The capacities of the two legs of the grid rheostat are 200 and 100 amp respectively and the water

rheostat will carry a maximum of 200 amp, making a total capacity of 600 amp.

The novel feature of this apparatus is the utilization of the shop supply of compressed air to pump brine into the water rheostat. The regulation of the current in this rheostat is found to give ample range of adjustment. This water rheostat is made of an old transformer oil tank in which a 6-in. iron pipe is suspended to form the positive electrode. The lower tank which contains the brine is an old air reservoir with a water gage added. The air is controlled by a three-way cock. It passes into the top of the brine tank, thus forcing the brine up into the rheostat. To empty, the air in the brine tank is exhausted to the atmosphere and the brine runs back by gravitation. The water rheostat and the brine tank are mounted on wooden supports to insulate them from the ground. The air pipe leading into the brine tank is insulated from the tank by a pipe insulation.

In testing circuit-breakers mounted in cars the current after passing through the rheostats goes to the trolley wire and from there to the circuit-breaker in the car. A jumper is placed from the trolley finger to the ground finger of the controller, thus enabling the current to flow directly to the rail. The apparatus is of simple construction and inexpensive. It has been found to give entirely satisfactory service in use.

EXPERIENCES IN OPERATION OF LOETSCHBERG AND SIMPLON TUNNELS

Two recent articles, one by Dr. Breslauer in the *Electrotechnische Zeitschrift* and one by B. Kilchenmann in *Elektrische Kraftbetriebe und Bahnen*, respectively describe electrical experiences in the Loetschberg and Simplon tunnels, the first being operated with single-phase and the second with three-phase line and motor equipment.

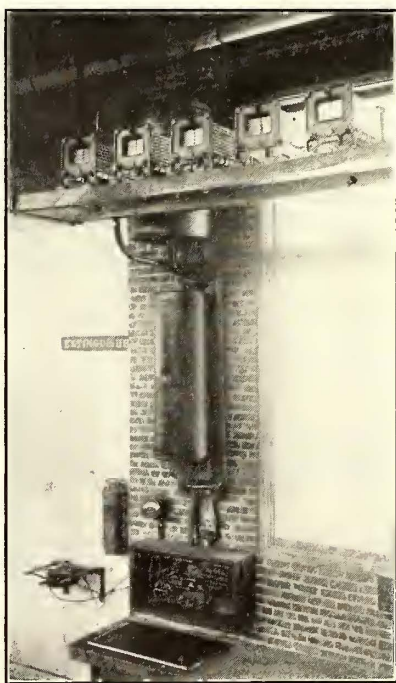
LOETSCHBERG SINGLE-PHASE LINE

Dr. Breslauer writes that some trouble has been reported from the excessive static charges on the 15,000-volt, fifteen-cycle contact line of the Loetschberg line owing to differences of altitude. Thus at Spiez, which is 1980 ft. high, the air is moist, while at the southern end of the tunnel, which is at an altitude of 4100 ft., the air is dry. These charges have been eliminated by the use of water-jet static discharges. On two or three occasions the end turns of the locomotive transformers broke down owing to the excess voltages from these static discharges. This trouble and a number of minor mechanical faults have now been remedied, and the regular schedule is being operated with the exception of a few night trains.

In this connection it is reported that a concession has been granted for a new line which will shorten the approach to the Loetschberg tunnel and act as a feeder from the French side. This line is to cross the Jura mountains via a tunnel nearly 5 miles long between Moutiers and Longeau. The Eastern Railway of France will be the most important connection of this line, which will greatly shorten distances from England to Berne and places beyond.

SIMPLON THREE-PHASE LINE

Mr. Kilchenmann discusses the operation of the Simplon tunnel line at 3300 volts, three-phase, sixteen cycles. In seven years' operation no trouble due to expansion and contraction from temperature variations has occurred, although automatic tension devices are not used. The heavy deposit of steam locomotive soot and dust on the insulators, however, makes it necessary to overhaul and clean them twice a year to discover faults. The horizontally placed bell-shaped insulators have been found unsuitable for tunnel work, owing to the presence of moisture. In some instances the hard-rubber insulated bolts for the attachment of the trolley wire had to be replaced every six or eight weeks because the moisture caused a surface sparking on



Apparatus in Place

the rubber, thus burning the soot and dust until the bolts broke down. Corrugated porcelain insulated bolts gave somewhat better results, but the best results are now being obtained with glass-insulated bolts. The wear on the contact wire has been only 0.012 in. to 0.016 in. after some 80,000 passes of the collector bows. In some places where lime water drops on the wire the wear is about twice as great. No abnormal wear has occurred at the points of suspension, although the wire is suspended without a catenary and with spans of from 90 ft. to 115 ft. At the south entrance of the tunnel, however, the copper wire is subject to so much oxidation that some 1¼ miles of wire had to be renewed after six years' wear. The reduction in weight was only 7 per cent, but it was considered safest to change the wire. No iron or steel was employed in the overhead equipment of the tunnel, as this would not endure two years in the presence of the soot and moisture. Experiments have shown that copper wire will stand the warm moisture only when no soot is present. This trouble will be obviated, however, when steam trains are operated through the tunnel no longer, which change will be made when the electrification is extended to Domodossola. The new section of copper wire has been coated with various kinds of paint over different sections. Icicles formed in winter on the contact wire by dropping water at the north end have also proved troublesome. This difficulty has been partially overcome by drawing the ventilating air through a 1.7-mile auxiliary tunnel to warm it before it enters the main tunnel, but in the construction of the second main tunnel hereinafter noted an attempt will be made to eliminate the dropping water. The metal paste rail bonds have not proved satisfactory, a test showing that more than 60 per cent of the traction current was returning through the earth. The copper bonds which are now being substituted have increased the rail conductance by 50 per cent.

The locomotive equipment has given no trouble in spite of the severe conditions. On account of the rapid changes of temperature and the consequent condensation effects, short-circuits were experienced in the switching apparatus, and had the pressure been much more than 3300 volts these would have been most serious. These difficulties have been partly overcome by painting all live parts except contact surfaces with an insulating varnish. Oil-immersed switches would be employed if there were space on the locomotives. The motors of one locomotive were not overhauled until after some eighteen months, or about 37,000 miles service, but overhauls are now made every nine or ten months, and a complete repair of the locomotive is made every three years. If the contact wire has a double zigzag on either side of the center line alternately, instead of a simple zigzag across the center line, the life of the bows has been increased from 1500 miles to 4500 miles. The use of longer and better-placed locomotive springs is recommended because in the present construction heavy vertical oscillations occur as soon as the journals show the slightest wear. The monthly runs of the four locomotives have averaged 4600 miles, which is good considering the severe conditions. The energy consumption has been 53 watt-hours to 56 watt-hours per ton mile inclusive of the locomotive weight. This high figure is accounted for by the air resistance in the tunnel. When the locomotive is running against the ventilation current the traction resistance, excluding the effect of the grade, amounts to 24.7 lb. per ton at 43.5 m.p.h.

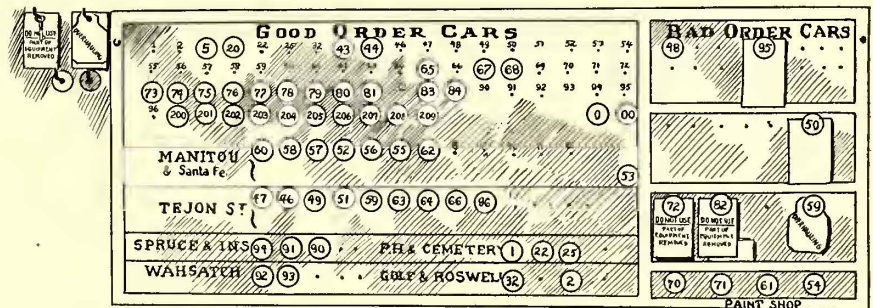
A new line is being built between Frasné, France, and Vallorbe, Switzerland, including a 4-mile tunnel to shorten the approach to the Simplon tunnel by 12 miles. The fed-

eral government has also undertaken the completion of the second single-track Simplon tunnel, which hitherto has been used only as an airshaft, and for the drainage of water from the first tunnel during construction.

REPAIR SHOP BOARD IN COLORADO SPRINGS

An ingenious form of board for recording the cars available for use and those in bad condition on an electric railway is used at the entrance to the main carhouse of the Colorado Springs Rapid Transit Company. Although somewhat similar boards are used elsewhere, the plan has proved so convenient on this line that a short account of it may be of interest.

The board, as shown in the accompanying engraving, is divided into various sections, is painted black and contains a number of horizontal rows of holes. Into these holes are inserted plugs, each representing a car and having the number of the car painted on the head of the plug. In the holes in the large section at the left of the board are placed the plugs representing the cars in good order, and in the four upper rows of this section are the plugs for the cars in the carhouse. The lower rows of holes in this section are marked with the names of the different lines operated by the company. When all cars are in the carhouse all of the good-order car plugs are in the four upper rows of holes. When a car is sent out on any line the plug representing this car is taken from the upper rows and inserted in the row representing the line on which the car operates.



Board for Recording Cars Available for Use in Colorado Springs

The holes for those cars on the street are in double rows so that if a car hauls a trailer the plug for the trailer is inserted directly under the plug for the motor car. The trailer car numbers are 200 or above so that they may easily be identified.

The section of the board at the right represents the "bad-order" cars. This section is divided horizontally into four panels. The two upper panels represent the cars which are simply in bad order but have not been dismantled. The third panel represents the cars from which a portion of the equipment has been moved, and the fourth or lowest panel is for the plugs of the cars which are in the paint shop.

A system of washers or tags is used with the bad-order cars to indicate the trouble with the cars. A white tin washer under the bad-order car plug indicates that while the car needs some slight repair it could be used temporarily in case of emergency. A yellow washer under a plug means a more serious defect and that the car should not be used for temporary service without a careful inspection. In addition to the washers, the company also uses two kinds of tags which can be put under the plugs. Some of these tags are of tin and others are of cardboard. The tin tags are lettered in paint with wording similar to the following: "For inspection—Use if necessary"; "Do not use—Part of equipment removed"; "Overhauling." The cardboard tags are blank and are filled out by the motorman to indicate

the defect in the car. These tags are hung ready for use on hooks at the side of the board and are plugged in under the car plug when necessary, as shown in the right-hand section of the board. The cardboard tags are numbered and remain with the plug until they are "O. K.'d" by the foreman to indicate that the repair has been made. An exception is made in the case of repairs to air brakes and equipments as the air brakes have to be tested by the motorman before he leaves the carhouse, so these tags must also be "O. K.'d" by the motorman before the car is taken out of the carhouse.

MICHIGAN UNITED TRACTION COMPANY'S SELF-CONTAINED SNOW PLOW.

The mechanical department of the Michigan United Traction Company recently designed and built an ingenious type of snow plow which is permanently applied to all the express cars during the winter months. The framework and mechanism is completely self-contained and may be detached by removing eight bolts.

The plow is 10 ft. wide by 9 ft. 6 in. in height and built



Self-Contained Snow Plow—View Showing Plow in Place on Car

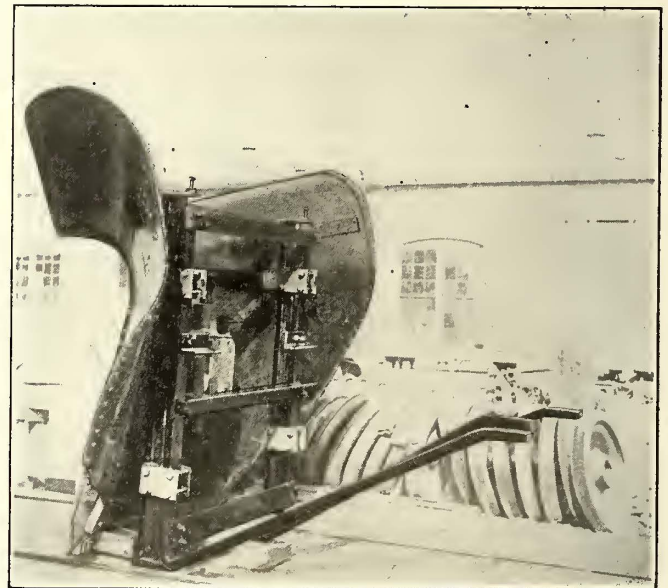
of 3/16-in. steel plate. It is supported on the bumper beam of the car by two angle lugs bolted to two 2-in. x 4-in. steel bar uprights which compose the supporting frame of the plow. These uprights are bent at the base and extend backward and upward to the bottom framing of the car, taking the thrust from the plow when it is bucking snow. The plow proper is reinforced at the bottom by 6-in. x 3-in. x 5/8-in. angles and the edges are reinforced by a 3/16-in. x 2-in. strap riveted to them. The bottom cross brace is a 2-in. x 4-in. steel bar and the rest of the cross braces in the supporting frame are 1-in. x 1/4-in. steel.

In order to provide for raising and lowering the plow the cross braces are permanently attached to two sections of rail extending the full height of the plow. These two sections of rail are attached to the supporting frame by two sets of guide bearings and this arrangement permits the plow to be raised and lowered within a range of 12 in. A 10-in. x 12-in. standard brake cylinder connected to the car reservoir by way of a three-way valve located in the motorman's cab permits him to raise and lower the plow from his normal position in the car. The plow nose is provided with adjustable stops which regulate the height above the rail. It is also provided with resting stops on which the plow may be supported when it is not in service. The re-

moval of the latter throws the load on the brake cylinder, which is used only for raising the nose. The device is an invention of R. C. Taylor, superintendent of equipment Michigan United Traction Company.

PROGRESS OF LONDON & SOUTHWESTERN RAILWAY SUBURBAN ELECTRIFICATION

Late in October the London & Southwestern Railway began the electrification of its London suburban lines in accordance with the plans and map published on page 799 of the *ELECTRIC RAILWAY JOURNAL* for May 3, 1913, in the article entitled "Electrification of British Railways." H. A. Walker, general manager of the company, announces that the work on the power house at Wimbledon was begun on July 21. The building will be 260 ft. long and 210 ft. wide and will contain twenty-four boilers, each capable of a normal evaporation of 20,000 lb. of water per hour and of supplying steam at a pressure of 200 lb. per square inch and with 200 deg. Fahr. superheat. Coal from the overhead bunkers will descend through chutes into electrically driven mechanical stokers. The condensers



Self-Contained Snow Plow—Rear View Showing Air Cylinder and Guides for Raising Plow on Frame

will be of the surface type. Economizers will be installed in the main flues. The turbine room will contain six 5000-kw, 11,000-volt, three-phase alternators, running at 1500 r.p.m. Two 400-kw d.c. auxiliary turbines of geared type will be used for power house lighting and auxiliary motors. The high-tension current will be transmitted to nine substations by the use of three-core, paper-insulated, lead-sheathed and wire-armored cables. In most cases they will be carried on poles beside the line and will also be arranged to afford a duplicate supply to every substation. The number and size of the converters to be installed follow: Waterloo, four; Clapham Junction, three; Raynes Park, two; Barnes, two, and Twickenham, three—all of 1874 kw. Hampton Court Junction, two; Kingston, two; Sunbury, two, and Isleworth, two, all of 1250 kw.

Eighty-four train units are being provided for the first section of the electrified lines. Each unit will consist of three compartment type coaches of 190 seating capacity, the forward truck of the first car and the rear truck of the last car carrying two 275-hp motors, the largest size yet placed under passenger cars. The carhouses and repair shops will be built at Wimbledon adjacent to the power house. It is hoped to commence electric operation on the Kingston Roundabout line before the end of 1914.

Committees for 1914

The Appointment Is Announced of a Number of the Committees of the American Electric Railway Association and of the Affiliated Organizations

The secretary of the American Electric Railway Association made public this week a partial list of the committees which have been appointed by the presidents of the several associations. Other committees as they are appointed will be announced. Those made public this week are:

AMERICAN ASSOCIATION

COMMITTEE ON SUBJECTS

James D. Mortimer, chairman, Milwaukee Electric Railway & Light Company.

Calvert Townley, Lackawanna & Wyoming Valley Rapid Transit Company.

E. C. Foster, Manchester Traction, Light & Power Company.

S. G. McMeen, Columbus Railway & Light Company.

W. F. Weh, The Cleveland Railway.

M. W. Glover, Mobile Light & Railroad Company.

J. H. Hanna, Capital Traction Company, Washington, D. C.

D. A. Hegarty, railway and electric departments, New Orleans Railway & Light Company.

COMMITTEE ON INSURANCE

H. J. Davies, chairman, Cleveland Railway.

E. J. Cook, New York State Railways, Rochester, N. Y.

F. A. Healy, Ohio Electric Railway.

Richard McCulloch, United Railways Company of St. Louis.

A. H. Ford, Birmingham Railway, Light & Power Company.

COMMITTEE ON EDUCATION

Prof. H. H. Norris, chairman, ELECTRIC RAILWAY JOURNAL, Ithaca, N. Y.

H. A. Bullock, Brooklyn Rapid Transit System.

Prof. D. C. Jackson, Massachusetts Institute of Technology.

Martin Schreiber, Public Service Railway.

Prof. A. M. Buck, University of Illinois.

COMMITTEE ON FEDERAL RELATIONS

Arthur W. Brady, chairman, Union Traction Company of Indiana.

Gen. George H. Harries, Louisville Gas Company.

Frank R. Ford, Ford, Bacon & Davis, New York.

H. S. Lyons, Boston Elevated Railway.

F. W. Brooks, Detroit United Railway.

L. S. Cass, Waterloo, Cedar Falls & Northern Railway.

L. S. Storrs, Connecticut Company.

J. N. Shannahan, Newport News & Old Point Railway & Electric Company.

COMMITTEE ON COMPENSATION FOR CARRYING UNITED STATES MAIL

M. C. Brush, chairman, Boston Elevated Railway.

H. A. Nicholl, Union Traction Company of Indiana.

Capt. A. R. Piper, Brooklyn Rapid Transit System.

J. K. Choate, J. G. White Management Corporation.

COMMITTEE ON TAXATION MATTERS

C. L. S. Tingley, chairman, American Railways.

Alabama.—J. H. Wilson, Mobile Light & Railroad Company.

Arizona.—F. E. Russell, Tucson Rapid Transit Company.

Arkansas.—C. J. Griffith, Little Rock Railway & Electric Company.

California.—Paul Shoup, Pacific Electric Railway.

Colorado.—John A. Beeler, Denver City Tramway.

Connecticut.—L. S. Storrs, Connecticut Company.

Delaware.—T. W. Wilson, Wilmington & Philadelphia Traction Company.

District of Columbia.—W. F. Ham, Washington Railway & Electric Company.

Florida.—Hardy Croom, Jacksonville Traction Company.

Georgia.—P. S. Arkwright, Georgia Railway & Power Company.

Illinois.—L. C. Haynes, East St. Louis & Suburban Railway.

Indiana.—R. I. Todd, Indianapolis Traction & Terminal Company.

Iowa.—P. P. Crafts, Iowa & Illinois Railway.

Kansas.—R. M. Patten, Topeka Railway.

Kentucky.—F. W. Bacon, Kentucky Traction & Terminal Company.

Louisiana.—D. A. Hegarty, New Orleans Railway & Light Company.

Maine.—Howard Corning, Bangor Railway & Electric Company.

Maryland.—William A. House, United Railways & Electric Company.

Massachusetts.—H. S. Lyons, Boston Elevated Railway.

Michigan.—F. W. Brooks, Detroit United Railway.

Minnesota.—A. M. Robertson, Twin City Rapid Transit Company.

Mississippi.—A. B. Paterson, Meridian Light & Railway Company.

Missouri.—A. H. Rogers, Southwest Missouri Railroad.

Nebraska.—W. A. Smith, Omaha & Council Bluffs Street Railway.

New Hampshire.—E. C. Foster, Manchester Traction, Light & Power Company.

New Jersey.—George H. Barker, Public Service Railway.

New York.—B. E. Tilton, New York State Railways, Utica.

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North Dakota.—C. P. Brown, Fargo & Moorhead Street Railway.

Ohio.—S. G. McMeen, Columbus Railway & Light Company.

Oklahoma.—George W. Knox, Oklahoma Railway.

Oregon.—C. N. Huggins, Portland Railway, Light & Power Company.

Pennsylvania.—C. L. S. Tingley, American Railways.

Rhode Island.—D. F. Sherman, Rhode Island Company.

South Carolina.—F. H. Knox, South Carolina Light, Power & Railways Company.

South Dakota.—F. M. Mills, Sioux Falls Traction System.

Tennessee.—Percy Warner, Nashville Railway & Light Company.

Texas.—W. J. Jones, Austin Street Railway.

Utah.—Simon Bamberger, Salt Lake & Ogden Railway.

Virginia.—A. B. Guigon, Virginia Railway & Power Company.

Vermont.—I. L. Meloon, Twin State Gas & Electric Company.

Washington.—Guy W. Talbot, Walla Walla Valley Railway.

West Virginia.—H. H. Archer, Parkersburg, Marietta & Interurban Railway.

Wisconsin.—George B. Wheeler, Chippewa Valley Railway, Light & Power Company.

Canada: British Columbia.—George Kidd, British Columbia Electric Railway.

Manitoba.—Wilford Phillips, Winnipeg Electric Railway.

Nova Scotia.—J. W. Crosby, Halifax Electric Tramway.
Ontario.—J. D. Fraser, Ottawa Electric Railway.
Quebec.—Patrick Dube, Montreal Tramways.

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James H. McGraw, McGraw Publishing Company.

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Col. H. P. Bope, Carnegie Steel Company.

Allan B. Forbes, Harris, Forbes & Company.

F. R. Ford, Ford, Bacon & Davis.

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C. A. Stone, Stone & Webster.

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H. H. Adams, Chicago Railways.

H. E. Reynolds, Bay State Street Railway.

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H. A. Bullock, New York Municipal Railway.

Cornell S. Hawley, Laconia Car Company.

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W. R. Alberger, San Francisco-Oakland Terminal Railways.

J. E. Gibson, Kansas City Railway & Light Company.

A. H. Ford, Birmingham Railway, Light & Power Company.

E. C. Deal, Augusta-Aiken Railway & Electric Corporation.

T. F. Grover, Terre Haute, Indianapolis & Eastern Traction Company.

L. C. Bradley, Stone & Webster Properties, Texas District.

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(The foregoing represent the American Electric Railway Association.)

Farley Osgood, Public Service Electric Company, Newark, N. J. (Representing American Institute of Electrical Engineers and National Electric Light Association.)

Percy H. Thomas, New York. (Representing American Institute of Electrical Engineers.)

F. B. H. Paine, New York. (Representing American Institute of Electrical Engineers.)

W. T. Oviatt, Narragansett Lighting Company. (Representing the National Electric Light Association.)

F. H. Bethell, New York Telephone Company (Representing the American Telephone & Telegraph Company to confer with committee.)

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Henry W. Blake, ELECTRIC RAILWAY JOURNAL.

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W. H. Glenn, Georgia Railway & Power Company.
Edward Dana, Boston Elevated Railway.

W. H. Collins, Fonda, Johnstown & Gloversville Railroad.

F. W. Coen, Lake Shore Electric Railway.

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ACCOUNTANTS' ASSOCIATION JOINT COMMITTEE

The new committees of the American Electric Railway Accountants' Association were published on page 1196 of the issue for last week. In that list the members representing the Accountants' Association on the two joint committees with the Engineering Association and the joint committee with the Transportation & Traffic Association were new members, but the names representing the other associations were those of the members of last year's committees. The members of this year's joint committees of the Engineering and Transportation & Traffic Associations have not yet been announced.

In discussing fire hazards in turbo-alternators at the recent meeting of the American Society of Mechanical Engineers B. F. Lamme reported experiments in which attempts were made to delay combustion by the use of asbestos coverings, but he declared that where the arc was sufficient to gasify the insulation the fire was found to spread about as rapidly with as without the non-burning cover. Asbestos tape, in fact, he said, is now believed to introduce a positive element of danger. He questioned the value of automatic devices to cut off the supply of cooling air, as an interruption would cause a large generator to overheat, possibly, with dangerous results.

POWER PLANT DEVELOPMENT IN MINNEAPOLIS

The evolution of the steam-power plant of the Twin City Rapid Transit Company in Minneapolis is a good example of the rapid changes which have been taking place generally in the methods of power production. Originally this plant contained triple-expansion Corliss engines, representing the best practice of twenty years ago, and these were connected through jack-shafts to 150-hp generators, large for the time. This equipment produced electrical energy at high cost for fuel, because the nature of the load did not permit the engine to be used under good operating conditions, and for maintenance, on account of the complicated character of the machinery. Ten years ago a modern steam plant was projected. The firm of Sargent & Lundy designed it to contain ultimately five vertical, cross-compound Allis-Chalmers engines of 5000-hp capacity, direct-connected to three-phase, 13,200-volt, thirty-five cycle generators conservatively rated at 3500-kw capacity, or at, say, 4000 kw on the now standard temperature rise. Three of these engines were installed by 1905, giving the plant an actual capacity of 12,000 kw.

The engines were supplied from a boiler room containing eighteen Babcock & Wilcox boilers with 5560 sq. ft. of heating surface each, giving a nominal rating of 556 hp. These were equipped with Roney stokers of a continuous capacity of 825 boiler-hp to produce a 50 per cent overload output of the boilers. The boilers contained superheaters of a capacity to produce 120 deg. superheat at rated load. Draft was furnished by two Custodis radial-brick stacks, 162 ft. high, mounted on masonry 63 ft. above the boiler-room floor. The flue diameter was 16 ft. Two flues, each of 125 sq. ft. cross-section, connected the boiler up-takes with each stack.

Following the original plan, a fourth engine and eight more boilers were added in April, 1906. By this time, however, the steam turbine had been pronounced a success in Chicago and elsewhere, and instead of the fifth engine two 5000-kw Curtis vertical turbines were installed respectively in February and July, 1907, in the place provided for it. The fact that this space accommodated in turbines three times its capacity for engines is significant. No increase in boiler capacity was made at the time. Complete detailed accounts of the plant as it existed in its earlier years are given in a paper presented by the mechanical and electrical engineer of the company, E. H. Scofield, before the Minnesota branch of the A. I. E. E. in December, 1906, and in one printed in the issue of the *STREET RAILWAY JOURNAL* for July 27, 1907. The plant was typical of the best practice of the time.

Hardly had the new turbines been installed when it was found possible to secure larger and more economical ones and the process of replacing the engine units began. In the meantime experiments had been made with chain-grate stokers, and in January, 1909, two, in July four more, and during the fall six more, were installed. By this time the stack capacity was greatly overtaxed and one of the brick stacks was replaced, in November, 1910, by two brick-lined steel stacks mounted on structural-steel frames over the boilers. These were 265 ft. high above the boiler room floor, with internal diameters of 14 ft. A 4000-kw vertical Curtis turbine unit was put into service in February, 1911, and in July six more chain grates were installed. Two more boilers, of 5000 sq. ft. heating surface, were added in the space formerly occupied by masonry stack foundations, and the remaining furnaces were equipped with chain grates. Again the stacks were overtaxed, and the second brick one was replaced with two steel ones in August, 1912. During the following month a 15,000-kw turbine set displaced the second engine. More steam being required, two more boilers were added in January, 1913, in the space created by the second brick stack. The installation of a third large turbine, also of 15,000-kw

capacity, has just been completed and but one engine of the original four now remains.

COMMUNICATION

PREDETERMINATION OF TRAIN ENERGY

NEW YORK, DEC. 8, 1913.

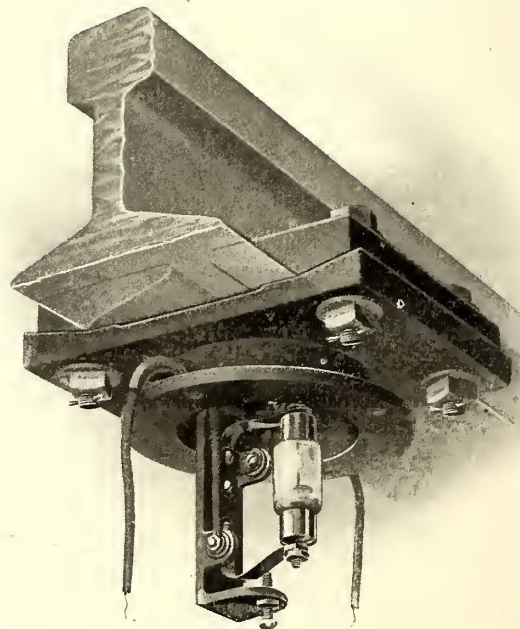
To the Editors:

Our article on the "Approximate Predetermination of Train Energy" in the Nov. 15 issue of the *ELECTRIC RAILWAY JOURNAL* has elicited the question as to whether consideration was given therein to the inertia of rotating parts, such as motor armatures, car wheels, etc. The answer is in the affirmative, an acceleration constant of 100 instead of the theoretical 91.2 having been used in both of the formulas for kinetic energy. This allows about 9.5 per cent for additional inertia due to rotating parts.

W. A. DEL MAR AND D. C. WOODBURY.

NEW TRACK CONTACT FOR ANNUNCIATORS AND INDICATORS

The accompanying illustration shows a new type of mercury contact which is operated by vibration of the rail to which it is attached. It consists of a mercury cup placed between springs and so connected that while it vibrates the mercury is thrown against a platinum wire forming an



Mercury Contact in Place Under Rail but with Casing Removed

electrical circuit. The mercury is held under vacuum so that a uniform and permanent low resistance of the contact can be secured. The entire device is incased in a water-tight jacket and the weight is approximately 20 lb., its installation being the work of but a few minutes, as two adjustable clamps held by four bolts with lock nuts permit the contact to be clamped to the underside of the rail where it is held out of harm's way.

It is stated that there are a number of practical uses to which this contact may be put and that in some cases it may supersede track circuits, as it may be more economically installed. Crossing bells and tower indicators can be so connected as to eliminate the cutting of track circuits, thus effecting a more simple method of handling such signals under these conditions. The L. S. Brach Supply Company, New York, is the manufacturer.

News of Electric Railways

Formal Hearings on Kansas City Franchise

The committee of the Council of Kansas City, Mo., which is considering the Metropolitan Street Railway franchise has begun to hold formal sessions with a view to getting the ordinance to the Council as early as possible. While the public is not barred from these meetings, it is not believed that anything of importance will be offered in the way of suggestions. Four weeks of public hearings have failed to develop any criticism of the general provisions of the grant. The committee during that time ran advertisements in the newspapers daily asking for advice or suggestions from all quarters. Three extensions of the lines seem likely. The plea of the union supporters for recognition probably will be ignored. The committee expressed the belief that it had no authority to provide for a feature of this kind. A clause, however, will be added, providing for the arbitration of disputes that may arise between the company and its men.

Negotiations for the resumption of traffic on the Inter-city viaduct, connecting Kansas City, Mo., with Kansas City, Kan., are to be reopened. This announcement followed the decision to reconstruct the Central Avenue bridge, which is now bearing the street car traffic between the two cities. L. Shaffer will represent the viaduct company in negotiations with the Metropolitan Street Railway. The latter formerly paid an annual rental of \$60,000 for the use of the viaduct. The receivership terminated the contract which existed between the two companies.

Subway Construction Contracts in New York

The Public Service Commission for the First District of New York awarded three contracts during the week ended Dec. 6, 1913, for as many different sections of the work on the new subway system, aggregating \$4,289,621. These sections were as follows:

Section No. 1-A of Routes Nos. 19 and 22, the Southern Boulevard branch of the Lexington Avenue subway, extending from 147th Street under Southern Boulevard to Whitlock Avenue. The road in this section will be a three-track underground railroad. The contract went to the lowest bidder, Rodgers & Hagerty, for \$2,253,159.

Section No. 1 of Route No. 16, the Jerome Avenue branch of the Lexington Avenue subway, extending from 157th Street and River Avenue through River and Jerome Avenues to about 182d Street. The road here will be a three-track elevated railroad. The contract went to the Oscar Daniels Company, the lowest bidder, for \$1,077,978.

Section No. 2 of Route No. 18, the White Plains Road extension of the existing subway, extending from Burke Avenue through White Plains Road to East 241st Street. The road here will be a three-track elevated railroad. The contract went to Alfred P. Roth, the lowest bidder, for \$958,484.

The commission has opened bids for the construction of Section No. 2 of Routes Nos. 4 and 38, the Seventh Avenue extension of the existing subway. This section lies under Greenwich Street, West Broadway and Varick Street, between Vesey Street and Beach Street, including a two-track branch turning from West Broadway into Park Place. The road here will be a four-track underground railroad. The commission first opened bids for this section on Oct. 1, but rejected all bids and readvertised. The Degnon Contracting Company was the lowest bidder on the second letting, at \$3,059,522. Plans for Section No. 6 of Routes Nos. 4 and 38, the Seventh Avenue subway, were approved and the commission has called for bids, to be opened Dec. 29. This section lies in Seventh Avenue between Thirtieth and Forty-third Streets and will include the express stations at Thirty-fourth Street (Pennsylvania Terminal) and at Forty-second Street (Times Square).

The Interborough Rapid Transit Company has notified the Public Service Commission for the First District that it declines to acquiesce in the addition to the dual system of the proposed extension of the Corona rapid transit line in Queens to Flushing, and to operate it as a component

part of the main railroad under the dual system contracts. The Corona line, as provided for in the dual system agreement, ends at Sycamore Avenue, Corona. Since the agreements were signed the commission has decided to extend it to Main Street, Flushing. It is, therefore, the first extension of the dual system authorized. Special terms for the operation of such extensions are provided in the dual system agreements, and the operating company has the option of accepting them and operating them on the terms governing the main system or of declining to accept them and operating them under special terms, which make the city responsible for any possible deficit caused by their operation. The Interborough Company in this case chooses the second alternative, and asserts its willingness to operate the Flushing extension under these special terms.

Petition for Compulsory Extensions Refused

The Public Service Commission of the State of Washington has dismissed the application of the city of Seattle for an order to require the Puget Sound Traction, Light & Power Company to accept franchises not applied for or to require it to extend existing lines on streets where it has no franchises.

In its opinion the commission said: "The law is not different from what it was on Aug. 31, 1912, when the former opinion was rendered. Your commission has no more power now than it had then. We are therefore under the necessity of advising you that we adhere to our former opinion and that you have no jurisdiction to compel the extension of street car lines along streets over which the company has no franchise."

The commission, in its findings, states that the complaint is dismissed on the question of jurisdiction, "so that the parties, if they be so advised, may test the jurisdictional question in the courts without having it confused with other matters. If it shall be determined by judicial decree that our action herein is erroneous, we understand the law to be that it is the duty of the court to send the case back to the commission with directions to pass upon the merits of the case as disclosed by the evidence. The hope is expressed that our action herein will be reviewed and this important question of jurisdiction finally determined."

New Akron Franchise Opposed

Opposition on the part of members of the City Council of Akron, Ohio, has developed to the new franchise ordinance for the Northern Ohio Traction Company in Akron, Ohio, the provisions of which were worked out by members of a committee of the Chamber of Commerce of Akron and the officers of the company. Some of the members of the Council object to the following provision on the ground that it is not sufficiently rigid:

"Said company during the life of the grant shall operate cars in such numbers and at such intervals of time as the traffic may from time to time require, and under such further reasonable rules and regulations as the city may from time to time prescribe, and said cars shall be kept in sanitary condition, properly lighted, ventilated and heated when necessary."

In the draft of a franchise prepared by City Solicitor Taylor and A. B. DuPont, the section relating to service control was practically the same as that contained in the Cleveland grant, but the company objected to its terms, on the ground that the city was privileged to fix the fare but did not guarantee a return to the company on its investment.

Some of the features of the ordinance now before the City Council follow:

Extensions of lines, about 6 miles within two years, and double track on some of the existing lines.

Future extension of lines based upon increasing population, possibly 15 miles within the next ten years.

City to approve design of all cars purchased in the future.

Privilege of the city to purchase the property at the end of fifteen years or at the end of any five-year period thereafter.

Heavy penalty clause in case of violation of any of the conditions.

All poles erected in the future to be of steel or concrete.

Rails to be of type approved by the city and in weight not less than 80 lb. to the yard. Steel ties to be used on concrete foundation.

Forfeiture clause in case of violation of the terms of the ordinance.

In case the company fails to maintain the tracks, pavements and other property, the city may do the work and add 25 per cent to the cost as a penalty.

Railway feeders in certain sections of the city to be placed under ground.

Abandonment of single-truck cars now in use, except in case of emergency.

Reduction of fare.

Arbitration in case of disagreement.

Only the physical value to be considered in case the city purchases the property.

Settlement of all grade crossing questions and other questions at present at issue.

Term of twenty-five years as length of franchise.

Sale of Six-for-Quarter Tickets on Cars Ordered in Seattle

The Public Service Commission of the State of Washington has ordered the Seattle Electric Company to sell six tickets for 25 cents on the cars in all parts of Seattle. The commission in its ruling explains that it is a case of service rather than rate-making, and therefore not a case which required a physical valuation as was contended by the attorneys for the company. The company also claimed that the commission could not overrule the franchise provisions under which was included the right and duty of selling tickets at the rate of 4 cents only at certain designated points in the city. The commission held that to sell tickets only at fixed places was to discriminate against a large percentage of the patrons of the company who were unhandily situated with regard to those places. The commission held that the 4-cent rate was in effect established by franchise as equitable, and that in ordering the company to sell tickets on the cars at the rate of six for 25 cents it was not establishing a new rate but was making the one already effective non-discriminatory.

Subway Offer in Montreal

The text of the Canadian Auto Bus Company's offer through Duncan McDonald to the city of Montreal, Que., in the matter of a subway, has been made public. It says:

"Our offer comprises the building and operating of from 7 to 8 miles of subway to serve the heaviest lines of traffic in Montreal. The estimated cost of this work is to be about \$20,000,000. The fundamental conditions of this offer are to be based on the following:

"The city to get half of the profits produced by the operations of the subway.

"The city to own and control the subway proper, the construction to be done by the city or the company, but in either case, to safeguard our mutual interests, the work to be done under the supervision of a joint commission of the company and the city.

"The company to furnish all required capital for plant, tracks, cars and car equipment. The money needed for these will probably amount to 33 per cent of the total expenditure.

"Frequent service and 5-cent fare.

"Service furnished to be as frequent as the traffic justifies. All differences of opinion on this subject between the city and the company to be settled by expert arbitration.

"The fare to be the same as charged on all subways on this continent, that is, a 5-cent fare, subject to revision by expert arbitration every ten years.

"Transfers to be given to and from the subways in terminal zones, transfer privilege to be subject to revision by expert arbitration every five years.

"Franchise to be for a term of thirty years with option to the city of acquiring the whole plant and equipment at the end of this term at their actual value plus 10 per cent.

"Work to be started in 1914 and finished in 1918.

"This is a public enterprise of such great importance and so intimately linked with the personal interests of each and every citizen that in case our proposal is accepted by your Council we should be pleased to have our agreement further ratified by a vote of the people."

The city is already considering an offer by the Montreal Tramways, which wants a fifty-year franchise.

Report on Proposed Cincinnati Loop

Prof. George F. Swain, chairman of the Massachusetts Rapid Transit Commission, acting as consulting engineer for the Cincinnati Rapid Transit Commission, made his first report on the proposed rapid transit loop for that city to Mayor Hunt and other city officials on Dec. 1. The route, chosen from one of the seven suggested by Bion J. Arnold in his report, is considered feasible by Mr. Swain and can be constructed within the estimate of \$7,000,000. This amount provides for the construction of the road complete, including terminals, with the exception of the down-town loop. This loop will extend from the canal subway down Plum Street to Fifth Street, thence to Main Street and up Main Street to the canal. It is to have a single track with a capacity of 30,000 passengers an hour. Work on this portion of the line will not be commenced until the inlets for the inter-urban lines are completed.

It is said that only few unimportant digressions from the Arnold plans are necessary. One feature which differs from the original suggestion is the proposition to carry the road on a trestle along the side of Mount Adams instead of constructing a roadbed on the hillside. A freight depot may be constructed on the site of the old city hospital. In case this is done a municipal market could be established on the second floor. The proposed municipal convention hall could also be contained in this building.

Mayor Hunt has addressed a letter to members of all business and civic organizations suggesting that they unite in an effort to forward the movement for the construction of this rapid transit loop. He reviewed the legislation enacted last winter to enable the city to acquire land for the purpose and issue bonds to pay for its construction and pointed out the many advantages to be gained from having an entrance for the interurban lines. If the Mayor's suggestion is acted upon, the Chamber of Commerce will call a joint meeting of all the organizations in the city and plans will be discussed with the idea of securing the construction of the road at an early date.

Injunction Against Low Fare Ordinance in Portland

Judge R. S. Bean of the United States District Court has granted a temporary injunction restraining the city officials of Portland from enforcing the ordinance requiring the Portland Railway, Light & Power Company, Portland, Ore., to sell six tickets for 25 cents. The company, in applying for the injunction, stated that the conditions of the state public utility act provide for methods of determining the reasonableness of the schedule filed with the State Railroad Commission. It was pointed out that the City Council's right to question such schedule of rates is by representation to the State Railroad Commission and not by means of an ordinance. The company also contended that it was entitled to be allowed to charge such rates as will yield a just and reasonable net return upon the value of all its properties, including its physical property and intangible assets or going cost of business and necessary working capital actually employed in rendering service; that such net return should not be less than 8 per cent a year. The company further contended that, under the provisions of the charter of the city of Portland, "the city did not reserve unto itself or its Council the right thereafter from time to time to change, alter, regulate or fix fares in the franchise granted."

In commenting upon the action of the company, Franklin T. Griffith, president of the company, made the following statement:

"In instituting suit to enjoin the enforcement of the six-fares-for-25-cents ordinance, we are acting on the first law of nature, self-preservation. We feel that the enforcement of this ordinance will be in the nature of confiscation of our

property in that it would require us to devote the investment in street railways to public service without compensation. The six-ticket ordinance in Portland requires the issuance of transfers. On our present rates of fare, because of the extensive use of transfers, our net receipts per revenue passenger on city railways are only 3.52 cents."

Chicago Elevated Railway Through Routing Reaches Normal

The through routing of elevated trains on the Chicago Elevated Railways, which began on Nov. 3, confused passengers who were unaccustomed to the method of taking advantage of the universal transfer, and the reversing from left-hand to right-hand operation on the Northwestern Elevated Railway delayed trains because the crews were not familiar with the rearranged signal systems. In a public announcement made recently B. I. Budd, president of the Chicago Elevated Railways, stated that the through routing of trains was now normal and that the increase in passengers had more than offset the loss in fares caused by adopting the universal transfers. In view of this increase in traffic the board or directors has authorized the purchase of 120 steel cars instead of 100, as planned at first. In order to increase the capacity of the loop to the limit and at the same time take advantage of any delays to trains, additional elevated tracks will be installed at Eighteenth Street on the South Side and Chicago Avenue on the North Side which will be of sufficient capacity to hold two or three trains for rush-hour emergency service.

One of the most serious difficulties in adopting the system of through routing was the introduction of the universal transfer. The management has made periodical checks at the different loop transfer stations. On one occasion between 5 and 6 o'clock in the evening, and at the busiest transfer point, namely, Adams Street and Wabash Avenue, 4100 passengers were checked going to the Northwestern trains from the West Side lines and 1700 passengers going in the opposite direction. This check represents to a certain extent a portion of the increase in traffic derived from through routing the elevated trains.

The Cleveland Deficit

The Cleveland papers are again discussing the deficits of the Cleveland Railway. It seems that the total deficit, including the value of the power houses that are to be abandoned soon, is about \$1,435,000. Peter Witt, street railway commissioner, says that the amount is not more than \$1,000,000. He says there are deficits amounting to \$200,000 in the operating and maintenance funds inherited from the Baehr administration and approximately \$800,000 for the abandoned power houses. According to Mr. Witt no understanding has been reached as to the amount that shall be charged off for the power houses.

Director of Public Safety Springborn of Cleveland has declared that overhead telephone and electric light wires should be eliminated from all streets on which car lines are operated. He is opposed to any yearly limit of the number of miles of wire placed under ground.

The new Denison-Harvard line of the Cleveland Railway was opened on Dec. 1.

At a meeting of the directors of the Cleveland Railway on Dec. 1 the October report was discussed. No action was taken on the subject of charging off the old equipment that will be abandoned shortly, as provided in the arbitration finding some time ago. The November report is expected to be ready about Dec. 20, when this question may come up for consideration.

An agreement has been approved for running the Coventry Road cars of the Cleveland Interurban Railway to the Public Square over the Euclid Avenue route of the Cleveland Railway.

Rules of Pennsylvania Commission

The Pennsylvania Public Service Commission, which succeeds the State Railroad Commission on Jan. 1, 1914, has adopted rules of practice. Complaints must be made by petition, in writing, verified by affidavits. The company

complained against must answer or satisfy the complaint within fifteen days or within such other specific time as the commission in its judgment may determine. The burden of proof is on the complainant, unless a violation of a lawful order of the commission is alleged, in which case the burden of proof is on the company complained against. The commission reserves the right to make investigations on its own motion. A form schedule has been prepared for such companies as are required to disclose their financial condition.

In a financial statement the company will be required to show: date and place of said incorporation; amount and kinds of stock authorized and issued, with the nature of all preferences; description of all mortgages; number and amount of bonds authorized and issued; other indebtedness of all kinds; interest paid during preceding year and the rate or rates thereof; dividends paid during the same year; classified statement of earnings and expenditures for the fiscal year showing condition at close of the year; such additional facts as the commission may require.

The commission has begun consideration of rules, which have already been drafted, governing the construction of tariffs or rate schedules which must be posted for the information of shippers.

Street Railway Liable for Damage by Interurban Licensee

In a decision handed down on Nov. 11 by the Ohio Supreme Court Barbara Quigley, guardian of Sylvester Fackelmann, was awarded \$8,000 damages against the Toledo Railways & Light Company and some new principles were laid down in regard to the operation of interurban cars over the tracks of city railway companies. The decision holds the local company responsible for accidents occurring as a result of the operation of interurban cars over its track. The boy lost one leg and half of the other foot and Mrs. Quigley asked for \$25,000 damages. The Court of Common Pleas found in her favor and the Court of Appeals reversed the decision. The opinion of the Supreme Court contains the following:

"A street railway company receives its franchise subject to certain well-defined duties to the public. It cannot relieve itself from these obligations by a lease or traffic arrangement by which it permits another company to make joint use of its tracks, except by legislative enactment authorizing such lease or arrangement with an express provision exempting it from liability for the acts of its licensee.

"When such owning company makes an agreement with another company under authority granted by law for the joint use of its tracks it is liable for injuries caused by the actionable negligence of its licensee thereon.

"The statute does not provide exemption from such liability, and as against the public it will not be implied."

New Transportation Plan in Toronto

Lionel Clarke, chairman of the Harbor Commissioners of Toronto, Ont., recently submitted to Mayor Hocken a plan recommended by the commission for the solution of the transportation problems of Toronto. This plan includes provisions for the following items: a terminal site for radial lines at the foot of Yonge Street; a rapid-transit route along the waterfront from Woodbine to Humber; a subway from the waterfront station under Bay and Teraulay Streets to North Toronto, and a central station for passenger traffic in front of the city hall. The cost of building the waterfront line from Woodbine to Humber, the Yonge Street subway, the radial entrances and the street railway feeders (25.46 miles long, double track) in the suburbs is estimated at \$13,197,533. The cost of the subway and extensions to the north is estimated at \$7,703,550.

On Dec. 2 the comptrollers of the city passed a motion asking that the engineer of the Ontario Hydroelectric Power Commission, the engineer of the Toronto Harbor Commission and the City Works Commissioner report jointly on the above transportation plan, and that the corporation counsel of the city and the counsel of the Toronto Harbor Commission report on the legal aspects of the proposal.

Mayor Hocken on Dec. 4, before a meeting of the North Toronto Ratepayers' Association, stated that he had not yet abandoned the idea of the purchase of the property of the

Toronto Railway and the Toronto Electric Light Company. The introduction of the harbor commissioners' plan had so changed the situation, however, that it would not be possible to present the former plan to the citizens on Jan. 1, 1914. No action, however, can be taken until the experts report on the plan of the harbor board.

The City Council has rejected a motion from Controller Church to take plebiscites of the property owners on the separate questions of buying the Toronto Railway property for \$22,000,000 and the Toronto Electric Light property for \$8,000,000.

Indianapolis Arbitration Proceedings

The Public Service Commission of Indiana, which is sitting as a board of arbitration in the controversy between the Indianapolis Traction & Terminal Company and its employees, under the terms of the agreement of Nov. 7, opened the hearing Dec. 4. Under the terms of the agreement of Nov. 7, signed by the contending parties, Governor Ralston and Ethelbert Stewart, the latter representing the United States government, the commission has thirty days in which to take evidence and announce its findings in the case, but by agreement between the attorneys representing both sides the commission may take whatever time it desires in the hearing of the case and making its findings. The finding of the commission binds both parties to the agreement for a term of three years.

In their opening statements the attorneys representing the company and the employees said that later on they would argue the questions of the relative increase in wages and in the earnings of the company during a period of years just passed, conditions of street railway service, present living conditions, the question of recognition of the union, etc.

The employees' attorneys seek to show that the present prices of living essentials have outstripped any increase in wages. The company's counsel announced that they would produce tables to show that the wages have increased approximately one-third more than the relative earnings of the company and that foodstuffs and other living essentials have increased only an average of 6 per cent in the last five years in Indianapolis, while during that time the wages of the train service men have been increased between 11 per cent and 20 per cent.

M. L. Clawson, a labor attorney, opened the hearing for the employees. He summarized the events preceding the strike, the disorders during the strike, the settlement agreement and the grievances presented by employees under that agreement. He stated that in the last few years larger cars had been placed in service and that the work and responsibility of the men had therefore been increased. He stated that he would also go into the matter of the physical valuation of the company's property.

W. H. Latta, attorney for the company, in his opening statement told of the various increases in the rate of pay of motormen and conductors, year by year. He read the present wage scale of the company, ranging from 20 to 25 cents an hour, and showed that of the 567 motormen 150 are receiving 25 cents an hour and 169 are drawing 20 cents. Of the 407 conductors seventy-nine are drawing 25 cents an hour and 179 are being paid 20 cents an hour. The gross annual wages of motormen and conductors of the Indianapolis Traction & Terminal Company are now \$510,287. He said the question was whether the men had received an advance in wages proportionate with the increased earnings per car mile of the company and that the platform expense of the company per car mile had increased faster than the earnings per car mile, the benefit to the men being greater than the increase in the earnings of the investors who had put their money into the company. He said that he would show that the dissatisfaction of the men had been produced only recently by "outside intermeddlers, within the meaning of the law;" that the morning following the strike sixty-five cars were manned by the early crews alone who desired to continue their work, and that a full schedule would have been put in force by noon when the late men reported for work, but these men were dragged from their cars by force.

Mr. Latta discussed the various car schedules in effect on the lines of the company as approved by the Board of Public Works of Indianapolis, and said he believed that

if these schedules were changed by any decision of the arbitration board such changes would have to be ratified by the Board of Public Works, under the charter of the company. It was impracticable to complete the "swing runs" and "straight runs" within the hours demanded. Discussing the question of recognition of the union, he said it related only to the construction to be put on the agreement of Nov. 7.

Several motormen and conductors were examined. Their testimony related to their alleged difficulty in living on their present wages. These, they stated, averaged \$18 to \$20 per week if they worked seven days and about \$84 a month if they worked every day. They went into the details of their household expenses in an effort to prove that their present wages were insufficient to provide the necessary food, clothing, fuel, etc., for themselves and families. In cross-examination it was shown that some of these men owned property which had been paid for out of savings from their wages, and that in the case of extra men, receiving the minimum wage, their present positions were the most remunerative they had ever held.

One man who stated he worked twelve hours a day, seven days each week, to earn about \$84 a month, was shown to have been off six days in one month on leave of absence, and during that particular month he still earned in excess of \$80.

Chairman Duncan of the commission called the attention of the witness to the fact that many lawyers were not earning any more than the trainmen. During the continuation of this testimony on Dec. 9 Chairman Duncan interrupted Mr. Clawson, attorney for the employees, and discussed his manner of examination of witnesses as follows:

"I think the proper line here is to bring out the cost of certain things at this time and prior to this time. We cannot investigate the question of how these men manage their wages. Some men keep their families well on \$10 a week, while others seem to find it difficult to live on \$25 a week. It would be helpful to know what things cost in the market; in other words, what could these men have done with their incomes? I should like to see both sides give us a list of table and other necessities and their prices. I meet men every day who say that they cannot keep their families. Others are saving on even smaller incomes. We cannot enter into the question of the prudence of these men."

The commissioners questioned some of the witnesses for the employees closely as to how a rearrangement of schedules might be effected which would give them shorter hours, but the men stated they did not know just how it could be done. The hearings will be continued Tuesday, Wednesday, Thursday and Friday of each week until the commission shall have obtained all the evidence it deems necessary. It is probable that the company will not present its side of the case for two or three weeks, on account of the detailed examination of witnesses now being conducted.

Boston Elevated Hours of Labor Agreement

J. J. Storrow, chairman of the Boston Elevated board of arbitration, having suggested that the parties ought to reach some agreement upon hours of labor, the Boston carmen's union and the Boston Elevated Railway have agreed upon the hours of labor for conductors, guards, motormen, brakemen and gatemen, which are to remain in force for such period not exceeding three years nor less than one year as may be determined by the board of arbitration. This agreement, so far as it relates to hours of labor, is to be made a part of the main agreement which is to be signed between the parties governing the wages and working conditions, which agreement will express the desire of the members of the carmen's union through their organization that the runs shall be laid out according to the hours of labor hereinafter specified, and the obligation of the members to take the runs so laid out. The hours of labor prescribed follow:

"1. A schedule run is to be any run which provides for a day's work between eight and nine and one-half hours' platform work as hereinafter provided.

"2. Schedule runs to be laid out as follows: Not less than 60 per cent to be performed within an outside limit of not exceeding eleven and one-half hours, and not less than two-

thirds of such percentage to be completed within eleven outside hours. The platform time of not less than two-thirds of such percentage of schedule runs shall not exceed nine hours and the platform time of the remainder shall not exceed nine and one-half hours. The outside time of not more than 40 per cent of the schedule runs may exceed twelve hours, but shall not exceed sixteen hours, but the actual platform time of not less than one-half of these shall not exceed nine hours and the platform time of the remainder shall not exceed nine and one-half hours.

"3. This arrangement of schedule runs to apply to each rating station, the company having a right, if necessary, to vary the percentages by 10 per cent on each class in any particular rating station, but the percentages for the road as an entirety to be maintained. This means that where the minimum number of runs has been fixed to be performed within certain outside hours or having a certain number of hours' platform work, that minimum may be reduced in any particular rating station by 10 per cent, but it shall not prevent the company from arranging runs in excess of the minimum to any such extent as it may deem expedient.

"4. The company agrees to arrange as many schedule runs as possible with platform time of between eight and one-half and nine and one-half hours, and to arrange the balance of schedule runs with platform time of not less than eight hours, all subject to the limitations in paragraph 2.

"5. The company agrees to recognize the principle that men having runs with an outside limit exceeding twelve hours are entitled to additional compensation because of the fact that their work is not completed within twelve hours, but the amount of such compensation shall be determined by the board of arbitration, it being understood that no additional compensation is to be paid for excess of actual outside time beyond the schedule time, and that no overtime is to be paid for platform time in excess of nine hours in the case of schedule runs exceeding an outside limit of twelve hours, but in such cases payment for platform time in excess of nine hours is to be at the regular hourly rate.

"6. If any man fails promptly to bid for or choose a schedule run arranged in accordance with the hours herein agreed upon he shall automatically go to the foot of the extra list.

"7. The association claims that men having runs of eight hours' or more platform time but less than eight and one-half hours' platform time should be paid for eight and one-half hours; that men having runs not exceeding twelve hours' outside time with platform time in excess of eight and one-half hours but less than nine hours should be paid for nine hours; that if the platform time exceeds nine hours and does not exceed nine hours and fifteen minutes the men are to be paid at the regular rate for nine and one-half hours; that if the platform time exceeds nine hours and fifteen minutes and does not exceed nine hours and thirty minutes the men are to be paid for ten hours' time at the regular rates, and that conductors and motormen should be allowed twenty minutes a day for making up work and for work at the end of the day for which they should be paid at the regular rates. (This twenty minutes not being figured in determining whether a run exceeds the inside limit of eight and one-half, nine or nine and one-half hours or the outside limit of eleven, eleven and one-half or twelve hours or in computing overtime, nor is it to be paid for if together with the actual platform time it does not exceed its aggregate eight and one-half or nine hours.)

"All of the matters heretofore described in this section are to be left to the determination of the board of arbitration.

"8. The company agrees to continue the present rate of wages and computation of time for time in excess of nine hours, except as provided in paragraph 5. The board of arbitration is left to determine whether this rate of wage and method of computation of time should be increased in accordance with the demand of the union.

"9. All platform work other than schedule runs shall be known as extra runs, which shall be completed within fourteen outside hours, except that this outside limit may be exceeded on Saturdays or in cases of emergency or unusually heavy traffic, such as holiday service, circus week, opera, etc., and except where extra runs are combined with schedule runs. For all time in excess of said fourteen hours the union asks that extra compensation be allowed, the amount

to be fixed by the board of arbitration, and the company agrees to recognize the principle that men having extra runs with an outside limit exceeding fourteen hours are entitled to additional compensation.

"The board will also decide the union's demand for a seven-hour guaranteed workday for extra men. The present practice of requiring men to report and to remain to protect runs or for extra work, together with excusing men for meals and when their presence is unnecessary, is to remain in force, it being understood that the company may reduce the number of men who are required to report.

"The company may assign men or men shall choose extra runs in the order of seniority as provided in Section 16 of the agreement.

"10. Schedules providing for runs in accordance with the hours herein agreed to shall be posted to go into effect not later than Jan. 24, 1914.

"11. Section 16 of the agreement which has already been approved by the association and the company is amended by adding at the end thereof the following:

"If any man is legitimately absent at the time when runs are chosen, the superintendent shall choose for such man the earliest finishing schedule run remaining unpicked at the time of this man's turn to choose."

The effect of the agreement is to release the company from strict compliance with the so-called "nine-hours in eleven" law of 1913.

Urging Appointment of Engineer for Illinois Public Service Commission

Beginning Jan. 1, 1914, the new Public Service Commission of Illinois will assume authority. Governor Dunne has not announced his appointments to the commission, but recently the newspapers printed a slate including W. L. O'Connell, Chicago, chairman; Stephen S. Gregory, Chicago; George W. Fithin, Newton, Ill.; Richard Yates, Springfield, Ill., and Frank H. Funk, Bloomington, Ill. Mr. O'Connell is the county treasurer of Cook County and a business man. Mr. Funk is a wealthy land owner. The rest of the members who are proposed are attorneys. The proposed appointments caused the various engineering societies of the State to urge that an engineer be placed on the commission. The Illinois Society of Engineers and Surveyors, a representative body composed of civil engineers in all parts of the State, has sent a petition to the Governor urging that at least one engineer be appointed. The Chicago Technical League and other engineering organizations have also petitioned the Governor to name Cicero D. Hill as the engineer member of the commission. Mr. Hill is engineer for the Board of Local Improvements of the city of Chicago.

Committee Appointed to Operate London & Port Stanley Railway.—The City Council of London, Ont., on Dec. 1 appointed Adam Beck, Philip Pocock, M. D. Fraser, K.C., Alderman W. Spittal and the Mayor a commission to electrify and operate the London & Port Stanley Railway.

New Line Opened in Idaho.—Service has been established over the line of the Lewiston (Idaho) Terminal Company. For the present cars will be operated only from the Lewiston-Clarkston bridge to the steam railroad passenger terminal, but it is proposed to extend the line to the live stock show grounds in Lewiston.

Appeal from Massillon Order Denied.—The State Utilities Commission of Ohio has refused to rescind its order in favor of the city of Massillon and decided against the Northern Ohio Traction & Light Company in that company's appeal from what it called unnecessary and unreasonable orders for the rebuilding of its tracks in Massillon.

Cancellation of Underground Franchises in Toronto Sought.—The Board of Control of Toronto, Ont., has decided upon motion of Mayor Hoeken to instruct the City Solicitor to ascertain what franchises are in existence for underground railways in the city, with a view to applying to the House of Commons for cancellation of those which have not been exercised.

Mr. Baer's Pronunciamento.—George F. Baer, president of the Philadelphia & Reading Railway, was quoted by the Philadelphia *Ledger* on Dec. 5, 1913, as follows in regard

to the report that the company was to electrify its Chestnut Hill branch: "There will be no electrification of the Reading while I live. I have no faith in electrification. It has been a failure everywhere."

Municipal Operation in Nelson.—At a conference between the members of the City Council and the directors of the Nelson (B. C.) Street Railway, Ltd., municipal operation of the street railway, with the stockholders retaining their interest in it on a proportionate partnership basis, was decided on. The number of shares of stock of the company will be increased from 50,000 to 75,000, and the city will probably take over 40,000 shares, by which it will have control.

Increase in Rates Ordered Discontinued.—The Interstate Commerce Commission has directed the Washington (D. C.) Interurban Railway to discontinue the increase in passenger rates which it put into effect recently on its line running along Blandensburg Road from Fifteenth and H. Streets, Northwest. According to the commission the company failed to follow the procedure prescribed by the commission where changes of the kind which was made are contemplated.

Report by City Solicitor on Pittsburgh Subway Application.—C. K. Robinson, assistant city solicitor, has rendered to the City Council a report unfavorable to the franchise ordinance presented in behalf of the Pittsburgh Subway Company. He recommends that a special committee be appointed to confer with the company and the city law department. Mr. Robinson contends that it would be better to draw a new bill than to attempt to amend the ordinance prepared by Mr. Fording for the company.

Sale of Municipal Street Railway Bonds Authorized.—The Board of Supervisors of San Francisco, Cal., has authorized the sale of \$850,000 of the 5 per cent municipal street railway bonds authorized by the voters recently. The plan is to apply part of the proceeds of the issue to the purchase of the property of the Presidio & Ferries Railroad, with the end in view of making it part of the municipal street railway system. It is said that the public utilities committee of the board has arranged to take over the Presidio & Ferries Railroad for \$350,000.

Enactment of Radical Compensation Measure Urged in New York.—Governor Glynn of New York sent a special message to the extraordinary session of the Legislature on Dec. 8 in which he embodied a recommendation for enactment of a compulsory workmen's compensation law covering hazardous employments, with a schedule of compensation rates far in excess of the schedules of any other measure proposed in this State or in most other states. Bills prepared under the supervision of Governor Glynn, carrying out the suggestions made by him, have been introduced in both houses.

Arbitration of Grievances in Lexington.—Differences which have arisen between the Kentucky Traction & Terminal Company, Lexington, Ky., and its men are being settled by arbitration. The company has named one man, the carmen's union another, and the two have agreed upon a third. Formal hearings were held for the purpose of discussing the questions involved in the discharge of three trackmen. The principal question is whether the trackmen can be considered "shopmen" in the meaning of the contract between the company and the union, signed on July 15, 1913, and whether the men were discharged for holding membership in the union.

Electric Railway Concession in Pernambuco.—A concession for a new electric tramway and lighting system in Pernambuco was granted eighteen months ago to Dods-worth & Company, Rio de Janeiro. This company has arranged with J. G. White & Company, New York and London, to do the construction work. The foundation for the power house is being built and surveys made for the car-house and track, a portion of which has already been laid. The gage is 3.28 ft. English cars will be used. The power machinery and rails are all of American manufacture. The power plant will generate 4000 hp. The work is expected to be completed within one year.

Extensions in Detroit.—At a recent meeting of the public utilities committee of the Detroit (Mich.) City Council, Attorney Weadock, representing the Detroit United Rail-

way, stated that the extension of the Fourteenth Street line between Bagg Street and Fort Street will be built soon on the terms of the new franchise, with a fare of eight tickets for 25 cents during the daytime, the city to build the track foundations and paving where the low fare is in effect. It is said that neither the city nor the company is anxious to plan extensions. It is difficult for the company to secure the money needed for the work and the city has no funds to pay for its portion, as provision for such expenditures was not made in the tax rate. The company has arranged to finance the Junction Avenue cross-town line.

Light Railway Act in Alberta.—An act has been passed by the Alberta Legislature to encourage the building of light railways. The government is authorized to give a subsidy of \$7,000 a mile in aid of such lines, which are not to exceed 75 miles in length. A section was inserted in the measure in its passage through the Legislature limiting the total mileage which may be aided before the next session to 200 miles. The first line to be built under this act will, it is said, be one from Bassano through the irrigated belt to Richmond, on Red Deer River. It is reported that this line will be built by the Bassano & Bow River Railway. The only company with anything like this title is the Bassano Electric Railway, which was incorporated by the Alberta Legislature on Feb. 12, 1912, with power to build a line from Bassano southerly to Bow River, from Bassano northerly for 40 miles, and also within the town of Bassano.

PROGRAMS OF ASSOCIATION MEETINGS

American Economic Association

The twenty-sixth annual meeting of the American Economic Association will be held at Minneapolis, Minn., Dec. 27 to Dec. 30. The American Sociological Society will hold its annual meeting at the same time and place. At the sessions a number of papers and addresses of interest to electric railway operators will be presented. At the session of the association on Dec. 27 Prof. John H. Gray, of the University of Minnesota, will present a paper on "The Control of Public Service Corporations." This subject will be discussed by E. W. Bemis, Chicago; J. E. Allison, St. Louis, and others. At the session on Dec. 29 B. H. Meyer, of the Interstate Commerce Commission, will read a paper on "Theory of the Making of Railway Rates." On Dec. 30 a paper on "Syndicalism" will be presented by John Graham Brooks, Cambridge, Mass., and a paper, "The Economic Effects of the Supreme Court Trust Dissolutions," will be presented by Willard E. Hotchkiss, of Northwestern University.

American Society for Labor Legislation

The seventh annual meeting of the American Association for Labor Legislation will be held at the Shoreham Hotel, Washington, D. C., on Dec. 30 and 31, 1913. The program of papers for the meeting includes the following:

Paper, "The Federal Industrial Relations Commission," by Frank P. Walsh, chairman of the Federal Industrial Relations Commission.

Paper, "Labor Law Enforcement Through Administrative Orders," by Charles H. Crownhart, chairman of the Wisconsin Industrial Commission.

Paper, "The Philosophy of Labor Legislation," by W. F. Willoughby, Princeton University, president of the American Association for Labor Legislation.

Paper, "The Practicability of Compulsory Sickness Insurance in America," by Joseph P. Chamberlain, of the Legislative Drafting Association.

Paper, "Sickness Benefit Funds Among Factory Employees," by W. L. Chandler, of the Dodge Manufacturing Company.

Paper, "Trade Union Sickness Insurance," by James M. Lynch, New York State Commissioner of Labor.

Paper, "Work Periods in Continuous Day and Night Occupations," by Basil M. Manly, special agent of the United States Bureau of Labor in the investigation of conditions of employment in the iron and steel industry.

Paper, "Long Hours in Railroading," by Austin B. Garretson, president of the Order of Railway Conductors.

Financial and Corporate

Stock and Money Markets

Dec. 11, 1913.

In the trading on the New York Stock Exchange to-day the standard stocks rallied quickly after declines, and the majority of the issues traded in at the end ranged moderately above Tuesday's final figures. An advance of 1½ points to 73 was made in New Haven, the announcement of the suspension of the dividend not being made until after the close of the exchange. Rates in the money market to-day were: Call, 5 @ 6 per cent; thirty days, 5½ per cent; sixty days, 5¾ @ 5½ per cent; ninety days, 5 @ 5½ per cent; four months, 5 @ 5¾ per cent; five and six months, 4¾ @ 5 per cent.

Changes in the prices of securities dealt in on the Philadelphia exchange to-day were irregular. The total of sales was small.

The market in Chicago to-day was narrow and dull. The sales of bonds totaled only \$14,000, par value.

In Boston the market opened quiet with the tone easy. Interest centered in New Haven, which closed at 7¾. The general list was little changed.

Trading in stocks on the Baltimore exchange to-day was exceedingly dull, but the demand for bonds was fair.

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

	Dec. 3	Dec. 10
American Brake Shoe & Foundry (common).....	87	87
American Brake Shoe & Foundry (preferred).....	127	127½
American Cities Company (common).....	36	36
American Cities Company (preferred).....	64	63
American Light & Traction Company (common).....	333	*334
American Light & Traction Company (preferred)....	106	*106
American Railways Company.....	38	38¾
Aurora, Elgin & Chicago Railroad (common).....	a42	a42
Aurora, Elgin & Chicago Railroad (preferred).....	82	a84
Boston Elevated Railway.....	85	88½
Boston Suburban Electric Companies (common).....	7	7
Boston Suburban Electric Companies (preferred)....	60	60
Boston & Worcester Electric Companies (common)...	*6½	*6½
Boston & Worcester Electric Companies (preferred)..	39	39
Brooklyn Rapid Transit Company.....	87½	86¾
Capital Traction Company, Washington.....	110	111½
Chicago City Railway.....	160	160
Chicago Elevated Railways (common).....	25	25
Chicago Elevated Railways (preferred).....	75	75
Chicago Railways, pteptg., ctf. 1.....	90	a90
Chicago Railways, pteptg., ctf. 2.....	28	a27½
Chicago Railways, pteptg., ctf. 3.....	7	6½
Chicago Railways, pteptg., ctf. 4.....	2	1½
Cincinnati Street Railway.....	110	110
Cleveland Railway.....	104½	104½
Cleveland, Southwestern & Columbus Ry. (common)..	5½	*5½
Cleveland, Southwestern & Columbus Ry. (pre'ferred)	*30	*30
Columbus Railway & Light Company.....	18	18
Columbus Railway (common).....	59½	59½
Columbus Railway (preferred).....	88	88
Denver & Northwestern Railway.....	*111	a80
Detroit & United Railway.....	80	a80
General Electric Company.....	139	138¾
Georgia Railway & Electric Company (common).....	118¾	119¾
Georgia Railway & Electric Company (preferred)....	85	85
Interborough Metropolitan Company (common).....	14¼	14¾
Interborough Metropolitan Company (preferred)....	58¾	59¾
International Traction Company (common).....	*40	a30
International Traction Company (preferred).....	*95	90
Kansas City Railway & Light Company (common)....	*22	20
Kansas City Railway & Light Company (preferred)...	*30	30
Lake Shore Electric Railway (common).....	*7	6
Lake Shore Electric Railway (1st preferred).....	*92	92
Lake Shore Electric Railway (2d preferred).....	*25	24
Manhattan Railway.....	130	130
Massachusetts Electric Companies (common).....	10½	10½
Massachusetts Electric Companies (preferred).....	66½	65½
Milwaukee Electric Railway & Light Co. (preferred)..	*100	95
Norfolk Railway & Light Company.....	*25¼	24¾
North American Company.....	70	68
Northern Ohio Light & Traction Company (common)..	66¾	66¾
Northern Ohio Light & Traction Company (preferred).	97	97
Philadelphia Company, Pittsburgh (common).....	39	39
Philadelphia Company, Pittsburgh (pre'erred).....	39	39
Philadelphia Rapid Transit Company.....	18¼	18¼
Portland Railway, Light & Power Company.....	56	53
Public Service Corporation.....	107	106
Third Avenue Railway, New York.....	40¼	39¼
Toledo Traction, Light & Power Company (common)..	30	15
Toledo Traction, Light & Power Company (preferred).	80	60
Twin City Rapid Transit Co., Minneapolis (common)..	105	105½
Union Traction Company of Indiana (common).....	*13	11½
Union Traction Company of Indiana (1st preferred)..	*83	80
Union Traction Company of Indiana (2d pre'erred)..	*25	14
United Rys. & Electric Company (Baltimore).....	25½	*25½
United Rys. Inv. Company (common).....	19	17
United Rys. Inv. Company (preferred).....	35½	33½
Virginia Railway & Power Company (common).....	56	56
Virginia Railway & Power Company (preferred).....	93½	93½
Washington Ry. & Electric Company (common).....	86½	85½
Washington Ry. & Electric Company (preferred)....	86	86¼
West End Street Railway, Boston (common).....	68½	a67½
West End Street Railway, Boston (preferred).....	90	90
Westinghouse Elec. & Mfg. Company.....	64¾	64¼
Westinghouse Elec. & M. g. Company (1st preferred)..	112	112

*Last sale. aAsked.

ANNUAL REPORT

Aurora, Elgin & Chicago Railroad

The statement of income, profit and loss of the Aurora, Elgin & Chicago Railroad, Wheaton, Ill., for the fiscal year ended June 30, 1913, follows:

Gross earnings and other income:	
Revenue from transportation.....	\$1,674,768
Revenue from operation other than transportation.....	338,843
Interest.....	1,150
Miscellaneous.....	82
Total gross earnings and other income.....	\$2,014,843
Operating expenses and taxes:	
Maintenance of ways and structures.....	\$154,389
Maintenance of equipment.....	128,272
Traffic.....	8,938
Conducting transportation.....	600,393
Other operations.....	34,996
General and miscellaneous.....	291,937
Total.....	\$1,218,925
Less undistributed operating credits.....	24,250
Taxes.....	\$1,194,675
	43,967
Total operating expenses and taxes.....	\$1,238,642
Net earnings.....	\$776,201
Deductions from income.....	395,223
Net income.....	\$380,978
Profit and loss—surplus at beginning of year.....	458,186
Profit and loss—Gross surplus.....	\$839,164
Profit and loss charges:	
Dividends.....	\$279,000
Other.....	2,770
Total profit and loss charges.....	\$281,770
Profit and loss—surplus at end of year.....	\$557,394

During the year the Aurora, Elgin & Chicago Railroad made numerous improvements, such as extensions, new sidings and cross-overs on its Chicago, Aurora & Fox River divisions, and about 3 miles of track was reconstructed.

L. J. Wolf, president of the company, says in part:

"A steel bridge, which carried a highway, recently vacated, over the tracks of the Chicago division at Glen Ellyn, has been used to replace a temporary wooden bridge carrying a highway over the tracks of the Chicago division at Batavia. A number of wooden bridges on the Fox River division have been replaced with concrete structures.

"While the gross earnings of the company for the past fiscal year increased \$120,642 over those of the preceding year, operating expenses increased \$101,469, leaving an increase in net operating revenues of only \$19,172. The abnormally large proportion of the increase in gross revenue which was absorbed in operating expenses is largely due to the fact that the company's expenditures for maintenance of its track, roadway and equipment were \$61,426 in excess of the expenditures made for like purposes during the preceding fiscal year, an increase of 25 per cent.

"Rather than sell its bonds under existing market conditions, the company has preferred to carry as accounts and notes payable its current expenditures for new construction and new equipment. On June 30 last the company had in its treasury \$450,000 of its bonds available for sale, and since June 30 the amount of treasury bonds has been increased to \$823,000 by the certification of \$373,000 bonds against last year's expenditures for construction, improvements and betterments.

"To insure the continuity and regularity of the lighting service in Elgin, a second transmission line is being constructed from the Ingalton substation to the Elgin substation. This line represents the very latest and best type of construction and includes steel towers, cross-arms and pins and insulators with a high factor of safety. On existing transmission lines the policy of replacing insulators with larger ones better suited to high voltage has been continued.

"Automatic track circuit signals have been installed on two industrial sidings on the Chicago division. An additional block of trolley contact block signals was installed on the Fox River division. Two crossing alarm bells were replaced with new standard bells, and thirteen additional new standard crossing alarm bells were installed. Fifty-eight crossings are now protected.

"A new intake and new discharge waterways have been completed in the power house and the screen house has been

enlarged. The 8300-kw turbo-generator set, with condensers and auxiliaries, ordered last year, has been installed, thus practically doubling the capacity of the plant. The continued increase of the station load has made it necessary to construct an addition to the boiler room large enough to house four 500-hp boilers and to increase the capacity of the pneumatic ash-handling system. Two boilers, together with stokers, bunkers and coal handling apparatus, have already been installed therein, and two additional boilers will probably be installed by the middle of the coming fiscal year.

"The following rolling stock was purchased for the Chicago division: six standard passenger cars, complete with General Electric equipment and Baldwin trucks; one motor express car, similarly equipped. The passenger cars with which this division was originally provided are now being reconstructed at the Wheaton shops and are being strengthened and reinforced by steel plates and angles to such a degree as to bring them up to the present standard.

"The following rolling stock was purchased for the Fox River division: four double-truck, semi-steel city cars, with General Electric electrical equipment and Baldwin maximum traction trucks, and four 45-ft. double-truck interurban passenger cars, with General Electric equipment and trucks. Pursuant to city ordinances, all city cars have been equipped with wheel guards and fenders."

Financing in Los Angeles

Articles of incorporation have been filed for the Los Angeles (Cal.) Railway Company, the purpose being to merge the Los Angeles Railway Corporation and the City Railway. The announcement in regard to the proposed readjustment was made at Los Angeles by W. E. Dunn, second vice-president of the Los Angeles Railway Corporation, who said that the details had not all been definitely decided, but that they would be announced about Jan. 1. From the unofficial statements which have been made it would seem that the plan is to fix the capital stock of the proposed new company at \$20,000,000, or \$5,000,000 less than the combined outstanding stock of the Los Angeles Railway Corporation and the City Railway. There is to be a limited open-end mortgage to secure an issue of \$50,000,000 of bonds, of which \$23,500,000 will be used to refund bonded indebtedness of \$23,500,000 of the two companies that are to be taken over. The remaining \$26,500,000 of bonds will be reserved for issue from time to time in the future to meet the needs of the company. It has also been announced that the Huntington Land Company, an affiliated corporation, has arranged to borrow \$14,000,000. Mr. Dunn's statement follows:

"I have just returned from New York, where the final arrangements were made for this flotation, but the details are not yet fully worked out. The new railway will be capitalized for only \$20,000,000, while at the present time the City Railway is capitalized for \$5,000,000 and the Los Angeles Railway Corporation has \$20,000,000 of capital. In the days before the State Railway Commission was created we were forced to increase our capital stock each time we increased our bonded debt, but under the present law we do not have to carry any excess stock on the books. With the opening of the canal and the coming of the people in 1915, this company must be ready to care for a greatly increased population. New cars must be bought and lines extended. New substations must be built to handle the power.

"The Huntington Land Company must erect certain buildings on its properties, while the Pacific Light & Power Corporation, which participates in this \$14,000,000, must be in a position to go ahead with the Big Creek development. Already \$12,000,000 has been expended in bringing a portion of that power to Los Angeles, but the work is a long way from completion as far as the ultimate capacity of the plants is concerned. The fact that the Big Creek power development is needed at the present time was shown a week or so ago, when the Redondo plant went out and the cars stopped. Had it not been for the Big Creek at that time there would have been no cars running in the city for three days. As it was, the plant carried the load, even though there was forty-eight hours' work still to be done on the plant to make it ready for service. We shall soon be able

to shut off the Big Creek power in order to complete this work. Within a day or so this power will be ready again and this portion of the development will go ahead."

Expenses of Southern Pacific Suburban Traffic

The following statement is an abstract of figures presented to the California Railroad Commission by the Southern Pacific Company in regard to the operating expenses of its Oakland, Alameda and Berkeley lines for twelve months, based upon operation during May, 1912. These lines are operated by electricity. Other references to these figures appeared on page 394 of the issue of Sept. 6 and page 1151 of the issue of Nov. 29 of this paper. The first three main headings given below are itemized only in part.

OPERATING EXPENSES OF OAKLAND, ALAMEDA AND BERKELEY LINES OF SOUTHERN PACIFIC COMPANY FOR TWELVE MONTHS BASED UPON OPERATION MAY, 1912

Maintenance of way and structures.....		\$447,418
Maintenance and care of track.....	\$45,804	
Maintenance and care of roadbed.....	136,811	
Interlocking plants.....	109,673	
Electric power transmission.....	48,334	
Station buildings and appurtenances.....	51,433	
	\$392,055	
Maintenance of equipment.....		135,449
Passenger train car repairs.....	81,776	
Electric equipment of cars.....	36,811	
Power plant equipment.....	9,392	
	\$127,879	
Transportation.....		699,854
Agents, clerks, etc.....	38,156	
Motormen.....	133,590	
Operating power plants.....	112,713	
Trains—passenger.....	231,272	
Interlockers—signals.....	58,291	
Crossing flagmen, etc.....	29,399	
	\$603,421	
Maintenance and operation, floating equipment....		317,703
General and traffic expenses.....		177,839
Taxes (4 per cent of revenues).....		54,172
Total.....		\$1,832,437
Revenue.....		1,354,303
Deficit.....		\$478,134

REPRODUCTION ESTIMATE

Way and structures.....		\$32,387,138
Two subdivisions of this account were:		
Electric power plants.....	\$1,346,965	
Electric power transmission.....	1,473,208	
Equipment.....		2,756,345
Electric locomotives.....	17,121	
Passenger train cars.....	2,083,298	
Floating equipment.....	655,926	
Law, taxes, interest, commissions.....		6,090,439
Proportional cost, Oakland pier.....		2,685,305
Proportional cost, boat yard.....		1,722,936
Proportional cost, float equipment.....		567,397
		\$46,209,560

Brooklyn & North River Railroad, Brooklyn, N. Y.—The Public Service Commission for the First District has granted the Brooklyn & North River Railroad permission to issue capital stock to the amount of \$100,000 to refund obligations incurred for construction and improvements to its system. The commission also adopted an order granting the following component companies the right to acquire the percentage of stock respectively subscribed for, namely, the Brooklyn Heights Railroad and the Nassau Electric Railroad, 25 per cent of the \$100,000 capital stock; the New York Railways, 25 per cent; the Third Avenue Railway and the Dry Dock, East Broadway & Battery Railroad, 25 per cent; the Coney Island & Brooklyn Railroad, 25 per cent.

Charlottesville & Albemarle Railway, Charlottesville, Va.—The State Corporation Commission of Virginia has approved the consolidation by merger of the Charlottesville & Albemarle Railway and the Redland Power Company as the Charlottesville & Albemarle Railway. The authorized capital stock of the merged company is to be \$700,000, of which \$200,000 is to be preferred and \$500,000 common. A mortgage to secure \$750,000 of refunding and improvement bonds has been authorized. The Charlottesville & Albemarle Railway has outstanding \$69,350 of capital stock, \$25,000 of first mortgage bonds, \$67,000 of general mortgage bonds and \$100,000 of two-year improvement and extension notes. The Redland Power Company has outstanding \$400,000 of stock and \$150,000 of first mortgage 6 per cent gold bonds.

Chicago (Ill.) City Railway.—The Chicago City Railway has declared the regular quarterly dividend of 2½ per cent and an extra dividend of one-half of 1 per cent, payable on Dec. 30.

Chicago (Ill.) Railways.—It is reported that the proxies asked by the management of the Chicago Railways for the meeting of certificate holders which will pass on the unification plan for the surface railways have been granted in sufficient numbers to assure the approval of the proposition.

Cleveland & Youngstown Railroad, Cleveland, Ohio.—Permission has been granted by the Public Utilities Commission of Ohio to the Cleveland & Youngstown Railroad to issue \$600,000 of common stock, the proceeds to be used for discharging obligations incurred in construction and improvement work. The company is building an electric railway between Cleveland and Youngstown.

Columbus Railway & Light Company, Columbus, Ohio.—The directors of the Columbus Railway & Light Company have called two assessments of \$10 per share each on the \$5,000,000 of capital stock of the company. The first assessment is to be paid on or before Dec. 30, 1913, and the second on or before June 30, 1914. The stock is now \$20 a share paid up. After the assessments are paid the stock will be exchanged for stock of the Columbus Railway, Light & Power Company, under which the Columbus Railway, the Columbus Railway, Power & Light Company, the Columbus Edison Company and the Columbus Light, Heat & Power Company, which companies are now operated by the Columbus Railway & Light Company, will be consolidated.

Columbus, Urbana & Western Electric Railway, Columbus, Ohio.—On application of L. P. Stephens as receiver, Judge E. B. Kinkead of the Common Pleas Court has set Jan. 20, 1914, as the date for the sale of the property of the Columbus, Urbana & Western Electric Railway. The company has \$400,000 of bonds outstanding, of which the Columbus Savings & Trust Company, now in the hands of a receiver, owns \$300,000, and Senator J. B. Foraker the remainder. There is also \$42,000 due the bank on a loan.

Idaho Railway, Light & Power Company, Boise, Idaho.—The committee representing holders of certificates of deposit for first and refunding bonds, consolidated first and refunding bonds and preferred and common stock of the Idaho-Oregon Light & Power Company announces that it has terminated the deposit agreement of May 1, 1913, and abandoned the plan therein set forth. The protective committee was formed last April as a result of default by the company of its interest due April 1 on the first and refunding bonds. The company is controlled by the Idaho Railway, Light & Power Company, which owns \$718,000 of first and refunding bonds, \$854,000 of consolidated first and refunding bonds, \$250,000 of notes, \$2,148,400 of preferred and \$6,415,100 of common stock.

International Traction Company, Buffalo, N. Y.—Ten of the second mortgage sinking-fund gold bonds of the Buffalo & Niagara Falls Electric Railway, dated July 1, 1896, have been called for payment at 105 and interest on Jan. 1, 1914, at the office of the Bankers' Trust Company, New York, N. Y. Harris, Forbes & Company, New York, N. Y., and Perry, Coffin & Burr, Boston, Mass., are offering for sale at 92½ and interest \$950,000 of refunding and improvement 5 per cent fifty-year bonds of the International Railway, dated 1912 and due Nov. 1, 1962, but callable at 110 and interest on any interest date. These bonds are part of an issue of \$2,366,000 recently authorized by the Public Service Commission for the Second District of New York, as noted in the *ELECTRIC RAILWAY JOURNAL* of Nov. 29, 1913.

Jefferson City Bridge & Transit Company, Jefferson City, Mo.—For the purchase of the Jefferson City Bridge & Transit Company by the Jefferson City Light, Heat & Power Company, noted in the *ELECTRIC RAILWAY JOURNAL* of Dec. 6, 1913, the Missouri Public Service Commission authorized the latter company to issue \$200,000 of preferred stock and \$200,000 of bonds. The property of the Jefferson Bridge & Transit Company is valued at more than \$250,000. The Jefferson City Light, Heat & Power Company also applied to the commissioner for permission to create \$1,000,000 of bonds to provide for taking up the company's outstanding indebtedness and for improvements and additions, only a portion to be issued at present, but the commission has delayed action on this petition for the reason, it is

reported, that the total bonds must not exceed the capital stock.

Massachusetts Northeastern Street Railway, Haverhill, Mass.—The Massachusetts Northeastern Street Railway has been authorized by the Massachusetts Public Service Commission to issue \$1,000,000 of twenty-year 5 per cent mortgage bonds, \$870,000 to be used to refund bonds issued for the purchase of railways lately taken over by the company. The balance of \$130,000 is to pay the floating debt of the companies at the time of the consolidation.

Nelson (B. C.) Street Railway, Ltd.—It is stated that the number of shares of stock of the Nelson Street Railway will be increased from 50,000 to 75,000 shares and that 40,000 shares will be sold to the city, giving it control of the property as referred to on page 1256 of this issue.

New York, New Haven & Hartford Railroad, New Haven, Conn.—The board of directors of the New York, New Haven & Hartford Railroad decided unanimously on Dec. 10 that no dividend should be paid on its stock for the current quarter. The passing of the dividend follows forty years of distributions of never less than 7½ per cent. Up to and including September, 1913, the company had paid to its stockholders 130 dividends in all, aggregating \$158,477,817. At the meeting on Dec. 10 the directors authorized Howard Elliott, chairman of the board, to arrange for a separate management of the lines of the Connecticut Company. L. S. Storrs, now vice-president of the company, is to be made president. This is another step toward closer detailed supervision of the various properties in which the New York, New Haven & Hartford Railroad is interested.

New York (N. Y.) Railways.—T. De Witt Cuyler, Philadelphia, Pa., and John C. Cobb, Boston, Mass., have been elected directors of the New York Railways, increasing the membership of the board from nine to eleven. Milo Ray Maltbie, of the Public Service Commission for the First District of New York, has adjourned to Dec. 22 the rehearing on the application of the New York Railways for the approval of an issue of bonds originally put at \$2,600,000, involving the right of the commission to limit the capitalization of the cost of the new stepless cars to the excess over the original cost of the cars displaced instead of the excess over the scrap value of the old cars, as the company desired.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—The Oakland, Antioch & Eastern Railway has filed for record a mortgage in favor of the Union Trust Company, San Francisco, as trustee, given to secure an issue of \$5,000,000 of bonds.

Porto Rico Railways, San Juan, P. R.—The Royal Securities Corporation, Ltd., as financial agent for the Porto Rico Railways, recently offered in London the remaining \$250,000 of an issue of \$500,000 of 7 per cent cumulative preferred stock, par \$100, at a price of 100 per cent Canada, equivalent to £20 11s. per share. The other half of this issue had already been subscribed for by existing shareholders, as noted in the *ELECTRIC RAILWAY JOURNAL* of Aug. 8, 1913.

Public Service Corporation of New Jersey, Newark, N. J.—The Board of Public Utility Commissioners of New Jersey has refused to approve the application of the Public Service Corporation for permission to sell \$620,000 of 5 per cent bonds of the North Hudson County Railway to the Fidelity Trust Company, Newark, at 97 and accrued interest to provide funds to retire a similar amount of 6 per cent bonds of the company due Jan. 1, 1914. At the hearings before the commission in regard to the application a local bond dealer protested that he had not had an opportunity to bid for the issue, intimating that he would have offered a price higher than that at which it was proposed to dispose of the issue to the Fidelity Trust Company. In denying the application the commission said: "The question which arises is this, Was the petitioner's decision to sell the entire block at 97 and accrued interest to the Fidelity Trust Company and its associates, excluding competitive bids and omitting to sound other possible purchasers, a matter fairly within the elastic limits of the company's discretion, or did such financing constitute a departure from a sound and safe rule of action whereby the company would obtain less than the utmost possible or probable return by the sale of its securities? We are of the

opinion that the sounding of other possible or probable bidders was a necessary part of the proper course to pursue; that departure therefrom in similar circumstances, even admittedly made without consciousness of improper motive, is a policy that may lead to unwarrantable prejudice to shareholders and to customers, and that a sense of special obligation would warrant nothing more than the sale to the preferred bidder at as high a price as offered by another responsible party."

Puget Sound Traction, Light & Power Company, Seattle, Wash.—The stockholders of the Puget Sound Traction, Light & Power Company will vote on Dec. 23 on authorizing an issue of short-term bonds to refund two-year 5 per cent mortgage notes that mature on Feb. 1, 1914.

Sheboygan Railway & Electric Company, Sheboygan, Wis.—The Sheboygan Railway & Electric Company has filed articles with the Secretary of State changing its name to the Sheboygan Public Utilities Company.

Tampa (Fla.) Electric Company.—At the annual meeting of the stockholders of the Tampa Electric Company to be held on Jan. 5, 1914, the question will be voted upon of increasing the stock of the company from \$2,244,000 to \$2,618,000. The plan is to devote the proceeds of the issue to paying floating debt of \$125,000 and to provide for extensions and improvements during 1914. If the increase is authorized the new stock will be offered to stockholders at par in the ratio of one new share for every six now held.

Union Street Railway, New Bedford, Mass.—The Union Street Railway has been authorized by the Massachusetts Public Service Commission to issue \$250,000 of twenty-year 4½ per cent bonds, the proceeds to be used to refund a similar amount falling due Jan. 1, 1914. These bonds are part of an issue of \$2,000,000 of bonds authorized by the stockholders of the company at the annual meeting on Oct. 17.

Washington Water Power Company, Spokane, Wash.—The stockholders of the Washington Water Power Company have voted to increase the capital stock of the company from \$15,000,000 to \$20,000,000. Stockholders will have the right to subscribe to shares at par, equal to 10 per cent of their holdings. The present stock will be issued in amounts sufficient to take care of some outstanding notes which were made incident to the construction of the three-million-dollar power house of the company and for future construction work.

J. G. White & Company, Ltd., London, Eng.—One of the important recent financial undertakings of J. G. White & Company, Ltd., is the formation of the International Light & Power Company, Ltd., a holding company owning securities in several electric light and tramway properties throughout South America.

Dividends Declared

Arkansas Valley Railway, Light & Power Company, Pueblo, Col., quarterly, 1¾ per cent, preferred.

Augusta-Aiken Railway & Electric Corporation, Augusta, Ga., quarterly, 1½ per cent, preferred.

Brazilian Traction, Light & Power Company, Ltd., Toronto, Ont., quarterly 1½ per cent, preferred.

Continental Passenger Railway, Philadelphia, Pa., \$3.

Eastern Texas Electric Company, Beaumont, Tex., \$3, preferred.

El Paso (Tex.) Electric Company, 3 per cent, preferred; quarterly, 2 per cent, common.

Grand Rapids (Mich.) Railway, quarterly, 1 per cent, common.

Indianapolis (Ind.) Street Railway, 3 per cent.

Manila Electric Railroad & Lighting Corporation, New York, N. Y., quarterly, 1¾ per cent.

New York State Railways, Rochester, N. Y., quarterly, 1¼ per cent, preferred; quarterly, 1½ per cent, common.

Philadelphia Company, Pittsburgh, Pa., quarterly, 1¾ per cent, common.

St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., quarterly, 1¼ per cent, preferred.

Twin City Rapid Transit Company, Minneapolis, Minn., quarterly, 1¾ per cent, preferred; quarterly, 1½ per cent, common.

Union Traction Company, Philadelphia, Pa., \$1.50.

United Traction & Electric Company, Providence, R. I., quarterly, 1¼ per cent.

Virginia Railway & Power Company, Richmond, Va., 2½ per cent, preferred.

West End Street Railway, Boston, Mass., 2 per cent, preferred.

ELECTRIC RAILWAY MONTHLY EARNINGS

BERKSHIRE STREET RAILWAY, PITTSFIELD, MASS.						
Period		Gross Earnings	Operating Expenses	Net Earnings	Fixed Charges	Net Surplus
1 mo.	Oct. '13	\$82,849	*\$78,983	\$3,866	\$15,283	†\$11,417
1 "	" '12	80,811	*79,932	879	12,749	†11,870
4 "	" '13	389,592	*306,431	83,161	60,015	23,146
4 "	" '12	370,433	*313,201	57,233	50,814	6,419
CONNECTICUT COMPANY, NEW HAVEN, CONN.						
1 mo.	Oct. '13	\$680,597	*\$525,234	\$155,363	\$89,079*	\$66,284
1 "	" '12	640,290	*462,068	178,222	86,500	91,722
4 "	" '13	3,114,757	*2,090,229	1,024,528	360,408	664,120
4 "	" '12	2,868,373	*1,844,706	1,023,667	346,405	677,262
CUMBERLAND COUNTY POWER & LIGHT COMPANY, PORTLAND, MAINE.						
1 mo.	Oct. '13	\$204,249	*\$115,886	\$88,363	\$63,735	\$24,628
1 "	" '12	176,976	*98,364	78,612	56,510	22,102
12 "	" '13	2,306,150	*1,286,259	1,019,891	700,142	319,749
12 "	" '12	2,109,285	*1,225,904	883,381	631,287	252,094
DETROIT (MICH.) UNITED RAILWAY.						
1 mo.	Oct. '13	\$1,039,610	\$727,635	\$311,975	\$182,430	\$129,545
1 "	" '12	1,050,143	714,003	335,141	175,308	160,833
12 "	" '13	10,961,416	7,273,654	3,787,762	1,769,891	1,695,971
12 "	" '12	9,863,112	6,397,251	3,465,861	1,769,891	1,695,970
EAST ST. LOUIS & SUBURBAN COMPANY, EAST ST. LOUIS, ILL.						
1 mo.	Oct. '13	\$248,966	*\$156,572	\$92,394	\$49,547	\$42,847
1 "	" '12	227,088	*122,901	104,187	48,176	56,011
12 "	" '13	2,668,715	*1,545,041	1,123,674	589,109	534,565
12 "	" '12	2,400,890	*1,319,750	1,081,140	573,528	507,612
GRAND RAPIDS (MICH.) RAILWAY						
1 mo.	Oct. '13	\$104,329	*\$68,469	\$35,860	\$13,306	\$22,554
1 "	" '12	101,569	*58,713	42,856	14,817	28,039
12 "	" '13	1,279,579	*784,031	495,548	171,038	324,510
12 "	" '12	1,228,766	*689,050	539,716	175,657	364,059
LEHIGH VALLEY TRANSIT COMPANY, ALLENTOWN, PA.						
1 mo.	Oct. '13	\$145,647	\$55,348	\$90,299	\$47,012	\$43,287
1 "	" '12	126,734	49,106	77,538	42,563	34,975
12 "	" '13	1,758,650	736,822	1,021,828	552,087	469,741
12 "	" '12	1,479,383	640,401	838,983	498,085	340,808
LEWISTON, AUGUSTA & WATERVILLE STREET RAILWAY, LEWISTON, MAINE.						
1 mo.	Oct. '13	\$51,301	*\$36,068	\$15,233	\$14,456	\$777
1 "	" '12	51,599	*31,686	19,913	14,400	5,513
12 "	" '13	668,543	*419,260	249,283	177,699	71,584
12 "	" '12	612,557	*386,141	226,416	173,151	53,265
MONONGAHELA VALLEY TRACTION COMPANY, FAIRMONT, W. VA.						
1 mo.	Oct. '13	\$87,394	\$33,887	\$53,506	\$25,799	\$27,707
1 "	" '12	77,837	29,589	48,248	24,738	23,510
12 "	" '13	788,832	280,152	508,680	246,092	262,588
12 "	" '12	705,450	280,339	425,111	211,556	213,555
NASHVILLE RAILWAY & LIGHT COMPANY, NASHVILLE, TENN.						
1 mo.	Sept. '13	\$187,252	*\$119,404	\$67,848	\$39,828	\$28,020
1 "	" '12	189,100	*102,932	86,168	36,994	49,174
12 "	" '13	2,166,318	*1,291,318	875,237	455,634	419,603
12 "	" '12	2,047,795	*1,173,201	874,594	425,572	449,022
NEW YORK & STAMFORD RAILWAY, PORT CHESTER, N. Y.						
1 mo.	Oct. '13	\$26,982	*\$29,635	\$2,654	\$7,850	†\$10,504
1 "	" '12	28,635	*25,858	2,777	7,030	†4,253
4 "	" '13	161,169	*114,909	46,260	30,741	15,519
4 "	" '12	156,376	*124,963	31,412	27,812	3,600
NEW YORK, WESTCHESTER & BOSTON RAILWAY, NEW YORK, N. Y.						
1 mo.	Oct. '13	\$38,749	*\$45,320	\$6,571	\$9,213	†\$15,783
1 "	" '12	29,604	*50,398	21,394	13,992	†35,386
4 "	" '13	150,261	*193,965	43,704	37,088	†80,792
4 "	" '12	92,505	*191,472	98,967	45,967	†144,934
PORTLAND (MAINE) RAILROAD						
1 mo.	Oct. '13	\$82,620	*\$52,081	\$30,539	\$21,711	\$8,828
1 "	" '12	79,415	*54,283	25,132	10,254	14,878
12 "	" '13	1,034,100	*705,997	328,103	156,193	171,910
12 "	" '12	972,501	*691,642	280,859	120,039	160,820
REPUBLIC RAILWAY & LIGHT COMPANY, NEW YORK, N. Y.						
1 mo.	Oct. '13	\$257,126	*\$156,462	\$100,664	\$43,804	\$56,860
1 "	" '12	230,773	*137,671	93,103	43,669	49,234
12 "	" '13	2,962,320	*1,800,391	1,161,929	537,111	624,818
12 "	" '12	2,606,842	*1,567,406	1,039,436	530,428	509,008
RHODE ISLAND COMPANY, PROVIDENCE, R. I.						
1 mo.	Oct. '13	\$462,302	*\$343,221	\$119,080	\$105,739	\$13,341
1 "	" '12	464,302	*298,447	165,856	102,056	63,799
4 "	" '13	2,056,688	*1,373,605	683,085	421,656	261,429
4 "	" '12	2,006,136	*1,844,706	1,023,667	346,405	677,262

*Includes taxes.

Traffic and Transportation

Modification of Running Board Order Refused

The Connecticut Public Utilities Commission has declined to modify its order issued some months ago regarding the custom of passengers riding on the steps or running boards of electric railway cars. The order referred to called upon all electric railways operating side-entrance open cars in the State to adopt and issue a rule forbidding passengers to ride on the steps or running boards of the cars. A petition was filed with the commission later by the New Haven division of the Amalgamated Association asking that the order be amended so that the decree be directed against the public, or that the decree be directed against the companies, calling upon them to refrain from using running boards for the purpose of carrying passengers. The commission has replied that it has no jurisdiction to direct such an order against the public and does not believe the latter drastic action is demanded. It further declares that it believes that a reasonable enforcement of the company's rule can be maintained, if diligent effort is made on the part of the officers and employees of the various companies. The opinion in part follows:

"The previous order, which the petition requests be modified, reads as follows:

"The Connecticut Company and all other electric street railways operating side-entrance open cars in the State are hereby ordered and directed to adopt and issue a rule, as one of their operating rules and regulations, forbidding and prohibiting passengers from riding on the steps or running boards of all their side-entrance open cars."

"The commission has no jurisdiction to issue an order directed against or requiring the general public to do or refrain from doing a particular act, as requested in the fore part of said Section 1 of this petition. The commission has jurisdiction, however, after hearing had, on complaint in writing, to issue an order directed against a public service company requiring it to do or refrain from doing certain specified acts pertaining to its plant or equipment or to the manner of operating such plant, if found necessary for the public safety or for the safety of the employees of such company.

"Chapter 15 of the Public Acts of 1913 prescribes a penalty for any person who wilfully resists an employee of a street railway in the enforcement of any such order duly made by the commission. There is no penalty imposed on the traveling public for performing an act which an order of the commission prohibits, but for wilfully resisting an employee of a public service company in the enforcement of such an order, and the company is subject to a penalty of not more than \$1,000 for each violation of any such order."

Detroit "Safety First" Plans Being Perfected

The Detroit (Mich.) United Railway is rapidly perfecting plans for its "safety first" campaign, mention of which was made at length in the *ELECTRIC RAILWAY JOURNAL* of Nov. 22, 1913, page 1122. Within a few weeks the city and the interurban lines will be thoroughly organized through the formation of safety boards in charge of the work. At the head of the movement is the general safety board with W. E. Cann, assistant to the general manager, as chairman. The other members of this board are: General Manager F. W. Brooks, General Superintendent Bullen, Assistant General Superintendent Dohrman, Superintendent of Power Burdick, Superintendent of Tracks Kerwin, Master Mechanic Potter, General Claims Attorney Rankin, General Freight Agent Parker, General Passenger Agent Keys, Supervisor of Dispatching Loughran and Publicity Agent Van Zandt.

There is to be a district safety board representing the Detroit city lines and a division safety board for each of the interurban lines. The first of the division boards organized is that of the Rapid Railway. The Flint, Orchard Lake and Pontiac divisions will be organized next. Each district and division board will meet monthly and go over matters that have come to its attention through contact with other employees, and once a month there will be a

meeting of the general board to pass upon the work and recommendations of the district and division boards. At this meeting the chairman of each division board will appear and take up with the general board such matters as have been favorably passed upon by his board. The general board will decide definitely as to what action will be taken upon all such matters presented, and when the decision is adverse specific reasons for such action will be given to the division chairman and he in turn will transmit the reasons to the employee making the suggestion.

Arrests for Stealing Fares in Saskatoon.—Eleven conductors on the Saskatoon (Sask.) Municipal Railway are on trial charged with pilfering from the fare boxes. The cases were remanded.

Reduction in Fare to Be Asked in Tacoma.—The City Commissioners of Tacoma, Wash., have decided to ask the Tacoma Railway & Power Company to sell twenty-five tickets for \$1 good on its lines in Tacoma. The company now sells twenty-two tickets for \$1 on its cars.

No Excuse for Stepping Off Car Backward.—In a Kansas City Court Judge Bird held in the suit of Alice L. Hulen against the Metropolitan Street Railway for \$20,000 that she can collect no damages because she stepped off a street car backward. The court stated that there was no excuse for the woman's act in view of the wide publicity which the correct methods of alighting from cars had received.

Buffalo Conductors Arraigned for Stealing.—Probation and orders to pay \$25 each in reparation was the disposition made by the court at Buffalo of the cases of the former conductors of the International Railway who pleaded guilty to cashing used street car tickets. The men bought the canceled tickets from a clerk in the canceling department of the road and then turned the tickets in for cash, keeping the 5-cent fare collected from the passenger.

Inquiry into Fares and Service in Jamestown.—The Council of Jamestown, N. Y., has asked the Public Service Commission of the Second District of New York to enter an order to require the Jamestown Street Railway to carry children to and from school for half fare and to investigate the service furnished by the company during rush hours. The request for half fare for school children was denied recently by A. N. Broadhead, president of the company.

Suggestions Invited.—E. J. Cook, vice-president of the New York State Railways, Rochester lines, issued the following statement previous to an inspection trip which he made recently over the lines in Rochester and the Rochester & Eastern Railway: "All patrons and friends of the company as well as those who have cause to feel other than friendly are invited to board the special train during its stay at the various points and give evidence of their friendliness or the cause of their being otherwise."

Watching the Signals.—The Pennsylvania Railroad has reprinted in leaflet form an article contributed by one of its locomotive engineers to the *Railway Age-Gazette* on how he "keeps a lookout." It describes graphically the work of an engineer on a fast passenger locomotive, the requirements as to signals, etc., and gives an excellent idea of the duties required of an engine man in work of this character. This publication of the Pennsylvania Railroad is one of its series of publicity leaflets designed to inform the public of some of the problems of steam railroading.

Freight Right Granted in Waupaca.—The City Council of Waupaca, Wis., passed an ordinance authorizing the Waupaca Electric Light & Railway Company to haul freight over its line between the Soo Line depot in Waupaca and the Wisconsin Veterans' Home, a distance of 5 miles. The ordinance provides that not more than two cars shall be hauled in any one train and that no car shall exceed 10 tons capacity. The Wisconsin Veterans' Home, with its 1000 inmates, has been obliged heretofore to have its freight hauled from the city of Waupaca by team.

New Transfer in Rochester.—The New York State Railways is using a new transfer on its Rochester lines by which it is hoped that confusion will be decreased and the number of unused transfers lessened. The new transfers are all of one color—yellow—and bear in red across the face the numeral corresponding with the day of the month. The month is punched. Transfers which are left over may

be used on the same day of any other month. The new transfers also bear on the face opposite each line the transfer point where passengers may change from car to car. This was formerly printed on the back.

Moving Pictures at Lexington.—The Kentucky Traction & Terminal Company, Lexington, Ky., has arranged to exhibit at the Colonial Theater in that city at its own expense a moving picture film called "The Fruits of Thoughtlessness." The film indicates the causes of street railway accidents and the proper way to avoid them and on account of its dramatic interest impresses the lessons of care more deeply than can be done ordinarily. The company is carrying on a definite campaign for accident prevention, of which the exhibition of the film is but a part. M. A. Cassidy, superintendent of public schools, is co-operating with the company and will arrange for school children to see the film at the moving picture theater.

The Stepless Car in Brooklyn.—The Brooklyn (N. Y.) Rapid Transit Company now has in operation all of the 101 center-entrance stepless cars which it ordered some time ago. Fifty of the cars are being operated on the Gates Avenue line, thirty on the Flatbush Avenue line and twenty-one on the St. John's Place line. These are all lines on which traffic is uniformly heavy. J. F. Calderwood, vice-president and general manager of the company, says: "The company is naturally anxious to see how the cars stand up under every possible test of service. We have given them practically every test but that of winter service, and we desire to see how they operate during the stormy winter months before we place another order."

Fare Charge Upheld.—In the complaint by the West Middlesex Borough Council against the Republic Railway & Light Company, Youngstown, Ohio, the Public Service Commission of Pennsylvania finds to be reasonable a fare of 5 cents for a distance of 3.2 miles. The commission in its decision says that as long as 5 cents continues to be the unit of fare the dividing lines of zones cannot always be of uniform distance, nor can exact distances be fixed as the length of ride for one unit of fare. In the consideration of the reasonableness of any rates of fare or the length of ride for one fare unit, the commission finds that the controlling factors are the relative locations of the centers of manufacture, business, shopping and population with reference to the greatest proportion of travel.

Collision in New York Subway.—Traffic in the subway from the Brooklyn Bridge station southward was delayed on Dec. 4 for more than one hour following a collision between a northbound train from the South Ferry and a train coming from Brooklyn at the Bowling Green junction. Frank Hedley, vice-president and general manager of the Interborough Rapid Transit Company, issued the following statement regarding the accident: "The train from South Ferry was coming around the Bowling Green loop and had the right-of-way. The signals and switches were right. The motorman of the train from Brooklyn says the distant signal was at caution and that the home signal turned red just as he appeared in sight of it, and he could not stop before bumping into the other train."

Carrying on Construction Without Interfering with Traffic.—The Brooklyn Rapid Transit Company, Brooklyn, N. Y., inserted in the Brooklyn papers of Dec. 9 an advertisement headed "Miracles and the Brooklyn Rapid Transit Company," in a space 8 in. wide and full newspaper depth. The company referred particularly to the work which is being carried out in connection with the subway and rapid transit contracts and showed the immense amount of readjustment which is necessary in order to facilitate that work. Under the circumstances it is impossible not to interrupt the regular Brooklyn Rapid Transit service occasionally. One particularly difficult piece of work to which the company referred in the advertisement is the proposed connection between the Broadway elevated line and the Myrtle Avenue elevated line at the junction of Myrtle Avenue and Broadway. At this point the Myrtle Avenue and the Broadway lines cross at different levels. It is proposed to build a direct connection between the existing structures, and the work is being carried out and an effort made to maintain regular service. The company concluded the advertisement with the capitalized sentence, "Co-operation, Not Miracles, in This Age of Progress."

Personal Mention

Mr. N. W. Patterson has been appointed chief inspector of the Regina (Sask.) Municipal Railway.

Mr. John G. Sutton has been elected vice-president and general manager of the Ocean Shore Railroad, San Francisco, Cal., to succeed the late Alfred Williams.

Mr. A. W. Foster has resigned as a member of the transportation committee of the Panama Pacific Exposition, because he was recently named as a director of the United Railroads, San Francisco.

Mr. Alfred H. Smith, senior vice-president of the New York Central & Hudson River Railroad and the Lake Shore & Michigan Southern Railway, has been elected president to succeed Mr. William C. Brown, who will retire on Jan. 1.

Mr. C. H. Gerber, who has been principal assistant in the valuation department of the State Railway Commission of Nebraska, will assume charge of the engineering office of the commission, Mr. E. C. Hurd having resigned as chief engineer in charge of the valuation work of the commission.

Mr. Clarence P. Westlake, who has been carhouse foreman of the Columbia Railway, Gas & Electric Company, Columbia, S. C., has been appointed superintendent of the company to succeed Mr. Alfred Wallace, whose appointment as general manager of the company is announced elsewhere in this column.

Mr. Wilfrid K. Barnard, formerly engineer of maintenance of way and structures of the Pacific Electric Railway, Los Angeles, Cal., has formed a partnership with Capt. Charles T. Leeds, U. S. A., retired, under the firm name of Leeds & Barnard, for the general practice of engineering, with offices at Los Angeles.

Mr. C. F. Foley, Lyons, Kan., has been appointed a member of the Kansas State Public Utilities Commission, succeeding Mr. Henderson S. Martin, who has resigned to become vice-governor of the Philippine Islands. Mr. Foley is a lawyer. He is the second new member of the commission, Mr. James A. Cable having been appointed about a month ago.

Mr. Archibald B. Millar has been elected secretary of the Public Service Commission of Pennsylvania. Mr. Millar was private secretary to Governor Stuart during the latter's term. Afterward he was secretary to the State Railroad Commission, the predecessor of the Public Service Commission. He has been acting secretary to the latter body since its formation.

Mr. Flag F. Grant, who has been station agent at Portsmouth, N. H., for many years for the Boston & Maine Railroad, has been appointed general agent at Portsmouth with jurisdiction over the station and the Portsmouth Electric Railway. Mr. Grant is a native of Berwick and has been in the employ of the Boston & Maine Railroad for twenty-four years.

Mr. Alfred Wallace has been appointed general manager of the Columbia Railway, Gas & Electric Company, Columbia, S. C., to succeed Mr. G. K. Dustin, who resigned early in the fall to accept a position in New York. Mr. Wallace has been connected with the street railway system in Columbia since 1885, with the exception of four years during the administration of President Cleveland, when he was in the postal service.

Mr. Robert M. Searle, vice-president of the Rochester Railway & Light Company, Rochester, N. Y., has been elected vice-president of the New York State Railways. He will still retain his former position and will remain in Rochester to take charge of the public policies of the two corporations, while Mr. E. J. Cook, vice-president of the New York State Railways, will remain in Rochester as general manager of the Rochester lines.

Mr. Charles C. Dietz, whose resignation from the United Traction Company, Albany, N. Y., to become connected with the McGraw Publishing Company, Inc., was noted in the *ELECTRIC RAILWAY JOURNAL* of Dec. 6, was the guest of honor at a dinner of the heads of the departments under the jurisdiction of Mr. James F. Hamilton, general manager of the company, at the Albany Club on Dec. 4. He was presented with a diamond pin and diamond cuff buttons. A theater party followed the dinner.

Mr. F. W. Murphy has been appointed electrical engineer and master mechanic of the Chicago, Ottawa & Peoria Railway with headquarters at Ottawa, Ill. Prior to accepting this position Mr. Murphy was assistant foreman of the electrical department of the Chicago (Ill.) Railways for three years. He began his electric railway career in 1895 in the mechanical department of the Calumet & South Chicago Railway, advancing to master mechanic of that road. Later he became master mechanic of the Southern Traction Company, now the Chicago & Interurban Traction Company.

Mr. C. L. S. Tingley, who has been elected president of the Pennsylvania Street Railway Association, is second vice-president of the American Railways, Philadelphia, Pa. Mr. Tingley was born in Philadelphia in 1865 and was educated at the Episcopal Academy of that city. He entered business in 1881 with the Girard Point Storage Company, a subsidiary of the Pennsylvania Railroad. This company operated the grain and oil terminals in Philadelphia. He subsequently entered the employ of the banking and shipping firm of Peter Wright & Son, with which he served first in the accounting department, then as assistant cashier and subsequently as cashier. Upon the organization of the American Railways in 1899, Mr. Tingley was elected secretary and assistant treasurer of the company. In 1901 he was elected treasurer and in 1903 he was elected second vice-president. Mr. Tingley's first association connection was with the American Electric Railway Accountants' Association, of which he was first vice-president in 1901-02, a member of the executive committee in 1905-06, president in 1906-07 and a member of the executive committee in 1907-08. From time to time he has served on numerous committees of that body, and in 1905 presented a paper before the convention on the cost of carrying passengers. His activities with the American Electric Railway Association have been of rather recent date and consist of serving for two or three years on the committee on compensation for carrying United States mail and three or four years on the committee on taxation matters, the last two years as chairman and the year before that as vice-chairman. Mr. Tingley presented a paper, "Present Tendency of Public Utility Laws and Regulations," at the convention last fall.

Mr. George F. Reed has been appointed manager of the Springfield (Mass.) Street Railway to succeed Mr. E. J. Dickson, who has been elected vice-president of the International Railway, Buffalo, N. Y. Mr. Reed was born in Cummington, Mass., on May 10, 1867. His parents moved to Springfield when Mr. Reed was an infant, and he has been a resident of Springfield continuously since that time. He attended the public schools there and entered the employ of the Springfield Street Railway in February, 1882, as a clerk. He remained in that position until the spring of 1890, when the motive power of the company was changed from horses to electricity. He was then made electrician in charge of all of the electrical and mechanical work on the cars. In 1892 he was placed in charge of the transportation department, his duties being practically those of superintendent. In 1905 he was appointed superintendent of the Springfield division, and in 1911 he was made superintendent of transportation in charge of the Springfield, Westfield and Palmer divisions. On Dec. 1, 1913, he was promoted to the position of manager of the Springfield Railway to succeed Mr. Dickson.



G. F. Reed

OBITUARY

Robert Christy Totten, who was president of the Nickel-Chrome Chilled Car Wheel Company, Pittsburgh, Pa., is dead. Mr. Totten was born in Pittsburgh eighty-one years ago. His father was one of the early iron manufacturers, having organized the old Fort Pitt foundry. When the elder Mr. Totten died the son entered the concern and conducted the business until 1891.

Construction News

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

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

RECENT INCORPORATIONS

***Los Angeles (Cal.) Railway.**—Incorporated in California in the interests of the Los Angeles Railway Corporation and the City Railway of Los Angeles. Directors: W. E. Dunn, G. C. Ward, C. A. Henderson, S. M. Haskins, J. E. Brown, Frank Griffith and Albert Crutcher.

***Southern Illinois & St. Louis Railway, Harrisburg, Ill.**—Application for a charter has been made by this company to build an electric railway from Marion to Harrisburg. Another line will extend north to Benton. A spur will connect Johnson City and Herrin. Incorporators: William Rothman, William M. Klein, Samuel Kraus, Thomas G. Deering, all of Chicago, and Harold E. Higginson, Elmhurst.

Red Lodge (Mont.) Electric Railway.—Incorporated in Montana to build a 9-mile railway between Red Lodge, Washoe and Bear Creek. Capital stock, \$225,000. Officers: C. C. Bowlen, president; J. N. Tolman, vice-president; Walter Alderson, secretary, and E. A. Sell, treasurer. [E. R. J., Dec. 6, '13.]

Three Rivers (Que.) Traction Company.—Application for a charter will be made by this company to the Quebec Legislature to build an electric railway in Three Rivers and the surrounding municipalities. J. Aldred, T. McDougall and W. S. Hart, Montreal, are interested. [E. R. J., Nov. 8, '13.]

Dallas (Tex.) Northwestern Traction Company.—Application for a charter will be made by this company to build a 50-mile electric railway from Dallas to Krum, via Denton. E. P. Turner, president. [E. R. J., Sept. 20, '13.]

***Tacoma (Wash.) Transit Company.**—Application for a charter has been made by this company to build an electric railway in Tacoma. Capital stock, \$30,000. Incorporators: J. Grant Hinkle and George Everett.

FRANCHISES

Birmingham, Ala.—The Birmingham & Chattanooga Railroad has asked the Council for a franchise in Birmingham. This is part of a plan to build a 147-mile railway to connect Birmingham and Chattanooga, via Oneonta and Boaz. W. W. Shortridge, secretary. [E. R. J., May 3, '13.]

***Birmingham, Ala.**—William M. Walker, Birmingham, has asked the Council for an electric railway franchise on Avenue F in Birmingham.

St. Petersburg, Fla.—The St. Petersburg Land & Loan Company has asked the Council for a franchise on Ninth Street north, beginning at the city limits and extending north to John's Pass Road. [E. R. J., Dec. 6, '13.]

New Orleans, La.—The City Council of New Orleans is advertising for sale two electric railway franchises, one on Claiborne Street to Clio Street to Magnolia Street, also on Erato Street from Claiborne Street to Magnolia Street, and the other on Broadway from Claiborne Avenue to Maple Street.

St. Louis, Mo.—The East St. Louis & Suburban Railway will ask the Council for a franchise for a line from the Lansdowne division to Natalia Avenue, Twenty-ninth Street, Caseyville Road and Jones Park in St. Louis.

Brooklyn, N. Y.—The Manhattan Bridge Three-Cent Line has received permission from the Board of Estimate to build through several streets in Brooklyn so as to reach the Long Island Railroad station.

Marion, Ohio.—Eli M. West, receiver for the Columbus, Delaware & Marion Railway, has received a twenty-five-year franchise from the County Commissioners.

Henryetta, Okla.—The Henryetta Interurban Railway has received a franchise from the Council in Henryetta. This is part of a plan to build a 100-mile electric railway to connect Henryetta with the various coal mines and oil fields within a radius of 10 miles of Henryetta. C. H. Kellogg, Henryetta. [E. R. J., Oct. 18, '13.]

Ottawa, Ont.—The London & Lake Erie Railway &

Transportation Company has asked Parliament to extend the time for construction of its authorized lines and for authority to build branches from Sparta and from St. Thomas through Aylmer to Port Burwell.

Centralia, Wash.—The Washington-Oregon Corporation, Vancouver, has received a franchise from the Lewis County Commissioners for a line from the Galvin station near the fair grounds west on South Street to the old Union Pacific grade and thence north to the south city limits of Centralia.

Seattle, Wash.—The Puget Sound Traction, Light & Power Company has received a franchise from the Council along the county roads between Seattle and Lake Forest Park. The company has also asked for a franchise for a line between Kirkland and Redmond.

Ceredo, W. Va.—The Ohio Valley Electric Railway has asked the City Council for a franchise for a double-track line between Ceredo and Kenova.

TRACK AND ROADWAY

Birmingham & Chattanooga Railroad, Birmingham, Ala.—Grading has been begun by this company in Boaz. Construction at other points along the line will be begun next spring. This 145-mile line will connect Chattanooga, Tenn., and Birmingham, Ala., via Oneonta and Boaz. J. M. Spradin, Boaz, president. [E. R. J., May 31, '13.]

British Columbia Electric Railway, Vancouver, B. C.—Plans have been approved by this company to build a line on Forty-third Avenue, South Vancouver, from Bridge Street to Main Street. This is an extension of the new line from Kerrisdale to Point Grey.

Northern Electric Railway, Chico, Cal.—Surveys have been completed by this company for the Colusa extension. This 40-mile line will extend from Woodland to Colusa.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—This company has filed a deed of trust to the Union Trust Company, San Francisco, to secure a bond issue of \$5,000,000. The deed covers rights-of-way through Contra Costa and San Joaquin Counties for a line from Oakland to Stockton.

United Railroads, San Francisco, Cal.—This company is asked to extend its line along Richland Avenue from Mission to Andover in San Francisco.

Stockton Terminal & Eastern Railroad, Stockton, Cal.—Work will soon be begun by this company on the completion of its line to Jennie Lind.

Carolina & Georgia Railway, Augusta, Ga.—Financial arrangements have been made and surveys will soon be begun by this company on the line between Greenwood and Johnston to connect with the proposed line from Columbia, S. C., to Augusta, Ga., two lines being run, one via Ninety-Six and the other via Epworth. James U. Jackson, Augusta, president. [E. R. J., Sept 27, '13.]

***Hagerman Valley & Twin Falls Traction Company, Boise, Idaho.**—This company is reported to have been financed to build a 37-mile electric railway from Hagerman to Castleford. D. B. Welty, Oklahoma City, Okla., is interested.

Michigan & Chicago Railway, Chicago, Ill.—This company has asked authority to issue \$3,000,000 bonds and \$750,000 capital stock for building an electric railway between Owosso and Saginaw.

Union Traction Company, Independence, Kan.—Plans are being considered by this company for an extension south of Nowata.

***Franklin, Ky.**—Citizens of Franklin and Simpson Counties are considering plans to build an electric railway between Franklin and Nashville, via Orlinda, a distance of 43 miles.

Brandon (Man.) Municipal Railway.—A report is being prepared for submission to the City Council of Brandon, Man., respecting extensions to the line which it may be necessary to make in 1914. The principal extension proposed is one of 4 miles to the Experimental Farm, the Industrial School and Lake Percy.

United Railways & Electric Company, Baltimore, Md.—The Public Service Commission has issued a pre-emptory order for the extension of this company's Belair Road line from the present terminus at Overlea to Jerusalem, a distance of 7 miles, for which a franchise exists.

Detroit, Lansing & Grand Rapids Railway, Detroit, Mich.—This company plans to begin work in the spring on its 135-mile line between Detroit and Grand Rapids, via Lansing. Capital stock authorized, \$2,500,000; issued, \$250,000. Bonds authorized, \$5,000,000; issued, \$50,000. The company will furnish power for lighting purposes. Officers: Henry M. Wallace, 704 Union Trust Building, Detroit, vice-president; Raymond G. St. John, secretary; William T. Utley, treasurer, and H. M. Wallace, Detroit, general manager and purchasing agent. [E. R. J., March 2, '12.]

Grand Rapids, Hastings & Battle Creek Interurban Railway, Grand Rapids, Mich.—This company states that no definite plans have yet been made as to when construction will be begun on the 53-mile railway to connect Grand Rapids, Hastings and Battle Creek. A. C. Sekell, Grand Rapids, promoter. [E. R. J., Dec. 7, '13.]

Lansing, Mich.—Grading has nearly been completed for the 11-mile electric railway to connect Lansing and Grand Ledge. George H. Kneal, Lansing, is interested. [E. R. J., July 6, '13.]

Mesaba Electric Railway, Duluth, Minn.—Plans are being considered by this company to extend its line westward as far as Biwabik and eventually to Grand Rapids.

Mankato (Minn.) Electric Traction Company.—Surveys are being made by this company for an extension from Mankato to St. Clair, via Thompson's ravine.

Minneapolis & Central Minnesota Railway, Minneapolis, Minn.—Surveys have been made by this company on the 25-mile section of its line between Minneapolis and Dayton and grading has been completed between Robbinsdale and Champlain, 12 miles. Construction will be begun in the spring on this 66-mile line between Minneapolis and St. Cloud. E. G. Potter, 433 Andrews Building, Minneapolis, president.

Minnesota Union Electric Railway, Minneapolis, Minn.—Right-of-way has been secured and financial backing has been obtained by this company for its line between Minneapolis and St. Cloud, via Hamel, Hanover, St. Michael, Buffalo, Maple Lake, Annandale and South Haven. Theodore A. Chadwick is one of those interested. [E. R. J., Nov 8, '13.]

Missouri Valley Traction Company, St. Joseph, Mo.—This company states that its 68-mile line between Excelsior Springs and St. Joseph, via Lathrop, Lawson, Mirabile and Kingston, is still in the course of promotion. H. G. Krake, St. Joseph, secretary. [E. R. J., Dec. 12, '13.]

United Traction Company, Albany, N. Y.—This company plans to extend its Broadway line in upper Rensselaer next spring.

Cleveland (Ohio) Railway.—Directors of this company have approved a contract with the Cleveland Interurban Railway, making possible a new electric line to Shaker Lakes.

Poland (Ohio) Street Railway, Youngstown, Ohio.—This company has placed in operation its line between Poland and Youngstown. G. J. A. Paul, superintendent. [E. R. J., Sept. 27, '13.]

***Bartlesville, Okla.**—Plans are being made to build an electric railway from Bartlesville to Caney, Kan., via Bolton, Wayside and Havana. Business men of Bartlesville are promoting the project.

Oklahoma (Okla.) Railway.—A 16-mile extension is being planned by this company from Edmond north of Guthrie.

London & Lake Erie Railway & Transportation Company, London, Ont.—The directors of this company have been asked to build an extension through Elgin from Union to Sparta and further, if possible, to Port Bruce.

Toronto, Barrie & Orillia Electric Railway, Toronto, Ont.—At a recent meeting of the Barrie (Ont.) Town Council a committee was appointed to confer with the company with a view to having an agreement for a franchise submitted to a vote of the ratepayers in January. This company was originally incorporated by the Ontario Legislature as the Monarch Radial Railway, having power to build a railway from Toronto to Barrie and Orillia. An extension of time for construction and authority to change its name to the Toronto, Barrie & Orillia Electric Railway was granted in 1912. [E. R. J., Feb. 17, '13.]

Manufactures and Supplies

ROLLING STOCK

Southern Traction Company of Illinois, East St. Louis, Ill., has ordered six passenger cars from the St. Louis Car Company.

City Railway, Dayton, Ohio, noted in the *ELECTRIC RAILWAY JOURNAL* of Aug. 30, 1913, as being in the market for cars, has purchased twenty 29-ft. 6-in. single-end double-truck prepayment car bodies from the Cincinnati Car Company.

Montreal & Southern Counties Railway, Quebec, Que., has ordered from the National Steel Car Company six passenger cars, two trail cars and two combination passenger and baggage cars, all 54 ft. 2 in. long over buffers, with straight platforms.

Regina (Sask.) Municipal Railway has purchased from the Preston Car & Coach Company eighteen double-truck cars and one double-truck snow sweeper. A motor haulage car and other rolling stock have been built by the railway in its own shops.

Ohio Electric Railway, Cincinnati, Ohio, has ordered two 60-ft. combination passenger and smoking excursion trail cars from the Cincinnati Car Company. It has increased its order from the same car builders for freight equipment, noted in the *ELECTRIC RAILWAY JOURNAL* of Sept. 6, 1913, from three to six motor freight cars and from six to fifteen freight trail cars.

Chicago (Ill.) City Railway, which ordered 100 double-end double-truck pay-as-you-enter cars from The J. G. Brill Company, has specified the following details for this equipment:

Seating capacity.....	53	Gongs	Brill
Bolster centers, length..	22 ft.	Hand brakes	Brill
Length of body... ..	32 ft. 8 in.	Heating system.....	Gold
Length over vestibule..	47 ft.	Headlights.....	A. & W.
Width over sills,		Journal boxes	Brill
	8 ft. 2 11/16 in.	Motors.....	G. E. 242-A
Width over posts at		Paint	Chicago
belt.....	8 ft. 5 in.	Push button signal—	Consol.
Width, sill to trolley-		Registers	International
base.....	9 ft. 1 3/8 in.	Roofs	plain arch
Height from top of		Sanders.....	E. S. S. Co.
rail to sills.....	2 ft. 6 1/2 in.	Sash fixtures.....	Edwards
Body.....	wood and metal	Seats	H. & K.
Interior trim.....	bronze oxidized	Seating material.....	cane
Underframe	metal	Side bearings.....	Brill
Air brakes.....	G. E.	Springs	Brill
Bolsters	Brill	Step treads.....	Universal
Brakeshoes	Brill	Trolley retrievers..	Keystone
Bumpers	Brill	Trolley poles.....	G. E.
Car trimmings.....	Brill	Trolley bases... ..	U. S. No. 14
Center bearings	Brill	Trolley wheels.....	G. E.
Control system.....	G. E.	Trucks	Brill 39-E
Curtain fixtures.....	Cur. Sup. Co.	Varnish	Chicago
Curtain material... ..	Pantasote	Ventilators.	
Destination signs....	Hunter	Mushroom and Cooke	
Fenders	H. B.	system.	
Gears and pinions.....	G. E.	Wheels	Carnegie

TRADE NOTES

New York Pole Company (G. M. Gest), New York, N. Y., has removed its general offices from 277 Broadway to the Woolworth Building.

American Brake Shoe & Foundry Company, Mahwah, N. J., at its annual meeting on Dec. 9, elected W. F. Cutler a director to succeed E. H. Fallows, who recently resigned.

Wagner Electric Company, St. Louis, Mo., has appointed T. T. Richards its assistant sales manager. Mr. Richards has been associated for nine years with the sales department of this company, specializing in the marketing of the new devices produced.

Alberger Pump & Condenser Company, New York, N. Y., has elected Theodore S. Fuller its secretary and treasurer in place of W. R. Billings, resigned. Mr. Fuller was formerly connected with the Scranton Bolt & Nut Company and was also treasurer of Milliken Brothers.

Conestoga Traction Company, Lancaster, Pa.—This company has placed in operation its 2-mile line between Lancaster and Rohrerstown, and hereafter the cars on the Mount Joy and Elizabethtown division of the company's line will follow this route instead of proceeding west on the Columbia turnpike as far as Ridgeway and then 1 mile north to the Marietta pike, as heretofore.

Scranton & Binghamton Traction Company, Scranton, Pa.—This company has completed 6 miles of grading, from Nicholson to Foster, on its 17-mile extension from Nicholson to Montross. R. W. Day, general manager.

Warren (Pa.) Street Railway.—Work will be begun shortly after the first of the year by this company on a 9-mile extension from Warren to Youngsville.

Jackson Railway & Light Company, Jackson, Tenn.—Work will be begun in the spring by this company on its new West Jackson line.

Puget Sound Traction, Light & Power Company, Seattle, Wash.—This company has agreed to build a 1-mile line on Fairview Avenue from Westlake Avenue to Virginia Street to the proposed county dock on the east shore of Lake Union, provided that the King County Commissioners will agree to operate a ferry from the dock through the Lake Washington canal to some point on the eastern shore of the lake.

Tacoma, Wash.—The City Commission at a recent meeting voted to call a special election Jan. 3, 1914, for the voters of Tacoma to pass upon a proposed bond issue of \$100,000 to be used in building a municipally owned and operated street car line across the new Lincoln bridge and the tideflats to the manufacturing district of Tacoma. The Tideflats Carline Club, composed of several hundred workmen, has agreed to stand the expense of the election, provide polling places and pay the election officials.

Charleston, Parkersburg & Northern Railroad, Parkersburg, W. Va.—Right-of-way has been secured, surveys are under way and construction will soon be begun by this company on its 47-mile line to connect Parkersburg, Charleston and Sissonville. K. B. Stephenson, Parkersburg, president. [E. R. J., July 12, '13.]

SHOPS AND BUILDINGS

Birmingham & Chattanooga Railroad, Birmingham, Ala.—Arrangements have been made by this company for terminal facilities in Chattanooga. J. M. Spradin, Boaz, president.

Stockton Terminal & Eastern Railroad, Stockton, Cal.—Plans are being considered by this company to build soon a new terminal on the Stockton waterfront.

Atlantic City & Shore Railroad Company, Atlantic City, N. J.—This company has now under construction new carhouses and shops in Atlantic City.

Ohio Electric Railway, Cincinnati, Ohio.—The A. Bentley & Sons Company has begun work on the foundation of the new freight house to be built for the Ohio Electric Railway in Cincinnati. The new structure will be one story high.

POWER HOUSES AND SUBSTATIONS

Charlotte (N. C.) Electric Railway.—This company has placed an order with the Westinghouse Electric & Manufacturing Company for one 750-kw, 600-volt, direct-current, six-phase, 60-cycle, 900-r.p.m. rotary converter; three 275-kva, single-phase, 60-cycle, 2200-volt, rotary-voltage, O.I.S.C. transformers and one switchboard for the control of the above apparatus.

Pennsylvania Railroad, Philadelphia, Pa.—This company has placed an order with the Westinghouse Electric & Manufacturing Company for one 20,000-kw and two 1000-kw turbines with surface condensers and other power house apparatus for the Long Island electric power station which furnishes electricity for the Long Island Railroad system.

Scranton (Pa.) Railway.—This company plans to build a new substation at Stark's Crossing in Moosic.

Norfolk & Western Railroad, Norfolk, Va.—This company has placed an order with the Westinghouse Electric & Manufacturing Company for three 9000-kw turbines, which the company will need in its plan of electrifying part of its system.

Wilfred K. Barnard, formerly engineer of way and structures Pacific Electric Railway, has formed a partnership with Capt. Charles T. Leeds, under the firm name of Leeds & Barnard, for the general practice of engineering, with offices at 511-515 Central Building, Los Angeles, Cal.

Cleveland Fare Box Company, Cleveland, Ohio, recently shipped fifty of its No. 2 fare boxes to the plant of The J. G. Brill Company, Philadelphia, Pa., for installation on the twenty-five motor cars and twenty-five trail cars that are being built at that plant for the Montreal Tramways Company.

Electric Railway Improvement Company, Cleveland, Ohio, has recently leased its bonding cars to the following railways: Hudson & Manhattan Railroad, International Railway, Maryland Electric Railways, Des Moines City Railway, Ottawa Electric Railway and Southern Traction Company, Dallas, Tex.

High Voltage Insulator Company, Derry, Pa., has appointed J. W. Blankenhorn to a position in connection with its electrical engineering department. Mr. Blankenhorn has been connected for some time past with the engineering department of the Stone & Webster Engineering Corporation, Boston, Mass.

Dossert & Company, New York, N. Y., has received an order for the wiring of the new signal system of the New York, New Haven & Hartford Railroad, which will replace the old banjo signal system. This company has also received orders for connectors from the Toledo Railways & Light Company, Interborough Rapid Transit Company, Wisconsin Railway, Light & Power Company, and Elmira Water, Light & Railroad Company.

Monitor Controller Company, Baltimore, Md., has brought out a new controller for variable speed motors of single-phase, two-phase or three-phase type. The distinctive feature is that in starting a proper amount of resistance is automatically inserted in each phase of the motor, giving absolutely correct starting characteristics. That is to say, the starting effort required of the motor is the same regardless of the position of the regulating handle. After the rotor has attained the proper speed the starting resistance is automatically cut out by the controller, and the regulating resistance which has been previously determined by setting of the handle is automatically thrown in, bringing the motor promptly to the speed desired. This may be any speed between normal speed and the lowest speed specified. A no-voltage release is provided with these controllers, so that on failure of the line voltage and the consequent stoppage of the motor the entire system is automatically cut out and will not again start on the return of the voltage until the operator has once more touched the start button or lever, when the starting cycle is again begun.

ADVERTISING LITERATURE

H. W. Johns-Manville Company, New York, N. Y., has issued a booklet on the subject of fires, in connection with its J-M Fyro fire extinguisher.

Pass & Seymour, Inc., Solvay, N. Y., have issued a catalog describing the use of their Shurlok electric lamp sockets, which prevent the theft of lamps, shades and reflectors.

American Tool Works Company, Cincinnati, Ohio, have issued a folder describing its radial drills, which are designed for high power and which combine the features of simplicity and convenience.

Electric Storage Battery Company, Philadelphia, Pa., has issued a catalog which commemorates the twenty-fifth anniversary of the company by means of a historical sketch of its growth and which contains an illustrated description of its present factory and organization. Its chloride accumulator and "Exide" batteries are for use in electric railway power houses and substations, switch and signal service, car lighting, electrification of railway terminals and in storage battery street cars. For electric railway service 329 large batteries have been built and installed, representing a kilowatt-hour capacity of 206,925 at the three-hour rate.

Automatic Ventilator Company, New York, N. Y., has issued a catalog on the subject of car ventilation, in connection with its self-acting, intake-and-exhaust car ventilators. Illustrations are shown of the instalment of these ventilators on various types of cars of steam and electric

railways, among which those of electric railways are as follows: Terre Haute, Indianapolis & Eastern Traction Company, New York Central Lines, Twin Falls Railway, Brooklyn Rapid Transit Company, Salt Lake & Ogden Railway, Great Falls & Dominion Railroad, Public Service Railway, Newark, N. J., and Schenectady Railway.

American Mason Safety Tread Company, Lowell, Mass., has issued a catalog describing the uses to which its safety tread may be applied, such as to brass bases and nosings, wood and iron stairs and sidewalks. This tread is used in the Grand Central and Pennsylvania Railroad terminals in New York City. The catalog also describes the Starwood tread and Karbolith flooring. The latter material is being used by the steel cars of the Interborough Rapid Transit Company, the Hudson & Manhattan Railroad, Long Island Railroad, New York Central & Hudson River Railroad, New York, New Haven & Hartford Railroad, Chicago Railways, New York & Queens County Railway, Philadelphia Rapid Transit Company and the Boston Elevated Railway.

William E. Volz, New York, N. Y., sales agent for the Weldless Chains, Ltd., Gartsherrie, Coatbridge, Scotland, has issued a catalog describing weldless steel chains for cranes, slings, cage bridles, coupling chains, steering gears, mooring, hauling and mining. Each chain is manufactured from a cruciform bar. Special attention is given to the manufacture of car brake chains, now in use on nearly all the principal tramway systems and railways in Great Britain, the Glasgow Corporation Tramways alone having 5000 brake chains in service. These chains are fitted with solid drop-forged steel eye-bolts, and the ends of the links are thickened to compensate for wear, thus at least doubling the life of the chain. Another folder describes universal patent chain adjusters and positive patent lifting clamps.

Dayton Manufacturing Company, Dayton, Ohio, has issued a bound 158-page catalog, No. 166, illustrating its various types of electric, gas, oil and candle car-lighting fixtures. The catalog also contains an illustration showing the application of these fixtures in the electric lighting of street and interurban cars. The light from a single series of five high-efficiency Mazda lamps, mounted on properly designed fixtures, is directed by correctly shaped reflecting shades, giving high illumination where desired, without the injurious effect of bare filaments. This system, in use on the cars of a large street railway, is found to deliver an increase of 80 per cent effective illumination at a reduction of 65 per cent current consumption, as compared with the former system, which used several series of 16-cp bare carbon lamps. The recent interest in modern methods of car illumination makes this catalog of special interest.

NEW PUBLICATION

Regulation, Valuation and Depreciation of Public Utilities.

By Samuel S. Wyer. Columbus, Ohio: The Sears & Simpson Company. Size, 6 in. x 9 in.; 313 pages. Price, in leather, \$5.

The author states that this book is "an unbiased discussion and concise compilation of the pertinent economic, engineering and legal facts" relating to both public utilities and the public. With the exception of Chapters I and II, which deal with introductory matters and fundamental definitions, the book is devoted mainly to a discussion of the economics of public utilities, describing the service, costs and rates, the principles underlying public utility regulation and the valuation of public utilities for rate-making purposes. The subject matter of the book is supported by tables, references and citations from court and commission decisions. The front of the book contains a convenient list of reference tables and also a list of the half hundred excellent halftones. The last three chapters of the book are devoted to engineering data pertaining to utility regulation, valuation and depreciation, to reference data and to a selected bibliography and indexes. A comprehensive index is given of all the authorities referred to in the book with the citations abstracted, and there is also an exhaustive separate subject index following. The book shows painstaking preparation and is a valuable handbook of information on its subject.