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ATLANTIC CITY CHOSEN AGAIN

The announcement is made by the convention location committee of the American Electric Railway Association that Atlantic City has been chosen again for the annual convention, which this year will be held during the period of Oct. 12 to 16 inclusive. Those who are familiar with the great advantages of Atlantic City as a convention place, on account of its unexcelled hotel facilities, convenient exhibit arrangements and natural attractions will heartily commend the choice of the committee. The fact is that Boston and Washington also were seriously considered, but as the convention has grown bigger from year to year the choice of a gathering place has become little greater now than the celebrated choice which Hobson permitted to the university students who wanted to use his livery service in traveling between Cambridge and London. In the case of Boston the committee found that Mechanics Hall, the only suitable structure in that city large enough for the exhibits, would not be free until November. That month the committee thought would be too late in the year. Washington, of course, is an excellent hotel city, but it has no suitable place for the equipment display which has justly come to be considered the prime attraction of the convention. No western cities were discussed this year owing to the fact that the 1915 convention will be held at San Francisco during the Panama-Pacific Exposition. By the selection of Atlantic City for the 1914 convention American electric railway men will have the opportunity of attending the two next conventions on the shores of the Atlantic and Pacific Oceans alternately.

THE ALTERNATIVE OF REGULATION

William D. Kerr, speaking before the Finance Forum of the Young Men's Christian Association in New York this week, said that the alternative of regulation is municipal ownership and operation. This is, we believe, an accurate conclusion. The only possible other alternative of private ownership with regulation is private ownership without regulation. It is scarcely thinkable that there will ever be a permanent return to the old conditions of unregulated management of public utilities in this country. Such a return would not be in the interest of either the companies or the public. Out of the progress of the last few decades there was developed a theory that private ownership with public regulation is the logical, fair policy. It means generally the acceptance of monopoly in public utility service in each city or district. Disregarding the confusing cloud of minor issues, the main problem

before the utilities now is that of making regulation a permanent success for the companies and the public. Other issues are less important than this. It is true that upon the settlement of other issues such as rate-making, rate of return and valuation, the future of the policy of regulation will largely depend. It is also true, however, that it is better for the public and the companies to lose some points on minor issues in order that the entire policy of regulation may not be a failure. All the parties concerned should work toward the goal of success in regulation with a willingness to sacrifice, if necessary, something small in order to attain the large end.

THE IDEAL SUPERVISORY OFFICER

Few but significant and sincere were the words of the address on "Your Duty to Yourself" which was delivered recently before the Public Service Railway section of the American Electric Railway Association by George J. Roberts, first vice-president of the Public Service Corporation of New Jersey. Perhaps the keynote of this address is better expressed by its sub-title: "Some Rules of Conduct for Supervisory Officers by One Who Has Practiced Them." Mr. Roberts' theme is the old but ever-vital one of making the rank and file take a real interest and pride in their work from the example set by the men immediately above them. The general cannot get personally acquainted with the private, but the corporal can. The supervisory officer does not hold office merely to exact the pound of flesh from each man in his charge. As Mr. Roberts says: "The duty of him who directs others, in fact the highest duty, is that he shall see that those under him cheerfully perform their work with the maximum efficiency." It is all too common to suppose that the management of men is a matter of wages and time clocks. Far more is it a question of treating them like human beings instead of automatons. A friendly act when a man is in affliction, an informal smoker, a dinner now and then, a personally-donated prize for an athletic competition—these are the things that make for the spice of life and the foundation of unshakable loyalty. Many preach these sentiments; few practice them. It is pleasant to add, therefore, that the property of which Mr. Roberts is first vice-president is conspicuous for its spirit of camaraderie although its employees number thousands and its area embraces the larger portion of the state of New Jersey. On the Public Service property every division has its social as well as operating organization, and apparently one of the greatest delights of the members is to give honor-

ary dinners to their superintendents and other officials of the company. If the sincere application of the simplest principles of common humanity can lead to such results on so great a system what excuse can be offered by the officers of far smaller properties whose every day is fraught with distrust of what the men will demand next? Must they not say with Cassius: "The fault, dear Brutus, is not in our stars but in ourselves"?

THE PROBLEM OF POPULAR EDUCATION

Few of the many discussions of publicity as a means of popular education equal in cogency the paper by Henry C. Hazzard published in these columns last week. The presentation of the problem and the discussion of its solution together make a document not to be overlooked by railway men conscious of the need for action in this direction and earnestly seeking for guidance as to what action should be taken.

Mr. Hazzard's comparison between highlanders and lowlanders and corresponding groups of public utility managers is apt. So also is his statement that "the lowlanders must educate the highlanders and the highlanders must educate the lowlanders, before they may hope to co-operate in successfully educating the public." In this particular we are somewhat more hopeful than Mr. Hazzard seems to be. This hopefulness arises out of the action taken at the mid-winter meeting of the American Electric Railway Association, with regard to a co-operative publicity campaign; but aside from this one incident, hopefulness is justified by the fact that we have made much progress in establishing the conviction that the situation of public utilities and the problems confronting them demand action which will secure for these properties a fair hearing from the public. This was the foundation necessary to be built before anything else could be done.

The conviction is now very general that public utilities may no longer with safety to themselves stand mute in the face of popular misunderstanding and attack. Having secured a very general consent to this proposition, the problem that remains is to work out a method of accomplishing what nearly everyone now agrees to be desirable.

If it is true, as we believe it is, that the problems of electric railways are less local than territorial or national and that permanent relief is to be found only in corrective measures which are based on broad underlying causes, then the campaign of popular education will ultimately be cast along these lines, and means will be found to carry it out. To express the faith that these things will come to pass is only to profess a belief in the intelligence and progressiveness of the men who are controlling the destinies of the public utility companies of the United States.

On the subject of the best method to accomplish the end that all desire, Mr. Hazzard, as we understand him, advocates direct rather than indirect publicity, meaning, as we interpret his words, advertising as distinguished from that form of publicity which finds its way into the news columns. There is room for difference of

opinion on this point. All that he says as to the drawbacks and weaknesses of indirect publicity is entirely justified, but the well-rounded publicity campaign must take account of every opportunity; and with a central bureau directing operations the country over, the opportunities for indirect publicity, which when it can be properly presented is the most effective, are numberless. This does not mean that direct publicity in the form of advertising could be dispensed with entirely, but the ELECTRIC RAILWAY JOURNAL'S observations as to the conduct of many publicity campaigns confirms the belief that from indirect publicity is to be expected the best results in popular education. Electric railways have news about themselves that the newspapers will print ungrudgingly if it is properly presented, and it is in this direction that the greatest opportunities are now going to waste. A national advertising campaign of fact and argument and propaganda, designed to reach every section of the country, would be so costly that there is no immediate prospect of its being carried out. A limited direct campaign supplemented by a broad and intelligent indirect publicity campaign is, on the other hand, as practicable as it is desirable. If new proof is wanted of the truth of this statement, we have only to refer to the publicity campaign conducted by steam roads in support of their application for an increase in freight rates.

THE FOUNDATION OF GOOD PUBLIC RELATIONS

There have been many discourses upon the desirability of maintaining good relations between the public service corporations and the public, but the public judges the corporation by the treatment which it receives, and concrete suggestions as to what this treatment should be are the most helpful contributions to the literature on this subject. Such a paper was that presented at the last meeting of the Iowa Association by P. P. Crafts, who discussed the proper manner of caring for complaints. As a foundation for his remarks Mr. Crafts assumed that the service given by the company was good. Otherwise it had better expend all of its energies in improving its service and in the meantime simply ask the public for a suspension of judgment until this preliminary work is accomplished.

But even with good service, complaints will come, some justified and some unjustified, and if they are cared for in the proper manner the company can make friends where otherwise it would make enemies. After all, the public in any community is made up of individuals not greatly different from the same number of men, women and children in any other community, and they are prepared to take a common-sense view of any situation if it is presented to them in the right light. The gist of Mr. Crafts' remarks, in connection with the manner of dealing with complaints, was to treat the complaints in a businesslike way or, as he expressed it, in a dignified way. By this he meant that the company should avoid assuming blame for conditions for which it was not responsible just as much as it should avoid the appearance of indifference to any complaint.

The impression to be conveyed by the company should be that of intention to right the trouble if one exists, of willingness to receive information and of command of the situation. Such an attitude is not inconsistent with affability of the right sort, but it requires personality, bigness of mind and heart on the part of the representative of the corporation. When relations with the public are involved, or, in fact, with anyone who understands what fair and reasonable thinking are, such a position is necessary.

To carry out a policy of this kind small men are useless because they will either be cringing or domineering. The kind of men required are those who have the ability to put themselves in the place of the customer or patron as well as the capacity to infuse a like spirit in all the representatives of the company who are brought into contact with the public. If a complaint is made, the chances are that there is some foundation for it. The cause should be sought, and if it can be remedied every effort should be made to do so. If this is not possible the reason should be made clear to the offended patron. If this plan is followed the idea will certainly grow that the company is anxious to do all that it can do to make the service satisfactory, and the public will then be more inclined to be lenient in regard to matters which are beyond the control of the utility.

PUBLIC OWNERSHIP IN FRANCE

Advocates of public ownership have often claimed that the function of publicly owned utilities is not to bring in profits but to afford proper service and that financial results may be sacrificed to administrative results. Yet, according to Yves Guyot, in his recent book on "Where and Why Public Ownership Has Failed," government administrations are especially characterized by an absence of a feeling of responsibility in regard to immediate, thorough and dependable service. This phase of the question is admirably brought out in a more popular discussion on government ownership in France which appears in a current issue of the *Saturday Evening Post*.

It is stated that after more than twenty years of state ownership France has only recently taken up the matter of improving a very bad telephone service. In one case in particular, exasperated subscribers through an organized league harried the government for years and finally received some satisfaction—but only when the principal exchange burned down and the government was practically forced measurably to modernize the system. To one who is acquainted with the eagerness of American telephone companies to install public pay stations, it must come as a surprise that in France the concessionaire must purchase an instrument, pay rentals quarterly in advance and make a deposit covering all toll charges, all of which amount to \$50 or \$60 in cash before service begins. Yet the government can go still farther, for it presumes to arrogate to itself the right of punishing through a suspension of service any individual with whom it may be at odds. It is quite needless

to say that no institution, be it either public or private, which is actuated by an honest desire to serve the public fully and efficiently could possibly impose such conditions.

Although the writer is primarily interested in the quality of service, he brings out an interesting point in regard to the financial success of public ownership. No recent authoritative statement was available as to whether the governmentally owned telephone produced a surplus or a deficit, for the telephone, telegraph and mail services were all handled by one organization and no scientific allocation of expenses had been made to each division. To the average man the reluctance that is exemplified in most cases of public ownership in regard to giving an exact statement of the financial operations and conditions is a fitting counterpart to the conception that the success of public ownership should be measured by the standard of service alone. The latter basis, however, is as unsatisfactory as the first, not only in the case of telephones but also in that of other utilities.

In the matter of railroads, the article states that one of the finest suburban trains ever seen runs over the state railroad for 12 miles from Paris to Versailles, but that with this exception there is nothing whatever to admire in the governmental management of railroads. Indeed, many of the cars are strongly suggestive of a dingy caboose of a way-freight train on a third-class American line.

The writer admits that the privately owned roads in France, as well as that publicly owned, may be criticized, but he insists that there is an overwhelming mass of testimony to show that the latter has given the poorest service and been the slowest to make improvements. Since the advent of state ownership, the operating expenses have increased in a much greater ratio than the operating receipts, and the operating ratio increased to 90 per cent, caused mostly by the padding of theoretical payrolls. True, the state railroad was always in an impoverished condition, and when the state was induced to take it over as a result of its original partnership arrangement, brilliant results were not anticipated. The point is, however, that when such management results in less efficient service and poorer financial returns than were obtained under private ownership, it most assuredly is not an argument or even an excuse for public control.

A current report to the Chamber of Deputies emphasizes the rehabilitation, new construction and electrification work that has been done and predicts a decreasing deficit in two or three years. Such was the dream in 1908, but the trend of the years has all but dissipated it. In the days of the millenium, perhaps, there may come that civic righteousness that will make possible a union of the forces of operation and regulation, but until that time they would better be kept separate. When political units operate, they must regulate themselves, and the result is not better public service. The operation of utilities is inherently adapted to private enterprise, whereas the function of the state and municipality is proper and just control thereover.

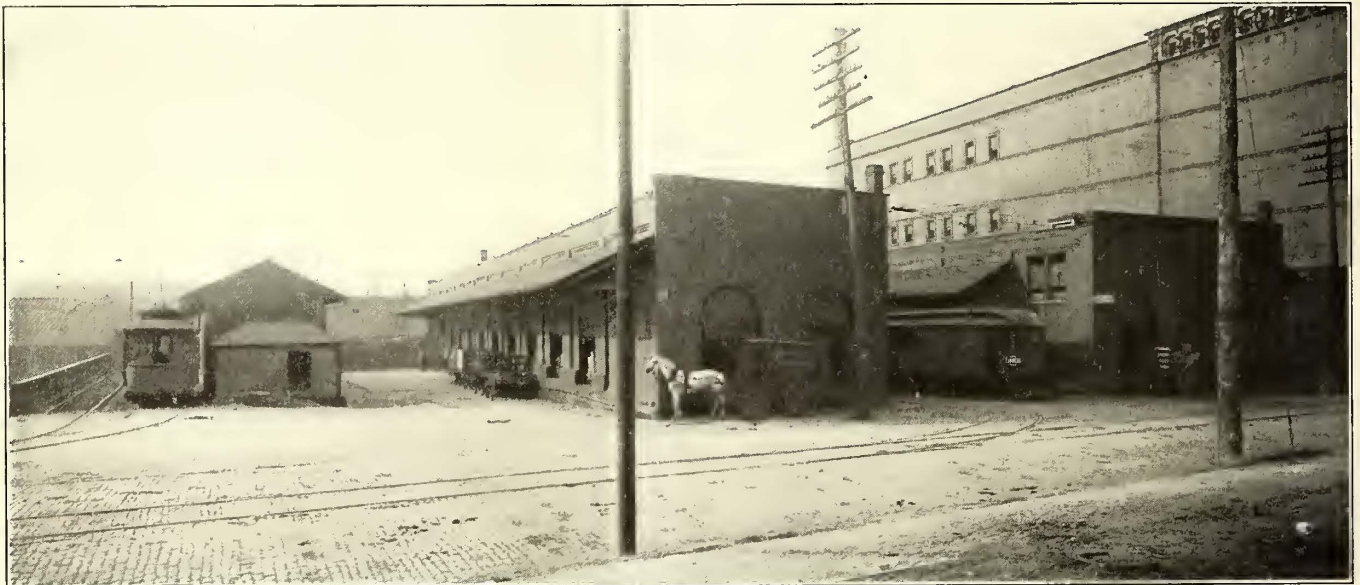
Express and Freight Service on the Detroit United Lines

A Description of the Methods Employed and Service Rendered by the Detroit United Railway in Handling More Than 1,000,000 Lb. of Freight In and Out of Detroit Each Day

The evolution of the freight and express business on the Detroit United Railway lines affords an excellent example of what may be accomplished in the development of this class of traffic on other electric interurban railways. From a modest beginning more than twelve years ago, the freight traffic has grown to such proportions that more than 1,000,000 lb. of l.c.l. freight is received and delivered each day through the Detroit station. Undoubtedly the almost ideal layout of this system for the development of a passenger and freight business explains in a large measure the success which it has attained. On the other hand, the possibilities for each class of traffic on each of the seven lines radiating from Detroit as a center were no more than

been discontinued. Later the Detroit, Monroe & Toledo Short Line and the Detroit, Ypsilanti, Ann Arbor & Jackson Railway were acquired, the merged lines now being known as the Detroit United Lines.

At first all freight and express matter was loaded direct from the cars to the consignee's door or transfer wagon, and if he was not on hand to receive it, it was left with the ticket agent. As the business developed, however, the property owners began to file complaints that the streets and sidewalks were being blocked at the points where receipts and deliveries of freight were made. In fact, at about this time, the city authorities of Detroit took up the question of relief and requested the railway company to arrange for the receipt and for-



Detroit Freight and Express—General View of Tracks and Warehouses

those afforded by any other electric interurban line through a prosperous rural community and with a terminal in a city of more than 100,000 population.

In 1900, about the date of the beginning of the company's freight and express traffic, the Detroit United Railway system consisted of a number of disconnected, separately owned interurban lines with separate terminals in the city of Detroit. Each had an agent in charge of freight and passenger traffic. As has been the experience on other electric interurban roads, freight business, in the beginning, was forced on these railways, and it consisted only of small packages which could be transported on the passenger cars.

During 1900 the Detroit United Railway acquired the various interurban lines that are now a part of the properties of that company and also the Rapid Railway System, which still retains that name. At about the same time the general freight and express business was consolidated, with George W. Parker, the present general express and freight agent, in charge. In the meantime the freight business on the various interurban lines had developed to a point where special cars were being operated to take care of it, and the practice of handling packages of freight on passenger cars had

warding of shipments on its own property. As a result of this request, the railway company purchased freight house property situated just outside the Detroit business district and close to the freight terminals of five steam roads. The location selected also was near to the docks of a number of steamship lines operating on the Detroit River, which made it easily accessible for transfer of shipments.

The construction of a freight terminal made it possible to concentrate the express and freight traffic handled over the seven interurban lines operating out of Detroit; consequently the Detroit Electric Depot Company was organized to receive and forward shipments over all lines. At the same time, arrangements were made whereby all other freight and express agencies in the city were discontinued and combined into one. The arrangement brought with it greater economy and further facilitated the prompt handling of shipments. Moreover, it gave the shippers and consignees a single point at which all freight and express could be received and forwarded.

A factor which seriously retarded the development of the freight and express business in the early days was the character of the rolling stock used for this pur-

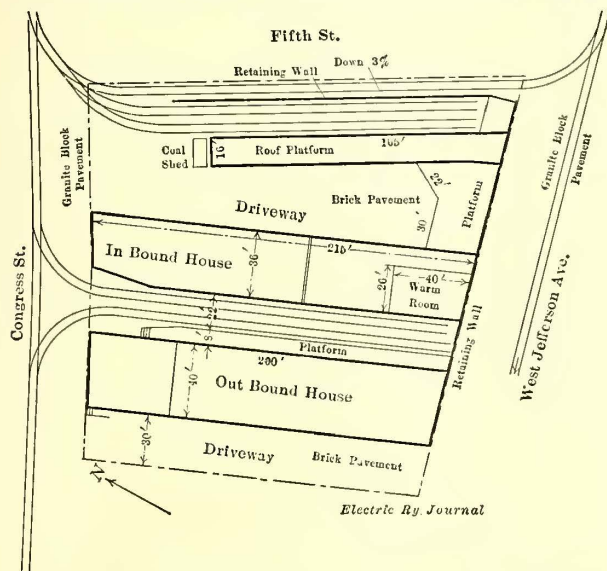
pose. Usually, it consisted of discarded passenger equipment along with the combination passenger and express cars, which made it very difficult to plan revenue-producing runs and at the same time provide satisfactory regular passenger service. However, the purchase of new rolling stock especially designed to handle express and freight shipments soon demonstrated that it was not economical to handle this class of traffic in the old passenger cars.

In a number of instances the Detroit United lines traversed a territory not served by steam roads, and this, along with a number of prepay points on competitive lines, gave each community access to the outer world to the exclusion of steam roads. The service rendered by the electric line was further enhanced by transfer arrangements made with boat lines operating on the lakes, as well as contracts with three old-line express companies. On the other hand, prior to the establishment of agencies at the way stations along the Detroit United lines, receipts and deliveries were made from the car to the store in the small towns. This was attractive to the shippers but very unsatisfactory to the company, because cars engaged in loading or unloading freight in the villages blocked the main line to the detriment of the passenger service. Also, when these freight cars engaged in making deliveries cleared the main line for passenger trains, it was necessary to make a round trip to some switch track before loading or unloading could be completed. This resulted in numerous errors through improper checking, which greatly annoyed both the company and the patrons. To add to the troubles, no receipts were taken for shipments delivered in this manner; consequently, when a claim arose it was practically impossible to settle it. As a result of this unsatisfactory experience, and wherever the business warranted, agencies were established and made responsible for the proper checking and delivery of all shipments.

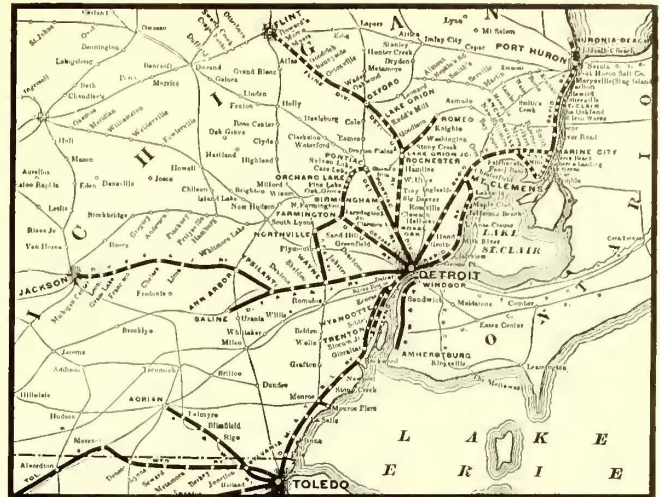
DETROIT FREIGHT TERMINAL FACILITIES

Although the existing freight terminal was outgrown several years ago, it still serves as a means of handling a large freight business, if not the largest received by an electric railway company in this country. While the freight terminal site is centrally located, its irregular shape as well as its location on a hillside made its adaptation for freight terminal facilities rather difficult.

The tracks approach the site on two sides over



Detroit Freight and Express—General Plan of Freight Houses



Detroit Freight and Express—Map of Detroit United Lines

main city thoroughfares, one along the top of the hill and the other along the bottom. The difference in the grades of the two streets made it necessary to level off the property, provide a retaining wall on the lower side and operate it as a stub terminal. Entrance to the terminal from the main track on the lower side of the property is along a cross street at one end, where a connecting track is laid on a 5 per cent ascending grade.

In the beginning one warehouse about 40 ft. wide and approximately 200 ft. long was constructed at one side of the property, and the office of the local agent was in one end of this building. For a time this served for both inbound and outbound business, and an old building on another part of the property was utilized to care for rough freight, such as empty beer packages, crates, etc. In time, however, the increased business made additional facilities absolutely necessary, and accordingly another warehouse of the same size as the first was erected and was used exclusively for handling inbound shipments. Two parallel tracks were constructed between these two buildings, and later additional platforms and storage tracks were installed. A covered platform, about 15 ft. in width and 165 ft. in length, was the last structure to be erected on the property. This is used for rough inbound freight in the morning and for loading the cars on the Flint and Jackson divisions in the afternoon, thus relieving the congestion in the outbound warehouse.

TRAFFIC DEPARTMENT ORGANIZATION

The organization of the express and freight traffic department is quite simple and includes the general express and freight agent, a traveling freight agent, a chief clerk, an "over, short and damage" clerk and a claim clerk. In addition to these, all the way-station agents report to the general agent as regards express and freight matters. The Detroit local agent in charge of the Electric Depot Company also reports direct to the head of the traffic department.

Probably the most striking feature of this simple organization is the absence of freight and express solicitors. The only kind of freight soliciting done at this time is for shipments carrying a high rate and low warehouse cost. In fact, the traffic department has made a strenuous effort to eliminate many undesirable shipments by filing exceptions to the official classification, either by refusing to handle them or by increasing the rates to a point where it becomes profitable to accept the business.

The traveling freight and express agent acts as an

assistant to the general agent in issuing tariffs and arranging schedules. He also personally solicits desirable freight and express shipments in advance of their movement to points on his lines. The claim clerk undertakes to clean up all freight at the way stations as fast as it accumulates; consequently all reports covering freight on hand, unclaimed or refused, are sent to him. In case freight shipments are not removed from the local stations within two months, they are sent to an "on hand" warehouse, where they are held until proper disposition may be provided. In many instances the claim clerk has been able to make savings for the company by repairing damaged shipments so that they were acceptable to the consignee. For instance, shipments of sacked commodities are often damaged in transit, and it has been found that it is more economical to resack the damaged pieces in new sacks than to dispose of them in a broken condition. The clerk in charge of over, short, damaged or refused reports conducts all the correspondence necessary to obtain disposition or trace shipments. In case personal investigations are neces-

sary, they are made by the local agent or the traveling express and freight agent.

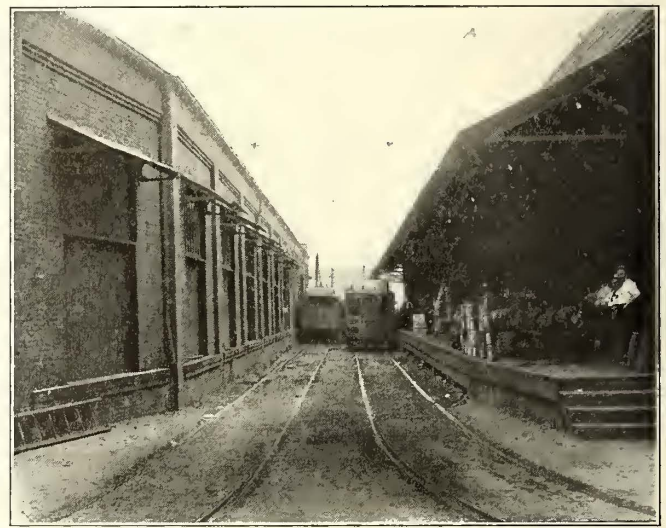
outbound warehouse doors on the driveway side check all shipments against the shipper's orders and at the same time inspect their condition as well as check their weight. In case the shipment is unusual in character and the weight unknown, it is weighed on an automatic scale. Generally, the various commodities are contained in crates of a standard average weight, and the warehouse trucks are of a minimum size and weight averaging 100 lb. each, thus making it unnecessary to readjust the automatic scales in order to determine the tare represented by the weight of the trucks.

Following the receipt and check of the shipper's order, the receiving checker signs his name to a copy of the order and notes the time and date it is received. This shipping order is either held or deposited in a common receptacle, whence it is removed by a bill clerk or messenger sent from the billing office. This messenger makes round trips every few minutes so that the receipted shipping orders are kept from accumulating in the receiving checker's hands.

In most instances every shipment is checked twice,



Detroit Freight and Express—Delivery Side, Inbound Warehouse



Detroit Freight and Express—Tracks Between Inbound and Outbound Warehouses

sary, they are made by the local agent or the traveling express and freight agent.

DETROIT DEPOT ORGANIZATION AND METHODS

As mentioned earlier in this article, the Electric Depot of Detroit ranks among the first in this country in the quantity of express and freight handled through it each day. As a general rule the outbound shipments exceed the inbound; consequently, the local freight house force is sufficient to handle the outbound rush of freight. A general foreman is in charge of the warehouse force, and under his direction are the foremen in charge of the outbound warehouse and the inbound warehouse and a night foreman who has charge of both houses. In the outbound warehouse freight is received by nine door checkers, one caller and two truckers. When this force is not engaged in loading cars it is required to keep the doors cleared by transferring the shipments to the various sections into which the car side of the warehouse is divided. These sections are designated by signs showing the various division stations, and their location is such as to be as nearly opposite the car making deliveries to that destination as warehouse space will permit. This reduces the necessary amount of trucking to a minimum after a car has been set.

The nine receiving checkers stationed at the eight

first by the receiving checker when it is deposited on the floor and then by the loading checker when it is moved into the car for transportation. When freight arrives late and the car in which it is to be transported has been set, the shipments receive only one check as they pass through the warehouse into the car.

At other times, to insure the proper loading of all shipments and at the same time obtain a double check, the loading checker is furnished with the shipper's order when the goods are loaded into the car. He is held responsible for the loading into proper cars and has supervision over a stevedore, an experienced packer who is required to examine the marking as an additional check on the proper loading. All shipments are packed in the car with the labels up, and articles of a fragile nature are loaded on top or in other safe positions. The stevedore follows the usual practice in loading out shipments in station order, and to facilitate his work the loading checker keeps him posted as to what is on hand in the warehouse to be loaded into the car.

After the loading checker has completed loading all shipments contained on a single shipping order, he returns the order to the head bill clerk, but before so doing marks the bill with his name and the numbers of the cars into which the shipments have been loaded. In case he finds a discrepancy between the shipping order

and the marking on the shipment, the freight is held until an additional check can be made.

The Detroit Electric Depot warehouses are open for the receipt of freight shipments from 7 o'clock in the morning until 5 o'clock in the evening, except on Saturday, when they are closed at 1 o'clock. As there are several express and freight trains over each division every day, it is the rule to receive general freight shipments until one hour before the departure of each train, an arrangement which gives ample time for billing and loading.

The trackage on the car side of the warehouse is sufficient to hold eight cars, four on each of two tracks. Most of the express and freight runs are in single units; consequently, when the tracks are filled to their capacity there is usually one car for any destination on the system. The cars on adjoining tracks are set so their doors are opposite each other, and freight may be trucked through those nearest the house to those on the farther track. In loading, an effort is made to use the maximum capacity for each car, but in most cases space is the limiting factor. This condition is found especially

men engaged in this work are obtained. The truckers are paid 20 cents an hour for the first six months and 21 cents thereafter. From time to time these men are advanced to callers, when they receive 22 cents per hour. Most of the receiving and loading checkers are on a monthly salary basis. Considerable night work is necessary at the warehouse, however, and it has been found quite difficult to obtain good men at the monthly wage. In order to obviate this, some are paid on an hourly basis, permitting them to earn a fair salary for their work. There are also a few of the day loading checkers that are paid on an hourly basis because it is oftentimes necessary to keep them longer than regular hours.

OUTBOUND FREIGHT AND COLLECTIONS

An average of more than 1250 shipments requiring expense bills are forwarded and received each day; hence it is necessary to employ an unusually large clerical force to handle the details. The local agent's staff includes approximately thirty men and boys, namely, chief clerk, chief biller and five bill clerks, an account



Detroit Freight and Express—Interior of Inbound Warehouse



Detroit Freight and Express—Interior of Outbound Warehouse

to be true with certain divisions, as some transport largely bulky shipments while others move small but heavy ones.

The limited space provided in the freight-terminal driveways as well as the rush of teamsters at certain periods in an effort to make outbound cars would result in congestion had not the local agent employed a traffic officer to direct wagon movement to and from the warehouses. It is this officer's duty to keep teams in line and see that all the receiving doors are occupied. Paved driveways and an overhanging awning protecting the door openings are provided on the receiving side of the outbound house, thereby affording protection of property while being unloaded from drays to warehouse. In some instances it is necessary to hold perishable shipments in the warehouse, either inbound or outbound. While the local agent endeavors to reduce this practice to a minimum, it has been found necessary to provide a warm room at one end of each of the warehouses to protect perishable shipments during extremely cold weather.

Experience in the warehouse has shown that the best help as truckers and checkers is none too good to reduce to minimum the number of claims for lost and damaged shipments. Consequently, this company has adopted the policy of paying wages a little higher than those paid by the steam roads, and as a result the best

man, a head collector, an accountant and an assistant, two abstract men, three men on over, short and damage reports and tracing shipments, two clerks to make out expense bills for prepaid shipments, one messenger, one file clerk, two stenographers and one switchboard operator. Other members of the local agent's staff include two clerks for special work, a cashier and an assistant, two inbound clerks who make out all expense bills and over, short and damage reports on incoming freight, as well as through business from one division of the Detroit United Railway to another. The cashier is assisted by two outside collectors who make their turn-ins to him and report to the chief collector in the local agent's office. The chief collector's duties include the selection of routes for the outside collectors for each day, and he keeps a record of the stops made daily as well as the collections made by each man. This record of efficiency is used in reprimanding the collectors when they do not obtain satisfactory results.

The telephone service has become quite an important factor in the handling of freight and express business, and in order to make it possible to serve several patrons at once, four lines run into the local agent's office. These are connected through a local switchboard to the agent's office, the chief clerk's desk, the tracing clerk's desk, the cashier, the baggage room and warehouses.

In a general way, the billing methods conform to the

usual practice of other roads but the detailed processes may be of interest. There are a number of prepay points on the road or points where agencies are not maintained, and when a Detroit checker receives shipments for these points from shippers who are not on the credit list he directs the representative of the consignor to the cashier, who applies the shipment classification, fixes the rate on the shipper's order and then receipts for the amount collected. Shippers on the credit list are furnished with a complete station list when they ask for credit. Therefore, when shipments are billed to prepay points, the shipper is held responsible for payment and a prepaid form of expense bill is made out and presented for collection. The prepay receipted shipping orders together with other shipping orders are sent to the chief bill clerk, who inserts the rates and charges. Most of the rates can be applied from memory.

After shipping orders have been supplied with rate and classification, they are turned over to the bill clerks, who prepare blanket waybills which go forward with the shipments. Two impression copies are made of the blanket waybill. A bound copy serves as the forwarding agent's record and a loose copy serves as the auditor's check against expense bills. In case there is a joint billing—that is, freight forwarded to a point on a connecting line—two loose copies of the blanket waybill are made so that the auditor can properly distribute the earnings.

In order to fix the responsibility on the conductor in charge of each express train, he is required to receipt for all waybills. This receipt also serves as a record of those responsible for placing the shipments in the car and contains the time of departure of the train. In case of freight short or damaged at the time of loading exceptions are registered on the record by the conductor or loading checker. In order to reduce the time elapsing between the checks of shortage in shipment and the time tracers are sent out, all the conductors' receipted records are checked daily at the local agent's office. If the receiving agent also checks the shipment as short, line tracers are sent out immediately.

INBOUND FREIGHT METHODS

The quantity of inbound freight is considerably less than that outbound; consequently, the force required to handle it is much smaller. This force is composed of a delivery foreman and seven delivery checkers, who have a sufficient number of truckers to make deliveries promptly. Usually four or five truckers are all that are required, and these are only on duty during the rush hours. After rush hours the delivery checkers deliver their own freight to consignees, and the truckers are assigned to duty in the outbound house, where they report to the loading checkers.

During all the year, and especially in the summer months, large quantities of freight of a highly perishable nature are brought into Detroit each day. A rather unusual feature with this class of commodity is that it arrives during the night and most of it is delivered before the time of opening the warehouse in the morning. These deliveries are made by the night foreman assisted at certain periods by delivery checkers, and this accommodation has brought the railway company practically all such perishable shipments coming out of the territory served.

In many instances inbound cars contain through shipments from one division to another. These are unloaded and checked against the blanket waybills, which are afterward sent to the inbound office, where a clerk makes exact copies of the waybills for through shipments. The result of the check from the inbound car, as well as that made when it is reloaded on the

outbound car, is recorded on the office copy, which is retained at the transfer point for record.

The blanket waybills for inbound shipments are checked by the unloading checker, after which they are sent to the inbound office, where expense bills are made in triplicate. These expense bills are given to a clerk who notifies the consignees by telephone for perishable shipments and by postal card for other shipments. At the same time a record of the manner of notifying the consignee is made on the triplicate expense bill so that they may be used as future reference. Following this procedure, the expense bills are then sent to the cashier, who has them distributed in alphabetical order in a bill case. When a consignee or his agent calls for goods he must first go to the cashier and obtain an expense bill. The cashier gives him two numbered parts of the expense bill, which are presented to the delivery warehouse foreman before delivery is made. The checker assigned to make the delivery in turn checks the articles on the No. 2 portion of the expense bill, after which the consignee or agent is requested to receipt for the shipment delivered. Part No. 1 of the expense bill is the consignee's record of the transaction and part No. 2 is filed in numerical order in the local agent's office.

In case the shipment arrives over, short or damaged, the delivery warehouse foreman or his assistant investigates the expense bill, first as to its accuracy in the number of articles recorded, next as to the legibility of the marking, and finally as to the agreement of the expense bill with the waybill. In case an actual shortage is found it is acknowledged on the receipted portion of the expense bill and an O., S. & D. report is issued. This is sent to the forwarding agent, who follows the usual procedure in tracing matters of this kind. In case a shipment is damaged the bad-order notation must contain an exact description of the nature of the defect, which, in case a claim is filed, limits the liability of the company.

Whenever exceptions are taken to the waybill by the delivery warehouse foreman they are immediately reported to the general freight agent, who has charge of all freight claims. This is done in order that he may have advance notice of over, short or damaged shipments and may take at once such action as is necessary.

Another precaution taken by the local agent in the receipt and delivery of freight to consignees is to require that shipments be receipted for by the party to whom they are billed and marked, or by his authorized drayman or representative. Draymen sign for the company to which they are making deliveries with the company's name and their own names. In case an outside cartage company performs the delivery service the driver signs for the consignee, the cartage company and himself.

Some years ago a contract was entered into with a cartage company to pick up and deliver shipments in Detroit. This company not only caters to those patrons who do not operate their own drays but assists materially in reducing the congestion on inbound traffic by hauling the freight when consignees' drays are otherwise engaged. The cartage charge is fixed on a basis of distances and weights, and weekly settlement is made to the Electric Depot by the cartage company for all charges on shipments delivered.

EXPRESS TRAIN SERVICE

At the present time express train service in and out of Detroit includes thirty-five cars each way daily. Some of these trains begin their runs at Detroit, while others start from an outside point, but all of them make round trips daily. On the seven divisions radi-

ating from the Detroit Electric depot, two to seven express trains are operated each way daily except Sunday. On Sunday the only freight trains operated are those in the milk-train service.

In addition to the express service rendered by the railway company, it has made separate contracts with three old-line express companies—namely, the Wells Fargo Express, the Adams Express and the United States Express—and each operates only over certain divisions of the Detroit United Lines. Each of the old-line express companies receives a special express-train service, and in a few instances where it is possible the company utilizes a portion of these express cars for its own business. Practically all the express business is loaded directly into the car from the wagon. One express company occupies space in a portion of the outbound house.

All cars when within 300 ft. of the Electric Depot, or in what is known as its yard limits, are under the direct supervision of the local agent. After the cars are set on the storage tracks or sent to the inbound warehouses, the regular crews are relieved and such switching as is necessary is handled by two crews, one for day work and one for night work, who report to the local agent.

In order that the shippers of Detroit as well as those along the seven divisions of this system may be on hand to receive or forward freight shipments, all express trains are operated on a regular schedule. The adherence to a regular schedule has been particularly advantageous in stimulating and holding the prepay station business, and at the same time it has eliminated every excuse for filing claims for damage or theft, as the shipper or consignee knows when to meet trains.

The express train service over the seven divisions of the Detroit United lines is of two kinds. Through cars which do not make local stops between Detroit and the outer terminals make it possible to give an early delivery of freight at the outlying points. Local cars which follow these through cars make way station deliveries en route. On the longer runs, as a general rule, if the outbound car is a local, it is returned as a through car, leaving outbound through cars to serve as locals on the return trip. The only competition now offered to this class of express service is that furnished by auto trucks transporting freight between Detroit and points 12 and 15 miles out. On the return trip, these auto trucks as well as other teams are creating a certain amount of competition by picking up milk shipments bound for Detroit.

In order to obtain a record of the work done by all crews, they are required to make detailed reports of freight, express and milk carried. These reports also furnish a record of the arrival and departing times of trains at the various stations as well as the weights and charges for freight delivered and received. The reports permit a check on the earnings of each run, which is very important when an adjustment in schedules is contemplated or it is found that a run is not profitable to the company.

MILK-TRAIN SERVICE

Few electric roads in the country have developed a milk traffic such as is handled on the Detroit United lines. A milk-train service is furnished on all divisions, and the schedules are arranged to meet both the shipper's and the consignee's needs. For this service the Michigan Railway Commission has issued an order for rates as follows: 15 cents per 10-gal. can for a distance of 1 mile to 30 miles on either milk or cream, and 22 cents for 31 to 35 miles, with a graduated scale for greater distances. At the present time more than

2000 cans of milk are brought into Detroit each day and most of it is shipped from the 1-to-30-mile zone. The crews on these special cars also serve as a source of information to the traffic department as to the milk production in the territory served. Their daily conversation with the shippers at the way stations, as well as personal observations, are the source of this information.

The delivery of milk and return of empty cans at the Detroit station is under the supervision of one man. The assignment of one man for this work accomplishes two things. The responsibility of deliveries to consignees is fixed as well as the return of the proper number of cans to each of the milk shippers. In order that the checks may be correct and serve as a record of the milk received and delivered, the conductor on each milk train is required to fill out a conductor's waybill of milk carried. The names of the consignor and consignee are written in by the conductor, but the individual receiving the milk at the Detroit end is required to receipt

DETROIT UNITED RAILWAY DETROIT MONROE & TOLEDO SHORT LINE RY.				RAPID RAILWAY SYSTEM DETROIT, JACKSON & CHICAGO RY.			
DIVISION							
CONDUCTOR'S WAY-BILL OF MILK CARRIED							
ON CAR NO. _____				CONDUCTOR _____ 191__			
N B - READ INSTRUCTIONS ON REVERSE SIDE AND OBSERVE SAME FULLY							
STATION FROM	DESTIN. OF MILK	TOTAL CANS	CLASS	CONSIGNOR	CONSIGNEE	DESTINATION OF EACH CANS	NO. CANS

Detroit Freight and Express—Waybill of Milk Carried

for the number of cans delivered to him. A copy of this conductor's waybill of milk carried is shown in one of the illustrations. Similar waybills of empty cans carried are also prepared by the conductor.

Interchange of freight and express business is limited practically to that with connecting electric lines. Those that have been established include the Michigan United Traction, which connects at Jackson, Mich., and the Saginaw & Flint Railway, which connects at Flint, Mich. It is hoped that satisfactory through rates with electric lines connecting at Toledo, Ohio, will be established in the near future.

KANSAS RULINGS ON WORKMEN'S COMPENSATION LAW

Kansas State Labor Commissioner O'Brien has ruled for the benefit of casualty insurance companies operating in that State that workmen injured in an accident which incapacitates them for a longer period than two weeks shall receive recompense under the workmen's compensation law from the date of injury. A meeting recently held in Kansas City between employers and workingmen to interpret the law adjourned without reaching an agreement. The commissioner's ruling followed.

It is believed that the Kansas courts, in the event of a test case, will uphold the ruling, despite the fact that Senator Hunter, of Wellington, one of the framers of the compensation law, stated recently that the intention of his committee was to make payment begin two weeks after the date of the accident in which the workman sustained injuries incapacitating him for longer than a fortnight. Mr. O'Brien also has ruled that payment shall be made on a gross basis of the workman's earnings, rather than net, as maintained by the employers. In conclusion, he asserted that the next Kansas Legislature would settle the disputed points as he has outlined them—in favor of workmen rather than employers.



Philadelphia Sprinkler Test—Fig. 1—Conditions Before Start of Fire, Showing Layout of Sprinklers with Test Car on Middle Track

TEST OF AUTOMATIC SPRINKLERS AT PHILADELPHIA

A test was recently conducted at the Luzerne carhouse of the Philadelphia Rapid Transit Company primarily for the purpose of bearing out the contention of the company that with a low ceiling carhouse with sprinkler heads properly distributed in the ceiling, a loss of more than one car could not occur from any fire starting within a car. A further object of the test was to show that with a low ceiling carhouse, aisle sprinklers are not necessary as a supplement to the roof sprinklers.

The Luzerne carhouse was built in 1912-13 of unit concrete construction and was fully described in the *ELECTRIC RAILWAY JOURNAL*, issue of June 28, 1913. The carhouse is one story in height and consists of ten bays divided by walls of 6-in. tile. These bays are open at each end and have a capacity of thirty-six cars each, or a total carhouse capacity of 336 double-truck near-side cars. The company contends that the building is

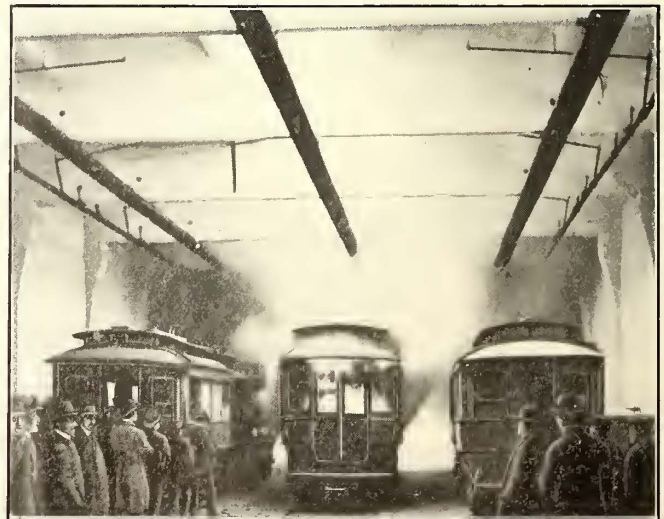
absolutely fireproof. The automatic ceiling sprinklers were installed solely for the protection of the cars when in the carhouse.

The sprinkler installation was made by the Rockwood Sprinkler Company, Worcester, Mass., and is the dry-pipe system. The sprinkler heads are staggered, each head being so located as to cover an area of 8 sq. ft. The placing of the sprinkler heads under the skylights made it necessary to use fuses of 212 deg. Fahr. under the glass, while 165 deg. Fahr. heads were used throughout the rest of the system.

The fire test, which was made March 25, 1914, in the presence of various fire insurance officials and others interested, was as follows: Five single-truck cars were used in this test and were placed upon the tracks in the ordinary positions as they come off the street, as shown in the first engraving on this page. Fire started upon the floor of the middle car at 2.16 p. m. The fire was rather slow in starting owing to the absence of air, all



Philadelphia Sprinkler Test—Fig. 2—Start of Fire After Glass was Broken to Give Draft



Philadelphia Sprinkler Test—Fig. 3—The Fire at the Maximum Did Not Affect the Adjacent Cars



Philadelphia Sprinkler Test—Fig. 4—View Taken After the Sprinkler Had Put Out the Fire Without Giving It a Chance to Spread to the Cars on the Near-by Tracks

doors and windows being closed. Therefore, a pane of glass was broken from each door and in $5\frac{1}{2}$ minutes, or at 2.21 $\frac{1}{2}$ p. m., the flame burst through the windows and doors communicating to the sides of the cars on the adjoining tracks. This is the period shown in Fig. 3 on page 1028. In $1\frac{1}{2}$ minutes later, or at 2.23 p. m., the first sprinkler head (212 deg. in skylight) opened, followed almost immediately by others until forty heads within an area of 400 sq. ft. had opened. The fire on side cars was put out immediately by the water from the sprinkler heads, and the curtain of water falling kept the fire confined to the center car in which it was started.

These cars were placed about 100 ft. from the west end of bay No. 8. A strong breeze was blowing from the east, the temperature of the bay being about 50 deg. Fahr.

The 1000-gal. auxiliary fire pump was not used in this test, the sprinklers operating under the ordinary pressure from tank and main at about 40-lb. pressure. The trolley troughing, which is about 4 ft. above the roof of the cars, was not damaged at all. A small section of the trolley wire was slightly annealed, but not sufficiently to require replacement. The walls and ceiling of the building were not damaged or even discolored. The local alarm of the private fire department at this carhouse was sounded within a minute after the fire was started, no advance knowledge having been given to the employees. The men were on hand, fully equipped with their appliances, and if they had been allowed could have put the fire out with but very little damage to the car.

RESULT

The result of this test indicated without doubt that in a low ceiling carhouse of modern construction aisle sprinklers are not absolutely necessary, as the sheet of water which descends from sprinkler heads forms a curtain in such a manner as fully to protect the adjacent cars. In this test ordinary pressure of 40 lb. only was used and accomplished the desired results. After this test was finished the pump pressure was put on the system, resulting in such an increase (nearly 50

per cent) in the flow of water that it was impossible to see through it, and it would without doubt have extinguished any fire.

CALIFORNIA RAILROAD COMMISSION REPORT

The Railroad Commission of California has issued a 2005-page report of its activities for the period from June 30, 1912, to June 30, 1913. The report covers the general divisions of the commission's work, and it also devotes considerable space to complaints filed with the commission, the resulting orders and an appendix of regulatory laws. Between March 23, 1912, and June 1, 1913, application was made to the commission to issue \$167,778,361 in the form of stocks, bonds, notes and certificates, of which sum the commission authorized the issue of \$146,495,597. Of the amount applied for, 23 per cent was asked for by electric railways, and 84 per cent of this amount was authorized. The electric railways ranked third in new financing among the utilities, being only about \$10,000,000 below the steam railroads as regards the amount applied for and about \$50,000 below the gas and electric companies. The report contains individual comparative balance sheets and income statements for the various street railways in California, and also presents group tables in order to afford an easier comparison between companies. The operating expenses are given in detail, and capitalization, mileage, traffic and miscellaneous statistics are presented for each separate company and for all the companies grouped in one table. During the year valuation work was entirely completed on the Stockton Terminal & Eastern Railroad and the Pacific Coast Railway, nearly completed on the San Diego & South-eastern Railway, and partly completed on the Southern Pacific Railroad and the Los Angeles & San Diego Beach Railway.

The Interborough Rapid Transit League, composed of employees of the Interborough Rapid Transit Company, New York, opened its baseball season on April 25 with two games at Hedley field.

Changes in Car Design at Albany

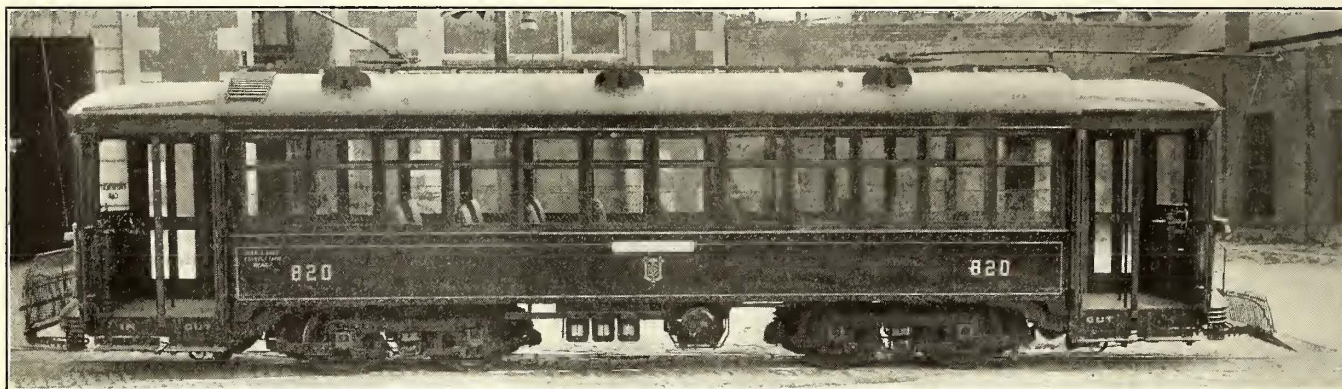
The New Semi-Steel Pay-Within Cars of the United Traction Company Are a Wide Departure from an Earlier Flush Platform Design for Suburban Service—Experiences with the Old Cars and the Advantageous Features of the New Ones Are Described

During 1907 the United Traction Company, Albany, N. Y., installed for service between Albany and Troy twenty-five "easy-access" cars with flush platforms, air-operated doors and double folding steps. This car was described in the STREET RAILWAY JOURNAL for Jan. 18, 1908. This design did not prove satisfactory because the double step and the fully partitioned cab for the

door which is 40³/₈ in. wide. On the reconstructed cars the conductor stands with his back to the vestibule and with the cash box in front of him.

GENERAL DIMENSIONS AND FRAMING OF NEW CARS

The twelve new double-end cars are of pay-within design and were built by the Cincinnati Car Company.

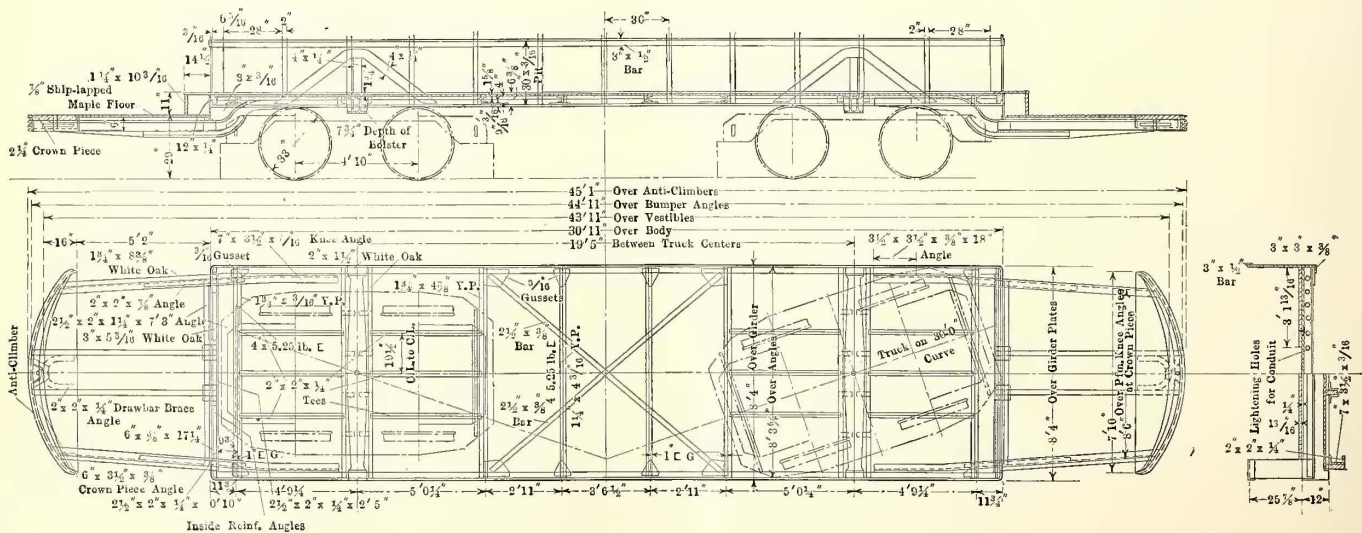


Albany Cars—Latest Prepayment Design Without Bulkheads; Vestibules Opened to Show Grooved Posts Into Which the Bufferless Folding Doors Make an Air-Tight Fit

motorman prevented maximum speed in loading and unloading. Furthermore, the steps could not be cheaply maintained to fold up completely with the closing of the door. These cars are now being rebuilt. In the first two the cab bulkhead and doors were removed, the platforms were dropped and fixed steps were substituted for folding ones. While the last change is not consistent with the practice adopted for its new cars, the company believes that the omission of all possible hand-holes on the outside of this car makes it impossible even for a small boy to get on the step after the door is closed. The sliding doors are now manually operated by means of a vertical handle similar to the reverse lever in the cab of a steam locomotive. With a travel of only 7 in. this lever permits the easy control of a

As they have no bulkheads, particular care was taken to make them draft-proof for winter service. In addition, the new type has several other interesting features, none involving any radical departure, but all tending toward better service.

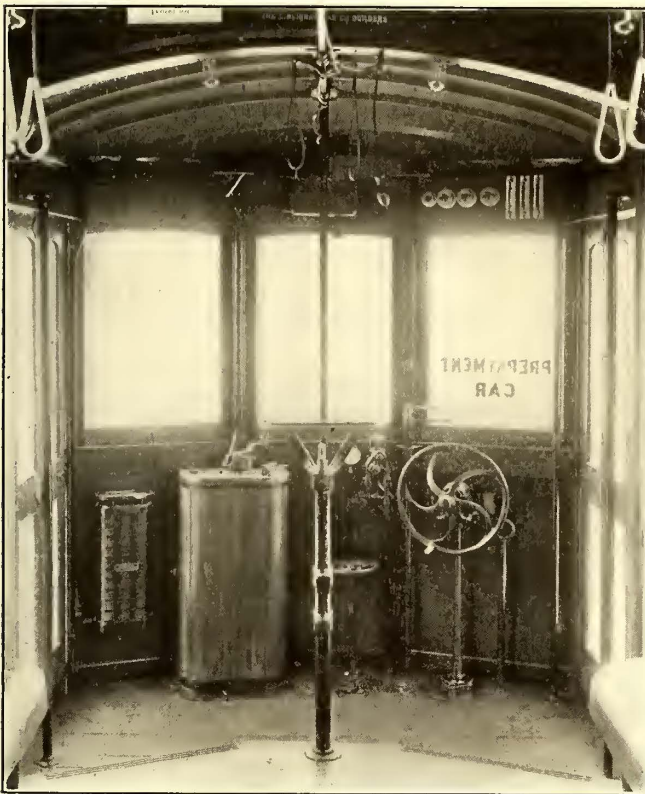
The principal dimensions of the new car are shown on the accompanying drawings. It has a body length of 30 ft. 11 in. and accommodates forty passengers in a combination of Walker & Bennett transverse reversible and short corner seats, all covered with pantasote. The bottom framing comprises steel channels and I-beams, yellow pine fillers and oak cross members. The 30-in. x 3/16-in. side girders are bent around the corner posts from door post to door post. These girders are riveted to a 3-in. x 3/8-in. lower sill angle, which is



Albany Cars—Plan of Bottom and Side Framing

made in one length and bent around the corner post to form a spliced member in the center. At the side bolster the side girder plates are reinforced by riveted diagonal braces of 4-in. x ¼-in. steel bars. The end-sill reinforcement consists of 10-in. x ¼-in. steel plate riveted to the end-sill angle. Like the cross sills, the cast-steel bolsters were made with the proper apertures for conduit and air piping.

Ash is used for the body posts, belt rail, letterboard and carlines. The posts are mortised into pine sills which in turn are bolted to the steel underframe. The framing of the arch roof is reinforced by 1½-in. x ⅜-in. steel carlines. The roof and ceiling comprise ⅞-in. white-leaded poplar, agasote headlining and an intermediate lining of ¾-in. cork, the last being used for insulation and sound-deadening. Cork of the same thickness is also used as a heat insulator between the side girders and the inside panels of agasote. The detachable bonnets are built like the roof, but have no steel carlines. The inside finish is of mahogany of



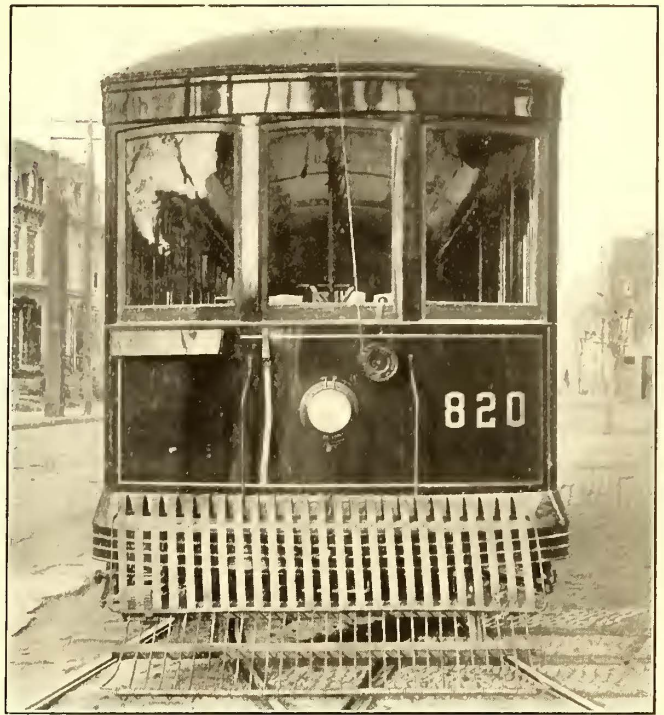
Albany Cars—No. 1, End, Showing Stanchions to Prevent Getting Off Car Backward, Location of Snap Switches, Switch Rod in Pocket, Etc.

plain sanitary design, with the headlining painted to match. The trimmings are of statuary bronze. A double floor of yellow pine is used.

The use of raised instead of drop sash permits an aisle of 26¼ in. instead of 20 in., other conditions being equal. The short, rigid upper sash gives a free outlook of 37½ in., which does not interfere with the line of vision.

VESTIBULES AND DOORS

The vestibules are supported on outer side knees of 7-in. x 3½-in. x 7-in. angles and center knees of 2¼-in. x 6-in. oak. The dash carries a buffer shield and Hedley anti-climbers. While the folding doors and steps are of standard hand-operated type, the doors differ from common practice in several points. They have no rubber buffers, but fit snugly in the grooves of an intermediate post. This method insures a better draft-



Albany Cars—End View of New Car with Bonnet Construction

excluding joint than can be obtained when one rubber buffer bears against another. Two years' service with such doors on rebuilt cars indicates that no trouble need be anticipated from the pinching of passengers with non-buffered doors. Another draft-excluding feature is that the doors close ⅞ in. below the vestibule floor instead of at the platform level. The door-operating handles of the conductor and motorman are interchangeable to secure their standardization and to avoid carrying them from one end of the car to the other.

PASSENGER MOVEMENT FEATURES

The car floor extends out into the vestibule section with the conductor's stand so placed thereon that a 32-in. aisle is left on each side of his station. During rush hours a chain is hooked across the rear exit, but at other times the passenger may use either aisle. As the illustration of the vestibule shows, the vertical stanchions are so placed that it is practically impossible for a passenger to get off backward. Straps with Rico sanitary sleeving are installed only above the corner seats, but despite this the transverse seats have no grab handles. The reason given for this omission is that when a high-speed car comes to a sudden stop there is a possible danger that a passenger clasping such a grab handle may have his fingers broken. All steps and the vestibule extension of the car floor are fitted with Mason safety tread.

Fares are placed in a New Haven recording-type fare



Albany Cars—Ceiling Detail, Showing Truss Plank from Which the Lamps and Straps Are Carried



Albany Cars—Interior, Taken Before Installation of Lamps; Grab Handles Purposely Omitted to Avoid Broken Fingers

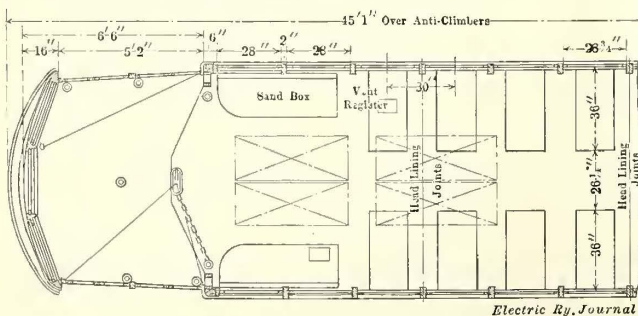
box, but in addition to this box standard registers of the same manufacture are used to record fares and transfers separately.

MECHANICAL AND ELECTRICAL EQUIPMENT

Each car is mounted on Taylor S. B. trucks equipped with four Westinghouse 101-B-2 motors. The braking equipment consists of General Electric air brakes and Peacock hand brakes of vertical wheel type. The electrical equipment includes 35-G platform controllers, Crouse-Hinds incandescent headlights, sixteen cross-seat, four truss-plank and two vestibule Consolidated heaters, Consolidated push-button buzzer system and twenty 36-watt tungsten lamps. The successive lamps are wired on alternate circuits and are carried from the same truss planks from which the corner hand straps are suspended. All wiring is in conduit with Crouse-Hinds condulets. The only important change from standard practice is that, instead of bringing all leads out through one bell mouth, the wires are brought out separately. This end was accomplished by drilling and tapping out the blank side of the junction box and fitting the holes with nipples. To each lead as brought out from the box a mark is given for identification.

The vestibule at No. 1 end carries over one sash a three-way snap switch whereby the headlights, platform lights and sign lights can be reversed with one movement. Adjacent to this switch are two snap switches for the control of the lighting and main heater circuits. The cab heater switch is shown above the sash at the left of the motorman. This view also shows some examples of the neat conduit work throughout. It will be noted further that a pipe pocket has been provided for the awkward but useful switch rod.

The auxiliary equipment on these cars includes Root spring-type track scrapers, automatic ventilators, Providence fenders and Earll trolley catchers.

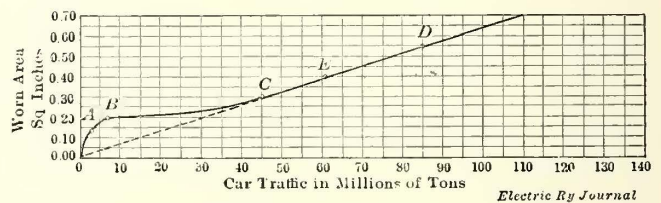
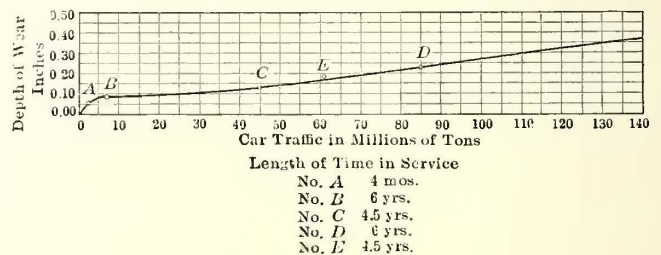


Albany Cars—Half-Plan Showing Vestibule and Seating

RAIL-WEAR MEASUREMENTS ON THE UNITED RAILROADS OF SAN FRANCISCO

Careful measurements were recently made by the United Railroads of San Francisco, of which C. N. Black is president and B. P. Legare is engineer of maintenance of way, to show how the rails now in service on lower Market Street in San Francisco are withstanding the wear of heavy traffic. These rails, which had been in service six years when the measurements were taken, weigh 141 lb. per yard, and their section is the standard No. 395 as rolled by the Lorain Steel Company. Under the conditions existing on lower Market Street it was possible to compare rails which had been subjected to different degrees of wear under exactly the same conditions, because the outer tracks, which are used by a smaller number of cars of the same weight and type, were laid at the same time as the inner tracks, the latter being the main arteries of all the city traffic.

Some thirty measurements of the wear shown by the rail head were taken at as many points along about 1/2 mile of track, and these figures were averaged to get the values plotted in the diagram shown in Fig. 1 as points B and D. Point B on the diagram represents the average wear on the outer tracks, which were subject to a lighter traffic, while point A represents wear on the rails which had been placed in the inner tracks in the



San Francisco Rail Wear—Fig. 1—Diagram Showing Wear on Ball of 141-Lb. Rail

course of putting in new turn-outs or switches. Points C and E show the average wear on the inner tracks near a branch line; point E including the traffic contributed at this junction, and point C excluding it. The tonnage of the car traffic was figured from the time schedule of the cars which daily run over this route, and is the sum of the weights of empty cars only, as there was no accurate means of estimating the weight of their loads. The weights of the cars ranged from 22 tons up to a maximum of 27 tons.

The rail wear was measured by taking the present depth of the flange groove and subtracting this from the depth which it was known to have when the rail was laid. Obviously this method could not be used after the wheel flanges had begun to cut the groove deeper, but the wear was found not to have reached this stage as yet in the track examined. The rapidity with which the rate of wear changes at the beginning of the curve is explained as being due to the larger percentage of wear while the corner of the rail head is still sharp. The fact that the curve practically becomes a straight line after a certain time is believed by com-

pany engineers to bear out the theory that these rails, while in service, are undergoing a process of hardening due to the rolling-out action of the car wheels.

In considering this question of rail hardness for the lines of the United Railroads, the climate of San Francisco has an important influence. It is pointed out that a rail for service in that city does not need the protective features required where temperature extremes are experienced. Rails weighing over 100 lb. to the yard rarely break on the lines of the United Railroads, it is reported, and wearing quality is therefore given primary consideration in comparing rail sections. The table, which compares different rail sections, was made to show the relation between the rail which has

well adapted to withstand heavy wear, such as in the Sutter Street tracks, for example. In these tracks, on which 96-lb. rails of weaker section have been in use for seven years, the wear has been so great that only about 25 per cent of the head proper is left. At some points on this track the wheel flanges have deepened the grooves until the guard-lip has been completely separated from the remainder of the rail.

The standard rail section shown in Fig. 2 was first laid in San Francisco in 1909, and at present time it is in use on about 60 miles of the company's 278 miles of track. During 1913 some 12 miles of track was laid with the 106-lb. rail, and this year about 15 miles more is projected. Although no official report to this effect has been made, it is a matter of belief in the engineering department that when the old rails on lower Market Street are finally removed, the 106-lb. standard should be used to replace them. This belief is based upon the investigations of the company as outlined which indicate that a 106-lb. rail can satisfactorily withstand the wear of 27-ton cars on a trunk line.

CALCULATED PROPERTIES OF VARIOUS RAIL SECTIONS

Rail Section	Weight per Yard	Height in Inches	Neutral Axis Perpendicular to Web		106-lb. Standard Taken as Unity		
			Moment of Inertia	Section Modulus	Relative Strength	Rel. Strength per Unit Weight	Rel. Wearing Area
L.S. 141-395	141	9	159.0	34.0	1.46	1.10	1.14
L.S. 129-461	129	9	136.1	24.6	1.05	0.87	0.92
L.S. 119-341	119	9	129.0	25.0	1.07	0.96	0.90
L.S. 109-340	109	9	124.0	24.0	1.03	1.00	0.97
L.S. 106-422	106	9	119.3	23.3	1.00	1.00	1.00
P.S. 85-201	85	9	99.2	21.0	0.90	1.12	0.62
P.S. 107-254	107	7	72.0	19.0	0.82	0.81	0.97
L.S. 81-378	81	4	16.0	7.3	0.31	0.41	0.96
8-in., 75-lb. T	75	8	62.0	15.0	0.64	0.80	0.78
L.S. 80-335	80	7	57.3	15.6	0.67	0.89	0.72
A.S.C.E. 100	100	5 3/4	48.9	15.0	0.64	0.68	1.07
A.S.C.E. 90	90	5 3/8	34.6	12.2	0.52	0.62	0.99
A.S.C.E. 80	80	5 3/8	26.6	10.1	0.43	0.58	0.88
A.S.C.E. 75	75	4 13/16	22.9	9.1	0.39	0.55	0.80
A.S.C.E. 70	70	4 5/8	19.8	8.2	0.35	0.53	0.72

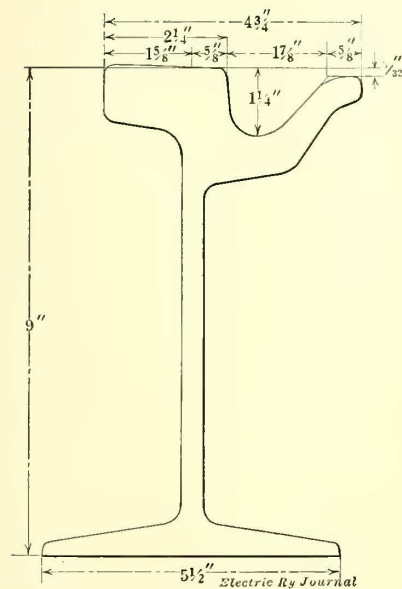
L. S.—Lorain Steel Company.
P. S.—Pennsylvania Steel Company.

SEMAPHORE SIGNALS FOR TRAFFIC REGULATION

The department of public safety of the city of Philadelphia placed in service during the past summer at the intersection of Chestnut and Broad streets, at the City Hall, a semaphore signal which is used in connection with the regulation of street traffic. As the accompanying illustration shows, this semaphore is installed in the middle of the street and is manipulated by the local

been adopted as standard by the United Railroads, and heavier and lighter rails of other design. The standard section which is the 106-lb. No. 422 of the Lorain Steel Co., is considered as having a cross-sectional wearing surface of unity, and the corresponding area on other rails is expressed in terms of this unit value. It is to be noted, however, that in the standard section the flange groove is offset sufficiently from the plane of the web so that even after this groove has been deepened to a

considerable extent by wear, there is still no weakened section just below the railhead that threatens a break. The table is, therefore, giving other rail sections the benefit of the doubt as to whether or not there would be danger of a break after the wear had reached a certain point. The wearing area assumed for the standard rail is considered fair in view of the company's experience with rail sections not so



San Francisco Rail Wear—Fig. 2—
Cross-Section of Standard
106-Lb. Rail



Semaphore Signal for Traffic Control in Philadelphia

traffic policeman. Two arms are used, one marked "stop" and the other "closed." When either of these arms is in a horizontal position traffic is not free to pass but otherwise the arm is dropped. The advantage of the semaphore scheme, of course, is that the signals of the policeman are made visible at a greater distance to the drivers of the vehicles in the rear. The department reports that it has found the semaphore scheme of inestimable value in controlling traffic at this point. It is now experimenting with several devices with a view of adopting something which will be practical for use in regulating traffic in other congested centers throughout the city of Philadelphia.

Freight Transportation on the "Harmony Route"

The Author Gives an Account of the Methods by Which the Company Has Been Able to Increase the Freight Business Along Its Lines—The Freight Schedule and a New Form of Waybill Are Also Described

BY J. B. M'INTIRE, GENERAL FREIGHT AGENT PITTSBURGH, HARMONY, BUTLER & NEW CASTLE RAILWAY

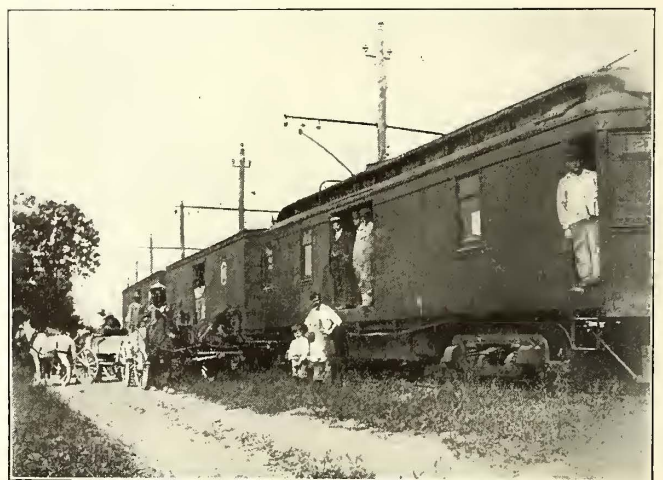
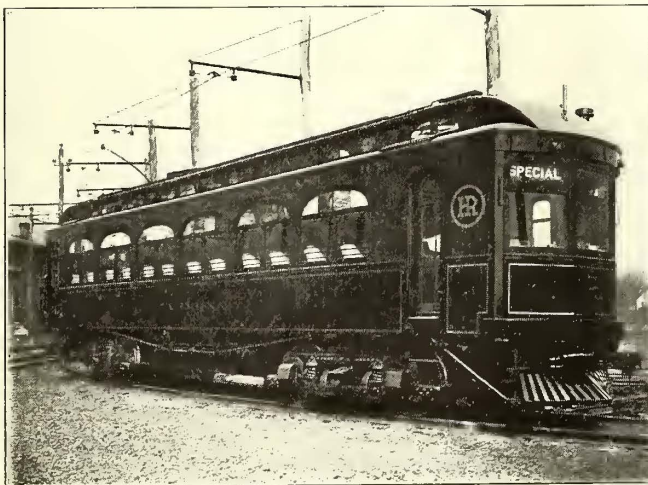
The Pittsburgh, Harmony, Butler & New Castle Railway, popularly known as the "Harmony Route," has been in operation since 1908. It is divided into three divisions, namely, the Pittsburgh division, which includes that portion of the system from Pittsburgh to Evans City, 23 miles; the Butler division, or that portion of the system from Evans City to Butler, 12 miles, and the New Castle division, or that section from Evans City to New Castle, 28 miles. This makes a total length at present of 63 miles. We also have under construction a 7-mile extension from Ellwood City, on the New Castle division, to Beaver. On its completion the system will consist of 70 miles of track connecting the county seats of Allegheny, Butler, Lawrence and Beaver Counties and serving a population of nearly 1,000,000 people.

The road was originally built exclusively for passen-

FREIGHT SCHEDULE

Following is our freight-train schedule: Freight train No. 51 leaves Harmony Junction in the morning, proceeds to Evans City, thence over the Butler division to Butler, delivering freight received from the Pittsburgh and New Castle divisions the preceding evening. Returning to Evans City it connects with trains No. 52 and No. 54, exchanges freight with them, and then makes another trip to Butler and Evans City.

Train No. 52 leaves Harmony Junction in the morning, proceeds to Pittsburgh and loads with New Castle division freight, running from Pittsburgh to Evans City as an express train and making no stops on the Pittsburgh division. It then proceeds as a local freight over the New Castle division to New Castle and returns to Harmony Junction in the evening.



Harmony Route—Special Party Car and Local Delivery of Freight

ger traffic. Later the management conceived the idea of the development of a freight business, and in May, 1910, the first freight train was run. Its total cargo was four 5-gal. milk cans, representing a gross revenue of 40 cents. From this modest beginning has grown our present freight business, which employs thirty-three persons and operates six motor or freight cars, eight box cars, three gondola cars, one flat car and forty dump cars. The cars vary in carrying capacity all the way from 20,000 lb. to 50,000 lb.

All freight and passenger runs originate and terminate at Harmony Junction, which is about midway between Pittsburgh and New Castle, on the New Castle division. Here also are the main power station, carhouses and executive offices. A city office is also maintained in Pittsburgh.

We have a direct connection at Harmony Junction with the Baltimore & Ohio Railroad, and by means of a tippel all material coming in over that road in hopper cars destined for us is dropped into our cars. All gondola or box-car material is transferred by hand. The gage of our road, like that of many other electric lines in western Pennsylvania, is 6 in. wider than standard track, hence the necessity of the transfer of material.

Train No. 53 is our milk train. It leaves Harmony Junction in the morning and proceeds over the New Castle division almost to Ellwood City. From this point to Pittsburgh it accepts milk shipments only, the amount carried being from 1000 gal. to 1500 gal. daily. From Pittsburgh north the train runs as a local, handling shipments over the Pittsburgh and Butler division, and returns to Harmony Junction.

Train No. 56 leaves Harmony Junction in the morning for New Castle and returns to Harmony Junction at noon, carrying through any local freight over the New Castle division.

Train No. 54 picks up train No. 56 at Harmony Junction at noon and proceeds to Pittsburgh, then returns to Harmony Junction late at night, handling through and local freight over the Pittsburgh division.

Train No. 55 picks up train No. 52 at Harmony Junction, leaving this point in the evening, arriving at Pittsburgh during the night, and unloads. Then it proceeds to the freight house of the Wells Fargo Express Company and loads with express shipments for the Butler division, returning to Harmony Junction the following morning.

Each freight crew consists of three men, a traveling

which furnish three grades of crushed limestone. The first, or No. 1, runs from dust up to $\frac{3}{4}$ in.; No. 2 grade is from $\frac{3}{4}$ in. to $1\frac{1}{4}$ in., and No. 3 from $1\frac{1}{4}$ in. to $2\frac{1}{4}$ in. The latter is especially adapted for railroad ballast. Nos. 1 and 2 are used for concrete work. A pulverizer furnishes raw pulverized lime for agricultural purposes, and it is becoming very popular with many of our farmers. In addition, the company furnishes burnt lump-lime, burnt ground lime and hydrated lime for agricultural and commercial purposes. The company which operates the lime works is composed largely of farmers living in the neighborhood of the mine.

It is the policy of this company to lend all encouragement possible to the development of agriculture and horticulture along its road. The liberal use of lime by the farmers has been recommended by the general freight agent, who is a member of the grange. He attends grange meetings and gives talks on the subject of lime as well as on that of direct marketing. This is in accord with the policy of the company that anything that helps the farmer must help the transportation company. In fact, the company feels that the better the transportation and marketing facilities, the larger the number of farmers who will want to locate along that line. The larger the number of farmers, the greater will be the demand for farms and the higher the price. As the price increases the size of the farms will decrease and the number of farms will increase. As the number of farms increases so will the passenger, freight and express business. Therefore, as a matter of business, we encourage agriculture and horticulture.

There is now on our road a magnificent orchard development of some 400 acres, from which we expect to haul many carloads of freight. There are also twelve commercial greenhouses in operation, and others are building. One of these is 120 ft. wide by 600 ft. long.

Under proper management greenhouses are good for 100 tons of product per acre per year and, based on a freight rate of 10 cents per 100 lb., this means an annual freight revenue of \$200 for every acre under glass.

CANADIAN ELECTRIC RAILWAY STATISTICS

According to the railway statistics of the Dominion of Canada for the year ended June 30, 1913, published by the Department of Railways and Canals, the length of road of electric railways in Canada amounts to 1356.63 miles. The total car mileage during the year was 90,819,638; the total number of passengers carried was 763,388,470, and the number of tons of freight carried was 1,957,930. The total railway capital amounts to \$141,265,631, divided \$62,079,767 for outstanding stocks and \$79,155,864 for funded debt outstanding. A summary of the income account for the year showed net earnings from operation of \$10,482,665; total income from operation, \$11,769,648; deductions, \$5,334,906; net income, \$6,612,575; surplus, \$3,444,507. The report also contains an analysis of the car earnings and miscellaneous earnings, as well as an analysis of the various divisions of operating expenses. Out of a grand total of \$17,755,372 for operating expenses \$1,066,413 was expended for maintenance of way and structures and \$1,699,641 for maintenance of equipment. The Canadian railways have a total of 3835 passenger cars and a grand total of 4989 cars of all classes.

The Bessemer & Lake Erie Railroad is experimenting with the McKeen motor car on the Hilliards branch, a distance of 12 miles, in which there are fifteen stops. The line runs from Branchton to Hilliards. One sixty-passenger car is being operated over this branch and records kept of each trip, so that operating cost may be accurately determined.

MEETING OF SUB-COMMITTEE ON AIR-BRAKE HOSE SPECIFICATIONS

A meeting of the air-brake hose specification sub-committee of the committee on equipment, American Electric Railway Engineering Association, was held at the association headquarters in New York on May 1. Those present were W. W. Brown, Brooklyn Rapid Transit System; W. E. Johnson, Brooklyn Rapid Transit System, representing W. G. Gove, superintendent of equipment, who is chairman of this sub-committee; R. N. Hemming, Union Traction Company of Indiana, who acted as chairman in Mr. Gove's absence; Roy L. Reed, Mulconroy Company, Inc.; George C. Penboss, United & Globe Rubber Manufacturing Companies; J. A. Queeny, General Electric Company, and E. H. Dewson, Westinghouse Traction Brake Company.

The first order of business was the discussion of questions contained in a circular letter of April 21, 1914, which had been sent to air-brake hose manufacturers and others. It was decided as the result of the discussion that oil-resisting tubes should be provided for service wherein the hose is subject to oil from motor-driven compressors, such as reservoir line in multiple unit trains and straight air emergency line in city trailer operation. It was decided further that the specifications should include two classes by grade, namely one for use where the hose is subject to oil and one for general use where that condition does not exist; also that the specifications would provide for three classes, namely, $\frac{3}{4}$ in., 1 in. and $1\frac{1}{4}$ in. nominal diameter.

It was agreed that chemical requirements should not be included in the specifications. It was also agreed that any guaranty that might be required should be made a matter of contract between the consumer and the manufacturer to meet the individual local conditions. It was left optional with the manufacturer whether the inner tube should be made by hand or machine. It was decided that the hose should be made straight throughout its entire length. A standard form of label was also selected.

The following changes were made in the tentative draft of the proposed specifications. As to the porosity test, it was decided that any porosity of the inner tube shown by the test proposed would be cause for rejection, and that there should be a paragraph to include this point. The stretching test was approved as written for regular grade of hose, but to be modified for oil-resisting tubes in accordance with further investigations to be made by the committee. As to tension tests it was decided that the committee would confer with the manufacturers' committee and draft requirements in line with action being taken in the revision of the M. C. B. specifications. Regarding dimensions, it was decided to revise the table to include sizes and dimensions for $\frac{3}{4}$ in. and $1\frac{1}{4}$ in. nominal size; also that the classifications be made by sizes instead of style. The matter of requirements to cover the oil-resisting quality of the inner tube was left subject to further investigation. It was the consensus of opinion that penalty clauses in connection with retests should be made a matter of contract instead of being part of a general specification.

The Compania Andino de Electricidad, which is controlled by the Compania Anglo-Argentina de Electricidad, has acquired the electric tramway concession which the government of San Juan, Argentina, granted to Mr. Basnaldo. Mr. Dirks, of the Siemens-Schuckert Company, is making final plans in order to have the work started at once. The first line will join the city of San Juan with Desamparados.

A. E. R. A. 1914 Convention at Atlantic City

After Consideration of Several Locations, Committee Decides on the New Jersey Seashore Resort Again—Bureau of Fare Research Organized with F. W. Doolittle in Charge—Conditions of Competition for Anthony N. Brady Gold Medal Announced—Standardization of Line Material and Construction—Manufacturers' Meeting

The 1914 convention of the American Electric Railway Association and affiliated associations will be held at Atlantic City, N. J., on Oct. 12 to 16. Official announcement was made by Secretary Burritt on May 7 that after a canvass of a number of cities, including personal visits to some of the places under consideration, Atlantic City appeared to be, on the whole, the most desirable location.

The principal other cities which were considered by the committee were Boston and Washington. It was found that a suitable hall in Boston would not be available until the middle of November. Because of this late date and the various considerations involved, the committee concluded that it would be inadvisable to decide on this city. Investigation of the possibilities of Washington showed that it would be impossible to secure a suitable hall in that city. While there was some question as to the wisdom of holding the convention in Atlantic City again, the committee concluded that as the 1915 meeting is to be held in San Francisco, it would be desirable to decide on an Eastern city for the 1914 convention, and Atlantic City was able to provide the necessary space for meetings and exhibits.

BUREAU OF FARE RESEARCH ORGANIZED

The Bureau of Fare Research of the American Electric Railway Association has been organized and will begin its work soon. It will be in charge of F. W. Doolittle, who has retired from service with the Public Utilities Commission of Illinois to take up the new work of the association in this direction. Mr. Doolittle is now spending two or three weeks in the West in order to familiarize himself with some of the particular problems of the kind with which the bureau will deal. He will reach New York City about May 18, and thereafter his headquarters will be at the main association office.

The Bureau of Fare Research will work along the lines discussed at the convention of the association in Atlantic City last October. These will include the determination of factors affecting the cost of passenger service, the compilation of data relating to operating results and the study and analysis of unusual conditions affecting electric railways. The object is to provide a center for information for the member companies.

The work of the bureau will be conducted so as to provide at all times comprehensive information in regard to rates of fare and matters affecting rates of fare. It will be the object of the committee on cost of passenger transportation service, which will have direct charge of the work, to undertake the most searching analysis of all factors and results that have a bearing on the subject.

CONDITIONS OF COMPETITION FOR THE ANTHONY N. BRADY GOLD MEDAL

The conditions governing the competition for the Anthony N. Brady gold medal have been completed by the committee of the American Electric Railway Association. This committee was composed of Arthur W. Brady, chairman; C. S. Sergeant and Frank Hedley. The competition is open to street and interurban roads operated electrically and a statement of the conditions, together with a blank form for the returns, will be sent to all the companies in the country soon.

The family of the late Anthony N. Brady authorized the American Museum of Safety to award annually a gold medal to the American electric railway company which for the year of award, the twelve months ended June 30, shall have done most to conserve the safety and health of the public and its employees. In addition to the gold medal to the company which presents the best record, a replica in silver will be awarded to the member of the operating staff who has contributed the most to the successful results of the company. Another replica in bronze will be awarded to the employee of the winning company whose services have been of the greatest value in the promotion of safety and health.

A committee on award of the medal will be appointed soon. It will probably be composed of five members.

The following have been adopted as the conditions of competition:

The competition shall be for the year ending June 30, and the award for the first year shall be for the year ending June 30, 1914.

Every company entering the competition shall file with the American Museum of Safety by Aug. 31 next after the close of the year the data upon which it founds its claim to the award. Such data for the year ending June 30, 1914, shall be filed by Aug. 31, 1914.

Every competing company shall include data covering all lines comprising the entire system of which it is a part, without regard to technical ownership. The test ordinarily would be operation under the jurisdiction of a single president. Such data shall include:

1. A report of all casualties to passengers, employees and others in Table I.

TABLE I—ACCIDENT REPORT FORM

The American Museum of Safety Competition for Anthony N. Brady Memorial Medal. Returns for _____ Company, Year Ending June 30, 1914.

Accidents in Train Service.				
Total train miles run.....				
Total car miles run.....				
	Number		Number per million train miles run	
	Killed	Injured	Killed	Injured
Casualties in train accidents:				
Passengers				
Employees				
Other persons				
Other persons, trespassing.....				
Total				
Casualties in other than train accidents (excluding industrial accidents):				
Passengers				
Employees				
Other persons				
Other persons, trespassing.....				
Total				
Industrial accidents (not involving movement of cars):				
Total number of "industrial" employees.....				
	Number		Number per 1000 employees	
	Killed	Injured	Killed	Injured
Total casualties to employees....				
Signed.....				
	(State official title)			

NOTE—Each competing company may file details of the casualties reported, analyzing and classifying the causes and circumstances thereof and showing whether due to the fault of the person injured or killed, or to causes beyond his control.

The terms used in this form are to be understood as follows:

Train miles run shall be the total of all revenue and

non-revenue mileage made by motor cars or locomotives in all classes of service, except construction service. The mileage of single car operation is regarded as train mileage.

The number of employees for computing the rate per 1000 in industrial accidents is determined by dividing the aggregate days worked by all employees in industrial service, such as track men, linemen, shop men, power house and substation men, freight handlers, and others not actually engaged in the operation of cars, by the number of working days in the period covered by the report.

Train accidents include all casualties resulting from collisions with other cars or trains, derailments, and miscellaneous accidents to trains.

Other than train accidents include all casualties resulting from accidents to roadway or bridges not causing derailments, as, for instance, fires, floods, landslides, explosions, etc.; also all resulting from collisions with vehicles, platform accidents, and other accidents connected with the actual operation of cars not including industrial accidents.

Industrial accidents include all accidents not involving train operation, but occurring to employees of the company on or about railway premises. Instances are, accidents occurring to employees while working on tracks, bridges or other structures, at stations, in or about power houses, substations, shops, barns, transmission and distribution lines. Railway premises include highways and other public property occupied under franchise rights.

Passengers include passengers on passenger, freight and mixed trains or cars, and persons carried under agreement or contract, such as employees of express companies, postal employees, etc.

Employees include employees of the company competing, but not the employees of other companies carried under agreement or contract.

Other persons not trespassing include all persons other than passengers, employees and trespassers.

Killed: Accidents to persons resulting in immediate death or in death within 24 hours from the time the accident occurred should be reported in columns headed "killed."

Injured: All other accidents to persons, including those resulting in death of the person injured after interval of more than 24 hours from the time the accident occurred, should be reported in the column headed "injured." Trivial accidents need not be reported. Accidents to employees shall be regarded as trivial if they result in injuries so slight as not to prevent the employee injured from performing his accustomed service for more than three days, in the aggregate, during the ten days immediately following the accident. Injuries to passengers and other persons that do not prevent the injured person from following his customary vocation for more than one day shall be regarded as trivial.

2. A report of the various measures taken during the year to conserve the safety and health, including, among others, those indicated as follows:

MEASURES TO PREVENT ACCIDENTS

- a* Block signals.
- b* Protective devices at railroad crossings.
- c* Protective devices at highway crossings.
- d* Protective devices at other points of danger.
- e* Automatic stops.
- f* Safety devices in cars, shops, power houses, substations, and in connection with roadway and transmission and distribution systems.
- g* The separation of grades, the reduction of curves, and the elimination of obstructions to view.
- h* The observance of high standards with regard to

the inspection, maintenance and improvement of rolling stock, roadway, transmission and distribution systems.

- i* Standards of employment, physical and mental.
- j* Periodical examinations of employees, physical and mental.
- k* Rules and discipline.
- l* Educational measures affecting the public, including school children.
- m* Educational, protective and co-operative measures by and through employees.

MEASURES TO ALLEVIATE EFFECTS OF ACCIDENTS

- a* First aid to the injured, including instruction and training of employees, and first aid equipment.
- b* Emergency and other hospitals.

MEASURES TO PROMOTE HEALTH

- a* Attention to lighting, ventilation, cleanliness, disinfection, pure water, sanitary conveniences, and other factors affecting the health of passengers.
- b* Attention to lighting, ventilation, cleanliness, disinfection, pure water, sanitary conveniences, and other factors affecting the health and welfare of employees.
- c* Instruction of employees in matters of hygiene and sanitation.

3. A report showing the following facts in connection with the operations of the company for the year:

a The single track mileage of all lines operated during the year.

b The division of the track mileage into surface, elevated and subway lines respectively; also into urban, suburban and interurban lines respectively, showing also what part of the mileage is on private right-of-way.

c The number of revenue passengers carried, showing separately the number carried on surface lines.

d The number of car miles run, showing separately the car miles run on surface lines.

e The gross earnings per mile of single track in each class of service.

f The amounts of earnings, both the amount set aside and that actually paid, on account of accidents occurring during the year, together with the ratio of such amounts to gross earnings.

g The monthly average number of employees.

h The especial difficulties, if any, physical, legal and other, affecting the safety of operation.

4. A report of all other facts regarded by the company as materially bearing upon the record for conservation of safety and health made during the year. Data for other years may be given under this heading.

The committee on award may ask for any additional data.

VALUE TO BE GIVEN DATA

It is obvious that in determining the weight to be assigned to the casualties reported consideration must be given to the relations between the company and the person injured, and to the cause of the casualty. The following rule has, therefore, been adopted for the guidance of the committee on award: The casualties per 1,000,000 car miles, and, in the case of industrial accidents, per 1000 employees, shall be multiplied by the factors stated in Table II.

TABLE II—RULE GOVERNING DATA

	Multiplier	
	Killed	Injured
Casualties in train accidents:		
Passengers	200	4
Employees	80	2
Other persons (not trespassing).....	80	2
Casualties in other than train accidents:		
Passengers	100	2
Employees	40	1
Other persons (not trespassing).....	40	1
Employees in industrial accidents.....	40	1

The company showing the smallest total of the added results thus obtained would have the best record for the year, provided equality existed in all other respects. It is clear, however, that no company would be on an exact equality with its competitors in all other respects, and that the total result obtained by the application of this weighted scale would be only one of the elements to be considered by the committee on award. The committee would also consider all the other data reported, together with any supplemental data provided at the request of the committee, and endeavor to give proper weight to every element shown.

STANDARD LINE MATERIAL AND CONSTRUCTION

Letters from manufacturers, received by G. W. Palmer, Jr., chairman of the committee on power distribution of the American Electric Railway Engineering Association, indicating willingness to adopt the standard design of cap and cone, have been made public by Secretary Burritt of the American Association. Extracts from the letters are as follows:

Westinghouse Electric & Manufacturing Company: "In order not to further delay the adopting of this standard, our engineers are willing to approve the cap and cone as per drawing of June, 1913. We should like to see the drawing finally approved by the committee (committee on power distribution) at an early date."

H. W. Johns-Manville Company: "If the dimensions of cap and cone insulators are standardized by the American Electric Railway Association at the meeting in October, we will be willing to change our dies in accordance with specifications."

Electric Railway Equipment Company: "We shall be very glad to make such slight changes in our cap and cone hanger as will make them conform to these (proposed) dimensions."

The Macallen Company: "We . . . have instructed the factory to make the necessary change in the mould in order to bring our insulator in line with your drawing."

The Ohio Brass Company: "Any information which you can give us at an early date regarding dimensions which you feel certain will be adopted as standard, will be greatly appreciated. If we find it necessary to make any changes in our dies, we wish to do so as soon as possible."

The A. & J. M. Anderson Company has also signified verbally to Mr. Palmer its intention to fall into line and has promised to confirm this in writing to Mr. Harte, chairman of the sub-committee.

The association urges all member companies to specify the standard design on their future orders for this material. Manufacturers will be notified officially of the adoption of the standard design and will be asked to place themselves in a position to furnish it.

MEETING OF THE MANUFACTURERS' ASSOCIATION

A meeting of the American Electric Railway Manufacturers' Association was held at the office, 165 Broadway, New York, on May 7. The action in regard to the selection of Atlantic City as a meeting place made by the joint committee of the American Electric Railway Association and the Manufacturers' Association was approved. In addition C. R. Ellicott, vice-president in charge of entertainment, announced the appointment of W. C. Kaylor, Westinghouse Traction Brake Company, as chairman of the entertainment committee for the 1914 convention; S. K. Colby, vice-president in charge of finance, announced the appointment of Wylie Brown,

Bridgeport Brass Company, as chairman of the finance committee for the current year. E. H. Baker, chairman of the membership committee, read a satisfactory report of the activities of that committee. Those present at the meeting were President Hawley, vice-presidents Ellicott, Colby and Baker, and B. A. Hegeman, James H. McGraw, H. C. Evans, Bertram Berry, F. A. Elmquist and D. W. Smith. C. Loomis Allen, vice-president of the American Electric Railway Association, was also in attendance.

A PRO-RAILROAD CANDIDATE FOR CONGRESS

News from Portland, Ore., states that E. L. Van Dresar, representative in that city of the Rail Joint Company, has announced his candidacy for the democratic nomination for Congress. He has declared his platform includes a sane treatment of the entire railroad problem as a "situation which vitally affects the financial integrity of the whole country."

In a recent speech he said, in part:

"More settlers for Oregon, and more railroads to put them on the land.' This might well be reversed to read 'More railroads for Oregon and more settlers for the land,' for we will never get settlers in the numbers we desire, nor will we ever get them on to the vast areas of interior Oregon until proper transportation is provided which will take them within easy striking distance of their proposed homesteads.

"All we need in this country to promote steady, healthy construction of new lines is reasonable stability of rates and expenses, with readjustments of the former from time to time as the latter make necessary. This I take it is the proper function of the Interstate Commerce Commission. Not merely to see that rates are forever lowered, but to stand as a just judge and arbiter between the railroads and the people, to see that rates are not made too high, and also to see they are not made so low as to impair the usefulness of the carrier. This I conceive is the nub of the entire situation.

"Almost from the beginning of railroad legislation and commission control the trend has been in one direction only as to rates and expenses, the former down, the latter up, until in many instances the margin between income and outgo has vanished and the receiver has had to step in for the final obsequies.

"If the promptness with which the Interstate Commerce Commission acts in suspending rates could be even partly duplicated in permitting advances where the same are reasonable and justified, then many of the strained, halting, uncertain elements in present railroad financing and operation would be eliminated.

"I have already announced that my purpose in entering this campaign for Congress in the third Oregon district is not political, but that it is purely commercial and industrial. I have not consulted one single railroad official regarding my purpose, nor do I intend doing so. It is not necessary. This whole matter of railroad ruin, and through it of community ruin, has gone too far to be affected in the least by what any railroad official may say or think. The remedy must be applied by the people through an enlightened public opinion."

Several cars embodying an improvement in the double-staircase type of double-deck car devised by C. W. Mallins, general manager Liverpool (England) Tramways, and described in the ELECTRIC RAILWAY JOURNAL of March 29, 1913, are being placed in service. While retaining the double staircase the vestibules have been made more commodious, and wide aisles have been provided on both decks between the transverse seats. The wheelbase has been increased to 8 ft. and in some instances to 9 ft.

COMMUNICATIONS

SIGNAL FAILURE DEFINITION ON DOUBLE- TRACK LINES

INTERBOROUGH RAPID TRANSIT COMPANY
NEW YORK, May 5, 1914.

To the Editors:

Signal failures can, of course, be divided into several different classes, but it will be a difficult undertaking to harmonize the opinions of different signal engineers as to what these various classes should include. Failures should be viewed from the standpoint of reliability of the signal system. The purpose of a signal system is not only to protect traffic but also to accelerate it, that is, to increase the capacity of the road, and any delays due to the improper display of a stop indication should be charged to signal failures, no matter how creditable such a failure may be to the design and installation of the system.

On the lines of the Interborough Rapid Transit Company the acceleration of traffic is of particular importance. It is just as important to display a proceed indication when it is safe to proceed as to display a stop indication when it is unsafe to proceed, and if a signal does not do so, it is charged with a failure. Such a method of recording signal failures includes not only all delays due to failure of or accident to any part of the signal equipment or signal power mains, but also those due to outside interferences, such as carelessness of the track forces in short-circuiting the track, breaking bonds, etc.

A standard whereby the efficiency of different signal systems may be compared, can be reached only by placing all signal failures in one class, using a definition for signal failure that will include all cases in which a signal displays a stop indication for any other than a normal operating condition.

CHARLES R. PEDDLE, Signal Inspector.

THE TECHNICAL SCHOOLS AND THE ELECTRIC RAILWAYS

UNIVERSITY OF ILLINOIS
URBANA, ILL., April 29, 1914.

To the Editors:

I have been much interested in recent articles and editorials in the columns of the ELECTRIC RAILWAY JOURNAL bearing on the relation of technical schools and electric railways. In my opinion the electric railway courses in the United States are not accomplishing as much as they would if the railroads would give greater consideration to technical men. Unfortunately, teachers in railway subjects are not in a position to advise students that their advance in the railway field will be as rapid as in other lines of engineering work. I know that this is exactly the conclusion at which you have arrived as covered in your editorial statements.

I am especially glad to see papers dealing with foreign installations in some detail. In this country we seem to have the idea that our engineers are the best in the world and that foreign practice is inapplicable to our conditions. While the former may be true, the developments which are taking place in electric railway apparatus in other countries certainly merit serious study. Our engineers can, without doubt, learn some valuable lessons from European experience.

A recent editorial entitled "Fascination of Railroad-ing" seems to me to point out the chief reason why technical men enter and remain in this line of work. With adequate salaries, the fascination of the work would soon draw properly trained men who would be able to bring about wonderful advances. There are still

many problems to be worked out by the railroads which require the most carefully trained engineers for their solution. If the ELECTRIC RAILWAY JOURNAL can, by its influence, assist in changing the attitude of the railroads toward our technical graduates, I believe that the schools, on their part, will be able to furnish well trained men. You have my heartiest support in this important work.

I have read the ELECTRIC RAILWAY JOURNAL every week for the past ten years and have watched its development along with other developments in the electric railway field. I therefore feel quite familiar with the paper. I am certain that the large knowledge I have of electric railway practice and to a great extent of electric railway theory has been obtained from my constant reading of this publication. It has seemed to me that, while the editorial pages have always been a source of inspiration, they seem at the present time to be broader than ever before.

A. M. BUCK,

Assistant Professor of Railway
Electric Engineering.

RENEWABLE CENTER OR SOLID MANGANESE SPECIAL WORK

TRANSIT DEVELOPMENT COMPANY
BROOKLYN, N. Y., May 4, 1914.

To the Editors:

I have read with interest the article in your issue of May 2 on Chicago special work. In 1911, in company with other members of the A. E. R. E. A. way committee for that year, I examined some of these solid manganese crossings at Chicago. I remember distinctly that most of them had not been in more than three years and some of them for a lesser time, yet nearly every crossing viewed showed at least one frog battered down or broken out. This was conceded to be due to "sub-cutaneous blow-holes" or some other cause which produced spongy or soft spots in the manganese at critical points. I believe that the non-appearance of such faults at critical points cannot be guaranteed.

The style of construction which has generally been adopted with solid crossings has been to include all four frogs of a crossing in one piece. This has, in the past, rendered it almost impossible to make any repairs to some one defective frog without excessive cost. The modern method of making arc-weld repairs so as to build up points, and the use of oxy-acetylene flame for the purpose of cutting manganese, may possibly render repairs to this style of crossing more reasonable in cost. But I think that the committee was of the opinion at that time that a solid crossing was a mistake for general uses. Since then, the scheme has come forward of making a solid manganese crossing with manganese renewable inserts for centers.

These influences have made some change in the situation, but from my own observation of various properties I believe that solid manganese crossings generally are not of service to us except in cases of certain types of steam railroad crossings over street railways. In these cases where the steam railroad traffic is exceptionally heavy, a certain form of solid manganese rails for the steam railroad runs, with ordinary high-carbon steel rails for the street railways, has been found to be very serviceable, since in such cases the steam railroad traffic has been the one which destroyed the crossings. I have also observed that manganese has given exceptionally good service when installed in curves of sharp radii and subject to the heaviest traffic. Even for such installations, careful analysis of the conditions should be made, because it has been noted that the increased life of a manganese curve did not always offset the difference in cost in favor of two high-carbon steel

curves, including the labor for re-installation and re-
 pavement.

In closing I would say that I thoroughly believe that
 this manganese subject in connection with special work
 has been overdone and that a great deal of money has
 been wasted.

R. C. CRAM, Assistant Engineer.

THE NEAR-SIDE STOP

PUBLIC SERVICE RAILWAY COMPANY

NEWARK, N. J., May 2, 1914.

To the Editors:

In an editorial in your issue of April 25, advocating
 the adoption of the near-side stop in New York City,
 you express the opinion that greater safety would be
 promoted by so doing. This idea seems to be quite
 general, but figures supporting it apparently are lack-
 ing.

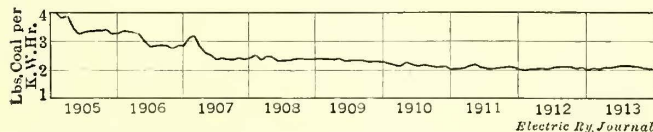
It seems reasonable that the only class of accidents
 which would be minimized by the near-side stop is such
 collisions as occur, under far-side operation, when the
 car is about to stop at the intersection. It does not
 seem reasonable that these accidents would constitute
 a very large percentage of the collisions which do occur
 where the far-side stop is in vogue. Even if such ac-
 cidents were entirely done away with, which is not cer-
 tain, the reduction in accidents would not be large, and
 it is not unlikely that such reduction would be more
 than offset by an increase at those intersections where
 the car passes rapidly and without stopping, this be-
 cause after near-side operation has been the rule for a
 considerable while, drivers will be apt to get it into
 their heads that the car will stop before crossing the
 street in every case. If any company has records to
 show the reduction in collisions from near-side opera-
 tion, such figures would doubtless prove of interest to
 your readers.

GEORGE H. LYNE.

[The theory of the advantage of the near-side stop, of
 course, is that it is more easy to stop a car when it is
 accelerating after a service stop on the near side of the
 street than to do so while it is being braked for a ser-
 vice stop on the far side of the street. Moreover, the
 motorman has an opportunity to select a proper time
 to make the crossing. Comparative figures of the kind
 mentioned by our correspondent, compiled by any com-
 pany which has used both methods, would be interest-
 ing.—Eds.]

**POWER PRODUCTION ECONOMIES ON THE INTER-
 BOROUGHS**

At the recent exposition of the National Efficiency
 Society the Interborough Rapid Transit Company in-
 cluded in its exhibit a number of diagrams showing the
 remarkable economies that have been effected in its
 various power stations. Of these diagrams, which were
 prepared under the direction of H. G. Stott, superin-



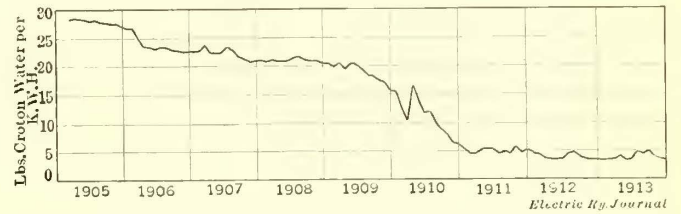
Interborough Power—Diagram Showing Decrease in Coal
 Consumption During Nine Years of Operation

tendent of motive power Interborough Rapid Transit
 Company, three are reproduced herewith.

The first reproduction, which shows the amount of
 coal used per kw-hr. by all power stations of the com-
 pany, indicates the remarkable improvement in power
 station operation which has been effected on this rail-
 way system during the last nine years. The economy
 is, of course, due in part to the introduction of the low-

pressure turbine with its high operating efficiency, and
 also to the adoption of high rates of driving steam
 boilers, the latter obviously effecting a very great re-
 duction in the stand-by losses incident to the variable
 load. From the curve it will be seen that the coal con-
 sumption has been maintained for several years at an
 average figure of 2 lb. per kw-hr. at the switchboard,
 including all incidental uses.

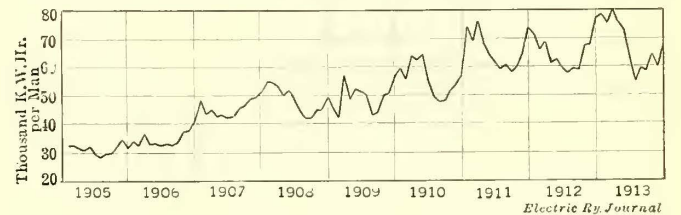
The diagram showing the weight of Croton water per
 kw-hr. used in the various power houses includes all
 water required for make-up purposes but does not in-



Interborough Power—Unit Consumption of Make-up Water
 Required by Boilers

clude the circulatory water for the condenser. The re-
 duction shown to have been effected has been due in
 part to an increased use of surface condensers and also
 to the use of highly economical auxiliaries. The present
 water consumption, amounting to about 4 lb. per kw-hr.,
 shows that the make-up is equal to some 25 per cent of
 the steam consumption of the various plants, part of
 this being needed to supply blow-off and leakage losses
 and part being required for non-condensing auxiliaries
 of which the exhaust is not returned to the system.

The third curve, which shows the output in kw-hr.
 per man employed in the power houses, serves as an



Interborough Power—Diagram Showing Decreased Amount
 of Labor Required in Power Houses

indication of the great reduction in the amount of labor
 required to produce power in recent years. It will be
 seen from the curve that the amount of power turned
 out by each man is greater in winter than in summer.
 In other words, the power-house force in summer time
 is relatively increased. This will be accounted for by
 the fact that the output is naturally greater during cold
 weather and also by the fact that more repair work is
 done during the summer months when more equipment
 can be taken out of service for overhauling.

Edward E. McCall, chairman of the Public Service
 Commission for the First District of New York, has
 expressed his regret at the action of Mayor John Pur-
 roy Mitchel in vetoing the bill, which had been favored
 by the commission, amending the Rapid Transit Act.
 The proposed bill clothed the commission with power to
 do actual construction work on the new rapid transit
 lines, in the event of this becoming necessary by rea-
 son of some contractor not being able to perform the
 whole of his contract. It also raised the amount from
 \$10,000 to \$25,000 for which the commission could let
 contracts without formal competitive bidding. Before
 doing any work under either amendment it would have
 been necessary for the commission to secure the con-
 sent of the Board of Estimate and Apportionment, of
 which the Mayor is a member.

Equipment and Its Maintenance

Short Descriptions of Labor, Mechanical and Electrical Practices in Every Department of Electric Railroading

(Contributions from the Men in the Field Are Solicited and Will Be Paid for at Special Rates)

DETERMINING THE CORRECT POSITION OF THE TROLLEY WIRE ON CURVES

BY R. D. DIXON, MAINS SUPERINTENDENT NEW SOUTH WALES GOVERNMENT TRAMWAYS, SYDNEY, AUSTRALIA

It appears to me that too little consideration has been given by engineers to the placing of the trolley wire at its theoretically correct position on curves. Your readers might therefore be interested in the uniform practice which has been followed for the last decade with quite satisfactory results on the Sydney (New South Wales) Tramways, the service of which totals more than 26,000,000 car miles per annum. This practice consists in placing the trolley wire in such a position that the boom or pole makes as nearly as is practicable, a tangent to the trolley wire curve. It was not until I read the article by J. H. Barnard in your issue of June 28, 1913, that I learned that such a condition was recognized as being the correct one. Mr. Barnard states that "the cases most affected are those of short radius curves, which are rarely circular, and a great majority of tracks are traversed by various classes of cars, so that any sufficiently accurate formula would be entirely too cumbersome for ready application." With this I do not agree and propose to show briefly a theoretical method which can be practically applied.

If we assume a certain definite height of trolley wire above the rail level, length of trolley pole and height of car, there are then two governing factors which are variable, namely, the radius of the curve and the super-elevation of the outer rail.

Take first a case in which the curve is circular.

In Fig. 1, *A* and *B* are the centers of the car trucks. If the rotating center of the trolley base is in the center of the car, then this point will be represented by *D*. *DF* is the horizontal projection of the trolley pole. When *DF* forms a tangent to the curve *XY*, this curve represents the theoretically correct position of the trolley wire. The distance that the point *F* is from the center of the track is the offset required. To find this offset, proceed as follows according to Fig. 1.

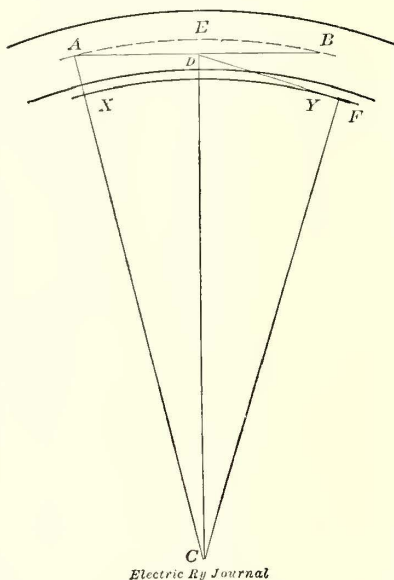


Fig. 1—Offsetting Trolley Wires—Case of Circular Curve without Superelevation

Radius of curve..... *AC*
 Length between truck centers..... *AB*
 Trolley wheel *F*
 Horizontal projection of trolley pole..... *DF*

Then $DC = \sqrt{AC^2 - AD^2}$.

$FC = \sqrt{DC^2 - DF^2}$.

AC — *FC* = Distance of point *F* from center of track. To find additional offset due to superelevation:

In Fig. 2 a cross-section through *MN* (the center of the car) is shown. *ED* is the distance of the center of the car from the center of the track when no superelevation exists. When the car is tilted owing to the elevation of the outer rail, the point *D* moves to *D*₁. This distance is equal to

$$\frac{\text{superelevation} \times \text{height of trolley base}}{\text{gage of track}}$$

If the superelevation of the outer rail is 3 in., the height of the trolley base 11 ft. and the gage of the track 4 ft. 8½ in., then

$$DD_1 = \frac{3 \times 11}{4.7} = 7 \text{ in. approximately.}$$

The theoretically correct position of the trolley wire is then a curve to which the trolley pole *D₁F* is a tangent as indicated in Fig. 2. It can readily be seen that if the car were on a four-wheeled truck the point *D* would be nearer the center of the track, but the method of calculation is precisely the same if the trolley base remains in the center of the car.

In a case where the car is on double trucks and the center of the trolley base is not in the center of the car, the offset is obtained as follows according to Fig. 3:

A and *B* = centers of trucks.

G = center of chord.

D = center of trolley base.

F = trolley wheel.

DF = trolley pole projected horizontally.

C = center of curve.

$GC = \sqrt{AC^2 - AG^2}$.

$DC = \sqrt{GC^2 + GD^2}$.

$FC = \sqrt{DC^2 - DF^2}$.

AC — *FC* = distance of trolley wire from center of track.

In practice very few tracks have curves which are complete circular arcs but are eased at each end with transition curves. In such cases the engineer who pegs out the position for the trolley wire measures the versine of a chord, say, 20 ft. to 25 ft. in length, and from tables he assumes that for this length the curve is a circular arc with a versine equal to the measured versine. This is, of course, not theoretically correct, but it is an assumption which is close enough for practical purposes. As trolley wire cannot be erected in a curve, it is a matter of judgment as to what length of chord should be allowed, i.e., distance between pull-offs.

On the Sydney system the spacing is such that the angle made between two chords should not deviate from 180 deg. more than 7 deg. 18 min., for a curve of 45 ft. radius, and diminishing to 5 deg. 16 min. for a curve of 350 ft. radius. The curve of larger radius has the

smaller angle owing to the cars traveling at a higher speed than is the case on a curve of smaller radius.

Fig. 4 shows the spacing of pull-offs for curves with radii up to 350 ft., and the offsets for various classes of cars with the trolley wire 19 ft. above rail level. Such curves can be prepared for any type of car. The engineer, when setting out the positions for the pull-offs, has merely to measure the superelevation and refer to his table and curves which give the total offset required (the superelevations multiplied by the height

It is also, I think, incorrect to allow 4-in. offset for every 1 in. of superelevation on curves. From Fig. 2 it will be seen that the trolley base is the portion that is affected by the superelevation, as it is from this point that the trolley pole is required to make a tangent to the trolley wire. As explained before, if the trolley base is 11 ft. from the rail, and the gage of track is 4 ft. 8½ in., the offset of the trolley base caused by the superelevation is

$$\frac{\text{Superelevation} \times 11}{4 \text{ ft. } 8\frac{1}{2} \text{ in.}}$$

POINTS RAISED BY MR. DIXON

[Mr. Dixon's article was submitted for comment to Charles Rufus Harte, construction engineer, Connecticut Company, who is a recognized authority on line construction practices in the United States. Mr. Harte's comments follow.—EDS.]

Mr. Dixon, in his very interesting paper, apparently has misunderstood Mr. Barnard's statement. There is no question that for any specific case the offset can be figured with absolute accuracy and usually without very much complication. But after such result has been obtained the offsetted position of the trolley wire is not the proper one, unless the line is used only by equipment which maintains the conditions of the calculations. The operating position of the wire must be that which is the best compromise of the conflicting figures. Any equation which attempts to reconcile those conditions in the determination of the value will be, as Mr. Barnard states, too cumbersome for ready application.

In questioning the value of the equation given in the American Electric Railway Association specification, Mr. Dixon apparently is unaware of the fact that on most of our American lines the trolley pole is over, or practically over, the center of the truck. A single trolley on a double truck car of considerable distance between bolsters, is so far as I know, very rarely used in this country; long-bodied cars with double trolleys on single trucks are almost equally so. Further, in this

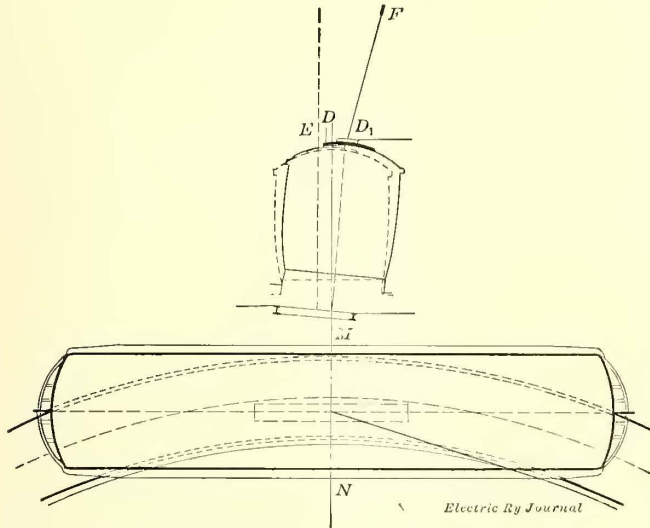


Fig. 2—Offsetting Trolley Wire—Finding Offset Due to Superelevation

of trolley base above rail level and divided by the gage of track can be tabulated).

Since the article by Mr. Barnard appeared, the "Specification for Overhead Trolley Construction," issued by the American Electric Railway Engineering Association, has been published in your journal. It appears to me that the conclusions arrived at are not quite correct for four-wheeled single-truck cars and

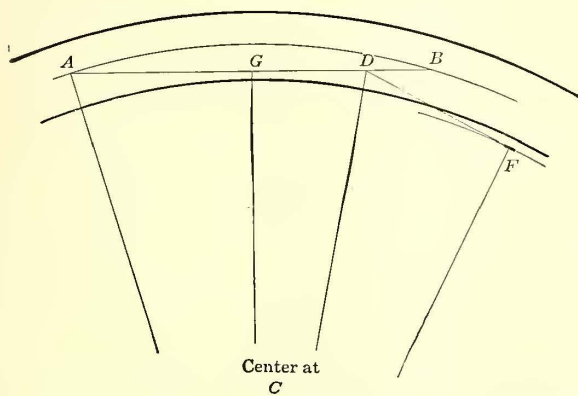


Fig. 3—Offsetting Trolley Wire—When the Trolley Base Is Not in the Center

very incorrect for double-truck cars. No allowance is made for the distance which the center of the car, and consequently the trolley base, is from the center of the track. This is very large when the trucks are, say, 22 ft. between centers, and the car is on a curve of sharp radius. With a radius of 40 ft., the center of the trolley base, if placed in the center of the car, is no less than 18 in. from the center of the track. This distance, of course, diminishes as the radius increases; with a radius of 200 ft. it is nearly 4 in. These distances should be added to any offsets calculated by the method proposed by the A. E. R. E. A.

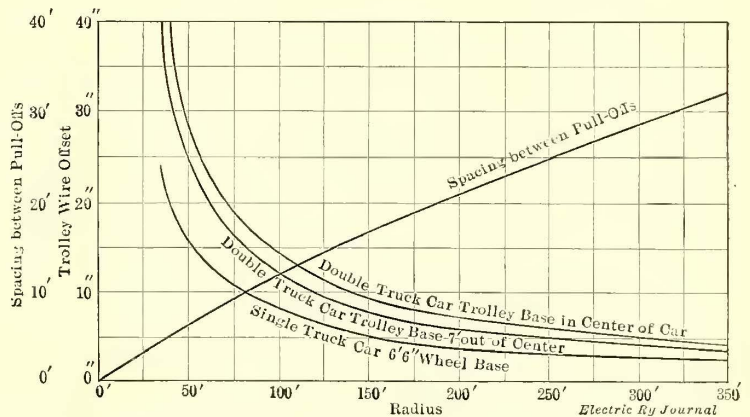


Fig. 4—Spacing of Pull-Offs and Offsets for Three Classes of Cars

country the use of only one type of equipment on a line is not at all usual. In view of these circumstances the A. E. R. A. specification gives a position for the trolley wire which is sufficiently accurate for hanging up, and in most cases will be entirely satisfactory without further change. However, no position values on the calculation should be made up permanently until a little observation has determined whether or not they are satisfactory. As a matter of fact, it is very evident from the behavior of existing overhead that there is a space of quite a little width within which the trolley wire may be placed with very satisfactory results.

HOME-MADE CRANE MOTOR WORK CAR

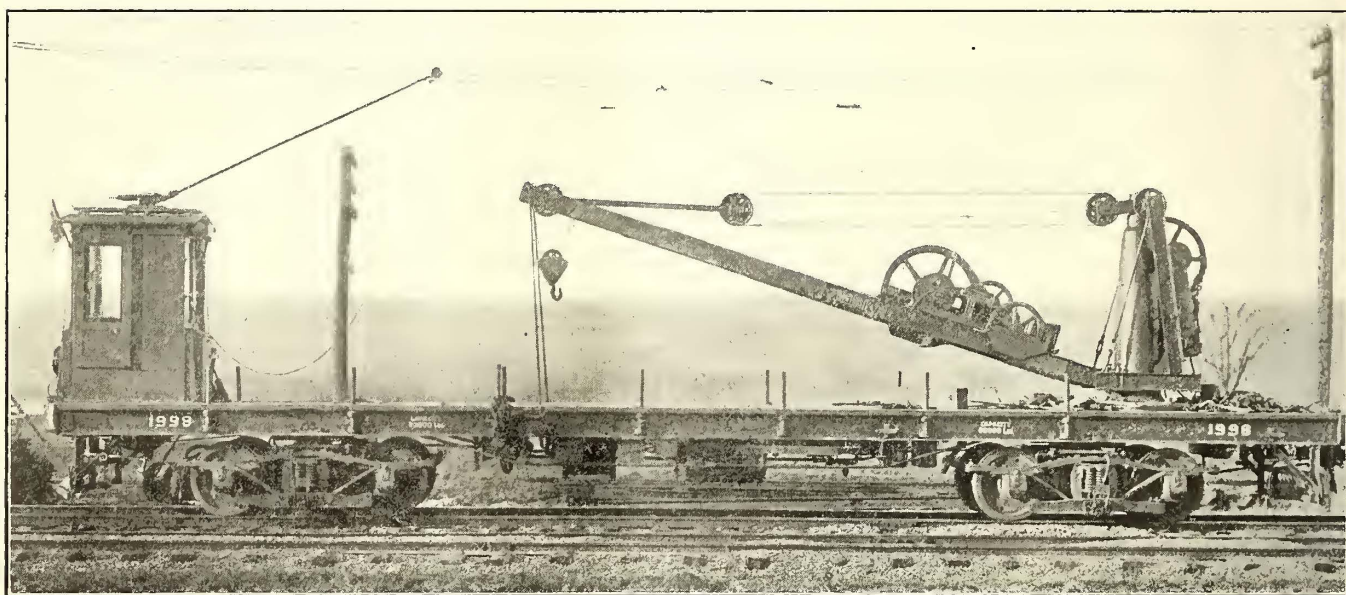
BY J. R. AYERS, MASTER MECHANIC, NEW YORK STATE RAILWAYS—UTICA LINES

A crane motor work car recently placed in service by the New York State Railways—Utica Lines has several unusual construction features that possibly make it worthy of mention. As this car was intended for the joint use of the maintenance of way and line and building departments, it was necessary to incorporate several special features in its design. Thus it is used to set up poles to place special work and to tear down bridges. The entire operation of building was carried on in the Utica Shops of the New York State Railways. The type of construction is all-steel underframing of standard steel shapes.

Two side sills of 12-in. I-beams and two center sills of 10-in. I-beams comprise the principal load carrying members of the underframing, the capacity being 80,000 lb. Due to the location of the derrick and cab on

at 25-ft. radius, it was essential to provide some means, other than by blocking under the side sills, to keep the car from tipping. This was accomplished by the use of a sliding 10-in. I-beam which could be extended out 2 ft. on either side of the car body. By placing a jack under the end of this beam, it is effectively secured against upsetting when the boom is working at right angles to the car. The derrick, which has a maximum and minimum radius of 25 ft. and 10 ft. respectively, is equipped with motor control throughout. A sole-noid brake on the hoisting motor also assures safe operation. The boom, which is built of channel iron, is protected against coming into contact with the trolley wire by wooden fillets in the channel iron. All control apparatus both for crane and car operation is centralized in the motorman's cab.

The car which is geared for maximum speed of 25 m.p.h. is powerful enough to pull two loaded freight gondolas if required. For hauling freight and general shifting work, Tomlinson radial M.C.B. couplers and



Derrick Work Car of the New York State Railways—Utica Lines

opposite ends of the car, four-fifths of the carrying capacity load rests between the truck centers. This made it necessary further to reinforce the underframing by the use of two 1½-in. truss rods which extend under the car from end sill to end sill. The end sills consist of 12-in. channel iron securely riveted to the longitudinal members by means of standard connecting angles. To insure rigid construction, underframing is secured by diagonal braces of 4-in. x 6-in. angles and needle beams of 8-in. I-beams. The bolsters are of the steel plate truss type with the bent lower or compression member built up of a 12-in. x ¾-in. plate, reinforced by two 3-in. x 3½-in. angles. These angles, which run from side sill to side sill, are bent to conform to the plate and are securely riveted to the same. The upper or tension member is of 12-in. x ¾-in. plate. The bolster is further reinforced by placing a 1-in. truss rod on the plate truss. The body rub irons are made of 4-in. I-beams which are curved to the required radius.

On account of the relatively large working radius of the Brown hoist pillar crane required by the line department for setting up 35-ft. concrete poles, i. e., 25 ft., the securing of the pillar to the underframing necessitated the framing in between the sills of 6-in. x 6-in. x 1-in. angles for holding the 2-in. pillar base bolts. As the crane specifications called for 8000 lb.

train line air were installed. The electric equipment consists of four Westinghouse 533-Y-3 motors, with HL control arranged for both trolley and third-rail operation. Other parts of the regular equipment are arc headlight, incandescent headlights, a radial sander which insures a plentiful supply of sand to rail irrespective of the radius of curvature of the track, and steel pilots fitted on both ends of the car.

The car is equipped with Brill No. 50-E-4 M.C.B. trucks especially designed and constructed to meet the severe requirements to which it is subjected. The principal dimensions and weights of the car are as follows:

Length over all	53 ft. 11 in.
Distance between truck centers	31 ft. 11 in.
Width	8 ft. 0 in.
Height from rail to car floor	4 ft. 4 in.
Height from rail to top of derrick pillar	13 ft. 6 in.
Total weight, car body, trucks, and equipment	50,000 lb.
Weight of crane	13,000 lb.
Maximum load capacity	80,000 lb.
Total weight loaded	143,000 lb.

After having been in service since February, during which time the car has been called upon to assist in taking down a truss bridge and to help clear the tracks during one of the most severe snowstorms experienced in the history of the road, its value has been proved conclusively.

DIES FOR REMOVING THE WORN SLOTS OF BRUSH-HOLDERS—CHUCK FOR TURNING UP BEARINGS

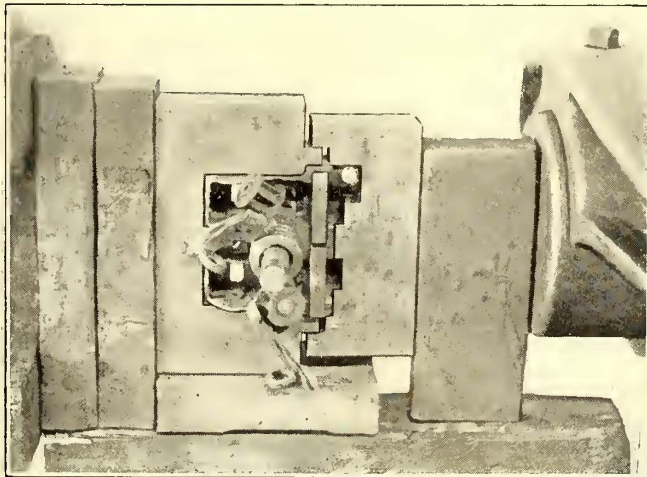
BY F. J. FOOTE, MASTER MECHANIC OHIO ELECTRIC RAILWAY, COLUMBUS, OHIO

As every railway motor repair man knows, the slots that inclose the brushes on brush-holders become badly



Parts of Die with Brush-Holder Alongside

worn after several years of service. When this condition is reached, the brushes are very likely to spark badly upon reversing the motor because they tip over and ride the commutator on one edge only. The problem of closing in these slots to the original size has been a live one with the writer for some time. As various methods such as hammering and electric welding proved unsuccessful, we finally originated the present plan of simply pressing or squeezing the slots together with the aid of a wheel press. The result has been very satisfactory, for we have since reclaimed, and made as good



Dies and Brush-Holder in the Wheel Press

as new, a lot of brush-holders that had been marked for the scrap heap.

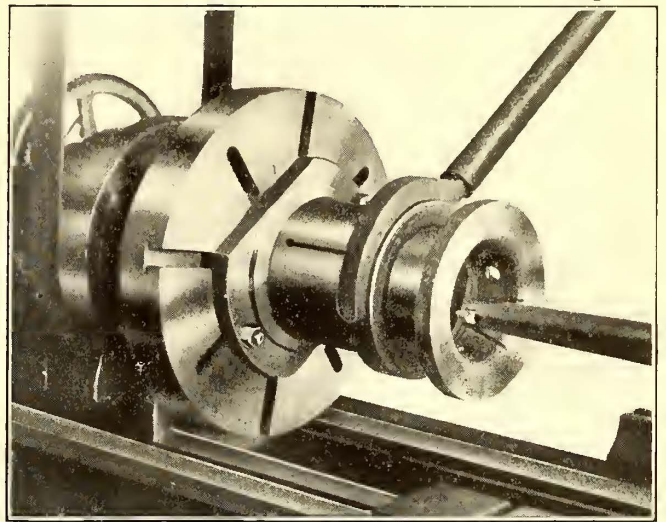
Referring to the illustrations, the two parts in the first view that look like carbon brushes, are steel pieces which are placed in the slots to keep the pressure from closing the slots too much, and also to straighten up the slots. These pieces are planed up perfectly true and made about 0.005 in. thinner than the brush to be used; this allows for the "spring back" of the holder after the pressure is removed and also for a slight truing up with a file. Worn brush-holders will be found to have slots worn taper with the large end next to the commutator. By using the dies in the wheel press, as shown, the dies are supplied with enough "give" to permit the slots to be so closed in that they are practically parallel again. It is found best to go over the brush-holders before

pressing and to file out any lumps or unevenness in order to secure better results.

So far, we have made dies for GE-73 brush-holders only, but we expect to make dies for other styles of brush-holders in the near future. One of the important things to guard against is the side tipping of the thin walls of the slots when the pressure is applied. This is avoided by the use of lugs or dowels which interlock to prevent the parts of the die shoving endwise on each other while under pressure. The upper view shows three parts of the die. One part is cut in deeply to receive the main bulk of the brush-holder. The other two parts, which are cut more shallow, are used on the right-hand and left-hand brush-holders respectively. The round steel pin is placed in the cable clamp hole to prevent the pressure from distorting the hole. We have found that a pressure of approximately 50 tons is about right to do good work. The dies are made of ordinary soft steel and are not case-hardened, although it might be better if they were.

CHUCK FOR TURNING UP BEARINGS

The accompanying view shows a chuck or jig for turning up armature and motor axle bearings as devised in the shops of the Ohio Electric Railway. This chuck is provided with a circular dowel or raised ring, about 10-in. diameter and $\frac{1}{4}$ in. wide and $\frac{1}{4}$ in. high, which fits into a groove in the face plate of the lathe to which it is bolted, so that the chuck can be set up in the lathe very quickly. The chuck is simply a hollow cylinder cast solid with a base plate and with walls about $\frac{3}{8}$ in. thick. Four slots, of which one is shown, are cut from the outer end down to near the base. The outer end is made with a taper thread of about twelve threads per inch with a



Chuck for Turning Up Bearings

steel-ring threaded taper to match. This ring has a number of holes for the spanner wrench shown. The method of using this chuck is to insert the bearing in the chuck and to tighten the nut. The chuck is made to fit the largest size of bearing used, and is provided with suitable split bushings to fit all bearings of smaller size. It is, of course, necessary to machine the outside of the bushings to the proper size before the chuck can be used to finish the inside.

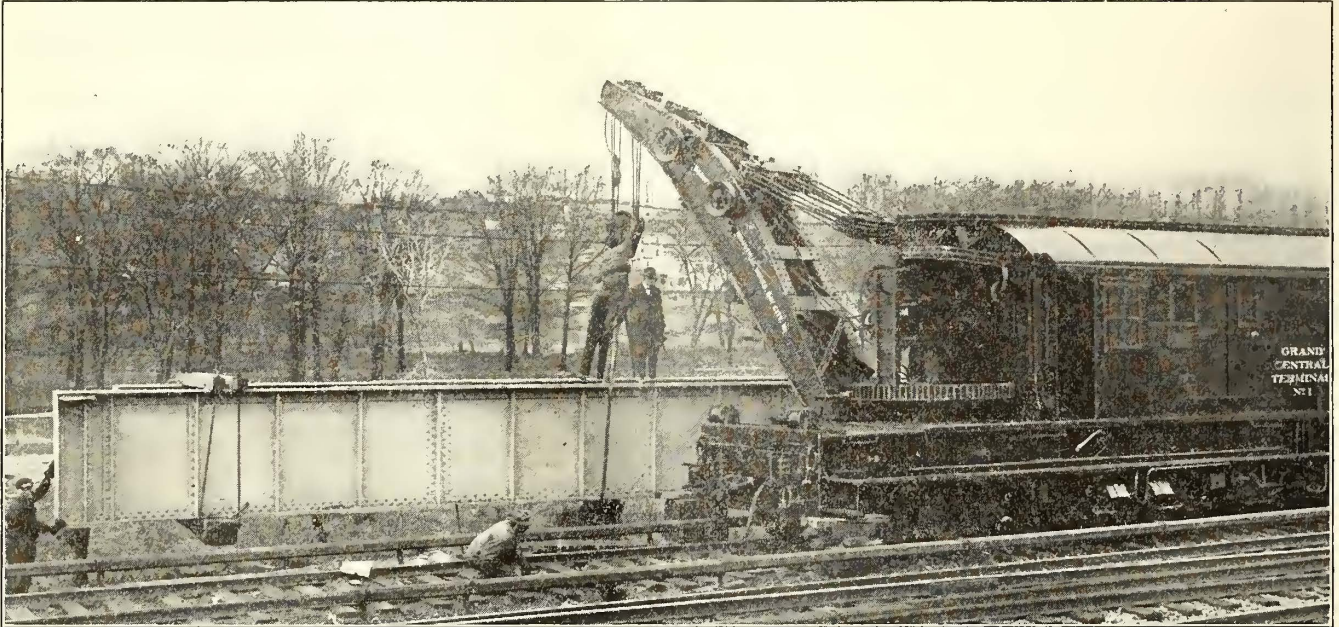
On May 11 the running time over the line of the Lehigh Valley Transit Company between Philadelphia and Allentown will be reduced by twenty minutes, so that the Allentown limiteds will make the run from Allentown to Sixty-ninth Street, Philadelphia, in an hour and fifty-eight minutes.

DOUBLE-ENDED WRECK CAR

A self-propelling wrecking outfit has just been put into service in the electric zone of the New York Central & Hudson River Railroad in New York City. The wrecker has at each end a crane having a capacity of 100 tons and permitting operation independent of the other. The machine will pass under the low bridges prevalent in the electric zone, will operate over a curve of 135-ft. radius and will develop a speed of more than

machine is similar to that built in 1910 by the same company for the New York terminal of the Pennsylvania Railroad, but has double the capacity and has entirely new features in the storage battery equipment, the ability to propel itself at a comparatively high speed and the power-operated outriggers.

The car body is 57 ft. long and 9 ft. 6 in. wide and is constructed entirely of steel. At each end is a boom which will revolve through 180 deg. and can be operated independently of or simultaneously with the other.



Electric Wrecking Crane—View Showing Crane Lifting Bridge Girder with Outriggers Extended



Electric Wrecking Crane—General View of Crane with One Boom Swung 90 Deg. Off Center

30 m.p.h. on level tangents while hauling a trailing load of 100 tons. While it is primarily designed to receive its power from the third-rail, it is equipped with storage batteries which allow it to run where there is no other power available. Of many advantages demonstrated by the outfit, the main one is the saving of time in getting to a wreck—an average of an hour. The

There is a cab at each end, from which is controlled not only the corresponding boom, but also the propelling mechanism of the car itself. Thus the wrecker can be operated equally well in either direction from either end, and no time need be wasted in turning it. No heavy levers are required as all motions are controlled by air.

With all outriggers set each boom can handle 100 tons at radii varying from 24 ft. 2 in. straight ahead down to 13 ft. 8 in. at right angles. Lighter loads may be swung through 180 deg. The outriggers, of which there are one on each end and one in the center of the car body on each side, are for adding stability during heavy lifting. These outriggers are 18-in. beams, mounted on rollers, which may be thrown out 2 ft. 3 in. at right angles to the track by means of compressed air, allowing the use of wedges and blocking under them to give the machine a broader base. When they are not needed they are drawn in and do not interfere with the travel of the car. The booms require no counterweights. Two 150-hp General Electric motors operate the booms and appurtenant machinery.

Four 200-hp General Electric railway motors propel the car, taking current from the third-rail. For service when the third-rail is out of commission, however, or on tracks not electrified, a storage battery of 230 cells, with a capacity of 75 amp for eight hours, replaces the current obtained from the third-rail and permits uninterrupted operation of the car and cranes for several hours. In case the third-rail connections at a wreck are restored before the wrecker has finished its work the storage batteries can be charged from the power rail, thus making the machine ready for the next emergency. The motor parts are of the same design as used on the multiple-unit cars, hence no time need be lost waiting for special repair parts, and little special stock of repair parts need be carried.

The wrecker is capable of a speed of 30 m.p.h. running light on level tangents, with a trailing load of 100 tons, and 12 m.p.h. with the same trailing load and an additional suspended load of 50 tons. It will climb a 2.7 per cent grade with an 80-ton rolling load at approximately 15 m.p.h. The cranes will lift their maximum loads 15 ft. per minute and will slew 180 deg. in one minute with a light load. The weight of the entire machine has been kept down to 380,000 lb. to meet the load restrictions on the upper level of the terminal, which is supported on columns.

The machine throughout conforms with U. S. safety-appliance standards. As the wrecker is its own locomotive, it is equipped with air pumps and reservoirs enabling it to operate the air brakes in its train, having both automatic and straight air brakes.

Under service conditions the wrecker has proved highly satisfactory. Its chief advantage, the saving of an hour's delay by eliminating dependence upon a locomotive when called out, is of paramount importance in a district in which there are so many train movements and in which derailments at certain points may cripple the service.

The outfit was designed and furnished by the Industrial Works, of Bay City, Mich., from specifications prepared by a committee consisting of H. A. Currie, assistant electrical engineer, B. S. Buell, wrecking master, and C. H. Quereau, superintendent of electrical equipment of the New York Central & Hudson River Railroad.

The Prussian Minister of Public Works has issued a decree that the daily hours of labor of city motormen shall not exceed ten, and those of conductors and brakemen not more than eleven hours, to include a thirty-minute rest. No day shift must exceed sixteen hours, and the interval between duties must be at least eight hours. In any shift covering fourteen to sixteen hours, at least four hours must be for rest. In each month there must be at least two rest days of twenty-four consecutive hours each. If the rest day does not fall on a Sunday then the employee must have at least one free Sunday in the month.

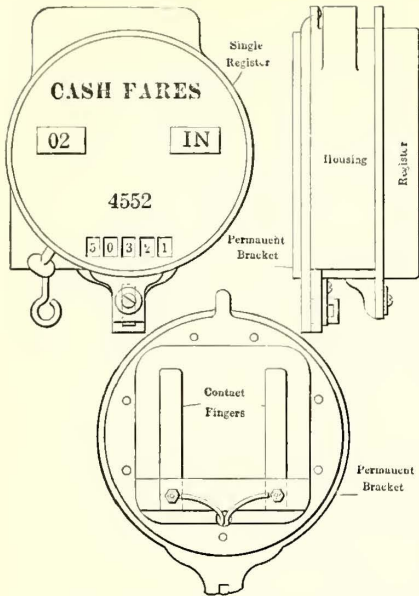
ELECTRICALLY-OPERATED RINGING DEVICE FOR FARE REGISTERS OF PREPAYMENT CARS

Before the Brooklyn Rapid Transit System undertook the operation of center-entrance cars a series of experiments was made with the various forms of registers and register-operating devices then available. Eventually the company decided to retain the standard round form of register but to operate it electrically from a push-button in the conductor's pedestal instead of employing register rods or pedal devices. The chief operating reasons for making this departure from previous practice was to enable the conductor to be freer to operate the center doors, to handle and register fares in the quickest and yet most accurate manner and to avoid the fatigue incident to ringing mechanically a large number of fares in succession. A car-building advantage of this electrical fare registration is the absence of all ropes and rods, especially as the signals to the motorman are also electrical. The unique apparatus hereinafter described was invented, patented and developed by E. J. Kennedy, mechanic of the railway's register department, to meet practical operating conditions. Equipments for general sale are being manufactured by the Perey Machine Works, Brooklyn, N. Y., for installation on prepayment cars of any type whatsoever.

In the center-entrance cars the standard fare registration practice of the Brooklyn Rapid Transit System is followed. That is to say, a cash register is mounted on the bulkhead at one end and a transfer register on the bulkhead at the opposite end of the car. When a passenger enters a center-entrance car he places his cash or ticket fare on the change plate of the pedestal. The conductor slides the fare to one side and at the same moment taps the push-button which corresponds to the proper register. If, say, five fares are to be recorded at one time, it is necessary only to maintain pressure on the button until the register has rung five times. The superiority of this method to that of mechanical transmission to the registers is clear from the fact that this device is timed to ring as high as 200 fares per minute, yet with a little experience conductors soon learn to gage instinctively the relation between the time of pressure and the number of registrations. The repeating switch hereinafter described limits the speed of registration to any degree desired by the railway, but even at the maximum speed named it is impossible for a conductor to bunch his registrations. A heavy drop in voltage lowers the rate of registration, but not enough to be of any consequence. Furthermore, it is utterly impossible for a dishonest conductor to drown the register by rattling handles or making other noises that might confuse a person who was keeping count of the register ringing.

The device consists essentially of a solenoid mechanism placed between the ordinary ringing back of any standard register and the bulkhead of the car, requiring only an extra space of 3-in. depth. The push-button circuits pass from the pedestal under the floor in conduit, up the bulkheads to each solenoid, thence to the repeating switch and to ground. So far none of the 225 devices in use has required any maintenance after operating for six months to a year. Should the register itself get out of order it can be lifted off of the mechanism and a new one substituted without further change because the contacts with the electric housing are made automatically. The maximum amount of current required for operating the register is 0.65 amp per operation.

For convenience, the accompanying illustrations, Figs. 1, 2, 3 and 4 show the devices as designed to fit the single-fare register on the Brooklyn cars, al-



Figs. 1, 3 and 4—Register, Showing Housing and Contacts

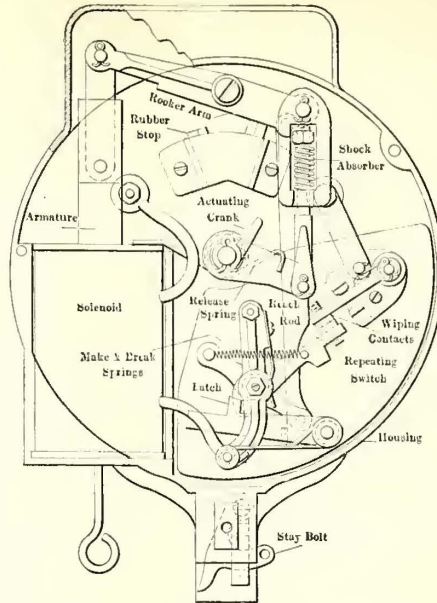


Fig. 2—Ringing Device with Register Removed

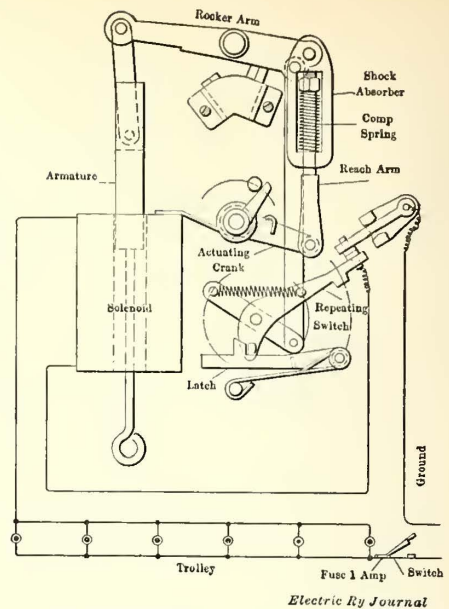


Fig. 5—Showing Repeating Switch Closed

though a register with any combination of dials may be used. Fig. 2 shows the device with register removed, Fig. 1 with the register in place, Fig. 3 is a side view of device and register, and Fig. 4 the permanent bracket with spring contacts. The housing, which contains all the working parts, has the same hooking attachments as the register back with the addition of electrical contacts.

The device is actuated by solenoids and a repeating switch. One solenoid is used for each dial of a register (should it have more than one dial), but only one repeating switch is required. Fig. 2 shows the solenoid, armature, rocker arm, reach rods, register actuating crank and repeating switch in place. When contact is made at the push button, which is a secondary circuit-breaker, the solenoid becomes energized and will pull down the armature, bringing with it the rocker arm. This rocker arm in turn is connected through a shock absorber to the repeating switch and also to the register actuating crank, which engages with the actuating pin of registers, in order to keep the repeating switch in circuit until a full stroke of the armature takes place. A latch holds the contacts together while the make-and-break springs are passing over the center. After this the contacts are released by the reach arm, but not until a registration is caused in the register. The repeating switch then releases and opens the circuit, whereupon all parts are returned to normal position by the release spring which is wrapped around the actuating crank. The repeating switch will then snap back into circuit and the solenoid again becomes energized.

The foregoing operation will be repeated so long as the contact is maintained at the button. The push-buttons are of the double-break contact type, well insulated and enclosed in a brass case. As the operation is on 550 volts without any intermediate resistance, the arc is cared for by the repeating switch which breaks the circuit before the push-button. The contact points of this switch come together with a blow and wipe, thus making the contacts self-cleaning and obviating the need for inspection.

To remove the housing, it is necessary only to remove a little padlock and lift it off its bracket, as there are no wires to disconnect. The wires or leads are secured to the spring-contact fingers of the bracket, and these fingers engage with two binding posts on the back

of the ringing device housing. All housings are interchangeable. Since the electrical registration always exerts the same moderate pull at the register and the space behind the register is sealed by the cast-iron housing, the register itself is protected against both abuse and dust. Fig. 5 shows all parts in normal position with the repeating switch closed and a diagram of circuits.

ADJUSTABLE TIME-TABLE RACK

A new time-table rack for accommodating folders of any width has recently been put on the market by the American Railway Supply Company, New York, N. Y. This rack, as shown in the accompanying illustration, has partitions that are adjustable to allow the insertion of folders of any width. The ordinary time-table rack is



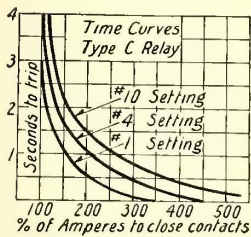
Adjustable Time-table Rack

made of rigidly spaced partitions and so is suitable only for folders of average size. Hence those folders which are wider than the spaces in each rack have to be displayed under less favorable conditions, say, by placing them on tables and counters. The new rack obviates this disadvantage.

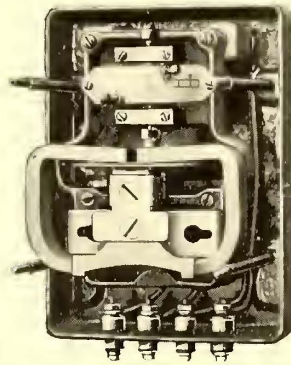
On Dec. 31, 1913, there were 160 miles of elevated roadbed carrying 1000 miles of track, either completed or under construction in Chicago. As there are approximately 3000 miles of track within the city limits, one-third of the total trackage in Chicago is elevated or being elevated. In addition 24 miles are to be elevated in the near future. There remains 179 miles still at grade and for which no elevation ordinances have been passed, but most of this trackage is in the outlying districts of the city.

INVERSE TIME-ELEMENT RELAYS

Alternating-current reverse-power relays close their contacts under conditions of overload or of reverse power. They are of three different characteristics, each having the inverse time-limit feature: Overload and reverse power; overload only—instantaneous or adjustable definite minimum time at heavy overloads; reverse power only—instantaneous or adjustable defi-



Curves of Time Element Adjustment

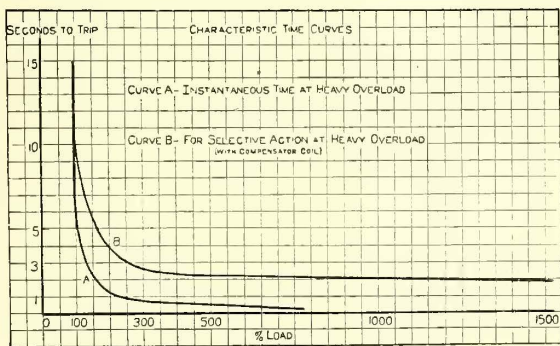


Overload Relay with Cover Off

nite minimum time at heavy overloads. Relays of this type are made by the Westinghouse Electric & Manufacturing Company.

In principle, overload and reverse power relay consists of contacts closed by an induction type instrument in which are combined the functions of ammeter and wattmeter, tripping at heavy overloads and on low reversed power. At zero voltage the relay acts as an ordinary current-actuated overload relay, and therefore low power-factor or absence of voltage does not prevent it from tripping. The relay is operated from voltage and current transformers of 100 volts and 5 amp secondary. The contacts close a direct-current tripping circuit. The maximum time element setting for any given tripping load setting is about ten seconds and the minimum about one second, the minimum having instantaneous tripping action at heavy overloads.

Three adjustments are provided. One is for regulating the ratio of the reverse to the overload tripping



Differences Between Instantaneous and Definite Minimum Time at Overloads

current, one for regulating the absolute values of these quantities and the third as above described for regulating the value of the time element. The relays can be adjusted to operate at from 6 amp to 14 amp in normal direction and from 0 amp to 4 amp reverse power with normal voltage.

The plain overload relays are similar in principle to

the overload and reverse power relays, but the voltage connection is omitted. The instrument therefore acts as an induction ammeter. Curve A shows the time-element characteristics of these relays. The definite minimum, Curve B, is obtained by means of the Westinghouse torque compensator used as an auxiliary to the overload relay. The torque compensator reduces the torque of the relay at heavy overloads without reducing the torque at light overloads and by using it with the relay, the latter can be adjusted for any definite minimum time from zero to two seconds at heavy overloads in the standard relays. The maximum and minimum time-element curves of the overload relay are also reproduced. These curves are modified in the manner shown in the first curves by using a torque compensator in connection with the relay.

One adjustment is provided for regulating the value of the time element between the limits shown in the time curves and one for determining the minimum current at which the relay is to operate. The minimum current at minimum time setting can be adjusted from 3 amp to 5 amp and at a maximum time setting for from 3 amp to 8 amp. The relay for reverse power only is a combination of the overload and reverse power relay movement with a selective wattmeter element that keeps the trip circuit open when power is flowing in the proper direction. This removes the overload feature of the main relay and allows the instrument to close the circuit only on reverse power. It does this even should the voltage or power-factor drop to 2 per cent of normal; in other words, if the true watts in the reverse direction drop to 2 per cent under short-circuit conditions. Power flowing in the normal direction equal to 2 per cent or more normal prevents the relay from tripping. The time-element characteristics of the reverse power relays are the same as those of the plain overload relays, and the same adjustments are provided.

An important feature of all these relays is their inherent accuracy in time characteristic. Relays controlling circuits operated in series can be safely set one-half second apart and will act selectively even at extremely high overloads. The operating characteristics of many circuit-breakers will allow this setting to be as close as one-third second. The resetting feature is so well worked out that should the overload in any relay be interrupted for one-twenty-fifth second short of the time the relay is set to operate, the movement will return to its starting position without closing its contacts.

JAPAN'S ELECTRICAL PROGRESS

According to a British Consular report, eight years have seen a very great development in the Japanese electrical industry. During that period the capital invested in supply undertakings and electric railways increased from \$14,290,000 to \$229,683,810. In the same period the length of transmission lines increased from 5981 to 35,584 miles, and the length of electric railways from 93 to 704 miles. Rapid development in all directions has caused a large demand for all kinds of electrical machinery, tools and materials. As copper is produced in Japan the manufacture of electric wire has made good progress, and imports of this material are practically confined to a certain quantity of submarine and other cables. Only two or three years ago insulators and other porcelain ware required in connection with electrical work were imported from Germany, but the Japanese article is now said to be in no way inferior to that imported, and has the additional advantage of costing only half the price.

News of Electric Railways

Request for Committee to Consider Kansas City Franchise

Henry L. Jost, Mayor of Kansas City, on May 4 sent a communication to the City Council, asking for the appointment of a committee of six members, three from each house, to sit with himself and the receivers of the Metropolitan Street Railway while an ordinance granting the company a new franchise was being drafted for reference to the people. The franchise ordinance prepared by the Mayor some time ago will probably form a basis for future negotiations. The decision to resume negotiations was reached at a conference between Mayor Jost and representatives of the city and the company on May 1. R. J. Dunham, one of the receivers, was unable to attend. Ford F. Harvey, the other receiver, said he certainly favored an early vote by the people.

Judge William C. Hook, in the United States Court at Kansas City, on April 30, granted the petition of the representatives of the bondholders of the Metropolitan Street Railway, who asked an additional 1 per cent interest on bonds that have matured. The order is said to mean added annual interest of \$180,721. This also is in addition to an extra 1 per cent interest which has been paid for the past year on about \$5,000,000 of bonds. Judge Hook, however, reserved the right to make any adjustments later developments might justify. As the result of the decision, 1 per cent additional interest will be paid on \$7,242,000 of bonds from Nov. 1, 1913, secured by the mortgage of the Old Colony Trust Company; upon \$2,000,000 of bonds of the Central Electric Railway which matured on May 1, and on \$8,500,000 of bonds from Nov. 15, 1913, representing the Metropolitan's proportion of the 5 per cent obligations of the Kansas City Railway & Light Company. The order granting the increase was made over the protest of representatives of the city.

Through Senator A. L. Cooper, its Kansas City representative, the Equitable Trust Company, New York, brought a foreclosure suit for \$2,000,000 against the Metropolitan Street Railway on May 2. The mortgage is secured by the Brooklyn and Northeast lines of the company. Permission to file the suit was granted to the attorney for the Equitable Trust Company by Federal Judge Hook at a hearing on April 27. The mortgage matured on May 1. This suit will be added to others of the same character which are pending. The court appointed Judge Herman Brumback special master to hear testimony in this and other similar suits which are pending.

Following the receipt of a communication from Mayor Jost, the Kansas City Council at its regular meeting on May 4 appointed a committee of six men, three from each house, to resume franchise negotiations with the Metropolitan Street Railway. The upper house committee is composed of Peter Michaels, L. L. Carroll and Isaac Reicher. That from the lower board is made up of James B. Allen, E. C. M. Towne and Frank Welch. All of those named are in sympathy with the present administration. Of the six men appointed, Messrs. Michaels, Towne and Welch served during the negotiations held prior to the municipal election in April. The six men form the streets, alleys and grades committees in their respective houses. The Council committee was directed, in accordance with Mayor Jost's message, to resume negotiations with the receivers of the company on May 7.

On May 6 Mayor Jost vetoed the ordinance granting permission to the Metropolitan Street Railway to lay tracks on Twenty-fourth Street between Main Street and Grand Avenue. The measure had passed both branches of the City Council. The Mayor explained that he regarded the ordinance as superfluous, as receivers for the company have not yet indicated their refusal of a similar measure passed some months ago. In his message to the Council on May 4, Mayor Jost asked the Council franchise committee to take up the Twenty-fourth Street routing of cars to the new Union depot before proceeding with general franchise negotiations. The committees were so instructed by the speakers of the two houses.

Agreement on Most of Toledo Franchise Terms

Agreements have been reached on most of the sections of the revised franchise ordinance submitted to the special committee of the Toledo City Council by Henry L. Doherty and his associates. The work was completed at a conference held on the evening of May 6. At that time the company through Mr. Doherty agreed that the city should have complete control of the service, such control to be exercised through resolution of the Council with any step subject to a referendum vote. Mr. Doherty holds that if the Council has control of the service and also fixes the rate of fare, the one will hold the other in check and legislation will be fair to all concerned.

It was also agreed on May 6 to exchange transfers between the city lines and the Maumee Valley and Toledo Beach lines, but the fare to points outside the city limits must be paid where transfers are accepted on interurban cars. The committee abandoned the effort to arrange for the exchange of transfers with other interurban lines.

After a discussion which covered practically every point, Mr. Doherty agreed to arbitration of the value of the property, should the city desire to purchase it. He objected to the requirement that the company should sell the property at a price fixed by arbitration, but finally conceded this point in the interest of harmony.

Another conference was arranged for the evening of May 8 for discussion of the rate of fare. Mr. Doherty told the representative of the ELECTRIC RAILWAY JOURNAL on May 7 that the company would insist upon its plan of a trial with 3-cent fares for one year, in order to learn just what rate will be necessary for the next period of five years. The plan is to have the Council fix the rate for each five-year period after the experimental period of one year. Mr. Doherty believes that the people, educated for the past twelve years to demand a 3-cent fare, should be permitted to see the results with this fare and be thoroughly satisfied before a rate for any considerable time is fixed.

Mr. Doherty is convinced that the publicity forum conducted in the newspapers is doing much towards enlightening the people on street-railway questions. Every criticism, favorable or unfavorable, receives fair consideration in these advertisements and he feels that the campaign is making many friends for the company. According to Mr. Doherty, people are now studying these criticisms and replies dispassionately and will decide upon them with fairness, whereas, if their presentation was left until the heat of a referendum campaign or a contest in the Council, they would not receive the same careful thought and consideration and would do little good.

From his experience in this instance, Mr. Doherty feels that methods of education and the giving of truthful information will do more good than anything else in a contest where the public has been taught previously to demand unreasonable things.

According to Mr. Doherty Toledo has for years been absorbing views held by many people, and it is a difficult matter to change such decided views within a short time by publicity. In the past few weeks criticism has been directed at the company from every angle.

Mr. Doherty believes that when the matter is submitted to a referendum, the voters will be called upon to decide between a well-defined ordinance providing for municipal ownership and what may be known as the Doherty franchise. The contest will be sharply defined, but Mr. Doherty expressed the belief that the people will uphold a franchise that has been fairly formulated and with a rate of fare to be fixed by the Council in proportion to the income of the railway.

The revised franchise provides for a rearrangement of the system within four months by an expert employed by the city, construction of a cross-town line, the appointment of a commission of one to three members to direct operation during the first year, the use of pay-as-you-enter cars, provisions giving the city the right to purchase, regulation of service by the city, paving of streets between rails and 12 in. out-

side, and the transportation of freight between midnight and 5 a. m. Other matters included are the requirement that the tracks shall be kept clear of snow and sprinkled, that the tracks shall be removed at the end of the grant and the streets restored, that a bond of \$300,000 to indemnify the city shall be furnished and that the franchise shall be forfeited if the company does not live up to its conditions. The term of the grant is twenty-five years.

The company is keeping track of all data so as to be able to go into a campaign whenever necessary. The general policy has been adopted of working slowly and making friends. It is estimated that about one-third of those who ride on the city lines are being carried free on account of their refusal to pay more than a 3-cent fare, but no trouble has occurred on this score for some time.

Further Municipal Railway Extensions in Seattle

A municipal railway extending from Dearborn Street to the south city limits at Ryan Street, Seattle, Wash., paralleling the Seattle, Renton & Southern Railway, and the construction of a line from Fourth Avenue South to a connection with the Highland Park & Lake Burien Railway at Iowa Street, in West Seattle, will cost \$853,154, according to estimates submitted to the City Council by W. H. Teidemann, assistant city engineer. This amount does not include the cost of cars.

The utilities committee of the Council of Seattle by unanimous vote has rejected the proposition to take over the Seattle, Renton & Southern Railway on the basis of paying 25 per cent of the gross receipts for twenty-five years into a fund to the credit of that company. According to the committee, the total payment under the plan suggested would amount to between \$2,000,000 and \$3,000,000. According to the committee, the line is worth about \$700,000.

Toronto Purchase Deal Apparently Off

On May 1 Sir William Mackenzie confirmed an announcement that the Toronto Railway is preparing to offer new capital stock to its shareholders to the amount of \$1,000,000. He is quoted in part as follows in regard to the negotiations for the purchase of the railway by the city:

"I never thought much of the thing, anyway. It was the city that came to me about it in the first instance. Personally I don't believe the purchase question ever will be submitted to the people."

Asked about the probable disposition of the proceeds of the new issue Sir William said he thought a good deal of it might be spent in the city; perhaps none of it would be spent outside of the city. The Toronto Power Company and the York Radial Company finance most of their own capital expenditures with bond issues.

The proposed new issue of stock, which is to be offered to shareholders of record of May 11, will increase the stock capital of the Toronto Railway from \$11,000,000 to \$12,000,000. This is in addition to outstanding bonds of the company amounting to about \$4,000,000, and to a guarantee of the principal and interest of the bonds of the York Radial and Toronto Power Companies, and through the latter of the Toronto Electric Light & Electrical Development Company.

Interesting Points in New York Workmen's Compensation Law

The workmen's compensation law recently passed by the Legislature of the State of New York classes among its groups of hazardous employments the operation, construction and repair of electric railways, including car and machine shops.

Every employer subject to the law must pay or provide for the payment of compensation for the disability or death of an employee resulting from an accidental personal injury sustained by the employee arising out of and in the course of his employment without regard to the cause thereof, except where the injury is occasioned by the wilful intention of the injured employee or is the result solely of the intoxication of the injured employee while on duty. The liability prescribed shall be exclusive, except that if an employer fails to secure the payment of compensation for an injured employee the latter or his representative may

elect to claim compensation or to maintain an action for damages. In the latter case the defendant may not plead the assumption of risk, the fellow servant or the contributory negligence doctrine.

Electric railways should not overlook the fact that medical, surgical, hospital and additional attention must be rendered promptly to injured employees and carried on for sixty days, according to the extent of the injury. If the employer fails to provide this the injured employee may do so at the expense of the employer. The employee however, shall not be entitled to recover any amount expended by him for treatment or services unless he has requested the employer to furnish the same and the latter has refused or neglected to do so. When the employee pays his own expenses, a greater expense might result to the employer than if he furnished the medical service. The fees and other charges are subject to the regulation of the insurance commission and are limited to average charges for persons in similar conditions of living.

If payment of compensation is not made within ten days after it is due by the employer or insurance corporation liable therefor, the amount of such payment constitutes a liquidated claim for damages which with an added penalty of 50 per cent may be recovered in an action instituted by the commission in the name of the State. If a default is made in the payment of an installment of compensation and the whole amount of compensation is not yet due, the commission may declare the whole amount due and recover this with an added penalty of 50 per cent.

Electric railways should remember that if a workman entitled to compensation is injured or killed by the negligence or wrong of another not in the same employment, the injured workman may elect either to take compensation or to sue for recovery against the third party. If he elects to take compensation the cost of action is assigned to the State for the benefit of the State insurance fund if compensation is paid therefrom, and otherwise to the person or corporation liable for the payment of such compensation.

No benefit or insurance of an injured employee independent of those provided by law will be considered in determining compensation. No valid agreement can be made by any employee to pay any portion of the premium or to contribute to the cost of mutual insurance, and any employer who makes reduction for such purpose on the wages of employees is guilty of a misdemeanor. No agreement made by an employee to waive his right of compensation is valid, and claims for compensation cannot be assigned, released or commuted and are exempt from all claims of creditor's execution and attachment. Compensation and benefits can be paid only to employees or their dependents.

An employer must secure compensation by insuring in the State fund or in a mutual or stock company or by paying the compensation himself if he can furnish satisfactory proof of his financial ability. Failure to secure compensation in one of these ways shall be punishable by a penalty of \$1 a day during continuous failure for each employee under the act.

A company that insures in the State fund should not overlook the fact that it must perfect all its arrangements and pay the premium prior to July 1, 1914. A company that elects to be self-insured should take up the matter with the compensation commission at least a month in advance of this date in order to have ample opportunity for compliance with all requirements for the issuance of the certificate by that date. The company which elects to insure in a stock or mutual company should not neglect to obtain a duplicate policy and file this with the compensation commission, together with a form which will be furnished by the commission, prior to July 1, 1914.

Perhaps the most important condition for the insuring company to keep in the foreground is the fact that the amount payable for a compensation is a preferred claim or lien against the assets of the company. For this reason the company should be particularly careful to select a solvent insurer—one whose resources would survive the losses of a disaster or catastrophe. This is particularly important because of its effect on credit. Bankers and other creditors appreciating that because of the unlimited liability of the insured there might result an obligation of thousands of dollars, will scrutinize carefully the insurance protection of companies to whom credit is extended.

A number of electric and gas companies in New York State have joined in a plan for a mutual insurance company for the carrying out of their obligations under the compensation law. As yet no move has been made by electric railways to form a similar organization. It is not proposed that they should be included in the above plan, but some discussion has been held relative to the inclusion of railway power plants. Frederic Culver, 25 Broad Street, New York City, has been appointed temporary secretary for the organizers.

Injunction to Prevent Extensions in Detroit Denied

The Michigan Supreme Court has affirmed the decision of the Wayne County Circuit Court in refusing an injunction to restrain the Detroit United Railway from constructing the proposed Junction Avenue extension. The injunction was sought by a resident of one of the streets to be traversed and it was set up in the petition that the city, under the low-fare agreement of August 7, 1913, had granted an interminable franchise to the railway company contrary to the state constitution which provides a maximum of thirty years for franchise grants. The Supreme Court held that the agreement was a day-to-day arrangement only and could be terminated at any time, and in addition held that because of its indefinite nature it would terminate at the expiration of thirty years as named in the constitution. The decision is regarded as having removed the last obstacle to the construction of very considerable extensions which have been agreed upon by the city and the company.

James Couzens, a member of the Detroit Street Railway Commission, who has returned to Detroit from a four months' vacation on the Pacific coast, was quoted as follows:

"The sooner we take over the street railway system, the better we can tell just how cheaply and well we can run it. The commission should be allowed to charge a 5-cent fare until it can actually determine what it will cost to run the system. This would be no hardship. The people would be virtually paying the money into their own pocketbooks, but the commission might be embarrassed if required to run a 3-cent system at once. I have seen too much fixing of prices of things before the actual cost is known not to realize that it is the quickest way into difficulties."

Mr. Couzens expressed the opinion that a subway would have to be built to take care of the growing population and to relieve the rush-hour congestion.

Future Regulation of Public Utilities

William D. Kerr, director of the Bureau of Public Service Economics, was the speaker before the finance forum of the West Side Young Men's Christian Association in New York on the evening of May 4. His subject was "Future Regulation of Public Utilities." Mr. Kerr reviewed briefly the history of regulation in opening his remarks. He could not even outline the future. The only thing he could do was to give an idea of the lines along which regulation was moving. The underlying principle of all regulation was to insure the convenience, welfare and comfort of the public. All other interests were subordinate to these. The speaker said that his subject divided itself almost naturally into three parts, public service economics, regulation and its functions, and factors influencing the future.

In public service work capital turned itself over in from four to six years. This turnover was so infrequent that the charge on the consumer was proportionately large. In some cases of public service capital stood idle about sixteen hours a day. There was a point in the use of capital where the principal passed away entirely. In order to counteract this adequate measures had to be adopted to take care of depreciation. Another matter of concern was obsolescence. In this connection Mr. Kerr quoted Samuel Insull, president of the Commonwealth Edison Company, Chicago, Ill., a previous speaker before the forum. The expense which the companies rendering service to the public found it necessary to meet in order to keep pace with the art had to be borne by the service. All regulation which denied a return on the investment commensurate with the risks and hazards involved would put a stop to further developments. In many localities there was a demand for flat-rate terms

for all consumers regardless of the incidents of any of the cost factors. Charging what the service would bear usually meant charging what monopoly power made it possible for the utility to exact. This method was indefensible. The charge for service based on the joint cost of that service was the proper one and had resulted in development.

Under regulation and its functions Mr. Kerr reviewed the tangible forms of regulation by commissions. In addition there was the wasteful regulation through unrestrained competition. Wherever there was unrestrained competition the public paid the bills eventually. Referring to the proposed competition in electricity supply service in Cleveland Mr. Kerr said that the new service would not be competitive unless the city plant was required to meet tax and other charges in proportion to those exacted from the privately owned plants.

The two principal methods of regulation were direct regulation by legislative enactment such as the recent full-crew bills and legislation by means of authority delegated to boards or commissions. The legal theory of principal and agent had been developed to hold the companies to the strictest accountability, but this doctrine could not be brought to bear until the public became initiators as well as constructors. In this connection Mr. Kerr quoted from the speech, "Control of Public Service Corporations," made by Prof. John H. Gray of the University of Minnesota before the American Economic Association at its meeting in Minneapolis Dec. 27-30, 1913. This speech was referred to in the report of the discussion of that meeting which appeared in the *ELECTRIC RAILWAY JOURNAL* of Jan. 3, 1914.

In speaking of the future Mr. Kerr referred to the attitude of both the companies and the public toward regulation. The companies must meet the commissions with all the cards on the table and the faces of the cards turned up. It was his opinion that most of the companies were now doing this. All future laws would have to be so drawn that there could be no question about the powers conferred on the commissions, and the personnel of the commissions would have to be high. A reporting system for the public at large and the members of the various commissions was essential so that doctrines and principles could be developed for the future. If the defects which were inherent in the system of private ownership could not be corrected by regulation the public would have before it the question of going over to another system with defects probably still more onerous. If public regulation should work well, however, there would be no occasion for supplanting private ownership with public ownership.

Calvert Townley, assistant to the president of the Westinghouse Electric & Manufacturing Company, who introduced the speaker, brought up the question of the rate of return. He declared that the principal object of regulation of public utility corporations by the public is to see that the profits are not too great. He emphasized, however, the fact that it is also to the interest of the public to see that the rate of return thus limited be not made too low.

Valuation of Los Angeles & San Diego Beach Railway

According to a recent decision of the Railroad Commission of California the original cost data of the Los Angeles & San Diego Beach Railway, San Diego, Cal., are not available. The construction period of the company extended over twenty-five years, during which time a systematic segregation of expenditures was not attempted. Hence it was impossible for the commission to show the exact original cost, but from data secured it would appear that the actual cash investment approximates \$442,000, which agrees quite closely with the present value as obtained by the engineering department of the commission. This figure, however, does not include interest on the investment. The books of the company show a total investment for road and equipment to June 30, 1913, of \$858,384.

The reproduction value contains full amounts for all improvements made subsequent to the original construction, and depreciation and appreciation are considered. The usual overhead, interest and contingency allowances are added to the value of the physical elements, including 5 per cent of the physical property for engineering, 1 per cent on the same basis for law expenses, and 3 per cent for interest and commission on all items. The chief point of difference

between the company's valuation and the commission's valuation was in connection with the right-of-way. The engineering department of the commission valued this at a wholesale price for the entire track, but the company claimed that the reproduction cost should be based on the retail value of individual and subdivided lots. A compromise was finally agreed upon on the market value of \$2,000 per acre for an estimated mean of a minimum value of \$1,000 originally adopted and a maximum value of \$5,000. The reproduction cost was fixed at \$554,590 as of June 30, 1912.

In computing the present value of the railway, the commission allowed the same amount for overhead expenses as in the case of the reproduction cost. In other words, it did not subtract anything for depreciation on overhead expenses. The present value of the physical elements of the operative property of the company, including engineering, law expenses, interest during construction and contingencies, was determined to be \$461,016.

Providence Subway Act Opposed

The passage of the Providence subway act was opposed by the Rhode Island Company on April 28 at a hearing on the measure held before the Senate judiciary committee at the State House. Attorney Nathaniel W. Smith, counsel for the company, suggested the continuance of the matter until the next session of the General Assembly. This, he said, would afford the trustees of the company an opportunity to become familiar with conditions. He said:

"This subway act is bound to put the Rhode Island Company upon the defensive. On the one hand there is the subway committee as a rapid transit commission enthusiastic to plan, advocate and construct additional subways. On the other hand the Rhode Island Company is unable to assume the financial burdens, principally because it has within two years entered into a contract with the city of Providence under which it has already expended large sums of money and under which it is obligated to further heavy financial burdens to carry out the very recommendations the city's own expert made for the solution of the transportation problem.

"It seems hardly fair that the city should first ask the Rhode Island Company to make a contract ostensibly to solve the city's transportation problem under which it assumes heavy burdens and then, before the improvements under that contract are completed, seek subway legislation which can but still further embarrass the company.

"The gentlemen who are to assume the control of and responsibility for the Rhode Island Company are understood to be not unfriendly to the subway idea. Before the next General Assembly convenes, less than nine months hence, these gentlemen will have entered upon their duties and had an opportunity to study the question. Considerations of prudence and fairness, therefore, seem to urge that final consideration of this act be deferred until these trustees can, with a knowledge of the facts, give you the benefit of their study of the situation."

Demand for Readjustment of Schedules in Cleveland

The executive committee of the Cleveland branch of the Amalgamated Association of Street & Electric Railway Employees has made a formal demand on the Cleveland (Ohio) Railway for a readjustment of the schedules which, it is claimed, cause a large number of the men to spend extra hours each day at the stations in order to get anything like a day's work. J. J. Stanley, president of the company, promised to make an investigation and then take the matter up with the other officers of the company. Many of these schedules were established through the insistence of Peter Witt, street railway commissioner. The employees claim that investigations on the Broadway line disclose the fact that eighteen and a half hours is the longest time spent on duty by any one man, in order to obtain ten hours' work, while the shortest time is ten and a half hours to secure pay for nine hours and twenty minutes. On this line 125 men are paid for approximately 884 hours, but 1,322 hours are spent on duty in order to secure that number of hours of work. The average duty of each man, they

say, is thirteen hours and thirty-six minutes, and the time lost is four hours and thirty-five minutes.

The Dispatchers' and Inspectors' Association, made up of the dispatchers and inspectors of the Cleveland Railway, was organized on April 27, for the purpose of uniting in a request for higher wages and better working conditions. The dispatchers, it is said, desire that their working shift of twelve and thirteen hours be reduced to eight hours, while the inspectors want a work-day of ten and a half hours, with wages of \$110 per month. The dispatchers receive \$100 per month. Twenty-eight dispatchers and thirty-five inspectors are employed by the company.

Tornado Hits Iowa Railway

A tornado which swept over Johnson and Linn Counties in Iowa on the afternoon of May 3 snapped off fourteen poles supporting a high-tension transmission line of the Iowa Railway & Light Company. The damage occurred just north of the town of North Liberty, Ia., along the line of the interurban railway connecting Cedar Rapids and Iowa City. A three-phase, 16,500-volt transmission line supported on wishbone cross-arms occupied the tops of the poles, while lower down a 550-volt trolley line for the railway was suspended on brackets. A telephone wire was also strung on the same poles. Traffic of the interurban line was tied up from 4 p. m. until 6:30 the next morning. The Iowa City Electric Railway depended on the transmission line for its power, and its lines were also tied up for the same interval. Since it was Sunday night and traffic on the interurban railway was lighter than usual, it was thought best to take additional time and supplant the damaged section with new and permanent construction. Accordingly the fourteen broken poles were replaced with new ones and the three-phase line, the trolley wire and the telephone line were restrung before the next morning by a record force of men summoned from all departments of the railway. A car loaded with passengers was just outside the path of the storm.

The New Haven Inquiry

The federal inquiry into the affairs of the New York, New Haven & Hartford Railroad has been confined during the last few hearings to the intercorporate relations of the New Haven Company, the Metropolitan Steamship Company and the Billard Company. Warren E. Chase, a lawyer of Hartford, said on May 6 that he had looked after all the legal details of the organization of the Metropolitan Steamship Company at the request of E. D. Robbins, general counsel for the New York, New Haven & Hartford Railroad. He also looked after the details of the organization of several other subsidiary companies, one of them the New England Investment & Security Company, which controls the electric railways at Springfield, Mass. Mr. Hemingway, a banker of New Haven, who was treasurer of the Billard Company, was questioned in regard to the details of the transactions between the Billard Company and the New Haven. It is expected that he will be recalled after Mr. Billard himself has been examined. Mr. Hemingway declared that he had no vouchers for expenditures he had made on behalf of the Billard Company and had not kept any memorandum to show how the \$4,000,000 that had passed through his hands as treasurer had been distributed.

David E. Brown, examiner for the Interstate Commerce Commission, presented at the hearing on May 6 a copy of schedules containing the names of more than 1000 individuals to whom about \$500,000 had been paid during the years 1912 and 1913 for advertisements and publicity work. These disbursements were grouped under legal services and disbursements, services pending litigation in various cases, retainers on legal services, professional services, advertising and publicity. Under the head of "Amounts paid to any newspaper or periodical or to any employee thereof or writer therefor, together with all other payments for every kind of publicity for influencing public opinion, including expenses incurred for the printing and distribution of time-tables, circulating pamphlets of information, issued directly by the New York, New Haven & Hartford Railroad, to its officers, employees or patrons," there was expended during 1912 and 1913, \$370,588.

Missouri Commission Report

In the first annual report of the Public Service Commission of Missouri for the eight and one-half months ended Dec. 31, 1913, the commission has announced its policy of discussing in its annual report questions that are of interest to the public and public service corporations, and issuing its opinions, orders and decisions in separately bound volumes. It is stated that many of the reports issued by other state commissions are too voluminous and cumbersome to be sent through the mail and easily handled by those in search of information. Furthermore, the commission feels that the publication of the various opinions, orders and the like from time to time would give better results than to withhold the printing of the same until the issuance of the annual report.

The first report of the commission is devoted to a general analysis of the jurisdiction of the commission, the organization of its various departments, and a statement of the policies to be pursued by each department in its work with public utilities. There are twenty-one interurban and street railway corporations under the jurisdiction of the commission.

It is stated that the commission has devoted considerable time to the study of a uniform system of accounts used by other state commissions and has issued tentative classifications and forms of reports for gas, water, heating and electrical corporations. Up to the present time the commission has not perfected a tentative classification for electric railways. It intends, however, to follow the classification of the Interstate Commerce Commission, taking into consideration the American Electric Railway Accountants' Association system, but what changes, if any, will be made in these systems it is not yet possible to state.

It has been the endeavor of the commission to draft such annual reports as would include only information which should also be furnished to the directors, stockholders and bondholders. Since the organization of the engineering department of the commission valuations have been begun on the Kansas City, Clay County & St. Joseph Railway for the purpose of rate making and on the Cassville & Western Railroad for security issuing purposes. During 1914 the commission expects to make a special study of the various public service regulation statutes of other states and of the operation and effect of the indeterminate franchise laws. It expects to report proposed legislation to the Forty-eighth General Assembly in January, 1915.

Hearing by Massachusetts Commission on Depreciation Allowances

The Massachusetts Public Service Commission gave a hearing at Boston on April 29 upon a proposed order requiring railroads and street railways to show, as a part of their case, the extent to which they have provided for depreciation when requesting the right to issue stock or bonds other than for refunding purposes. Chairman McLeod announced that the purpose of the hearing was to see if a general policy to govern the commission's action could be formulated for passing upon new issues. He pointed out that the time had arrived when depreciation should be considered in detail and suggested that it might be helpful to require the filing of statistics with the board at regular periods that would throw more light upon the depreciation problem.

James F. Jackson, for the Bay State Street Railway, contended that higher fares must come if street railways are to give proper attention to depreciation, but suggested that each case of security issue should be treated by the board upon its merits. He said that in some cases depreciation had little or no bearing upon the propriety of a security issue, and expressed the willingness of his client to assist the board in every way within its power. Bentley W. Warren, for the Berkshire Street Railway, concurred in the view that higher fares must come with an adequate depreciation allowance. Rates should be such that they will supply the money needed to cover depreciation and obsolescence and leave the companies in a position properly to serve the public. Earning power was a fundamental factor in the determination of security issues and it

would be burdensome to thresh over the depreciation question every time a company desired to issue new stock or bonds.

Commissioner Anderson declared that he was aware that the question of higher rates on street railways must be faced; that if the companies were carrying passengers at a loss, rates must go up, and that proper charges to cover depreciation must be made possible to enable the roads to make the earnings needed. After hearing a number of steam railroad officials, the board adjourned the session until May 18 to give the representatives of the Boston Elevated Railway and other companies an opportunity to present their views.

Question of Extensions Before Missouri Commission.—

As a result of negotiations between the Hannibal Railway & Electric Company, Hannibal, Mo., and the special committee of the Commercial club, the question of extensions to the company's lines will be referred to the Public Utilities Commission of Missouri.

Meeting of the Central Safety Committee at Portland.

A meeting of the central safety committee of the Portland Railway, Light & Power Company, Portland, Ore., was held at the Commercial Club on April 20. The meeting was preceded by a supper. A great deal of enthusiasm is felt in the work of the committee, which now numbers 104.

Elevated Third-Tracking Contract Approved.—The Public Service Commission for the First District of New York has approved the form of contract submitted by the New York Municipal Railway Corporation for the construction of the third-track on the Fulton Street elevated railroad in Brooklyn for that portion of the road between Nostrand Avenue and East New York. The company can now submit the contract to bidders.

Plan for Power Development at Washington.—Senator Norris, of Nebraska, has introduced a bill in the Senate as an amendment to the river and harbor bill for the development of water-power on the Potomac River above Washington and for the construction of a power plant to furnish electric light and power for use in the District of Columbia. The amendment authorizes the expenditure of \$15,021,600 to meet the expense of the project.

Plans for Reconstructing Fillmore Hill Line, San Francisco.—Nothing will be done until some time in June on the changes planned by the United Railroads, San Francisco, Cal., for the Fillmore Street hill funicular line. This hill is one of the obstacles that block the company from securing ready access to the exposition. The actual grade on Fillmore Street hill is 24 per cent. The company operates over it now by means of a cable attached to ascending and descending cars.

Additional Ozoning Apparatus in London.—Ozoning apparatus is being installed in connection with the ventilation of the Charing Cross, Euston & Hampstead and the Baker Street & Waterloo Railways, at Edgewood Road, Euston, Gooch Street, and Charing Cross, London, England. The apparatus is similar in every way to that provided at all the stations of the Central London Railway some two or three years ago, but of rather larger capacity. A washing arrangement is, however, being put in, which is thought to be an improvement over the previous installations.

"Leaving" Defined by Court.—In upholding a City Court judgment secured against the International Railway, Buffalo, N. Y., by an employee for wages, Justice Wheeler in Supreme Court defined the word "leaving," which was in the contract of employment and contended by the plaintiff to mean voluntary quitting of work and by the defendant to mean discharge or other means of severing relations. Justice Wheeler sustains the voluntary side of the case. The contract provided that if the employee should leave within six months after entering on his employment, the money paid him during the ten-day period of his instruction in the duties of a conductor should be refunded to the company.

Protection in Pennsylvania Strike.—Seventeen members of the State constabulary arrived at Freeland on May 4 and are patrolling that section on account of the trouble which has developed as a result of the strike of the motor-

men and conductors of the Lehigh Traction Company, Hazelton, Pa. An attempt was made to blow up the bridge over which the company operates at Drifton near Freeland, and stones and logs have on several occasions been piled up on the tracks to impede the progress of cars. The strike began on Jan. 1, but as stated in the *ELECTRIC RAILWAY JOURNAL* of April 18, 1914, page 894, the company made no effort to restore full service until last month.

Recommendation by Rhode Island Commission for Increased Powers.—The adoption of a law which will give the Public Utilities Commission of Rhode Island power to pass upon all leases, assignments or transfers of railroad properties in this State from one corporation to another is recommended by the Public Utilities Commission in a letter addressed to Governor Pothier. The letter was sent in response to a request for information directed to the commission several weeks ago by the Governor. The Governor asked the commission to draft an act which would meet the situation presented by the proposal of the New York, New Haven & Hartford Railroad to dispose of its holdings in the Rhode Island Company.

Report Favoring Municipal Ownership in Pekin.—The Mayor and the Corporation Counsel of Pekin, Ill., have reported to the Council in favor of taking over the line of the Pekin & Petersburg Interurban Railway in Pekin and rehabilitating it. The property was recently sold under foreclosure. With the report was submitted an estimate of the engineer on the cost of construction, operation and probable earnings, showing a net profit of 12 per cent on an investment of about \$60,000. The probable cost is figured as follows: purchase of present line, \$7,000; rehabilitation of present tracks, \$4,480; new construction, \$23,000; overhead construction, \$7,000; equipment, \$10,000; carhouse and shop equipment, \$8,500; total, \$59,800. Gross income, \$22,000; power, \$2,500; transportation, \$7,300; maintenance, \$3,000; general expense, \$2,700; total, \$15,500; net earnings, \$6,500. The equipment would consist of three motor cars and three trailers.

Illinois Commission Attempts to Force Track Elevation.—The Illinois Public Utilities Commission in further consideration of forcing the Chicago & Oak Park Elevated Railroad to elevate its tracks through the suburban territory west of Chicago, has ordered Samuel Insull, receiver of the road, and B. I. Budd, president, to show cause why the commission should not enter an order for immediate elevation of the tracks. The difficulty arising in this particular situation is one of jurisdiction. At the present time Mr. Insull is operating the road under an order of the Federal Court. In explanation of the situation Mr. Insull gave out a statement as follows: "About a year before the commission came into existence I recommended to the court that that part of the railroad located upon the surface be elevated, and secured authority to do the work if necessary funds could be provided. Up to the present time it has been impossible to raise the money."

Reopening of Kings County Rate Case.—The Public Service Commission for the First District of New York has decided to reopen the rate case of Kings County Lighting Company recently decided by the Court of Appeals. A further hearing was set for May 7. The commission ordered the company last year to reduce the price of gas to 95 cents per thousand cubic feet. The Appellate Division sustained the commission's action except in connection with the going value, paving over mains and the annual increase in land value. The Court of Appeals recently agreed with the Appellate Division as to going value and annual increase in land, but sustained the commission in regard to paving over mains, as was noted in detail in the *ELECTRIC RAILWAY JOURNAL* of April 11, 1914, page 821. The decision of the court was of considerable interest on account of its extended discussion of the elements which should enter into a determination of going value in rate cases.

Effort to Organize Louisville Employees Fails.—The effort of the Amalgamated Association of Street & Electric Railway Employees to organize the employees of the Louisville Railway and the Louisville & Interurban Railway have evidently failed. After a committee, purporting to represent the employees, had waited on officials of the companies with demands for increases in wages, shorter hours and

recognition of the union, an announcement was made that concerted action would be taken at 9 p. m. on May 1, at which hour a meeting of all the employees was to be held. Not a motorman or conductor left his car and everything at the various carhouses of the company was quiet and orderly, with nothing to substantiate the claims of the organizers that 700 men had been enrolled. W. F. Welch, second vice-president of the national body, on the ground at the time, declared that if the men did not want a union there was nothing left for the organizers to do but leave.

Track-Laying in Fourth Avenue, Brooklyn, During Summer.—The work of track laying in the Fourth Avenue subway in Brooklyn probably will begin early in the coming summer, as the Public Service Commission for the First District of New York has advertised for bids, to be opened May 21, for this work. The city will furnish rails, ties, ballast and other material necessary to lay the tracks, and the contractor will simply perform the work of putting them in place. The contract calls for tracks to be laid from the Manhattan Bridge through Flatbush Avenue extension, Fulton Street, Ashland Place and Fourth Avenue to Eighty-sixth Street. From the Manhattan Bridge to Sixty-fifth Street the subway will be mainly a four-track line, although there will be parts of the road with as many as eight tracks. From Sixty-fifth Street to Eighty-sixth Street it will be a two-track railroad. Under the contract, however, no electrical or signal apparatus will be installed, as that is part of the equipment and will be placed by the operating company.

Mutiny of the Lamentation Club.—On Saturday, May 2, the members of the Lamentation Club, sometime known as the Deportation and Importation Club, held a wake or "coronach" in the Flemish Room of the Grand Union Hotel over the remains of Simeon Ford's famous gathering place of New York electric railway and supply men. Some of the forty-odd mourners recalled with regretful reminiscence that in a period of thirty years they had worked their way forward from the mahogany lunch counter to the sedate tables of the Flemish Room. At the beginning of the luncheon a dun pall of grief hung about the boards which had so often resounded with such abandon to vibrant tales of fenders and couplers 'yond compare. But joy soon reigned supreme as the mourners reflected that, after all, the destruction of the good old landmark was to make room for a new subway. So those who came to grieve remained to smile and to rebaptize the organization as the Exultation Club. Among the honorary pallbearers were noted the following: Tom Mullaney, Bill Sawyer, Jack High, Jim Doyle, Harry Ransom, Bill Wampler, Charlie Ellicott, Epicure Wood, Stymie Banghardt and Messrs. Quinn, McWhirter, Whipple, McIver, Keyes, Hayes, Elmquist, Palmer, Thompson, Taylor, Carlton, Davidson, Berry, Bassett, Sabin, Stocks, Milo, Clark, Armstrong, Shephard, Kent and McMurrough.

PROGRAMS OF ASSOCIATION MEETINGS

Missouri Electric, Gas, Street Railway & Water Works Association

The annual meeting of the Missouri Electric, Gas, Street Railway & Water Works Association will be held on May 20-23. The delegates are to assemble in St. Louis on May 20. On May 21, at 10 a. m., they will board the steamer *Quincy* for a trip on the Mississippi River to the Keokuk dam, returning to St. Louis on May 23. The sessions of the association will be held on board the steamer.

Illinois Electric Railways Association

The next regular meeting of the Illinois Electric Railways Association will be held on May 15 at the Hotel La Salle, Chicago. Following the transaction of the regular business of the association R. B. Stearns, vice-president and assistant general manager of The Milwaukee Electric Railway & Light Company, will deliver a short address. P. Junkersfeld, assistant to the second vice-president of the Commonwealth Edison Company, Chicago, will read a paper. After the usual association luncheon has been served, the members will be the guests of the Commonwealth Edison Company on an inspection trip to the Fisk Street power station.

Financial and Corporate

Stock and Money Markets

May 6, 1914.

In the trading on the New York Stock Exchange to-day price changes were irregular, but the prevailing tendency was reactionary. The general level of quotations again showed a net loss. The Mexican question is not expected to be a factor unless some striking event should occur. Rates in the money market to-day were: Call, 2 per cent; sixty days, 2½ @ 2¾ per cent; four months, 3 per cent; six months, 3 @ 3¼ per cent.

In the Philadelphia market to-day Rapid Transit was stronger, 14¾ being bid for this issue. Other issues were unchanged and quiet.

The market for stocks in Chicago to-day was dull. The bond transactions totaled \$108,000, par value.

In the Boston market to-day small sales were reported of Boston Elevated, Boston & Worcester preferred, Massachusetts Electric and West End Street Railway. Only four bond issues were dealt in for a total of \$19,500, par value.

The Baltimore market to-day was broad, but the volume of transactions was small, the sales totaling 600 shares. The bond transactions to-day totaled \$67,000, par value.

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

	Apr. 29	May 6
American Brake Shoe & Foundry (com.)	83	87
American Brake Shoe & Foundry (pref.)	130	132½
American Cities Company (com.)	35½	32
American Cities Company (pref.)	60¾	62
American Light & Traction Company (com.)	340	345
American Light & Traction Company (pref.)	105½	106½
American Railways Company	37½	37½
Aurora, Elgin & Chicago Railroad (com.)	32½	32½
Aurora, Elgin & Chicago Railroad (pref.)	77	76
Boston Elevated Railway	78	79
Boston Suburban Electric Companies (com.)	7	7
Boston Suburban Electric Companies (pref.)	*63	*63
Boston & Worcester Electric Companies (com.)	*6¼	*6¼
Boston & Worcester Electric Companies (pref.)	37	36
Brooklyn Rapid Transit Company	90	92¼
Capital Traction Company, Washington	100	100¾
Chicago City Railway	135	135
Chicago Elevated Railways (com.)	20	20
Chicago Elevated Railways (pref.)	65	65
Chicago Railways, ptcptg., ctf. 1	90	92½
Chicago Railways, ptcptg., ctf. 2	30½	31¾
Chicago Railways, ptcptg., ctf. 3	6	5
Chicago Railways, ptcptg., ctf. 4	2	2
Cincinnati Street Railway	102½	102
Cleveland Railway	103¾	104
Cleveland, Southwestern & Columbus Ry. (com.)	*4	*4
Cleveland, Southwestern & Columbus Ry. (pref.)	*2	a30
Columbus Railway & Light Company	13	13
Columbus Railway (com.)	53	53
Columbus Railway (pref.)	79½	79½
Denver & Northwestern Railway	*71	63
Detroit United Railway	a80	a80
General Electric Company	144	146¾
Georgia Railway & Electric Company (com.)	120½	120
Georgia Railway & Electric Company (pref.)	87	86½
Interborough-Metropolitan Company (com.)	14¼	14¾
Interborough-Metropolitan Company (pref.)	60¼	62½
International Traction Company (com.)	*80	40
International Traction Company (pref.)	*85	85
Kansas City Railway & Light Company (com.)	*15	37
Kansas City Railway & Light Company (pref.)	a35	18
Lake Shore Electric Railway (com.)	*5	6
Lake Shore Electric Railway (1st pref.)	*2	92
Lake Shore Electric Railway (2d pref.)	*22	22
Manhattan Railway	131½	130¼
Massachusetts Electric Companies (com.)	9¼	10
Massachusetts Electric Companies (pref.)	57	57
Milwaukee Electric Ry. & Light Co. (pref.)	95	95
Norfolk Railway & Light Company	25¾	25½
North American Company	74	75¾
Northern Ohio Traction & Light Co. (com.)	70	a70
Northern Ohio Traction & Light Co. (pref.)	101	101
Philadelphia Company, Pittsburgh (com.)	38¾	40
Philadelphia Company, Pittsburgh (pref.)	38¼	38½
Philadelphia Rapid Transit Company	13½	14½
Portland Railway, Light & Power Company	51	50
Public Service Corporation	112	112
Third Avenue Railway, New York	39	41½
Toledo Traction, Light & Power Co. (com.)	a20	a20
Toledo Traction, Light & Power Co. (pref.)	a70	a70
Twin City Rapid Transit Co., Minneapolis (com.)	103	105
Union Traction Company of Indiana (com.)	*11½	11½
Union Traction Company of Indiana (1st pref.)	*75	*75
Union Traction Company of Indiana (2d pref.)	*14	14
United Rys. & Electric Company (Baltimore)	26¾	26½
United Rys. Inv. Company (com.)	15	15½
United Rys. Inv. Company (pref.)	43	42½
Virginia Railway & Power Company (com.)	56	50
Virginia Railway & Power Company (pref.)	87	94
Washington Ry. & Electric Company (com.)	87½	86¾
Washington Ry. & Electric Company (pref.)	84½	83¾
West End Street Railway, Boston (com.)	a68	67
West End Street Railway, Boston (pref.)	82	86
Westinghouse Elec. & Mfg. Company	73	74½
Westinghouse Elec. & Mfg. Co. (1st pref.)	118½	120

* Last sale. a Asked.

ANNUAL REPORT

Easton Consolidated Electric Company

The comparative consolidated income statement of the Easton (Pa.) Consolidated Electric Company, and the affiliated companies for the years ended Dec. 31, 1912 and 1913, follows:

	1913	1912
Gross revenue—railway lines	\$468,508	\$427,536
Operating expenses, including provision for depreciation and payment of damage claims	286,630	277,298
Earnings from operation	\$181,878	\$150,238
Deduct—		
Interest on bonds, taxes, etc.	\$54,715	\$53,239
Deficit—Easton Amusement Company	725	2,662
Total	\$55,440	\$55,901
Net earnings from operation of railway lines—	\$126,437	\$94,336
Edison Illuminating Company—		
Rentals, less taxes and expenses	23,013	24,719
Interest received		64
Total earnings	\$149,450	\$119,119
Deduct charges of Easton Consolidated Electric Company—		
Interest on collateral trust bonds	\$61,850	\$61,850
Expenses and taxes	9,226	7,835
Total	\$71,076	\$69,685
Surplus earnings	\$78,374	\$49,434
Less—		
Dividends paid, 4 per cent	30,000	30,000
Taxes paid applying to prior years		3,885
Loss on carousel sold		2,169
Total		\$36,054
Surplus	\$48,374	\$13,380

The gross revenue from the railway lines for 1913 increased \$40,972, or 9.58 per cent. The increase in the number of passengers carried was 9 per cent. Passenger receipts increased 9.5 per cent and car mileage 1.5 per cent. The operating expenses for 1913 were 62.06 per cent of the revenue, a decrease of 5.32 per cent. Provision was made for depreciation, but none of the details of the operating expenses are given so as to afford an analysis of the maintenance and depreciation charges.

The net earnings from the operation of railway lines amounted to \$126,437, and the net receipts from the Edison Illuminating Company \$23,013, total \$149,450, or an increase of 25.46 per cent. After the deduction of the fixed charges of the Easton Consolidated Electric Company and its expenses, amounting to \$71,076, surplus earnings of \$78,374 were left for the year. This represented 10.45 per cent on the paid up capital stock, out of which 4 per cent was paid in dividends. The balance of \$48,374 transferred to surplus increased the credit to that account as of Dec. 31, 1913, to \$190,338.

There was no material change in the mileage of the railway during the year. The company owns or controls 53,707 miles of railway extending from Easton to Bethlehem, South Bethlehem, Nazareth, Pa., and Phillipsburg, N. J. The car equipment consists of fifty-nine passenger cars fully equipped, as well as ten service cars and thirty-five open car bodies.

The current assets increased over \$9,357 and the bonded debt of the Easton & South Bethlehem Transit Company was reduced \$4,000 during the year.

Liability for Unsecured Debts After Reorganization

Attorneys representing several railroads in the hands of receivers have joined in asking the United States Supreme Court to give a more explicit decision as to when a reorganized corporation is liable for the unsecured debts of old corporations taken over by the new ones. The Kansas City Southern Railroad was recently held by the Federal District Court of Missouri to be liable for the unsecured debts of the Kansas City Belt Line Company, the stock and property of which were taken over by the Kansas City Southern Railroad. This decision was the result of the judgment of the Supreme Court in the case of the Northern Pacific Railroad vs. Boyd. It is asserted that the decision in the latter case, however, has been differently construed and the Supreme Court has been asked to review the lower court's decision.

Separate Organization for Connecticut Company

The following statement has been issued to the public in regard to the separate organization which has been established by the New York, New Haven & Hartford Railroad for the Connecticut Company, New Haven, Conn.:

"The Connecticut Company, which controls and operates 675 miles of electric railway in the State of Connecticut, operated by 4000 employees, all residents of the State, has just taken offices in the Second National Bank Building at New Haven. When Howard Elliott, the chairman of the board of the New York, New Haven & Hartford Railroad, took charge of the affairs of that company he at once planned to give to a company as important as the Connecticut Company a management complete and independent, so that there would be the closest supervision of every detail, the highest efficiency and the greatest economy, and so that the patrons of the road and the employees would find responsible officers near at hand for the prompt dispatch of business.

"It has taken some time to work out all details, and the moving into the new offices is one of the last steps of the plans formulated in September, 1913.

"In December, 1913, L. S. Storrs was elected president of the Connecticut Company. Since then Mr. Elliott and he have been working on the plans of organization, and the following officers of the Connecticut Company have now been moved from the office building of the New Haven Company to the new location: president, general manager, auditor, chief engineer of power and equipment, construction engineer, traffic agent, purchasing agent, assistant treasurer, assistant secretary.

"The law department, under H. G. Day as counsel, is near at hand in the Exchange Building.

"Mr. Elliott and Mr. Storrs both feel that this arrangement will be of advantage to the Connecticut Company, its patrons and employees, and will help to make the Connecticut Company of the greatest possible use in the development of business in Connecticut.

"On account of the changing relations between the New Haven Company and the Connecticut Company, because of the agreement with the federal department of justice, there must of necessity be stoppage of plans for improvements, but it is hoped that the actual operation of the property can be maintained on a basis that will be steadily bettered."

American Water Works & Electric Company, Pittsburgh, Pa.—In the United States District Court at Pittsburgh on April 28 Judge Charles P. Orr made an order confirming the sale of the property of the American Water Works & Guarantee Company to representatives of the reorganization committee for \$1,250,000. The purchasers are allowed four months in which to make final payment. The details of the financing of the successor company, the American Water Works & Electric Company, have been published previously in the *ELECTRIC RAILWAY JOURNAL*.

Anglo-Argentine Tramways, Buenos Ayres, Argentina.—The gross receipts of the Anglo-Argentine Tramways for the calendar year 1913 amounted to £2,963,192, and the working expenses £1,969,161. After adding interest on investments and the 1912 balance and deducting interest and municipal and other charges, there remained a balance of £232,796. After the payment of dividends equal to 6¼ per cent on the total issued ordinary capital stock of £3,250,000, a balance of £13,421 was carried forward. The number of passengers carried was 340,014,573, an increase of 7.51 per cent during the year. The car mileage increased 6.29 per cent. One hundred and thirty new motor cars completely equipped, twenty motor cars without electrical equipment and 200 new trail cars were ordered. The percentage of working expenses to receipts decreased from 60.52 in 1912 to 60.29 in 1913. During the year the company established a pension fund for its employees, setting aside \$4,000 paper per month.

Bristol & Plainville Tramway, Bristol, Conn.—The directors of the Bristol & Plainville Tramway have declared a quarterly dividend of 2 per cent, payable on May 1 to stock of record of April 30. This is the first quarterly dividend declared by the company, former payments having been 4 per cent semi-annually. The directors have recommended

an increase in the stock of the company from \$375,000 to \$562,500, present stockholders to have the right to subscribe for one share of new stock for each two shares now held. The proceeds of the new issue will be used for extensions and betterments.

Buffalo & Williamsville Electric Railway, Williamsville, N. Y.—L. L. Lewis, Jr., president of the Buffalo & Williamsville Electric Railway, says: "The necessary transactions will be completed soon and the Batavia Traction Company will take over the street railroad in the village of Batavia which heretofore has been operated by the Buffalo & Williamsville Electric Railway. The granting of the certificate of public convenience and necessity by the Public Service Commission of the Second District completes the permission for the purchase of the line by the new company, which was formed for the purpose by business men in Batavia. We will turn over the line, all our equipment, including the power house, dynamo, four or five cars, etc., and the new company will operate the road, which is approximately 2 miles in length running through the main street in Batavia. The line in Batavia has been a losing venture for the eleven years that it has been operated by the Buffalo & Williamsville Electric Railway."

Chardon, Jefferson & Meadville Interurban Railroad, Cleveland, Ohio.—The Chardon, Jefferson & Meadville Interurban Railway has applied to the Public Utilities Commission of Ohio for authority to issue \$290,000 of stock and \$425,000 of its twenty-five-year 5 per cent bonds, to defray the cost of constructing the proposed road between Chardon and Jefferson. The commission recently denied the amended application of the company for permission to issue \$250,000 of capital stock and \$750,000 of thirty-year first mortgage bonds.

Chicago (Ill.) Railways.—The management of the Chicago Railways is understood to be preparing a statement for participation certificate holders regarding the company's condition, the compromising of suits against the company and possible merger propositions involving the Chicago surface and elevated railways.

Columbus Railway & Light Company, Columbus, Ohio.—The directors of the Columbus Railway & Light Company have declared a dividend of 75 cents a share on its capital stock, payable on May 25, to shareholders of record May 9. This distribution will not apply to shareholders who are in default in the payment of assessment due on Dec. 30, 1913. It will, however, be applied as of May 25 on account of final assessment due on June 30, 1914. Money for this special dividend was secured from the 1¼ per cent initial dividend on the common stock of the Columbus Railway, Power & Light Company, a large amount of which is held by the Columbus Railway & Light Company. There is approximately 1½ per cent on the \$3,500,000 of common stock of the Columbus Railway which has not yet been deposited for exchange into common stock of the Columbus Railway, Power & Light Company, under the terms of the recent consolidation of the Columbus properties. Holders of this undeposited stock cannot participate in the 1¼ per cent common stock dividend, which was paid on May 1, until their holdings have been exchanged in accordance with the reorganization plan. The Columbus properties are managed by E. W. Clark & Company, Philadelphia.

Dry Dock, East Broadway & Battery Railroad, New York, N. Y.—The Public Service Commission for the First District of New York has denied the application of the Dry Dock, East Broadway & Battery Railroad for the approval of a mortgage and the issue of \$4,300,000 in bonds, of which \$2,800,000 was to be a new issue and \$950,000 refunding bonds. This action was taken upon the recommendation of Commissioner Milo R. Maltbie, who held the hearings. The motion to deny was adopted by a majority vote, Commissioners Maltbie, Eustis and Cram voting for it, and Chairman McCall and Commissioner Williams against it. The main objections to the granting of the bond issue were that if allowed the new issue would make the capital of the company more than its property is actually worth, and also that the evidence showed that the company would not be able to earn the interest charges on all the proposed bonds. This opinion was not shared in by the minority of the commission.

Empire United Railways, Inc., Syracuse, N. Y.—The Public Service Commission of the Second District of New York has authorized the Empire United Railways, Inc., to issue \$81,000 of its 5 per cent fifty-year first and refunding gold mortgage bonds under a certain indenture given to the Equitable Trust Company, as trustees, to be sold for not less than 85 per cent of their par value and accrued interest, the proceeds to be used for the reimbursement of the treasury for expenditures for capital purposes.

Gary & Interurban Railway, South Bend, Ind.—Joseph D. Oliver, who owns 800 shares of stock of the Gary & Interurban Railway, and Charles E. Russ, also of South Bend, who owns 875 shares, have filed suit in the Valparaiso Circuit Court praying for a dissolution of the Gary & Interurban Railway.

International Railway, Buffalo, N. Y.—The Public Service Commission of the Second District of New York has authorized the International Railway to issue \$502,000 of its 5 per cent fifty-year refunding and improvement mortgage gold coupon bonds under a certain indenture given to the Bankers' Trust Company, as trustee, to be sold for not less than 88 per cent of their par value and accrued interest, the proceeds to be used for the purchase of real estate in connection with the new terminal which the company proposes to erect in Buffalo.

Liverpool (England) Corporation Tramways.—The annual report of the general manager of the Liverpool Corporation Tramways for the calendar year 1913 gives the total revenue for the year as £715,120; operating cost, including rental of leased lines, £451,667; gross profits, £263,453; net profits, £154,163, an increase of £20,305 over 1912. During the year £54,163 was placed in the renewal and depreciation account, and the total sum set apart in this, as of Dec. 31, 1913, amounted to £765,803. The number of passengers carried during the year was 144,085,927, an increase of 7.3 per cent over 1913; the traffic receipts, £677,881, an increase of 7.4 per cent, and miles run 13,442,605, an increase of 6.8 per cent. The average earnings per car mile amounted to 12.1d., an increase of 0.07d. It is stated that traffic receipts and car mile earnings, together with the passengers carried, are the highest recorded in connection with the Liverpool Tramways.

Railway & Light Securities Company, Boston, Mass.—Stone & Webster, Boston, Mass., are offering for subscription at 98½ and interest, yielding about 5.10 per cent, \$500,000 of Railway & Light Securities Company collateral trust sinking fund 5 per cent gold bonds, fifth series, dated May 1, 1914, and due May 1, 1944, interest being payable on May 1 and Nov. 1 at the office of the Old Colony Trust Company, Boston, Mass. The bonds are in coupon form in the denomination of \$1,000 with the privilege of registration as to principal and are callable as a whole or in part at 103 and interest on any interest day upon twenty-one days' notice. There is a sinking fund provision for the retirement of the bonds which will result in practically the entire issue being taken up before maturity.

Rochester Railway & Light Company, Rochester, N. Y.—The Public Service Commission of the Second District of New York has authorized the Rochester Railway & Light Company to issue \$642,548 par value of its 5 per cent fifty-year consolidated mortgage gold bonds under a certain indenture given to the Security Trust Company, Rochester, as trustee, to be sold for not less than 97 per cent of their par value and accrued interest, the proceeds to be used for the discharge and payment of underlying real estate mortgages.

United Railways Investment Company, New York, N. Y.—At the annual meeting of the United Railways Investment Company on May 1 much time was taken up in the discussion of the plan for readjusting the company's finances, paying back dividends and resuming dividends, as presented by the committee appointed at the annual meeting in May, 1913. A resolution was adopted "creating the agency contemplated by the plan to effectuate the plan as presented to the meeting or to effectuate the plan with such modification as the agency shall make, the agency having been duly authorized by the meeting to make such changes as it may deem fit." The committee thus created will be composed of nine members, to be named by the chairman of the meet-

ing. The proposed readjustment plan, on which action was deferred, was referred to at length in the ELECTRIC RAILWAY JOURNAL of April 11, 1914, page 846.

West Penn Traction Company, Pittsburgh, Pa.—A. B. Leach & Company, New York, and the Continental & Commercial Trust & Savings Bank, Chicago, are offering, at 99 and interest, \$6,000,000 of three-year notes of the West Penn Traction Company. The notes will fall due on March 1, 1917, and are callable at 101 during the first year, 100½ during the second, and 100 in the final year of their life. This is the first of three issues. The other two issues are to be junior notes, one issue dated April 1, 1914, and due April 1, 1917, and the other dated after March, 1914, and due in 1919, both expressly subordinate as to principal and interest to the first issue of notes above mentioned and maturing after these notes.

Dividends Declared

Detroit (Mich.) United Railway, quarterly, 1½ per cent.
Lincoln (Neb.) Traction Company, quarterly, 1½ per cent, preferred.

Massachusetts Consolidated Railways, Greenfield, Mass., quarterly, 1¼ per cent, preferred.

Pacific Gas & Electric Company, San Francisco, Cal., quarterly, 1½ per cent, preferred.

Tampa (Fla.) Electric Company, quarterly, 2½ per cent.

ELECTRIC RAILWAY MONTHLY EARNINGS

AURORA, ELGIN & CHICAGO RAILROAD, WHEATON, ILL.						
Period		Gross Earnings	Operating Expenses	Net Earnings	Fixed Charges	Net Surplus
1m., Mar., '14		\$148,019	*\$98,493	\$49,526	\$36,371	\$13,155
1 " " '13		141,502	*92,032	49,470	32,342	17,128
9 " " '14		1,520,206	*966,998	553,209	309,698	243,511
9 " " '13		1,455,950	*860,244	595,706	289,327	306,379
BROCKTON & PLYMOUTH STREET RAILWAY, PLYMOUTH, MASS.						
1m., Feb., '14		\$5,786	*\$7,176	\$1,391	\$1,065	†\$2,456
1 " " '13		6,849	*6,755	94	1,087	†993
12 " " '14		122,800	*99,220	23,580	12,997	10,583
12 " " '13		120,684	*91,968	28,717	12,629	16,088
CAPE BRETON ELECTRIC COMPANY, SYDNEY, N. S.						
1m., Feb., '14		\$25,285	*\$15,698	\$9,587	\$6,401	\$3,186
1 " " '13		26,142	*17,006	9,136	6,071	3,065
12 " " '14		378,058	*209,448	168,610	73,857	94,753
12 " " '13		366,133	*196,795	169,338	68,728	100,610
COLUMBUS (GA.) ELECTRIC COMPANY						
1m., Feb., '14		\$53,510	*\$22,286	\$31,224	\$24,838	\$6,386
1 " " '13		52,812	*21,126	21,564	19,861	8,823
12 " " '14		643,571	*289,919	353,652	283,019	71,047
12 " " '13		625,947	*275,417	275,060	228,623	120,907
DALLAS (TEX.) ELECTRIC COMPANY						
1m., Feb., '14		\$183,066	*\$113,819	\$69,248	\$6,654	\$42,594
1 " " '13		163,243	*93,829	69,414	24,635	44,779
12 " " '14		2,243,580	*1,322,352	921,227	307,132	614,095
12 " " '13		1,890,698	*1,124,160	766,538	295,895	470,643
EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEXAS						
1m., Feb., '14		\$50,039	*\$33,415	\$16,623	\$8,242	\$8,381
12 " " '14		525,885	*310,253	215,632	79,837	135,795
EL PASO (TEX.) ELECTRIC COMPANY						
1m., Feb., '14		\$89,664	*\$47,729	\$41,936	\$4,344	\$37,592
1 " " '13		75,298	*36,070	39,228	4,240	34,988
12 " " '14		913,037	*497,722	415,315	59,667	374,118
12 " " '13		818,121	*440,254	377,867	61,589	316,278
GALVESTON-HOUSTON ELECTRIC COMPANY, GALVESTON, TEXAS						
1m., Feb., '14		\$175,051	*\$106,501	\$68,550	\$38,963	\$29,587
1 " " '13		158,773	*99,155	59,619	33,660	25,959
12 " " '14		2,417,005	*1,374,142	1,042,863	429,340	612,922
12 " " '13		2,073,593	*1,207,868	865,725	404,255	461,470
HOUGHTON COUNTY (MICH.) TRACTION COMPANY						
1m., Feb., '14		\$20,946	*\$15,277	\$5,669	\$5,595	†\$74
1 " " '13		22,112	*16,520	5,592	5,690	†98
12 " " '14		293,446	*178,439	115,006	67,355	47,651
12 " " '13		309,901	*174,303	135,599	68,220	67,379
NORTHERN TEXAS ELECTRIC COMPANY, FORT WORTH, TEXAS						
1m., Feb., '14		\$155,976	*\$94,868	\$61,107	\$25,338	\$35,769
1 " " '13		142,784	*84,318	58,466	24,646	33,820
12 " " '14		2,161,438	*1,202,767	958,671	287,002	671,669
12 " " '13		1,862,411	*981,299	881,112	273,865	607,247

*Includes taxes.

†Deficit.

Traffic and Transportation

The Puget Sound Electric Railway Rate Case

In connection with its application to the Railroad Commission of Washington for an increase in passenger rates between Seattle and Tacoma, Wash., referred to in the *ELECTRIC RAILWAY JOURNAL* of April 25, 1914, page 949, the Puget Sound Electric Railway has issued a statement, signed by L. H. Bean, general manager, in part as follows:

"From the time the Puget Sound Electric Railway was constructed and up to and including the year 1908, the fares were fixed at considerably less than 2 cents per mile, and with particularly lower fares from Seattle and Tacoma to suburban points.

"Although it was realized that the rates were entirely too low for the service furnished, it was hoped that conditions would enable the company to maintain these rates. (At that time the boat fare from Tacoma to Seattle was 75 cents one way and \$1.25 for the round trip.) After experimenting for a period of about seven years, it was necessary for the company, on account of serious financial losses, to endeavor to secure sufficient revenue from the money invested in the line to cover operating expenses, taxes, depreciation and interest, and the only way open to obtain this result was by an increase of the rates to approximately 2 cents per mile. In view of the fact that suburban localities had enjoyed the lower rates, a commutation rate of 1.4 cents per mile was installed for the benefit of regular riders.

"As steam roads throughout the State are allowed, and justly so, to charge 3 cents per mile, as the service rendered by the Puget Sound Electric Railway is practically the same as steam road service, as the other interurban lines of the same character in the State usually charge 3 cents per mile, and as throughout the entire country the base rate is rarely less than 2 cents per mile, it was not felt that the rate asked by the Puget Sound Electric Railway was at all excessive.

"These rates were installed on Oct. 17, 1909. Complaint to the State Railroad Commission was made by residents along the line and others, and after a long and exhaustive hearing the Railroad Commission and its engineer placed a financial valuation on the property of the Puget Sound Electric Railway, or, in other words, found that the actual cash value of the property was \$4,070,237.

"The purpose of the commission in fixing this valuation was for the establishment of rates, and the commission determined that the company should receive a return on its investment of 7 per cent per annum, after paying operating expenses and depreciation. On April 17, 1910, the commission ordered that Tariff No. 4 be installed, and estimated that the rates charged under this tariff would yield a net return to the Puget Sound Electric Railway of \$289,179.32, or approximately 7 per cent on the valuation.

"After testing the legality of the order through the courts, Tariff No. 4 of the Railroad Commission was put in force on Oct. 14, 1911, in order that the rates of the commission might be tested to ascertain if the estimate of the results to be accomplished was correct. After this tariff had been in force for a period of approximately two years, it was found that instead of the rates yielding a net return of \$289,179 for the year 1912, they yielded a net return of \$89,655, after operating expenses and taxes had been paid, (but no provision had been made for accrued depreciation) or an amount of \$199,524 less than the commission estimated, which amount was only a return of 2.2 per cent on the investment, instead of 7 per cent as estimated by the commission, the net return for 1913 being \$67,718 instead of \$289,179 as estimated by the commission—or a return of 1.66 per cent instead of 7 per cent as estimated by the commission on actual money invested by the company.

"In view of the above facts, it will be understood that it was absolutely necessary for the company to seek relief in order that the property might be maintained and some fair return made to the owners on their investment. Consequently, an application was made to the Public Service Commission of Washington, asking that the order of the Railroad Commission be set aside and the company be allowed to operate under a new tariff. The hearing of this application was before the Public Service Commission, be-

ginning April 15, and a decision in the matter is expected at an early date.

"It might be well to call attention to some of the facts relative to Tariff No. 4, which was ordered by the Railroad Commission of Washington. There are several stations suburban to Seattle, ranging from 6 to approximately 12 miles, at which the rate was fixed by the commission at 15 cents for one-way and 15 cents for the round-trip. There being no difference between one-way and round-trip fares, great injustice resulted to the company. Other single and round-trip rates were made at rates ranging from slightly in excess of three-fourths of a cent per mile to approximately 5 cents per mile, which on its face is a discrimination in favor of places and people."

Magazine for New York Railways Employees

The New York (N. Y.) Railways has begun the publication of a monthly magazine in the interest of its employees. The new publication is the *New York Railways Employees' Magazine*, and in appearance and make-up it is similar to the *Interborough Bulletin*, published by the Interborough Rapid Transit Company, which, with the New York Railways, is controlled by the Interborough-Metropolitan Company. The contributors to the first issue of the new magazine include T. P. Shonts, president of the New York Railways; Frank Hedley, vice-president and general manager of the company; H. H. Vreeland, director of welfare of the company; H. G. Stott, superintendent of motive power, and B. S. Josselyn, former president of the Portland Railway, Light & Power Company. The salutatory from the editor, Henry Proctor Waugh, follows in part:

"With this issue the *New York Railways Employees' Magazine* makes its initial bow to the 8000 or more employees of the transportation lines of the New York Railways Company and to the public.

"The magazine is solely a publication of and for the employees of the New York Railways Company. Its mission is to bring employees of all departments closer together; to cement their friendship; to co-operate with and work for a common cause, and to afford a channel of easy communication in publishing both technical and personal articles and items that will be of interest to all. In other words, we should not hide our light under a bushel. Through the columns of the magazine it is proposed to let the right hand know what the left hand is doing. In nearly all cities of the United States and Canada, and for that matter throughout the world, public utility and other large corporations are now publishing monthly periodicals for free distribution among their employees. President Shonts and the board of directors are, therefore, creating no precedent in authorizing the publication of the *New York Railways Employees' Magazine*.

"The publishers invite the heads of all departments, and all employees of each department, to submit articles of technical interest, or information that is of educational value, or items of personal interest for publication from month to month in the magazine.

"As a matter of fact, we cannot have too much personal mention. We want to publish names and personal matter from all departments. This does not refer to the general offices alone. We want personals and news items from the power houses, the substations, the carhouses, the employees' stores and from here, there and everywhere over the entire system.

"And again, if you have any suggestions to make that you think would, if adopted, be of value to yourself, your fellow employee or to the company, do not hesitate to send them along. They will be welcomed, even if only one out of one hundred should be used.

"While this is the first issue of the magazine, the editor believes it is fully as good and as attractive as the first issue of any other similar publication. We do not claim perfection, and suggestions looking to improving the paper or criticism of the current issue are invited and will be received in good grace. Remember that two, or for that matter, many heads are better than one.

"With these few words, we salute you and, with the hearty co-operation of all employees, bespeak for the *New York Railways Employees' Magazine* a long and successful career."

Progress of Detroit Safety Campaign

Of all the suggestions received by the district boards and general safety board of the Detroit (Mich.) United Railway from interurban and city lines since the beginning of the "safety first" movement only 2 per cent have been rejected. In the instances where the general board has turned down suggestions they involve radical changes in equipment with large expenditures or have been adjudged impractical and not in accord with general practice and experience. In the cases where large expenditures are involved the general board has deemed it advisable to take no action pending a consideration by the management.

Seventy-six per cent of the suggestions have secured final action. Of the remaining 22 per cent the work involved in a large number of suggestions is partially completed, while many, such as cutting trees, moving milk stands, tracks, etc., have been held up pending the acquirement of the necessary property to permit of the work being done.

One of the suggestions on which there is a wide difference of opinion among interurban motormen is whether there shall be large or small vestibules and what arrangement shall be made of the door to the vestibule. At the last general board meeting there was a lengthy discussion of the subject and it was found that interurban motormen did not agree at all as to the proper vestibule. At the next general board meeting three cars which will be equipped to meet the various ideas will be ready for inspection and a decision probably will be made at that time.

A number of suggestions have been received as to the placing of highway crossing bells and these will be taken care of as rapidly as delivery is made by the manufacturer. In respect to the suggestions for changes in semaphore boards, block light systems, telephone booths, and minor changes in equipment on both city and interurban cars, the majority of these are practically all under way.

The report of accidents on the Detroit United Lines for March, 1914, shows a very gratifying decrease over the same month a year ago, attributed by the management to the practising of the principles of "safety first." In March, a year ago, there were 370 cars in collisions of all degrees, while for that month this year there were but 235. The reports of all kinds of accidents totaled 1391 a year ago, compared with 1219 for March, 1914.

The Detroit United Railway has begun the publication of *Safety*, a magazine for the employees of the company, to be issued monthly. The first number is dated May. In concluding its announcement in regard to the purposes of the new publication the company said:

"To help each of us remember the things we ought to do and leave undone the things we ought not to do, *Safety* will be published for and distributed without cost to the employees of the Detroit United Lines."

Jesse W. Lilienthal on Co-operation

The following communication addressed by Jesse W. Lilienthal, president of the United Railroads, San Francisco, Cal., to the employees of the company, appears in the *United Railroads Magazine* for April, 1914:

"If we can just make up our minds that we are all members of one family working for a common cause; that we cannot injure that cause without injuring ourselves; that what is to the interest of one is to the interest of all; that every man in the organization, no matter how humble his position, is a link in the chain and that no chain is stronger than its weakest link; that your officials are concerned not simply to maintain an efficient service and to collect the largest possible revenue and to pay our debts at the earliest possible moment, but to have the employees happy and prosperous and well; that saving life and limb is more important than maintaining schedules; that next only in importance to the duty of avoiding accidents is the duty to be courteous to the public even under the strongest provocation; that the door of your president is always open to you to counsel with him even as to matters not connected with the company—then we shall, indeed, be an ideal organization and a happy family, with our hearts in our work and a feeling of friendship for each other that will make our tasks easy and our future assured."

Ordinance Against Smoking in San Antonio.—The Council of San Antonio, Tex., has passed over the veto of Mayor Brown the ordinance to prohibit smoking on the cars of the San Antonio Traction Company and the San Antonio & San José Interurban Railway.

Extension of Time Under Brooklyn Transfer Order.—On the application of the several Brooklyn Rapid Transit companies affected by the recent transfer order, the Public Service Commission for the First District of New York has granted an extension of one month, from May 1 to June 1, 1914, in which the companies are to obey the commission's order for the establishment of the so-called universal transfer system among the surface lines of Brooklyn.

Public Relations in Springfield.—The Springfield (Ill.) Consolidated Railway, of which A. D. Mackie is third vice-president and general manager, was the subject of a long illustrated description published in the *Springfield Record* of April 27. The article dealt particularly with the growth of the company and the improvements which have been carried out by it recently. The illustrations included reproductions of two group photographs of the employees, car-house, rolling stock and interiors and exteriors of the power house.

Serious Head-on Collision in Detroit.—Early in the morning of May 5 a Detroit, Mich., northbound Sherman-Victor car filled with passengers jumped the track and collided head-on with a Fourteenth Street car coming in the opposite direction on a parallel second track. The accident occurred on a section of track which, under a contract with the city, is operated as a 3-cent line and the city is required to maintain the roadbed. As a result of this accident both cars were badly wrecked, the motorman of one car and a passenger were killed, a third passenger fatally injured and forty-one others slightly injured.

New York Smoking Order Modified.—The Public Service Commission for the First District of New York has modified the anti-smoke order passed last year, so that smoking will be allowed upon the four rear seats of the convertible cars of the Third Avenue Railway. The original order forbade smoking except upon the open cars of the running-board type, and then only upon the four rear seats of such cars. This order prevented smoking on the convertible cars, and as these cars are practically open cars in the summer season the commission, on the request of the Third Avenue Railway, decided to exempt such cars from the operation of the order.

Increase in Wages in Akron.—Notices were posted by the Northern Ohio Traction & Light Company, Akron, Ohio, on April 18 that on and after May 1 the wages of all trainmen would be advanced 2 cents an hour. This gives on city lines a minimum wage of 25 cents an hour, advancing 1 cent an hour for each year of service to a maximum of 29 cents for employees who have been five years or more with the company. The suburban trainmen will receive 25½ cents an hour minimum and 30 cents maximum, and interurban men 26 cents minimum and 31 cents maximum, advancing for each year of service as indicated. An advance of 2 cents an hour was also made a year ago. Previous to that time there had been each year for twelve years an annual advance for the men with the exception only of 1908.

Interchange of Traffic in Iowa.—The Waterloo, Cedar Falls & Northern Railway, Waterloo, Ia., recently made a contract with the Chicago, Rock Island & Pacific Railway which permits it to run its freight trains over the steam road from Center Point, Ia., to Cedar Rapids. This arrangement also permits the electric line to make use of the steam road's terminal facilities at Cedar Rapids until such time as its own line is completed. Progress on the construction of the Waterloo, Cedar Falls & Northern line between LaPorte City and Cedar Rapids has now progressed to a point where the company expects to operate over its own rails into the Cedar Rapids terminal by Oct. 1. Extensions of the company's lines now under construction will when completed add 60 miles of main line to the existing property.

Trenton Company Seeks to Abolish Sale of Tickets.—The Trenton & Mercer County Traction Corporation, Trenton, N. J., has renewed its effort to abolish the system of selling six tickets for 25 cents. It would substitute straight 5-cent

fares, with transfer privileges. At a general community meeting on April 30, at which fourteen civic organizations, including the Chamber of Commerce, were represented, Rankin Johnson, president of the company, outlined his plans. In return for the establishment of the straight 5-cent fare, effective on May 31, he agreed that the company would purchase ten new double-truck cars yearly until seventy had been added to the system; to establish a waiting-room in the center of the city; to develop a package express, subject to the approval of the Board of Public Utility Commissioners, and to inaugurate a pension system, including death benefits to families of employees.

Rapid Transit Between the Twin Cities.—The question of bettering service between Minneapolis and St. Paul, Minn., by providing for rapid transportation between the cities was recently discussed by the members of the Engineers' Club of Minneapolis. Edward P. Burch, consulting engineer, advanced four proposals. He presented plans of the two cities and plans showing how the situation might be bettered, first, with the system as at present, by the elimination of stops, making possible a greater speed. The second suggestion was for an elevated track part of the distance between the two cities. The third possible method suggested was the electrification of one of the steam railroads, and the fourth was the building of a subway either the whole or part of the distance between the two cities. The attitude of the Twin City Rapid Transit Company, which operates between the cities, toward the proposal to construct an elevated railroad to connect the cities was referred to in the *ELECTRIC RAILWAY JOURNAL* of April 18, 1914, page 899.

Fare Case Carried to the Courts.—The Cincinnati & Hamilton Traction Company and the Ohio Traction Company have entered proceedings in the United States Court at Cincinnati for an injunction against the city and its officials, prohibiting them from enforcing the new 5-cent fare ordinance applying to Mill Creek Valley districts. The companies assert generally that the ordinance is in disregard of their contract rights and an open violation of the United States Constitution, as it impairs contracts and takes property without due process of law. The Federal Court is asked to issue an injunction to stop the city and the officials from attempting to enforce the new ordinance, or in any way interfering with the company in the operation of its lines in the manner in which it has been conducting them. The court also is asked to declare the city ordinance null and void, in so far as it attempts to disregard the conditions under which the company holds its franchises to its present several routes. W. Kesley Schoepf, president of the Cincinnati Traction Company, recently suggested that the villages in the Mill Creek Valley combine in selecting a commission with power to represent them in negotiating with the company for revised rates of fare in the valley.

Compromise on St. Louis Transfers.—At a conference on April 29 participated in by Richard McCulloch, president of the United Railways, St. Louis, Mo., Attorney Francis of the company, and City Counselor William E. Baird and T. P. Young, his associate, Mr. McCulloch announced that he had worked out a plan for issuing transfers which he thought would meet the requirements of the recent decision of Judge Grimm, referred to at length in the *ELECTRIC RAILWAY JOURNAL* of April 18, 1914, page 892, and at the same time protect the company against fraudulent use of the slips. According to McCulloch's plan universal transfers will be issued only to passengers who ask for them upon payment of fare. The passenger is to be required to tell his destination. The conductor will then issue a double transfer or a triple transfer, if need be, which the passenger can use in going over several lines. The conductor will route the passenger over the most direct route to his destination. A statement setting forth the conditions to govern the issuance of transfers as reached by the representatives of the company and the city will be submitted to Judge Grimm for an expression of opinion as to whether the system which it is proposed to adopt will meet the requirements of the decision handed down by him. The amended decree of the court in the case against the company was placed on record on May 1, and the system of transfers will be put in force on July 1.

Personal Mention

Mr. H. F. Swift has been elected treasurer of the West Penn Traction Company, Pittsburgh, Pa., to succeed Mr. J. B. Van Wagener, resigned.

Mr. William L. Day, who resigned recently as judge of the United States District Court of Cleveland, Ohio, has been admitted to membership in the firm of Squire, Sanders & Dempsey, counsel for the Cleveland Railway.

Mr. F. R. Newman has resigned as manager of the property of the Greenville Railway & Light Company, Greenville, Tex., to accept the position of vice-president of a real estate and development organization operating in Texas.

Mr. M. S. Sloan, who has been manager of the railway and electric departments of the New Orleans Railway & Light Company, New Orleans, La., has been appointed general manager of the company. A portrait and a biography of Mr. Sloan were published in the *ELECTRIC RAILWAY JOURNAL* of Feb. 7, 1914.

Mr. Edward W. Bemis, Chicago, who is to supervise the valuation of the property of the public service corporations operating in the District of Columbia for the Public Utilities Commission of the District, has established headquarters in Rooms 5 and 17 of the District Building. The principal assistants of Mr. Bemis in the work will be Mr. Andrew Sangster and Mr. Robert McArthur.

Mr. George O. Nagle, vice-president and general manager of the Wheeling (W. Va.) Traction Company, has been appointed a member of the Panama-Pacific Exposition Commission of West Virginia by Governor Hatfield of that State. The commission consists of five members. It will have charge of the erection of buildings, arrangements for exhibits and other West Virginia State matters at the exposition to be held at San Francisco in 1915.

Mr. Patrick Calhoun, who was succeeded in September, 1913, as president of the United Railroads, San Francisco, Cal., by Mr. Jesse W. Lilienthal, has resigned as a director of the United Railways Investment Company which owns or controls most of the stock of the California Railway & Power Company, which in turn controls the United Railroads, the Sierra & San Francisco Power Company, the Coast Valleys Gas & Electric Company and the San Francisco Electric Railways.

Mr. P. S. Young, who has been comptroller of the Public Service Corporation of New Jersey, Newark, N. J., has been elected treasurer of the company to succeed Mr. James P. Dusenberry, who, as noted elsewhere in this column, has retired, having reached the age limit fixed by the company. The offices of comptroller and treasurer have been consolidated and Mr. W. S. Barker, formerly assistant comptroller, has been appointed an additional assistant treasurer to serve with the present assistant treasurers, Mr. R. D. Miller and Mr. T. W. Van Middlesworth.

Mr. R. T. Montgomery, superintendent of the railway lines of the Monterey Railway, Light & Power Company, Monterey, Nuevo Leon, Mexico, who was imprisoned and threatened with death by the insurrectionists in Mexico, was released on April 24 and started for New Orleans, where he expects to enter the employ of the New Orleans Railway & Light Company. Mr. Montgomery was formerly superintendent of the Rankin division of the Pittsburgh Railway. Six years ago he went to Mexico City to become connected with the Mexico City Tramways. Three years later he became connected with the Monterey Railway, Light & Power Company.

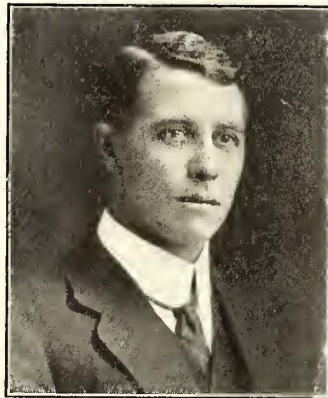
Mr. C. E. Lenhart has been appointed master mechanic of the Fitchburg & Leominster Street Railway, Fitchburg, Mass., to succeed Mr. William Lish, who has been assigned to other duties. Mr. Lenhart was formerly with the International Motor Company, New York, at its main plant in Allentown, Pa. Before that he was mechanical engineer in charge of shops and rolling equipment of the Mahoning & Shenango Railway & Light Company, Youngstown, Ohio. He began electric railway work in November, 1888, after nine years' service in engineering and mechanical departments of steam railroads. Among the electric railways with which he has been connected in addition to the one previously mentioned are the Buffalo & Lake Erie Trac-

tion Company, Buffalo, N. Y., and the Lehigh Valley Transit Company, Allentown, Pa.

Mr. Ralph W. Eaton has been appointed superintendent of power plants and equipment of the Shore Line Electric Railway, Norwich, Conn. He will have charge of the generating plants at Saybrook, New London, Thamesville and Danielson, and the substations at Guilford, Waterford, South Windham, Plainfield and Putnam, and also the generating plants of the Norwich & Westerly Traction Company at Hallville and Mystic, and substations at White Rock and Mistuxet Brook. Mr. Eaton was graduated from the Massachusetts Institute of Technology as an electrical engineer and later was employed by the Westinghouse Electric & Manufacturing Company at its Pittsburgh works. He was appointed electrical engineer of the Connecticut Company in January, 1913, and has had supervision of the operation of the steam end of the power plants of that company since May, 1913.

Mr. James P. Dusenberry was tendered a testimonial banquet by the executive and operating officers of Public Service Corporation of New Jersey and affiliated companies in Newark, N. J., on the evening of May 5. The occasion marked the retirement of Mr. Dusenberry from the office of treasurer of the corporation, which position he had held ever since Public Service Corporation was organized in 1903. For thirty-three years prior to that time Mr. Dusenberry was identified with the gas industry in Newark. Having reached the age of seventy years, his retirement was in accordance with the company's pension system. About forty of the officials acted as hosts, and President Thomas N. McCarter served as toastmaster. He paid a glowing tribute to the character and ability of Mr. Dusenberry. Addresses were made by Mr. Randal Morgan, Philadelphia, third vice-president of Public Service Corporation of New Jersey; Mr. Uzal H. McCarter, president of the Fidelity Trust Company, Newark, and a member of the Public Service Board; Mr. E. A. Armstrong, Mr. J. L. O'Toole and Mr. Frank Bergen. On behalf of the hosts who were present at the banquet Mr. Bergen presented the retiring treasurer with a silver centerpiece.

Mr. W. G. Murrin has recently been appointed general superintendent of the British Columbia Electric Railway, Ltd., with headquarters at Vancouver, B. C., as noted briefly in the *ELECTRIC RAILWAY JOURNAL* of May 2. His work will cover the duties of mechanical superintendent, with control of equipment over the company's entire system, as well as the supervision of the Vancouver and suburban division of the company's railway system, the most important division of its several lines. Mr. Murrin went to British Columbia from the old country in 1913 to take the position of mechanical superintendent of the British Columbia Electric Railway. His early technical training was obtained in the Finsbury Technical College, after which he served as apprentice in the shops of the City of London Lighting Company. He next served as shift engineer on the Middlesboro & Stockton Tramway, after which he started on his thirteen years' experience as an electric railway executive, first serving as superintendent of power on the London United Tramways and later being appointed to a post with the same company as manager of rolling stock and electrical equipment and works manager. His service of more than a year with the British Columbia Electric Railway as mechanical superintendent has won for him the high regard of his associate officials. It is believed that in his new and wider field of activity Mr. Murrin will be able to do better work for the general interest of the company than in the narrower but very important field which he filled previously as mechanical superintendent of the company.



W. G. Murrin

Mr. Williston Fish, formerly general manager of the Chicago (Ill.) Railways, has been elected vice-president and comptroller of the West Penn Traction & Water Power Company, Pittsburgh, Pa., and its various subsidiaries. Mr. Fish became connected with the surface railways in Chicago in 1890 and was very active in the affairs of the Chicago (Ill.) Railways during the rehabilitation of that property, under Mr. Henry A. Blair, who was chairman of the board and president of the company. That company, now included in the Chicago Surface Lines, under the plan for unified operation of the Chicago Railways and the Chicago City Railway, operated 480 miles of track. The principal operating subsidiary of the West Penn Traction & Water Power Company is the West Penn Traction Company, which operates more than 140 miles of city and suburban railway in the vicinity of Pittsburgh.

OBITUARY

John R. Neat, cashier of the Louisville (Ky.) Railway, died recently at his home in New Albany, Ind., just across the Ohio River from Louisville, Ky. Mr. Neat was fifty-four years of age and all his business life had been spent in the employ of the Louisville Railway, the service of which company he entered as a boy. He and Mrs. Neat spent the winter in Florida. Mr. Neat was born on a farm a few miles north of New Albany, was a Knight Templar, and a member of the Trinity Methodist Church. He is survived by his widow and two daughters.

D. P. Sheehan, general roadmaster of the Chicago (Ill.) Elevated Railways, died on April 28, as a result of a fatal injury received while superintending reconstruction work on the Chicago elevated loop. Mr. Sheehan was born in New York State in 1869. In 1891 he accepted a position as construction foreman with the contractor for the South Side Elevated Railroad in Chicago. At the completion of this work in 1894 he took a similar position with another contractor on the construction of the Metropolitan West Side Elevated Railway structure. Later he accepted a position with the North American Railway Construction Company as general superintendent, during which time he built the Northwestern Elevated Railway main line structure and added a third track to the South Side Elevated Railroad structure. He also assisted in the reconstruction of the surface lines in Detroit, Mich., and Kansas City, Mo., and the rehabilitation of that part of the surface railways of Chicago outside the city limits. In 1910 he was appointed roadmaster of the Metropolitan West Side Elevated Railway, and when this line was consolidated with the four other elevated railway companies he was made general roadmaster of all the lines.

New Kentucky-Tennessee Developments

Probably the most important and definitely formulated of the new electric railway projects in the Kentucky-Tennessee territory at this time is that which contemplates the extension of the Clarksville (Tenn.) Street Railway from the edge of the city, across Red River, and thence across country to Dunbar's Cave. The Clarksville Chamber of Commerce, with which the officers of the railway company are co-operating, is at work on a program which includes the raising of some \$12,000 by the people of Clarksville as a loan to the Clarksville & Dunbar Cave Railway, taking therefor five-year notes secured by the cave property.

The project, while talked about for years, has been halted by the prohibitive cost of a bridge over Red River, and by the construction cost on account of the broken topography of the country over which the line must run. It is proposed that the company provide for the transfer of passengers at the river over the wagon bridge until such time as the company and the city, or Montgomery County, may be able to join in the building of a combination bridge. The Chamber of Commerce has appointed committees to get subscriptions, contingent upon needed franchises, rights-of-way, etc.

A line of 3½ miles is projected to connect Hodgenville, Ky., on the Illinois Central Railroad, with the Lincoln Memorial Park. The Louisville Board of Trade acted at a recent meeting expressing positive conviction that something should be done to make the park available to tourists who might stop at Hodgenville.

Construction News

TRACK AND ROADWAY

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

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

RECENT INCORPORATIONS

Parker-Colorado River Valley Electric Railway, Parker, Ariz.—Application for a charter has been made by this company in Arizona to build an electric railway and other public utilities in Parker and through the Colorado River Indian reservation and along the Colorado River, a distance of 35 miles. Capital stock, \$250,000. Incorporators: Thomas Taylor and David Connor, Jerome; J. E. Beck and W. H. Tharpe, Parker; I. W. Wallace, Bisbee, and William Drury, Lowell. [E. R. J., April 11, '14.]

***Lafayette & Northwestern Railroad, Lafayette, Ind.**—Incorporated in Indiana to build an electric railway between Lafayette, Wolcott, Remington, Goodland, Rennselaer, Morocco and the Illinois state line. Capital stock, \$100,000. Directors: G. J. Thomson, O. A. Cummins, A. P. Rainier, E. B. Simmons and O. L. Brown.

***Rolla, Ozark & Southern Railway, Rolla, Mo.**—Chartered in Missouri to build an electric or steam railway from Rolla to Anutt, a distance of 18 miles. Capital stock, \$200,000. Directors: F. W. Webb, J. Ellis Walker and E. W. Walker, Rolla; E. C. Comstock, Lecoma, and J. A. Frank, Anutt.

***International Suburban Railway, Windsor, Ont.**—Application for a charter has been made by this company at the present session of Parliament to build a railway to be operated by electricity, steam or gasoline between Ojibway, Sandwich, Windsor, Walkerville, Ford City, Belle River and Amherstburg and allowing connection either by tunnel or ferry with Detroit, Mich.

FRANCHISES

Montgomery, Ala.—The Alabama Traction Company has received an extension of time of twelve months on its franchise from the Council in Montgomery.

Globe, Ariz.—The Globe & Miami Traction Company has received, a twenty-five-year franchise from the Council in Globe. This is part of a plan to build a line between Globe and Miami. Richard West, Miami, president. [E. R. J., April 25, '14.]

Paxton, Ill.—The Kankakee & Urbana Traction Company has received a franchise from the Council in Paxton.

***Middleboro, Ky.**—Fred Moomau of the Tri-State Realty Company, has purchased the electric railway franchise in Middleboro. Mr. Moomau claims to represent Cincinnati capitalists, who will arrange at once to begin the construction of lines to connect Middleboro with the mines to the south and with Jellico, Tenn.

Shreveport, La.—The Shreveport Traction Company has received a franchise to double-track its Fair Grounds line on Texas Avenue, from Jordan Street to the Kansas City Southern crossing in Shreveport.

Lowell, Mass.—The Bay State Street Railway has asked the Council for a franchise to relocate and extend some of its lines in Lowell.

Batavia, N. Y.—The Public Service Commission, Second District, has granted a certificate of convenience and necessity to the Batavia Traction Company, Inc., for the construction of an electric railroad, and permission to said company for the purchase from the Buffalo & Williamsville Electric Railway Company of its franchise, rights and property in Batavia. [E. R. J., April 4, '14.]

Bartlesville, Okla.—The Bartlesville Interurban Railway has received a franchise from the Council to extend its lines through the southern section of Bartlesville.

***Dallas, Tex.**—Daniel Sonnentheil, Dallas, has asked the Council for a franchise to build an electric railway through the Lakewood Heights property.

Blaine, Wash.—The Blaine-Lynden Electric Railway has asked the Council for a franchise in Blaine, and a franchise is also asked from the city limits of Blaine over the Cloverdale right-of-way of Great Northern Railroad, to Lynden. J. J. Pinckney, Blaine, president. [E. R. J., March 21, '14.]

Glendale & Montrose Railway, Glendale, Cal.—During the next few weeks this company will award contracts to build 2.7 miles of new track and seven new sidings.

Pacific Electric Railway, Los Angeles, Cal.—The initial link in what will probably be a new electric line between San Pedro and Redondo Beach is announced by the Harbor View Land Company. A contract with the Pacific Electric Railway was signed in Los Angeles recently calling for the immediate extension of the Fifth Street car line to Santa Cruz Street along Bandini Street from La Alameda. The plans of the Harbor View Land Company call for an extension of the line to Lomita which ultimately will be extended to Redondo. The land company has offered a right-of-way for the line free along the Western Avenue boulevard through its holdings.

San Pedro Street Railway, Los Angeles, Cal.—This line, which is leased by the Pacific Electric Railway and operated as a part of the Pacific Electric System, has completed 1.37 miles of its line from Aliso Street to Ninth Street in Los Angeles. R. W. Stewart, Los Angeles, engineer. [E. R. J., Jan. 4, '13.]

Redwood City, Cal.—Articles of incorporation are being drawn by the attorney by the San Mateo County Development Association for the holding company which is to obtain the requisite right-of-way for the independent electric railroad, which will extend 30 miles down the peninsula from San Francisco to Palo Alto. The directors of the company will be Terrence Masterson, San Mateo; D. G. Doubleday, Millbrae; H. C. Tuchsens, Redwood City; F. A. Cunningham, South San Francisco; E. M. Moores, Burlingame, and M. B. Johnson, Montara, the association's president. [E. R. J., April 11, '14.]

United Railroads, San Francisco, Cal.—This company has placed in operation its extension of the Polk Street and Larkin Street line near the exposition grounds in San Francisco. It is the intention of the company eventually to continue the extension to North Point Street or to a pier which may be built there.

Sacramento Valley West Side Electric Railway, Willows, Cal.—This company has been authorized by an order of Judge Seawell to continue its construction work in Solano County, southeast of Dixon, regardless of the injunction proceedings instituted recently. The injunction has not been dismissed, but it will be discussed before Judge Seawell the first week in June. At that time it is expected that it will be dismissed by mutual consent. The continuation of the work on the roadbed was ordered with the consent of all concerned in the matter. George W. Pierce, president. [E. R. J., April 11, '14.]

Connecticut Company, New Haven, Conn.—Work has been begun by this company double-tracking its line through the business section of Ansonia.

***Stafford Springs, Conn.**—George L. Baldwin has formulated a plan and taken steps for the incorporation of a company to construct a passenger and freight carrying electric railroad from Putnam to Stafford Springs, the proposed route being to South Woodstock, thence past Roseland Park to East Woodstock, North Woodstock, West Woodstock to Eastford, passing near Woodstock Valley, thence past Crystal Lake to North Ashford, through Boston Hollow to Westford, Stafford, Staffordville, Stafford Hollow to Stafford Springs, a total of about 31 miles. Also a branch from Putnam easterly through East Putnam to Chepachet, R. I., there to connect with the electric line to Providence, a distance of 12 miles.

Valdosta (Ga.) Street Railway.—During the next few weeks this company will award contracts to build 1¼ miles of new track in the western section of Valdosta.

Union Railway & Power Company, Chicago, Ill.—As soon as right-of-way is secured this company will begin the construction of its electric railway to connect Hammond, Ind., and West Hammond, South Chicago, and Harvey, Ill. Capital stock, authorized, \$10,000. Capital stock, issued, \$10,000. Officers: F. Arthur Jost, president; John J. McGuire, vice-president; Thomas Simson, Jr., secretary and treasurer, and J. W. Paul, general manager, all of 161 Quincy Street, Chicago. [E. R. J., Nov. 29, '13.]

East St. Louis & Suburban Railway, East St. Louis, Ill.—This company has been asked to consider plans to extend its line along East Main Street instead of having its terminus at the Public Square in Belleville.

Chicago, Peoria & Quincy Traction Company, Quincy, Ill.—Surveys have been completed by this company on its 120-mile line between Peoria and Quincy. The line has been located between Quincy and Timewell, 9 miles, and it is planned to begin construction about June 1. A 9-mile branch will also be built from Banner to Canton. John L. Soebbing, 302 North Sixth Avenue, Quincy, president. [E. R. J., Nov. 29, '13.]

Emporia Railway & Light Company, Emporia, Kan.—This company contemplates an extension of its lines west from Commercial Street on South Avenue in Emporia for about 1 mile.

Union Traction Company, Independence, Kan.—Work has been begun by this company on its line between Coffeyville and Nowata, Okla.

Central City, Greenville & Drakesboro Railway, Central City, Ky.—Surveys have been completed, financial arrangements made and work will soon be begun by this company grading for its electric line to connect Central City, Drakesboro, Greenville, Hillside, Brownsville, Mercer, Powderly, Bevier and Graham. W. H. Netherlands, Central City, is interested. [E. R. J., Feb. 28, '14.]

South Covington & Cincinnati Street Railway, Covington, Ky.—Contracts for the erection of a new steel bridge, to cost between \$160,000 and \$200,000 have been let to the American Bridge Company by the South Covington & Cincinnati Street Railway. The bridge will span the Licking River at Twelfth Street, Covington, and will replace the present structure. Polk Lafoon, secretary, is authority for the announcement.

***Lexington, Ky.**—A large part of the right-of-way for the projected construction of an electric railway between Lexington and Richmond, Ky., some 30 miles, has been pledged, according to John G. King, who launched the project. It is said that numerous subscriptions from local capitalists have been received.

Orleans-Kenner Electric Railway, New Orleans, La.—Surveys have been completed for this 110-mile line between Kenner, New Orleans, Hanson City, Harrihan and Shrewsbury. Grading has been completed between New Orleans and Harrihan, 6 miles, and 3 miles of track have been laid from Kenner 3 miles south. Headquarters, New Orleans; J. A. Bowman, New Orleans, president. [E. R. J., April 25, '14.]

***Winnipeg, Man.**—The Winnipeg Council has awarded a contract to John H. Kern, Moose Jaw, Sask., for the construction of an electric line between Winnipeg and Transcona, Man. The matter of double-tracking is to be left to the discretion of the builders, and the time for completion to be Oct. 30, 1914.

Hannibal Railway & Electric Company, Hannibal, Mo.—Plans are being considered by this company to build soon its extension to Riverview Park and also to improve some of its lines in Hannibal.

New York State Railways, Rochester, N. Y.—Work has been begun by this company double-tracking and improving some of its lines in Syracuse.

Tidewater Power Company, Wilmington, N. C.—Arrangements are being made by this company to extend its suburban line in the lower part of the county.

Cape Breton Electric Company, Sydney, N. S.—Plans are being made by this company to build soon its extension into New Waterford.

Northern Ohio Traction & Light Company, Akron, Ohio.—Following a conference with the Canton City officials this company has agreed to double track and extend several of its lines in Canton.

Chardon, Jefferson & Meadville Interurban Railroad, Cleveland, Ohio.—John B. Chapman, Cleveland, has again applied to the Public Utilities Commission for approval of a plan to finance the proposed electric interurban line from Chardon to Jefferson. Mr. Chapman asks authority for issuing to stockholders \$10,000 of capital stock in lieu of \$1,000 cash paid in for preliminary expenses and to issue

and sell at 80, \$290,000 of capital stock and \$425,000 of twenty-five-year 5 per cent bonds, the proceeds to be used for constructing and equipping the line. [E. R. J., March 21, '14.]

London (Ont.) Street Railway.—Plans are being considered by this company for extensions of its lines in London.

Pacific Power & Light Company, Astoria, Ore.—Work will be begun at once by this company on the extension of its local lines around Smith's Point and to the Hammond Mills in Astoria.

Lancaster City (Pa.) Street Railway.—Plans are being made by this company to extend its lines on Chestnut Street and Ann Street to King Street, thence by curve to connect with the present lines of the company in Lancaster.

Montreal & Southern Counties Railway, Montreal, Que.—This company has retained the Arnold Company, of Chicago, as consulting electrical engineers on a 15-mile extension of its line from St. Cesair to Granby. This is in addition to the electrification work reported in the *ELECTRIC RAILWAY JOURNAL* of March 28, on page 702, and provides for the construction of a new line, including grading, track, overhead and electrical equipment.

Jackson Railway & Light Company, Jackson, Tenn.—This company has extended its line into West Jackson to the Country Club and West Tennessee agricultural experiment station.

Knoxville Railway & Light Company, Knoxville, Tenn.—Plans are being made by this company to double track its line between Knoxville and Fountain City.

Memphis (Tenn.) Street Railway.—Surveys have been made by this company to extend the Florida Street line in Memphis to the Nonconnah yards of the Illinois Central Railroad, a distance of 2 miles.

Nashville (Tenn.) Traction Company.—The Nashville-Detroit Construction Company, to have an authorized capital of \$100,000, has filed articles of incorporation in Tennessee. The company has been organized to take over the contracts for the construction of the Nashville Traction Company's lines and equipment in Nashville and was organized by Cameron Currie and others. W. O. Palmer, Nashville, president. [E. R. J., April 4, '14.]

***Crowell, Tex.**—The Young Men's Business League of Crowell, Tex., has received an offer from financiers to provide half of the estimated amount of \$210,000 necessary to build an electric line between Crowell and Vernon, provided local residents raise the other half.

***Dallas, Tex.**—The Dan Sonnentheil Company is considering plans to build a double tracked electric railway through Lakewood Heights and have connections with the business center of Dallas. A franchise is being asked of the County Commissioners over the old Greenville road, which is now the extension of Junius Street. The line will be constructed at once. The property is all owned by the company, and no complications will arise over the right-of-way.

Dallas (Tex.) Consolidated Electric Railway.—This company is asked to extend its Highland Park Street Railway to the Southern Methodist University in Dallas.

Southern Traction Company, Dallas, Tex.—This company plans to spend about \$40,000 in improvements of its lines in Dallas. Its line to Trinity Heights, just south of Oak Cliff, will be placed in operation at once.

Texas Traction Company, Dallas, Tex.—Among the improvements planned by this company in the near future will be a loop line to the southwest portion of Denison, a double-track on Main Street or a new line down Woodard Street in Denison.

San Antonio, San Jose & Medina Interurban Railway, San Antonio, Tex.—This company has completed about 3½ miles of its 15-mile line between San Antonio, San Jose and Kirk. Power will be purchased from the San Antonio Traction Company and the repair shops will be located at San Jose. Three cars will be operated. Capital stock, authorized, \$100,000. Capital stock, issued, \$50,000. Bonds, authorized, \$100,000. Officers: A. D. Powers, San Antonio, president; E. O. Burton, San Antonio, vice-president; C. A. Newton, San Antonio, secretary and treasurer, and L. S. Powers, San Antonio, general manager and purchasing agent. [E. R. J., April 25, '14.]

Manufactures and Supplies

ROLLING STOCK

Homestead & Mifflin Street Railway, Homestead, Pa., has purchased one closed car.

United Traction Company, Albany, N. Y., is remodeling fifteen of its semi-convertible cars.

Lincoln (Neb.) Traction Company has ordered four motor and two trail cars from The J. G. Brill Company.

Valdosta (Ga.) Street Railway expects to purchase during the summer two 10-bench open cars.

Chicago (Ill.) Surface Lines is preparing plans and specifications, and will shortly consider the purchase of a large number of new cars.

Chicago & Joliet Electric Railway, Joliet, Ill., has ordered five prepayment cars from the McGuire-Cummings Manufacturing Company.

Dayton, Springfield & Xenia Southern Railway, Dayton, Ohio, has ordered three single-end steel prepayment cars from the Cincinnati Car Company.

Third Avenue Railway, New York, N. Y., has ordered eleven Russell sweepers and four storage battery sweepers through Wendell & MacDuffie Company.

Portland, Eugene & Eastern Railway, Portland, Ore., has ordered two cars from the American Car Company, to be equipped with four GE-216, 50-hp two-motor car equipments.

Charlotte (N. C.) Electric Railway, noted in the ELECTRIC RAILWAY JOURNAL of Feb. 21, 1914, as expecting to purchase six closed city passenger cars, has ordered these cars from the Southern Car Company. Their length over all will be about 38 ft.

St. Paul Southern Electric Railway, St. Paul, Minn., has purchased four 51-ft. interurban cars, including two passenger and two combination passenger and express cars, from the Niles Car & Manufacturing Company. Each car will be equipped with four 70-hp Westinghouse 1200-volt motors with multiple unit control.

United Railways & Electric Company, Baltimore, Md., noted in the ELECTRIC RAILWAY JOURNAL of April 4 as having ordered eighty-five semi-convertible pay-as-you-enter cars from The J. G. Brill Company, has specified the following details for this equipment:

Seating capacity	44	Curtain fixtures,	
Weight (car body)	19,000 lb.	Rex all metal roller	
Bolster centers, length,	18 ft. 8 in.	Curtain material . . .	Pantasote
Length of body	30 ft. 8 in.	Destination signs . . .	Hunter
Length over vestibule,	42 ft. 1 in.	Fare boxes	International
Width over sills	8 ft. 1 in.	Gongs	Dayton
Width over all	8 ft. 5 in.	Hand brakes	Brill
Height, rail to sills,	2 ft. 8 7/8 in.	Heaters	Consol.
Height, sill to trolley base,	9 ft. 1 in.	Headlights	Dayton
Body	wood	Journal boxes	Symington
Interior trim	bronze	Motors,	
Headlining	Agasote	4-GE-200, outside hung	
Roof	monitor	Paint	Felton & Sibley
Underframe	composite	Registers	International
Bumpers	angle-iron	Sanders	Brill Dumpit
Car trimmings	Brill	Sash fixtures	Brill
Control, type	GE type K	Seats, style	Hale & Kil.
Couplers,	Van Dow No. 5 head	Seating material	cane
		Springs	Brill
		Step treads	Universal
		Trucks, type	Brill
		Varnish	Hildreth
		Wheels	33 in.

TRADE NOTES

Hickey & Schneider, New York, N. Y., have moved their offices to 61 Broadway.

R. Thomas & Sons Company, New York, N. Y., has moved from 227 Fulton Street to 61 Broadway.

Standard Paint Company, New York, N. Y., has removed its Boston office from 70 Kilby Street to 6 Beacon Street.

Otis H. Cutler, president of the American Car & Foundry Company, has been elected a director of the New York Telephone Company.

Fort Worth & Denton Interurban Railway, Fort Worth, Tex.—Stockholders and directors of this company have decided to sell this railway provided a satisfactory bid is received. The specifications and profiles are complete and are now on file in the office of the chief engineer. The cross-sectioning has been completed as far as Haskell. The length of the line is approximately 34 miles. E. E. Baldrige, Fort Worth, president. [E. R. J., April 18, '14.]

San Antonio & Austin Interurban Railway, San Antonio, Tex.—Right-of-way has been secured and preliminary arrangements are being made to soon build this 27-mile electric line between Austin, San Antonio and New Braunfels. Vories P. Brown, president. [E. R. J., Feb. 7, '14.]

San Antonio & San Jose Interurban Railway, San Antonio, Tex.—Work has been begun by this company on the West Commerce Street extension in San Antonio.

Wheeling (W. Va.) Traction Company.—Guy Tripp, New York, president of the American Water Works & Electric Company, conferred with the officers of the Wheeling Traction Company, a subsidiary company, recently relative to the beginning of extensive improvements and additions to the traction company. Of the \$6,500,000 secured on a bond issue, a large part will be used in expanding the Wheeling Traction Company's lines.

POWER HOUSES AND SUBSTATIONS

Glendale & Montrose Railway, Glendale, Cal.—During the next few weeks this company expects to purchase one 350-kva to 500-kva motor generating set, 2200 a.c., 600 d.c.

Connecticut Company, New Haven, Conn.—This company has completed its new power house on Pine Street in Norwalk. In it have been installed three motor generator sets and three rotaries, together with transformers, switchboards, etc., 11,000 volts will be turned from the Cos Cob power house into this plant. When ready for operation this power plant will have cost \$160,000.

American Railways Company, Philadelphia, Pa.—This company will place in operation for one of its subsidiary companies new station equipment consisting of a 1000-kw Curtis turbo-generator, a 200-kw rotary converter, six 100 kva and two 300 kva transformers and switchboard. The contract for building and installing this apparatus has been awarded the General Electric Company.

Austin (Tex.) Street Railway.—Work will soon be begun by this company on an addition to its power house in Austin. The structure will be of brick and concrete construction. The cost is estimated to be about \$2,000.

SHOPS AND BUILDINGS

Glendale & Montrose Railway, Glendale, Cal.—During the next few weeks this company will award contracts to construct the following buildings: one carhouse, 40 ft. x 100 ft.; two freight depots, 30 ft. x 30 ft., and one passenger station, 20 ft. x 30 ft.

Springfield (Mass.) Street Railway.—Plans are being considered by this company to build a new carhouse between Carew Street and Bond Street in Springfield.

International Traction Company, Buffalo, N. Y.—This company's interurban depot in Buffalo has been moved from the basement of the German-American bank building on the south side of Court Street at Main Street to the basement of the Western Savings Bank on the north side of Court Street at Main Street. The new quarters will be used until the new terminal in Franklin Street is ready.

Texas Traction Company, Dallas, Tex.—Plans are being made by this company to build a new terminal station in Denison.

Southern Traction Company, Dallas, Tex.—A new passenger station has just been completed by this company at Comal and Jefferson Streets in Dallas.

West Virginia Traction & Terminal Company, Wheeling, W. Va.—This company is now building a new passenger station at Wheeling Park.

Ohio Valley Electric Railway, Huntington, W. Va.—During the summer this company plans to build a new terminal at Eighth Street and Fourth Avenue in Huntington. The structure will be two stories and will consist of waiting rooms and offices. The cost is estimated to be about \$60,000.

C. O. Mailloux, New York City, N. Y., consulting engineer, has removed from 90 West Street to 20 Nassau street, telephone number 131 John.

Ingersoll-Rand Company, New York, N. Y., has appointed R. C. Cole to a position in the pneumatic tool department of its Chicago office.

MacArthur Brothers Company, New York, N. Y., engineer and contractor, has moved its Chicago office to Room 1892, Continental & Commercial Bank Building.

Welding Materials Company, New York, N. Y., has removed from 149 Broadway to the Engineering Building, 114 Liberty Street, telephone number 3213 Rector.

J. G. White Engineering Corporation, New York, N. Y., has appointed Douglas I. McKay, until recently police commissioner of the city of New York, as first assistant to Gano Dunn, president.

Westinghouse Lamp Company, New York, N. Y., has appointed F. N. Kollock, Jr., until recently district manager for the Westinghouse Electric & Manufacturing Company at Seattle, Wash., as treasurer, with office in New York City.

Taylor-Wharton Iron & Steel Company, High Bridge, N. J., Wm. Wharton, Jr., & Company, Inc., Philadelphia, Pa., and the Tioga Steel & Iron Company, Philadelphia, Pa., have moved their Chicago office to room 1880 Continental & Commercial Bank Building.

Van Dorn & Dutton Company, Cleveland, Ohio, has opened branch offices at 1007 North Alameda Street, Los Angeles, Cal., and at 515 Mission Street, San Francisco, Cal. The Los Angeles office is in charge of H. E. Borland, the San Francisco office, W. B. Wilson, district sales manager.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has appointed Walter D. McDonald, formerly branch manager at Minneapolis, as district manager at Seattle, Wash., succeeding F. N. Kollock, Jr. Curtis C. Curry has been made branch manager at Minneapolis, succeeding Mr. McDonald.

J. Sutherland Warner, inventor of the Warner non-parallel axle, recently arrived at New York from abroad. Mr. Warner will make an extended business trip throughout this country, in connection with the introduction of the Warner non-parallel axle to double-truck cars. During his stay here he will make his headquarters with the Wendell & MacDuffie Company, manufacturers' agents, 61 Broadway, New York.

William R. Garton, New York, N. Y., has opened an office in suite 706-707, 299 Broadway, where he will conduct a sales engineering business. Mr. Garton has taken the eastern sales engineering agency for the products of the Root Spring Scraper Company, Nichols-Intern Company, J. F. Hodgkins Company, Monarch Refillable Fuse Company and the W. J. Baker Company's lock washers. Mr. Garton will continue to represent in an engineering and expert capacity some of the large interests with whom he has been associated for some time.

Clark Electric & Manufacturing Company, New York, N. Y., has just made a second shipment of seamless copper splicing sleeves for use on the U. S. Government transmission lines in the Panama Canal zone. Other sleeves and a large number of the company's patent insulator clamps will be furnished to the Otter Tail Power Company, Fergus Falls, Minn., to be used on 75 miles of transmission line which that company will build this year. Overhead protective clamping sets for use on railroad right-of-way have been sent to the Rochester Railway & Light Company.

Thayer & Company, Inc., New York, N. Y., United States selling agents for Chillingworth seamless steel gear cases, have appointed the following agencies to represent them: W. R. Garton & Company, who will represent them in Minnesota, Wisconsin and Iowa, including the cities of Omaha and Lincoln, Neb.; Grayson Railway Supply Company, St. Louis, Mo., who will represent them in the states of Missouri (except St. Joseph), Arkansas, Oklahoma, Texas, Louisiana, Mississippi, western Tennessee and western Kentucky, also East St. Louis, Ill.; The Union Electric Company, Pittsburgh, Pa., will represent them in the western parts of Pennsylvania, New York and Maryland and the state of West Virginia.

ADVERTISING LITERATURE

American Electrical Company, Phillipsdale, R. I., has issued a price list of its wire and cables.

Van Dorn & Dutton Company, Cleveland, Ohio, has issued a folder illustrating its railway and mill motor gears and pinions.

National Scale Company, Chicopee Falls, Mass., has issued a catalog and testimonial letter in regard to its accounting machines.

H. F. Keegan Company, Chicago, Ill., has issued a catalog describing and illustrating the Kerwin Detroit rail girder, manufactured by the Kerwin Machine Company, Detroit, Mich.

General Railway Signal Company, Rochester, N. Y., has issued Catalog Section B, Part 7, containing price lists of equipment for its R. S. A. mechanical dwarf signals.

Buffalo Brake Beam Company, New York, N. Y., has issued a catalog describing and illustrating its various types of brake beams and brake-beam parts for freight, passenger and electric car service.

Lombard Governor Company, Ashland, Mass., has issued a card showing the geographical locations of water-plants in New York State which electrically operate locks, on the waterwheels of which fifty-eight Lombard governors are installed.

Fairmount Electric & Manufacturing Company, Philadelphia, Pa., has issued a reprint of a paper entitled "Notes on Grounding of Electrical Systems," by H. P. Liverside, which was presented at the Eighteenth Annual Convention of the International Association of Municipal Electricians, at Watertown, Aug. 19 to 22, 1913.

Consolidated Expanded Metal Company, New York, N. Y., has issued a catalog illustrating its steelcrete guards for protecting machinery and for use in connection with expanded metal lockers in factory washrooms. This company has also issued sheets explaining in detail its universal slab computer for calculating concrete slabs reinforced with steelcrete mesh.

Fairbanks-Morse & Company, Chicago, Ill., have issued a series of catalogs on their motors and generators. Bulletins Nos. 27 and 29 describe their d.c. types CP and TRC motors and generators, respectively. Bulletin No. 2024 describes a c. type B constant-speed induction motors. Bulletin No. 210 describes internal starter motors for two and three-phase a.c. circuits.

Elyria Iron & Steel Company, Elyria, Ohio, has issued a catalog describing its plain and shoulder tie plates both with flat bottom and with longitudinal and transverse flanges, also its types of screw spike plates. Another folder recently issued illustrates its Manhattan compromise or step joints for connecting different size sections of tee rails and for connecting girder and tee rails.

Western Electric Company, New York, N. Y., has issued a special "Office Boys' Number" of its *Western Electric News* for May, 1914, which contains forty pages of contributions relating to and furnished by those who are either at present serving the company in the capacity of office boys or have done so in the past. F. B. Uhrig, western district manager of the Kansas City office, contributes the leading article on the office boy of thirty years ago, and there are pictures of thirty-nine men now holding important positions with the company, all of whom started as office boys.

Sprague Electric Works of the General Electric Company, New York, N. Y., has issued Bulletin No. 41010, describing its Types C and D d.c. motors for all classes of general industrial service. Type C motors are equipped with commutating poles and are especially suitable for high speeds in variable speed service where the range of adjustment desired by field control exceeds 50 per cent above the normal or full field speed of the machine. Type D motors are not provided with commutating poles and are suitable for low and moderate speed ratings, but can also be used for adjustable speed service where the normal or full field speed is low and where the range of increase by field control is not excessive. Another folder recently issued by this company describes its laboratory ozone apparatus.