

Electric Railway Journal

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City Parking Ordinances Should Be Encouraged

THE figures which we were enabled to publish last week on the results of Chicago's anti-parking ordinance throw a surprising light upon this phase of city operation, and it would be well if they could be brought to the attention of every city government in the country. In Chicago, the prohibition of automobile parking on every car-line street in the business district brought about a saving of no less than 25 per cent of the time formerly occupied by all cars in passing through the congested part of the city. This amounted to an average time saving of 3.7 minutes, but on several lines the gain actually exceeded eight minutes per car. Clearly enough, such a condition in general on a line with reasonably frequent headway would mean that cars entering the congested district would be bunched and moving on a short headway. For cars leaving the congested district, however, the reverse would take place, with the result that frequent headway would be given at points of light traffic and lengthened headway at the points where the maximum service would be desirable. On a line requiring sixty minutes for the round trip the maximum time saving effected at Chicago would cause a 13 per cent increase in service without increasing the number of cars on the line, provided only that the rush hour lasted for more than the round-trip time. The passage of such ordinances, like the introduction of the skip stop, is a measure of co-operation between a city government and a railway that results only in benefit to both, and at present an unequalled opportunity is afforded to establish such co-operation.

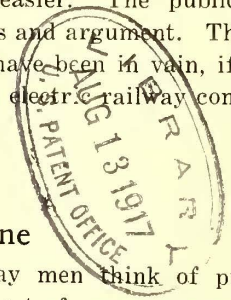
Fundamentals in the Practice of Publicity

MR. LEE, who contributed an article last week on the psychology of publicity, continues his treatment of the subject this week by a discussion on personality in publicity. In the first article he emphasized the necessity of not neglecting the human side of the audience addressed. The typical "lawyer's brief" may be a very convincing argument when presented before a court, but publicity material, if prepared in that form, would not prove very successful. In his article this week Mr. Lee extends his discussion of making publicity material "human" by advocating that personality be put into it. Still a third factor of successful publicity, which Mr. Lee has often dwelt upon, is continuity. The telling of the story should not be left until the pinch comes and when the company is in need. Publicity delayed loses greatly in value. Just now, for instance, electric railway companies are asking for increased

fares. Until they decided to ask for greater income they had given the matter of rising costs and fixed fare very little publicity. Delayed until now it cannot possibly have the value that it could have had before these petitions were filed with the Public Service Commission. No matter how true the story of the electric railway may be of rising costs for labor, equipment and taxes, it is now discounted by many because it is being told in conjunction with an appeal for higher fares. The same story told last year, or the year before last and frequently since, would have made the task of convincing the public of the justness of the demand for increased revenue infinitely easier. The public mind would have digested the facts and argument. The present fare campaign will not have been in vain, if it has no other result than to teach electric railway companies this lesson in publicity.

Belated Publicity and Preventive Medicine

TOO many electric railway men think of publicity work as a last resort, a sort of emergency medicine. And they think of it as something in which they are not fitted to act. They realize perfectly that the public must be informed of the facts in a certain situation, but they don't know how to go about it. "I'm a railway man, not a writer," said one recently, "nor am I a speaker or advertising man. When my child is sick, I do not attempt to doctor it. I call a physician." Now, what the railway man said is true enough, but it calls for some analysis and comment which may show a better way to do things. It is true that the average railway man is not a professional writer. And, true again, he is not a doctor. But of late years we have come to learn that preventive medicine saves a great many more human lives than curative medicine. By preventing the breeding of mosquitoes we prevent the transfer of the yellow fever germ from a sick man to a well man, and yellow fever has lost its standing as a great human scourge. By keeping our drinking water, milk supply, etc., clean, we avoid typhoid fever. By vaccination we prevent smallpox. A public utility that waits until the day of trouble before seeking the good-will and sympathetic interest of the public is like the person who wants typhoid cured instead of having it prevented. The railway side of the question may be absolutely correct, but not all of a cold or uninterested public will accept it. But a public already the friend of the railway is prepared to give a ready hearing to what is said in its support. A person does not have to be a physician to screen his house to keep out flies and mosquitoes. He knows that is good policy so he engages a carpenter to do it. So with publicity. A company decides on keeping the



public informed about the service it is directing in its behalf, and if necessary it gets some help to put the statement into form as advertisement, pamphlet, leaflet, or written statement. If only these statements are simple, direct and authoritative, the main objects are attained. And any man intelligent enough to run a good public service can get these qualities into his publicity material.

Electric Transportation of Farm Products a Benefit to All

IN these days, when the steam railroads are bending all of their energies to the handling of through freight and the electric roads are striving to find those portions of the freight business which they can most efficiently take over, an excellent opportunity exists for the electric roads to develop the transportation of garden products from the farmer to the consumer. A bulletin just issued by the department of market and rural organization of the United States Department of Agriculture, points out some of the essential factors. They are, briefly, a fast but frequent stop service to pick up farm produce within the "commuting" distance, the location of a market for distribution purposes close to the railway terminal, an arrangement by which the shipper or his agent takes possession of the products immediately on their arrival at the terminal, and "organized efforts of the producing community intelligently directed in sympathetic co-operation with the carrier."

The rates charged on the steam railroads for service of this kind, according to the report just mentioned, are somewhat higher than first-class freight rates, yet the steam railroads do not seem to be anxious for it, even in normal times, because of the special features in equipment and treatment required. On the other hand, the chief handicap in the past to the substitution of electric service for steam in this class of transportation, according to the Agricultural Department, has been the lack of adequate and centrally located city terminals and the restrictions imposed on the running of freight cars through the streets. These, however, it seems to us should be merely temporary. If a real need exists for the service and the steam railroads are not in a position to supply it, it must perforce fall on the electric carriers. Freight terminals will be built, as they have been built in Indianapolis, Detroit, and Los Angeles, if there is need for them, and as the chief persons to be benefited by such improved facilities are the consumers, they should not hesitate long in granting freight rights. The bogie that electric freight cars should not be permitted on city streets in reasonable numbers and at reasonable hours might just as well be laid at rest. Electric cars for this service possess a great many advantages over automobile or horse-drawn trucks, and we know of no city where such rights have been revoked after once being granted. This shows that the community appreciates the value of the service rendered. In fact, the Massachusetts Public Service Commission has been conspicuous in advocating broader freight rights for the electric roads in its jurisdiction.

Do Competitions Always Stimulate to Increase of Production?

THE passing of the date, Aug. 1, on which closes the competition for the medal awarded by the American Electric Railway Association for the best paper presented before a company section, suggests a review of the activities of the sections during the year and a query as to the probable effect which the medal competition has had upon these activities. A tabulation of the eighty or more section meeting programs shows a wide variety of method and material indicating a substantial year's work. There are comparatively few papers suitable for entry in the competition, but among these are several of excellent quality. We predict that the winning paper will be well up to the standard set by previous awards, but we doubt if the competition has directly affected their quality. The award will be more a recognition of good work well done because well adapted to local needs rather than a reward for special effort stimulated by the prospect or possibility of such recognition.

The programs indicate clearly that the sections are using their organizations for the laudable purposes of promoting fellowship among the members, familiarizing the employees with the operating problems of the several departments of each company and broadening the outlook of all with respect to local and national issues. Socials, patriotic gatherings and meetings at which company officials spoke, were conspicuous. Papers, as this term is generally understood, were relatively few. But there appears to have been a fine spirit animating the gatherings, especially at those where patriotism had a chance to manifest itself. The sections which do not get the medal may, therefore, take comfort in the realization that their gatherings were possibly best meeting the local situation even if they did not bring out any epoch-making papers. We wish to commend especially such features as the departmental talks in Washington, Connecticut, Denver, Milwaukee and Manila; the educational lectures in Chicago; the classwork in Toledo; the power plant visit in Newark and the sociability in Hampton, Portland and elsewhere. These things will not be recognized by medal awards but they are accomplishments to be proud of.

While it is the duty of section officers to send to the association office copies of all worthy papers presented at their meetings this should be done as a matter of course rather than in the spirit of rivalry for honors. The history of the Edison medal of the A. I. E. E., the Brill competition in car design, and presumably of others also, shows that production is not stimulated directly by hope of reward. For example, the Edison medal was at first intended to encourage worthy research work, but failing in this it is now awarded to honor men of signal accomplishment. Possibly the present or another association medal might be given to the section or the individual, or both, which contributed most to the development of the local members in efficiency and satisfaction in their work, if there was any way of determining how to make such an award.

Making the Public See the Other Side

FORCED to it by rising costs electric railway men now realize that they must teach the public to see their side of the increased fare problem. The 5-cent fare has maintained almost a prescriptive right to existence. It has been a convention, a fetish. It is a habit of mind with the public, and it must be changed. The electric railway man sees nothing sacrosanct in the nickel fare. He must provide for the public a street car service. He must sell the kind of a service the public prescribes, and his only customer is the public. Furthermore, this customer sets his own price.

There is no way in the world to get satisfactory business results out of such a situation except to have the public see that the electric railway company has rights and that its interests and the public's interests are interests in common. The public must be led to appreciate that when a company's expenses are growing faster than its receipts, not only is the company headed toward bankruptcy but the public will be the greatest sufferer from that bankruptcy. It will inevitably mean fewer cars, more crowded cars and cars in worse condition, even if it does not mean the disappearance of some car lines altogether.

Now it is principally the fault of the railway management if the public does not see both sides. It isn't enough that electric railway managers have correct ideas about the railway business. The public's ideas must also be correct. If the ideas of the railway men are right and those of the public are not, the companies simply haven't made the public understand the case. They either have not been frank about it or have not talked in the language that the average man understands.

There's no hocus pocus nor mystery about sound publicity. True, there's a certain technical experience necessary to the preparation of any story for publication, but the important thing, without which no amount of technical expertness will avail one whit, is to have an honest case, and then to state it frankly and persistently. And electric railway men have not appreciated the truth and importance of this. Much of the publicity attempted has been cold and formal. It lacked human touch, and its circulation has been confined practically to electric railway men. The public will sympathize with the railway when it sees the point, but no one in the world can make that point public property but the railway man himself.

The electric railway men haven't done this. They have not had the public's sympathetic interest. The proof of this statement is that every electric railway man feels that his business is under more or less public suspicion. They haven't had the public's sympathetic interest because they have neglected to do the things necessary to get it. This situation can be bettered only by persistent and frank publicity, backed directly and openly by men who are strong in the conviction of the correctness of their business methods and the justice of their case.

The Need for a "Billy" Sunday

THE electric railway business needs a "Billy" Sunday. It needs him to preach the gospel of service to the men in the industry itself. It also needs him to tell the people—in language that they can understand—what the electric railways are doing for them.

The people know "Billy" Sunday, and he knows them. He speaks their own language. He goes to the heart of a subject, not in a roundabout way but straight, fearlessly and without evasion. This explains what he has been able to do for religion.

What "Billy" Sunday has done for the church can be done for the electric railway business. It must be done if a nation-wide epidemic of receiverships is to be averted. There is no time to lose.

The electric railway industry to-day faces a crisis. It has reached the point where it must have more revenue, and it is meeting with opposition when it reaches out for it. Why? Because the public distrusts it!

For years, the industry, like every other ordinary sinner, has been its own worst enemy. It has tried to run its business without taking the public into its confidence. This is about as foolish as trying to run a church without revivals, which can be done, according to "Billy" Sunday, only when a gasoline engine can be run on buttermilk. Yet to-day there are traction managers who marvel that the public should protest when an effort is made to raise fares.

What if the additional revenue is needed? What if the company will go into bankruptcy unless the extra fare is granted? Can the man whose sole conception of the electric railway business has been gleaned while riding to and from work in crowded cars be blamed for protesting the extra charge? How is he to know that operating costs have practically doubled within the last five years?

When the industry finds its "Billy" Sunday, it will find a healthy answer to these questions. It will find, too, that the public, despite what seems to be a callous indifference to utility troubles, is at heart fair. All it demands is a square deal, with the cards face up on the table.

But the time is short. It behooves those who would avert financial disaster to get busy at once and do some "Billy Sundaying" on their own account. In so doing they should remember all the time that "Billy" is a "doer" as well as a talker. Talk without service is so much wasted breath.

In many cases, companies are already giving as good service as possible under unfavorable circumstances. But that fact is not going to be appreciated nor additional revenue made possible for the improvement of conditions until the public has been shown.

"Billy" Sunday has proved that the public is fair-minded at heart and can be reached with the right kind of a story, told in plain speech and backed up by performance. When that fact penetrates the minds of the electric railway managers, the outlook for the necessary increased rates will become brighter.

Southern Pacific Railroad Extends Oregon Electrification

Forty-two Additional Miles of Steam Railroad Line on This Company's Portland Division Have Been Electrified at 1500 Volts, Thus Providing Electric Service Throughout the Major Part of the Fertile Willamette Valley Extending South from the City of Portland

ON June 17, 1917, the Southern Pacific Company placed in service an extension of its electrically-operated lines in northwest Oregon whereby 42.3 route miles (47.5 miles of single track) have been added to the 1500-volt direct-current electrification of its Portland division. The new electrification, which runs almost due south from Whiteson to the town of Corvallis, brings within sight the completion of the company's ambitious plan, undertaken a half-decade ago, to have electric operation for every line in the fertile Willamette Valley, excepting a single steam railroad route for through traffic north and south across the State.

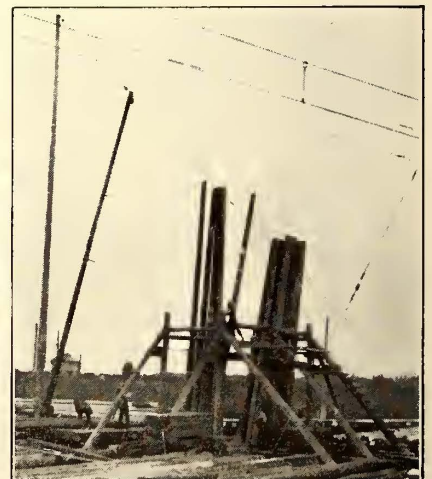
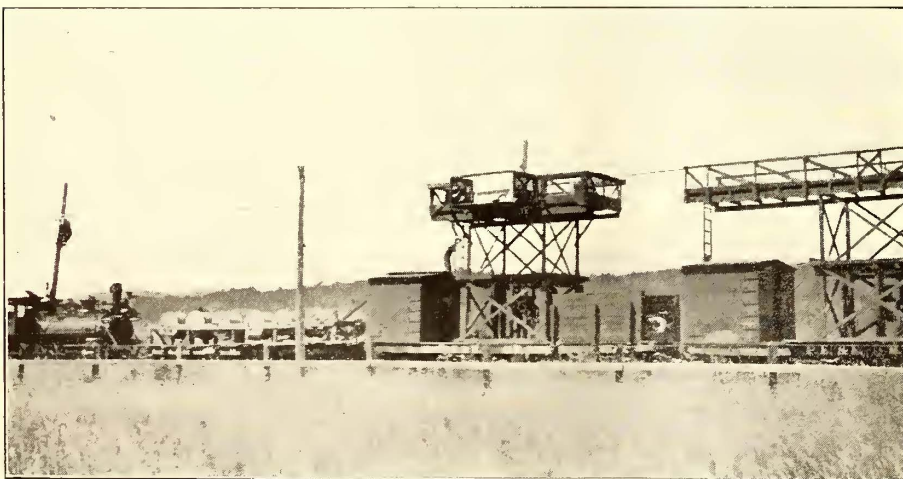
At the eastern side of the valley, which extends for about 100 miles south of the city of Portland, is the Oregon Electric Railway, while the western side is served by the line whose extension has just been completed. Of this latter electrification the first section to be changed over from steam to electric operation was placed in service in January, 1914. This section included the so-called West Side Branch, extending from Portland through the town of Forest Grove to Whiteson; also the Newberg Branch, extending from Portland via Newberg to St. Joseph, where it joins with the first-mentioned line. The section includes also the short Tigard Branch, which connects the two above-mentioned branches by a line between the towns of Beaverton and Cook, making a small loop about 10 miles southwest of Portland. These three divisions make up a total single track mileage of 120. With the latest electrification at the south end of this trackage, there is provided a through route from Portland to Corvallis, the distance via Newberg being 87.8 miles.

In general the new line construction, as shown in the

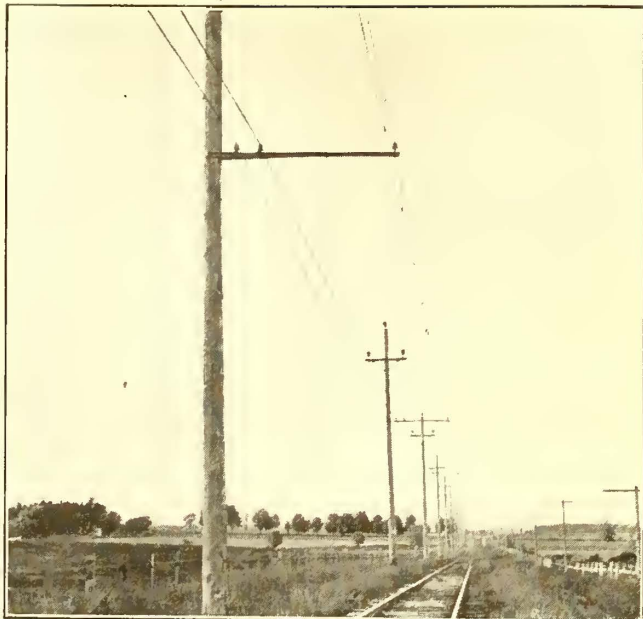
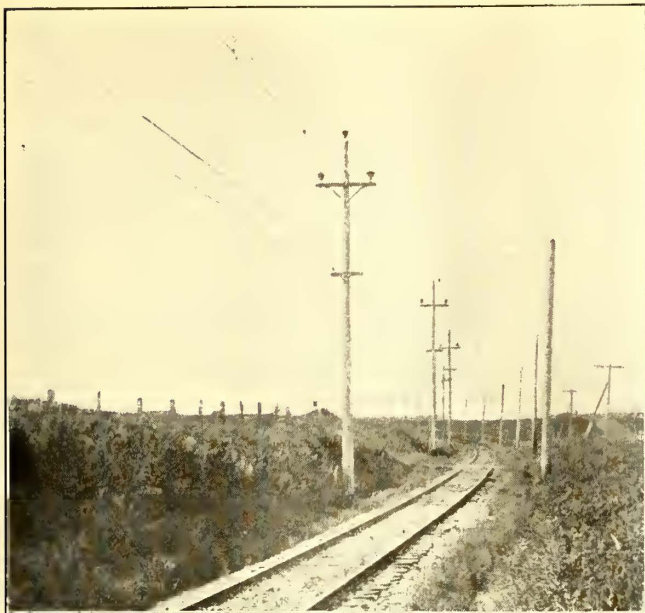
accompanying illustrations, follows general customary catenary standards, similar to those which were used on the first section of the line to be electrified. Such modifications and refinements in details as have been made in connection with the new work are only minor in character and were made as a result of operating experience with the earlier construction. The contact system is made up of a single catenary which has a steel messenger wire supporting a copper contact wire by means of flexible hangers, the latter being in the form of a round steel rod bent into a large circular loop at the upper end and clipped solidly to the contact wire at the lower end. Wooden poles are used, and over part of the route these are extended to support a three-phase high-tension transmission line supplying energy for the two substations that have been installed.

In distributing materials and stringing the messenger wires, trolley wires and feeders, the fullest possible use was made of a work train drawn by a steam locomotive, and a heavy steam-operated locomotive crane with a specially long boom was kept steadily at work during the construction period for loading, unloading and setting the poles.

All of the poles that were used received an open-tank butt treatment with creosote at a temperature of 220 deg. Fahr., this being done by the company at a plant erected especially for this purpose. This plant is shown in an accompanying illustration which indicates the major features, consisting of a framework to hold the poles upright during treatment and a large derrick for handling the poles from the storage piles to the tank and thence to flat cars for distribution along the line. The total number of poles treated at this plant was 2300, and it was estimated that the savings which were made



SOUTHERN PACIFIC ELECTRIFICATION—WORK TRAIN WITH PLATFORM CARS ENGAGED IN STRINGING TROLLEY AND MESSENGER WIRE; TREATING PLANT CONSTRUCTED FOR CREOSOTING BUTTS OF POLES



SOUTHERN PACIFIC ELECTRIFICATION—TYPICAL OVERHEAD CONSTRUCTION ON TANGENTS AND ON CURVED TRACK

in the cost of pole treatment by doing the work locally paid many times over for the cost of the temporary installation.

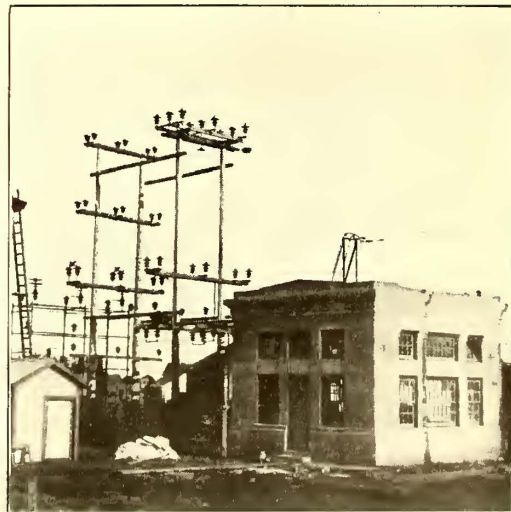
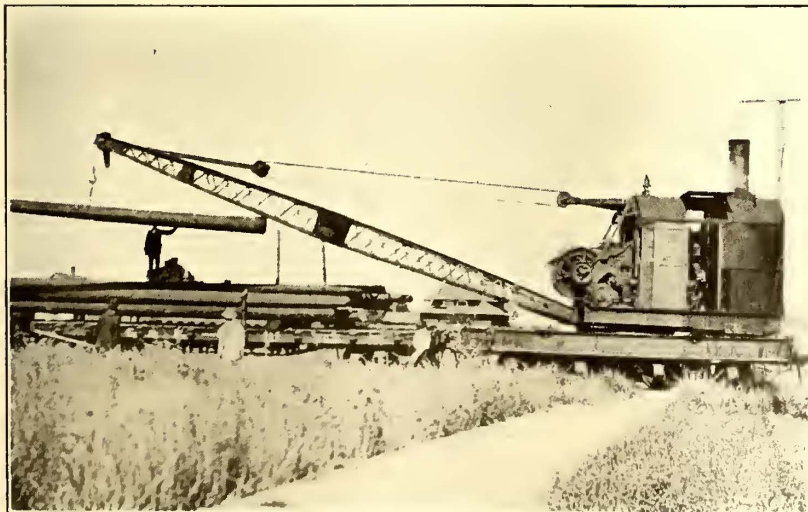
After distribution along the line, the poles were framed on the ground, and all material was assembled on them complete. They were then set up in the pole holes by the locomotive crane with a minimum of manual labor. Poles for use on sections of the route where the transmission line is installed are 50 ft. long, but where the poles carry only catenary construction they are 40 ft. in length. The standard spacing is 150 ft., this interval being maintained except on the sharper curves.

On tangents, steel bracket arms made up of a pair of horizontal angles fastened back to back are used to support the catenary, the supporting insulators for the messenger being set on top of the arms. The arms also carry over the greater part of the new line two feeders, each of 636,000-circ. mil aluminum cable. These feeders are supported on insulators mounted on the bracket arms close to the poles. The transmission line is carried on No. 341 Locke insulators that are supported on

crossarms near the top of the poles. These high-tension insulators are mounted on Peirce forged-steel pins and Peirce crossarm saddles over the wooden crossarms, which are held square with the poles by steel angles bent to proper shape.

On curves too sharp to permit retention of the bracket-arm type of support span construction is installed. In addition, pull-off wires are used where necessary. In all cases double insulation is provided between the live contact system and the ground, including wood-strain insulators on the span wires and on the guys, where these are used.

The messenger wire that supports the copper contact wire is made of 7/16-in. steel strand with a tensile strength of 15,000 lb., and the trolley wire is standard No. 0000 gage, this being suspended from the messenger cable by round steel hangers at 15-ft. intervals. In the erection of this catenary construction one entire span was clipped up at one time, four platform cars being coupled together in the work train for this purpose. The average time to clip up a span in this way was one-and-one-half minutes, including movement of



SOUTHERN PACIFIC ELECTRIFICATION—LOCOMOTIVE CRANE USED TO HANDLE POLES; VIEW OF SUBSTATION AT MC COY DURING CONSTRUCTION PERIOD

the work train, and as a consequence extraordinarily rapid work was accomplished.

POWER EQUIPMENT

For the supply of energy to the new extension substations have been erected at McCoy, about 8 miles south of Whiteson, the north end of the new extension, and at Wellsdale, about 26 miles still further south, leaving a distance of about 8 miles to the southern end of the extension at Corvallis. These substations receive energy at 55,000 volts, three-phase, 60 cycles, and convert it into direct current at 1575 volts by means of synchronous converters in series. Each substation contains one 1000-kw. unit, consisting of two 500-kw. machines wound for 787.5 volts and connected in series on the direct-current side. The alternating-current supply is stepped down from 55,000 volts to 580 volts by three-phase, water-cooled, outdoor-type transformers, the secondaries being connected in double-delta and the primaries in star. Outdoor-type 55,000-volt lightning arresters are used. The converters and transformers were furnished by the Westinghouse Electric & Manufacturing Company, and the switchboards and lightning arresters by the General Electric Company.

In addition to the electrical machinery above outlined, each substation contains a motor-driven air compressor for blowing out the converters and for other uses about the station, and there is also a motor-driven triplex pump for keeping up the supply of cooling water for the transformers. Owing to the moderate size of the equipment that is installed, the substation buildings are of minimum height. Their design provided for sufficient elaboration in architectural detail and window arrangement to eliminate the inartistic features so frequently found with structures of reinforced concrete, of which material the substations are built.

Energy for the primary supply of power is purchased from an outside source in the town of Salem, which lies some distance to the west of the middle of the new extension. Consequently a transmission line, 10.7 miles in length, has been built between Salem and the town of Gerlinger through which the railway passes. From this point the transmission line is strung along the right of way on the poles supporting the overhead construction, extending north and south from Gerlinger to the substations at McCoy and Wellsdale. The total length of 55,000-volt line is 34.4 miles.

Mileage Rate System Sought

Boston & Worcester Seeks More Revenue—Asks Authority to Equalize Rates and Lengths of Rides by Changing from Zone to Mileage Basis

THE Massachusetts Public Service Commission held hearings at Boston on July 16 and 25 upon an increase in fares for the Boston & Worcester Street Railway. In his opening statement G. W. Cox, counsel for the company, said that in its fifteen-year life the earnings of the railway had never been sufficient to yield an adequate return upon the capital authorized by the Railroad Commission. The schedule now proposed is calculated to yield an increase in revenue of \$90,000, or about 10 per cent. In the main it seeks equalization of rates.

The company proposes to install a mileage system of

rates in place of the present zone system with a 6-cent fare unit. The minimum rate of fare is to be 6 cents for 3 miles or less, with a charge of 2 cents per mile for each additional mile or fraction thereof. It is proposed to sell round-trip tickets at 15 per cent discount from two one-way rates, good between the principal points and the eastern terminus of the line at Chestnut Hill. It is also proposed to sell 100-mile books at 15 per cent discount from the regular rate, good anywhere on the system, with a minimum charge of three mileage coupons for any single fare paid. Pupils' tickets are to be sold in lots of 30 miles at one-half the regular tariff rate.

The investment and working capital on Dec. 1, 1916, was \$5,205,620. The total revenue requirements, covering operating expenses, taxes, depreciation and a 6 per cent return, are \$920,563. The 1916 total revenue was \$823,136, representing a deficiency of \$97,427 below the requirements. Coal cost in 1917 will show an increase of about \$45,000. Material and labor costs also bid fair to rise still higher. Operating expenses in the last eleven months increased \$52,000, and operating

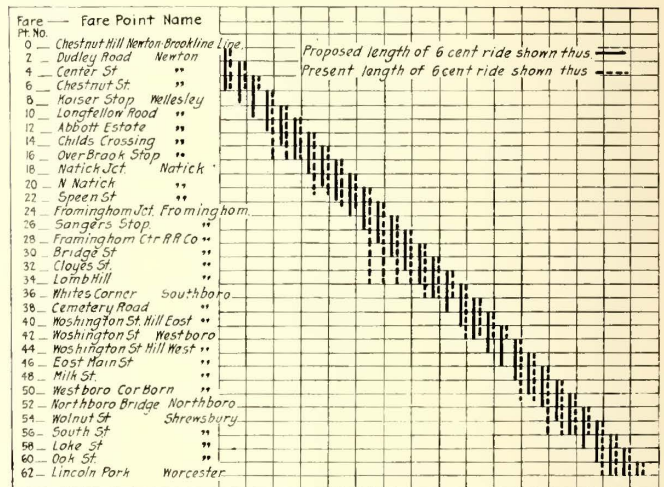


CHART SHOWING INEQUALITIES OF PRESENT 6-CENT FARE COMPARED WITH PROPOSED 6-CENT FARE

revenue increased only \$19,000. For the last eight years the stockholders have received less than 2.75 per cent on their investment.

The company presented charts showing in graphic form the tariffs existing between all fare points on the basis of the present and the proposed fares. Under the proposed schedule there will be twenty-nine fare points on the main line in the 31.15-mile trip from Chestnut Hill to the terminus in Shrewsbury. These will be twenty-nine 6-cent minimum rides. At present there are twenty-three 6-cent and six 12-cent minimum fares on the main line between the points mentioned. The new schedule shows many reductions in fare as well as increases, for the company plans to equalize the rates and the distances to which they apply. The accompanying chart shows the present and the proposed lengths of ride for 6 cents. On the present schedule the one-way fare between Worcester and Boston (excluding the two 5-cent fares on the city systems at the ends of the Boston & Worcester Street Railway) is 50 cents. This is to be increased to 62 cents on the mileage basis. The competition railroad rate is \$1.04, as compared to the one-way trolley total rate of 72 cents. Round-trip tickets are to be sold only at authorized

agencies. Conductors will furnish passengers with checks covering their designated destinations.

C. D. Emmons, vice-president and general manager, said that it is not the present intention of the company to screen or remodel its open cars in order to prevent over-riding. About 25 per cent of the service is with open cars and 75 per cent with semi-convertible cars.

Mr. Emmons was of the opinion that the work of the conductor will be less difficult than at present on account of the elimination of fare collections in each zone through the mileage check system. Remodelling of cars had not been necessary on the Chicago, South Bend & Northern Indiana Electric Railway, with which Mr. Emmons was associated before coming East.

D.U.R. Triples Freight Handling Capacity

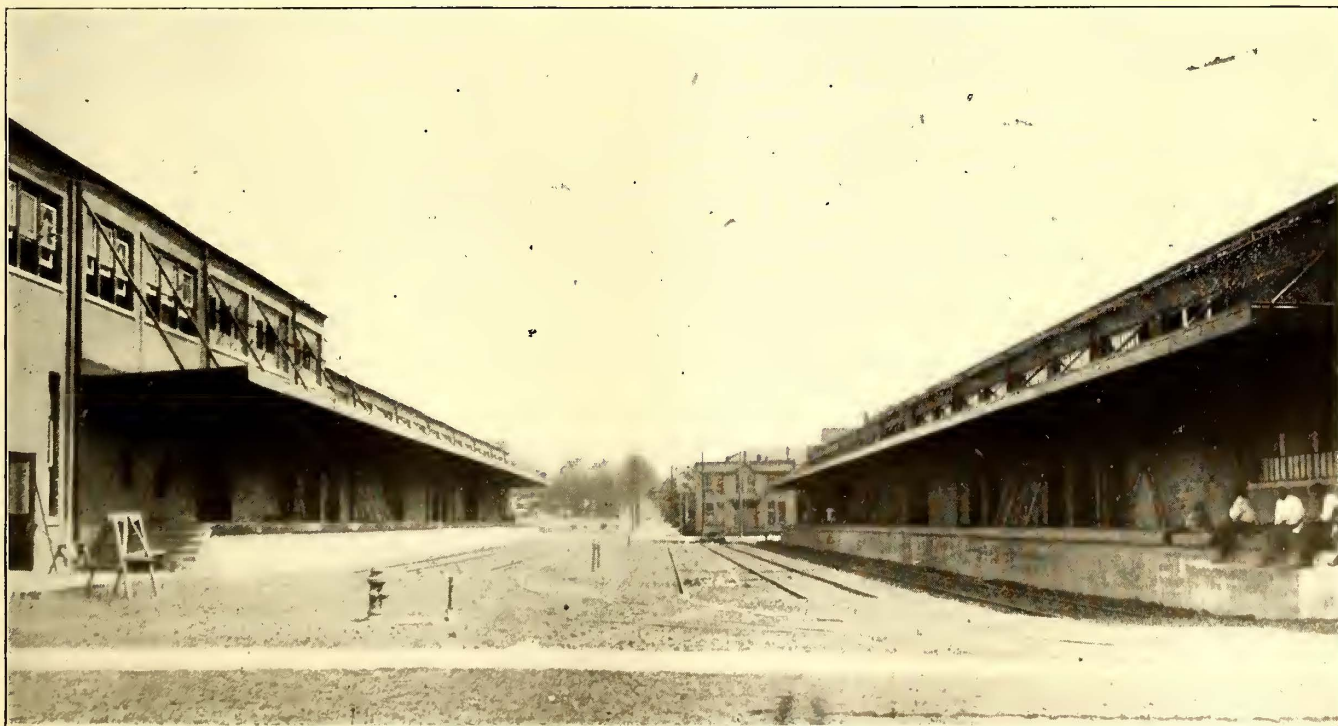
A Spacious New Freight Terminal in Detroit, Including Two Specially-Designed Buildings, Will Materially Reduce Cost of Handling Freight Besides Providing Accommodations for the Increased Volume of Business to Be Expected with the Introduction of Improved Facilities

A NEW freight terminal for the city of Detroit has just been placed in operation by the Detroit United Railway to supersede its original somewhat crowded facilities. Although the sale to the Pennsylvania Railroad of the land where the present freight house is located really precipitated the building of the new terminal, yet the improvement was necessary, and more than justified by the marked congestion which prevailed. Conditions had reached the point where the great amount of traffic through the old terminal necessitated a considerable rehandling of shipments in order to make deliveries, and this, of course, added greatly to the terminal costs. The company was also forced to issue embargoes from time to time in order to clear up the congestion. This, and the delay to the teams of the shippers in discharging and receiving commodities, caused a loss of available business which the electric line will now not only be able to secure, but which will flow to it in increasing volume owing to the promptness with which teams and trucks will be released from the freight house, coupled with the faster-

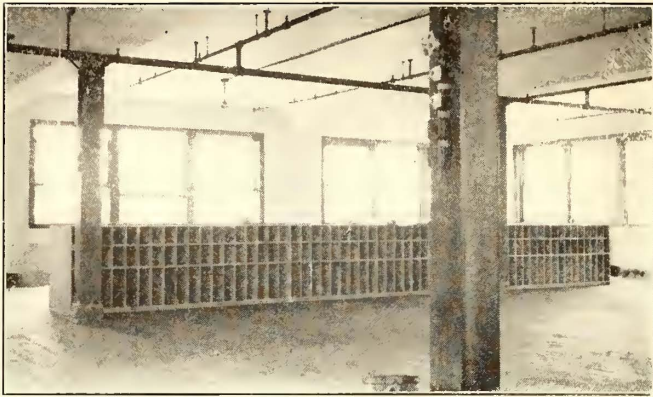
than-express service which has been consistently given for goods in transit.

The new terminal is located on the east side of the city, just outside the 1-mile zone from the city hall. This situation is convenient and reasonably central to many manufacturers and wholesale jobbers. Shippers on the west side of the city will temporarily have a rather long haul, but this condition will be alleviated within the year by the construction of another similar and slightly larger freight terminal, $1\frac{1}{2}$ miles to the west of the city hall, on which work was begun June 15.

In the *ELECTRIC RAILWAY JOURNAL* for April 21, 1917, were shown the general layout and cross-sectional view of the East Side terminal. This includes an inbound freight house, 60 ft. x 405 ft., and an outbound house, 45 ft. x 405 ft. These two buildings and the five-track space between them occupy one entire city block, the streets along either side serving as the team and truck way for the station. In addition to this block, one-half of the next block beyond, from the street to the alley line, is utilized for storage space and for loading



DETROIT FREIGHT TERMINAL—VIEW SHOWING TRACKS BETWEEN INBOUND AND OUTBOUND FREIGHT BUILDINGS



DETROIT FREIGHT TERMINAL—CABINET FOR CURRENT RECORDS ON SECOND FLOOR OF OFFICE

directly from wagons into the cars. On this piece of ground are four team and storage tracks, 600 ft. long, which connect directly with the tracks between the two buildings. A 20-ton wagon scale is installed at the front end of this open yard. Here also will be constructed immediately an automobile loading platform, an open platform for storing empty oil barrels and other empty containers, etc., and a covered milk platform. This open yard will not only provide space for efficient use at present for loading direct from trucks to cars, but also provides space for future expansion of the buildings when the present floor space shall have reached its capacity.

Both buildings are of red-brick and timber construction, with a two-story office section at the front end of the inbound house, the remainder of the two buildings being of one-story height and having monitor-type roofs. The structures are protected throughout by an automatic sprinkler system. On the track side of each building is a concrete platform 8 ft. wide, covered with a canopy which slopes back toward the building wall, from which it projects 11 ft., thus extending well out over the car roofs, and eliminating very largely the drippage of water onto the freight as it is wheeled into the car. The five tracks between the two buildings are laid on cinder foundation, and will be used two on each side for the cars in process of loading and unloading, leaving the center track free for through movement of cars, although this, too, may be used as a loading track if necessary.

THE OUTBOUND FREIGHT HOUSE

The outbound freight house is two bays wide, a total of 45 ft., with practically continuous doors on the track side and pairs of doors with a 35-ft. storage space between on the receiving side. These doors are of wood construction, and counterbalanced so that they may be lifted easily. The floor inside the building is made up with a concrete base, on which an asphalt cushion and binder, and a layer of 3-in. plank are laid. On top of this is a layer of 1-in. tongue-and-groove hard maple flooring. This construction was adopted because of the long life expected from it and because of the fact that it is comparatively noiseless for trucking and not so hard on the men's shoes and feet as cement. High tables, 16 in. x 24 in., are placed at each door on the receiving side for the use of the checkers.

The continuous windows on both sides of the monitor roof and the large side windows make the building

particularly light and airy. The upper windows are mechanically operated from chains at several points through the room. Artificial lighting is supplied by large type C lamps in enameled steel reflectors, installed one in every other bay on each side of the center posts, and staggered on opposite sides. All wiring is in exposed conduit.

At the far end of the outbound building a chain hoist is mounted on a monorail extending across the building, and is used for handling heavy shipments. The end bay has been partitioned off temporarily for the use of the Adams Express Company. At the opposite or front end of the building is a baggage room, 45 ft. x 30 ft., in which a 1000-lb. American Automatic scale is installed. Just behind the baggage room is a hot-and-cold room, approximately 20 ft. x 20 ft., built with cork-and-plaster walls, and utilized principally in the winter for protecting perishable shipments from freezing while awaiting shipment. This room may be heated from the steam coils installed on the side walls.

THE INBOUND FREIGHT HOUSE

While the width of the outbound freight house was made as narrow as consistent with providing the necessary amount of floor space within the length permitted by the property (in order to keep the trucking distance down to the minimum), the inbound house was made as large as the area of the property and the appropriation for the building would allow. The amount of freight accumulating in the outbound freight house can, of course, be very largely controlled by the railway company itself, while the accumulation in the inbound house is dependent upon the consignees, and therefore involves the need for much greater storage space. This accounts for the 60-ft. width of the inbound building as compared with the 45-ft. width of the outbound building.

With the exception of width, the inbound freight room is a duplicate of the outbound freight house. The floor, roof, daylight and artificial lighting, general construction, fire protection, etc., are the same. The hot-and-cold room in this building is of the same type of construction, but is made larger to accommodate the greater accumulation of freight, and is more used,



DETROIT FREIGHT TERMINAL—FRONT ENDS OF BUILDINGS HOUSING OFFICES

both in summer and winter, in taking care of the perishables upon arrival.

The hot-and-cold room in the inbound house incloses a space 36 ft. x 44 ft., and is intended to provide enough heat or enough cold to protect any perishable freight which may be received. This room is insulated against the outside temperature by cork walls covered with a special plaster inside and outside. It is equipped with meat racks and other facilities for handling the more common perishables. The cement floor within the hot-and-cold room is equipped with drains so that it may be readily washed out as needed.

The inbound freight room is equipped with a chain-hoist monorail system opposite that in the outbound house, and two American Automatic 4000-lb. scales are installed for checking up on freight weights. Four drinking fountains are installed along the street side of the freight room for the use of the employees and teamsters. The doors on this side of the building are practically continuous, while on the receiving side of the inbound house they are grouped in five pairs, with 35-ft. spaces between for storage purposes, the same as in the outbound house. Timber racks for the storage of long pieces of any kind are installed, two on the inbound-house receiving platform and three on the outbound-house delivering platform, and these are found useful in keeping various long pieces of material off the floors.

A large room on the second floor at the front end of the freight room, just behind the two-story office section of the building, has been equipped with tables and benches, hot and cold water, and other conveniences for the use of the warehouse workmen. This room is finished in white plaster, and this, together with the solid row of windows on the two sides, makes the room very light and airy.

FREIGHT TERMINAL OFFICE ARRANGEMENT

As before mentioned, the front 60 ft. of the inbound freight house is two stories in height, and is utilized for office purposes. On the first floor, entrance is made at the front of the building, through a small vestibule which opens into a large lobby across the front of the building. Four windows of the cashier's office and the windows of the cartage company's office open off this

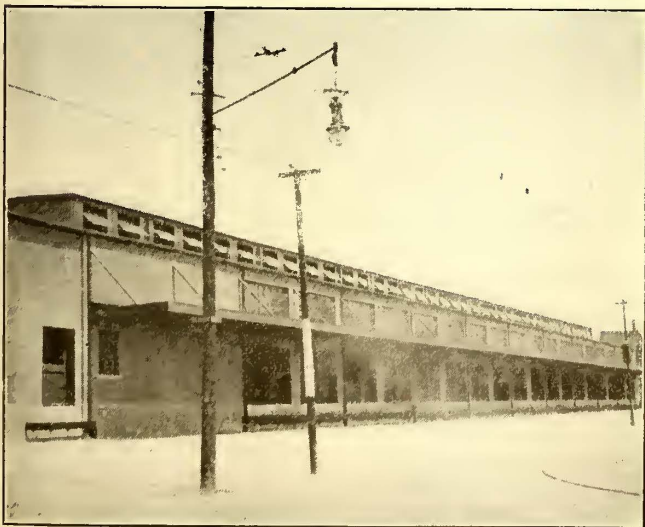


DETROIT FREIGHT TERMINAL—INTERIOR VIEW OF INBOUND BUILDING, SHOWING FOREMAN'S OFFICE AT LEFT

lobby and provide facilities for handling a very large volume of work. From the far end of this lobby a stairway leads to the second floor, where a lobby inclosed by a broad wood rail brings shippers in contact with the local freight agent and the general freight clerks. Two additional entrances are provided on the first floor for the special use of employees. The one on the street side of the building opens into a lobby from which employees may enter the cartage company offices or the first-floor freight offices, and off from which a wide passageway leads into the inbound freight house for the use of the warehouse employees. The entrance on the track side of the building is for the special use of freight conductors. As they enter the lobby on the first floor, there are windows off this lobby through which they may turn in their bills and then go upstairs, where windows off another lobby at the top of the stairs put them in touch with the billing clerks, from whom the outbound bills for their next trip may be received.

On the first floor also are the offices of the express-bill clerk, the freight house foreman, the cashier and the clerks working in these offices. The various offices are separated by wire grille partitions in order to gain the maximum in lighting and ventilation, but the cartage company's office is separated from the railway company's by partitions. Both upstairs and down, the walls of the offices are finished with white plaster and the wiring conduit for the ceiling fixtures is exposed.

On the second floor, except for the private office of the local freight agent, the office is all in one large room. In this space are located the chief clerk and general clerks in the outbound building, accounting, claims, overs and shorts departments, and the stenographers, tracing clerks, filing clerks, etc. A record filing cabinet for current bills, 32 ft. long, is placed in this large room in such a way as to separate the office into an inbound and outbound section. This cabinet is made up in three sections, with pigeonholes 19¼ in., 10¼ in., and 8¼ in. respectively, from the floor to the top. By building the cabinet in three sections it will be possible in the future to separate and place the sections in different locations if this proves more advantageous. Accommodations are provided in the cabinet for approximately six months' records, and the storage of records beyond the capacity of this is taken care of in a room especially equipped with shelving on all four walls and located adjacent to the main office room. This shelving is arranged to accommodate different sizes of records,



DETROIT FREIGHT TERMINAL—TEAM SIDE OF OUTBOUND BUILDING

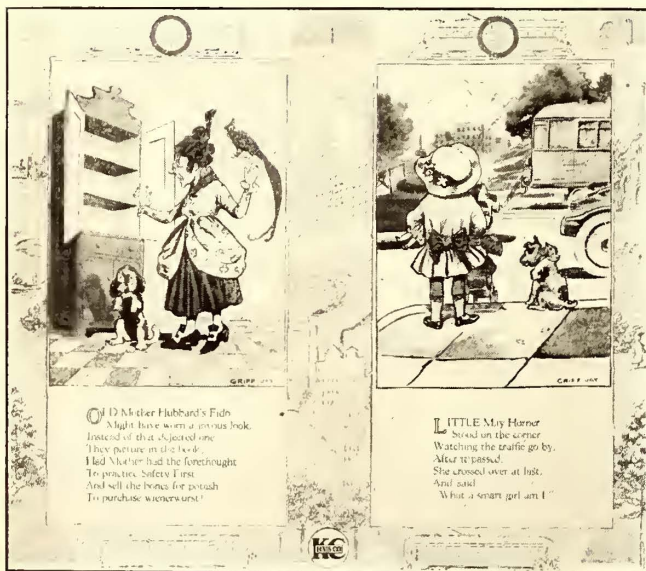
and will take care of old records for from three to five years. In addition to the shelving on the walls there are four sections of shelving in the center of the room, all of open construction. A large skylight, in addition to windows on one full side, makes the room very light and especially fitted for old record work. A binding machine is installed in this room to facilitate the keeping of the records in more compact form.

Windows on three sides of the office section of the building, and a skylight in the center at the back, make the good day-lighting one of the special features of the new terminal-office layout. Specially designed desks for the use of the clerks throughout the freight offices were furnished as part of the equipment. These desks are 48 in. x 60-in. quarter-sawed oak, with flat top and a single drawer on each side. The center drawer was omitted in order to place a brace between the drawers underneath the table. Except for the two drawers per desk, they are simply unusually well-built tables, but their uniformity will add materially to the appearance of the offices.

With the new terminal in full operation it is estimated that the terminal facilities of the Detroit United Railway in Detroit will be increased from three to fivefold. The increase in capacity cannot be measured only by the comparison in floor area, for the elimination of extensive rehandling, due to the better facilities, and ability to segregate shipments for various points, multiply the capacity much more rapidly than the floor area involved increases.

Safety Rhymes at Kansas City

The Kansas City Railways have just published a "safety-first" edition of several of the Mother Goose rhymes for distribution at the end of the school term among all the children in the kindergarten and first



TWO PAGES FROM "SAFETY-FIRST" PAMPHLET OF KANSAS CITY RAILWAY

grades in the city schools. Copies will also be sent to every home in Kansas City where there are children. It is estimated by A. B. Atchley of the publicity department that at least 50,000 copies will be required. The pamphlet contains twelve pages with colored illustrations. Two typical pages are reproduced.

War-Time Cost of Power-House Coal

Data in Graphical Form from Records of Connecticut Company, New Haven, Conn.

THE accompanying coal-cost chart, reproduced from one of a number recently compiled by the power department of the Connecticut Company, puts in tangible form one reason for the increase in the cost of furnishing electric railway service.

In the chart the data for 1915 are averaged for the year, the dash line showing that the monthly average total cost of coal for the Berlin, Bridgeport, Hartford

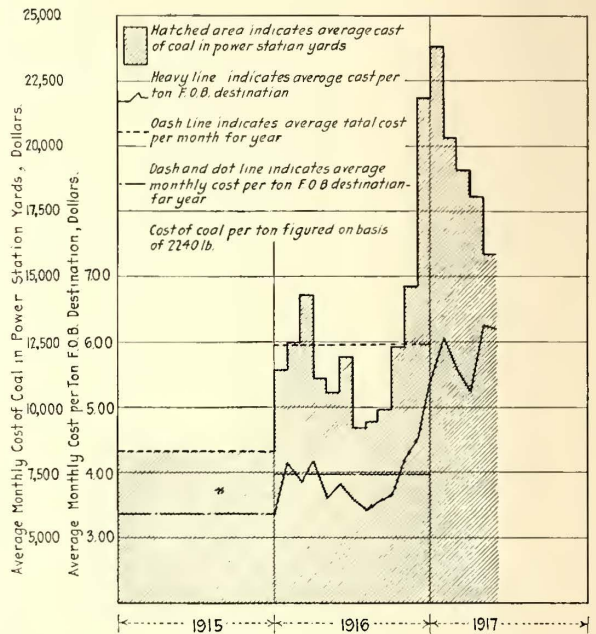


CHART SHOWING COSTS OF COAL AT CONNECTICUT COMPANY POWER PLANTS

and New Haven power plants for which the chart was drawn was about \$8,300. The corresponding unit cost of coal at the yards was about \$3.38 per ton of 2240 lb., as shown by the dot-and-dash line. On May 1, 1917, the unit cost had risen to \$6.25 per ton.

This coal is brought from Pennsylvania and West Virginia, an average distance of about 450 miles. Its heat content is approximately 14,000 B.t.u. per pound. The output of the plants in 1915 was roughly 73,415,000 kw.-hr. and in 1916, 81,363,000 kw.-hr. All contracts for coal expired on April 1, 1917.

It will be noted that the total cost of coal in the yards has been falling off since the first of the year. This is due to the fact that contract coal did not come forward during the winter months.

In view of the fact that the younger men of the country will shortly be called into military service, the management of the Pennsylvania Railroad has decided to suspend, temporarily, the regulation covering the age limit for employment. The rule heretofore in force prohibited the hiring of new employees, in any branch of the service, above the age of forty-five years. Under the new rule, which has been adopted to meet war conditions, persons between the ages of forty-five and seventy years may be employed during the war and for a period of six months thereafter. Inasmuch as such employment is not to be considered permanent, it will not carry with it pension department privileges.

Personality in Publicity

How Electric Railway Companies Should Word Their Notices—Other Suggestive Hints of Ways in Which Electric Railway Companies Can Secure Better Public Relations

By IVY L. LEE

JOHN WANAMAKER'S great success is due more than anything else to publicity, and when I say publicity I do not mean merely the advertising of what he has to sell. He has put his remarkable personality in his advertising in such a way that his pages in the New York and Philadelphia papers command universal attention.

It costs John Wanamaker thousands of dollars every year to talk to the public—not about his wares—but about his personal views of what's going on in the world.

Not long ago he decided to close his store all day Saturday for part of the year. Of course he had to announce the fact that he would close, but that could have been done in but little space. Instead, he printed a signed article telling the public at some length just why he was closing his store. What was the result? John Wanamaker got the credit of starting the Saturday closing for department stores. A number of the large New York stores were the first to take the step, but they didn't tell the public with the rare skill that John W. did.

What John Wanamaker has done to department store publicity every electric railway manager can do to his own. He can put the personality of the management forward in such a way that the people will realize that the men who run their street cars have red blood in their veins, and they are, above all, human in their regard for the public.

Take, for instance, a change in routing that must be made. Possibly it is one that at first may give promise of proving unpopular. How would the average electric railway—the A. B. C. Company—announce it? It is a hundred to one that a sign would be posted in the cars reading like this:

"Effective Oct. 1, 1917. Notice.—Green street cars will run south through to Thirty-fifth Street and return northbound by First Avenue, instead of Broadway."

Could anything be colder? Is it any wonder that people sometimes feel that some electric railway managers sit up nights trying to think of ways to irritate the public? I don't know of a better way to incur hostility than to put the word "Notice" at the top of a statement to the public.

How much more reasonable it would have been if John Smith, the president of the A. B. C. Company, had put small folders in his cars giving all the reasons for the change, showing how it would improve the service, etc. Such a notice should, above all, show the personal concern and regret of the manager that it was necessary to disturb an arrangement which to some had become almost a habit.

An American comedian returned from England not

long ago and told of his cold reception by London audiences. He said his jokes "got over" all right, but they "lay there." And that is just what happens to about 90 per cent of the notices to the public issued by electric railways. They don't "get across"; and then, when the people and the newspapers protest, the management says the public and the newspapers are unreasonable, that they would complain regardless of what was done. That may be true to a certain extent, but at least give them a chance to be reasonable. Take them into your confidence and tell them why you do things and tell them before you do it.

In some places the back of transfers is used for advertising. It would be worth more if this space were used for some personal message or comment from the manager of the company. It should be changed every day if the date is printed on the transfer, or, if the transfers are arranged so that the date is indicated by punch marks, the message should be changed as often as the company can easily arrange to do so.

The John Wanamaker of the old days stood at the door of his store, helped the ladies out of their carriages and gave them a pleasant good-morning. Every one, rich or poor, received a greeting. Now the store is too large for that, so the wise manager adds this same touch of personality through his publicity. That's what the manager of the electric railways must do. The horse-car driver knew all of his passengers, and there was a cheery good-morning for each. And to-day it is equally important that the manager have a way to keep in touch with the public who are using his cars. Unless the management understands the patrons of its lines, how can it expect the patrons to understand the company?

Some time ago the Pennsylvania Railroad—one of the pioneers in publicity—began to issue poster bulletins to the public. They dealt with various topics. They attracted attention and accomplished good, but they brought forth from a number of people one criticism which was deserved. They were too impersonal, too cold. The reason was that the signature at the bottom of the poster was "The Pennsylvania Railroad Company." Later, one of these posters was issued over the signature of the president of the railroad, Samuel Rea, and the effect on the public was very different. People always like to know the individual with whom they are dealing.

In all publicity work by far the most essential thing is that it be kept human. People generally don't care much about gross and net, but if you talk gross and net in terms that mean something to them, you can gain their attention. By combining with this simplicity, consideration and humility great progress can be made in securing the public's good-will.

Joint Interurban Freight Facilities for Indianapolis

A New Freight Terminal Which Covers a 6-Acre Tract Is Now Under Construction—The Freight House Floor Area Will Total 60,000 Sq. Ft., in Addition to Ample Platform Space and About 1½ Miles of Loading, Storage and Team Tracks

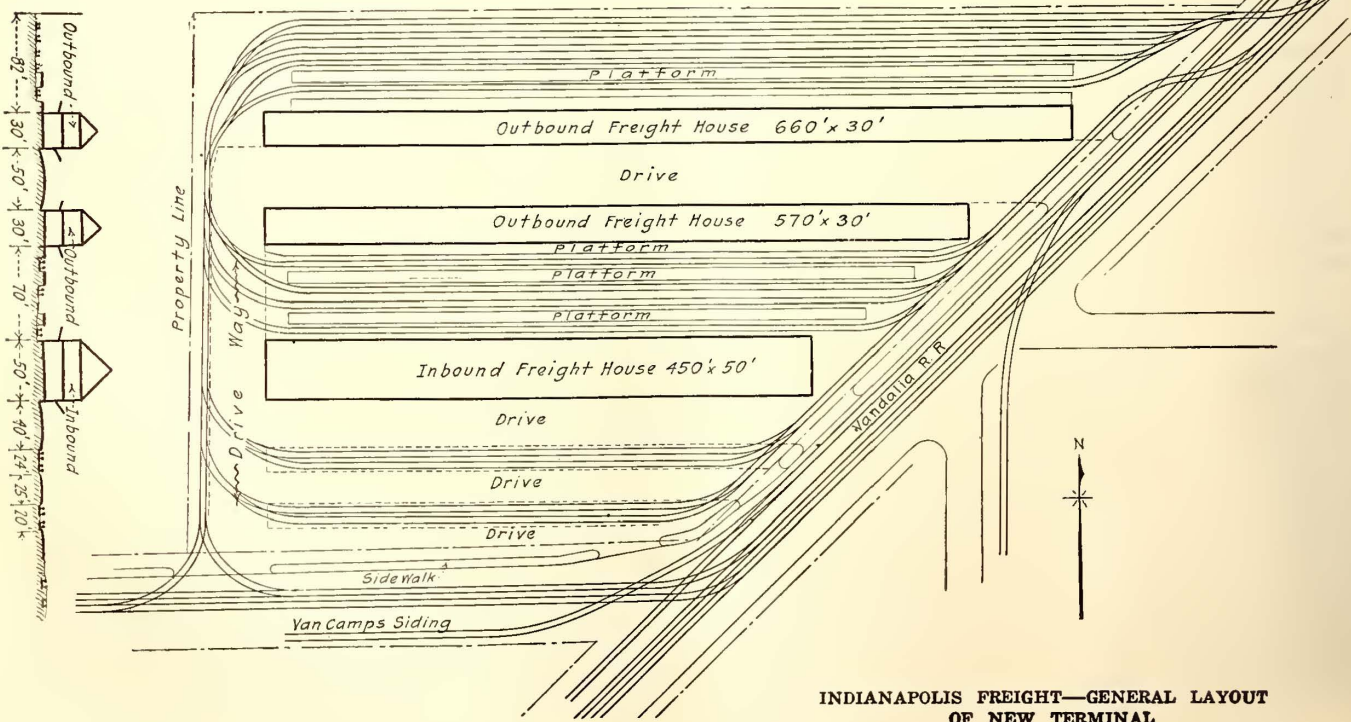
AN electric railway freight terminal that will be one of the largest in the country is now under construction in Indianapolis, the estimated cost being \$500,000 exclusive of the land. It will serve the twelve radiating lines of the Union Traction Company of Indiana, the Terre Haute, Indianapolis & Eastern Traction Company, the Indianapolis & Cincinnati Traction Company and the Interstate Public Service Company, comprising a total of approximately 1100 miles of track without including the numerous connections with other electric railway properties which do not enter Indianapolis but which handle a large interchange of through freight. The new terminal will increase the freight-handling facilities of Indianapolis by four or five times and will alleviate the costly congestion occurring daily with the present terminal as pictured in the illustration on the opposite page.

The new terminal is to be located on a 6-acre trapezoidal piece of ground only a few blocks southwest of the interurban loop in the center of the city and on the same side of the loop as the wholesale district. Although the present freight terminal is located exactly in the center of the city, and the new layout will be several blocks away from this point, yet the advantages of quick unloading possibilities will much more than offset the greater haul which will result in some cases. The quick release of cartage equipment from the freight terminal is of much greater importance in the present day, when motor trucks are in extensive use, than the

distance of haul, for the trucks move so rapidly that the time and expense involved in hauling shipments a few blocks farther is of practically no consequence as long as there are facilities whereby it will not be necessary to keep the trucks standing idle awaiting a turn to unload. Also, when trucks are held, the motor is frequently allowed to run idle and continue the gasoline cost. The important consideration, then, is sufficiency of terminal facilities rather than location of terminal.

THREE FREIGHT BUILDINGS TO BE ERECTED

Three large buildings will be included in the new project. There will be two outbound freight houses, 30 ft. wide and 660 ft. and 570 ft. long respectively, with a 50-ft. driveway between them and tracks on the opposite side of both. The inbound freight house will be 50 ft. wide and 450 ft. long with a 40-ft. driveway along the south side. At the present time, 432 ft. of the 660-ft. outbound freight house only will be built and this will be used in conjunction with the present freight facilities at the traction terminal building. This one house, however, will be of sufficient capacity so that it will be possible to handle completely the shipments of the largest company now using the old terminal, and thus greatly relieve the pressing congestion which now prevails. The remaining buildings will be erected in the near future, it is anticipated, and the entire 6-acre piece of land is being leveled and graded as it will finally appear.

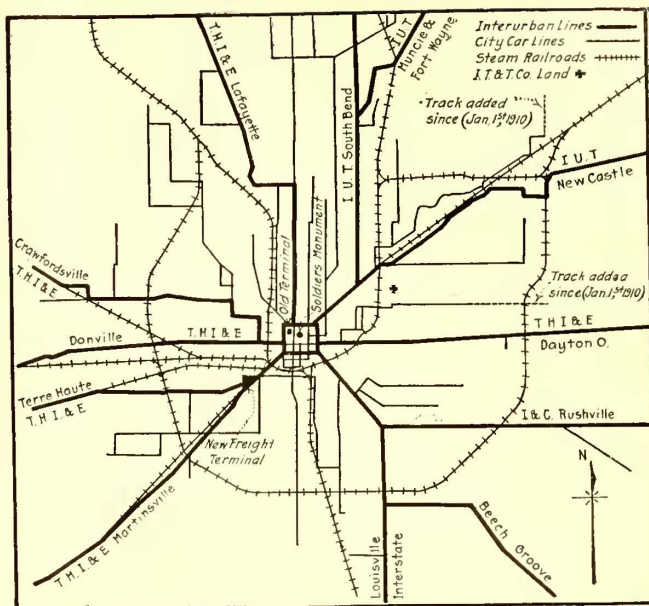


INDIANAPOLIS FREIGHT—GENERAL LAYOUT OF NEW TERMINAL

The buildings will be constructed of "Saraband Chin-chilla" brick varying in color from rough-faced red to slate. Plans call for concrete foundations and steel roof, if the steel can be had, otherwise wooden-truss roofs will be used. The roof will be covered with Federal tile, which are pressed, ribbed, reinforced concrete slabs, 4 ft. long and 18 in. wide, and colored red. The side walls are divided into 16-ft. panels with 6-ft. pilasters and 10-ft. doors, placed opposite on the team and track sides of the buildings. Kinnear rolling steel doors will be installed throughout and there will be windows above the doors on the north walls. The east 64 ft. of the first outbound building to be constructed will be two stories in height with offices on the second floor and with the heating plant and toilet and locker facilities in the basement. This office space will provide record storage and general office space sufficient for one company, and additional office space will later be provided in one of the other buildings.

TRACK AND DRIVEWAY LAYOUT

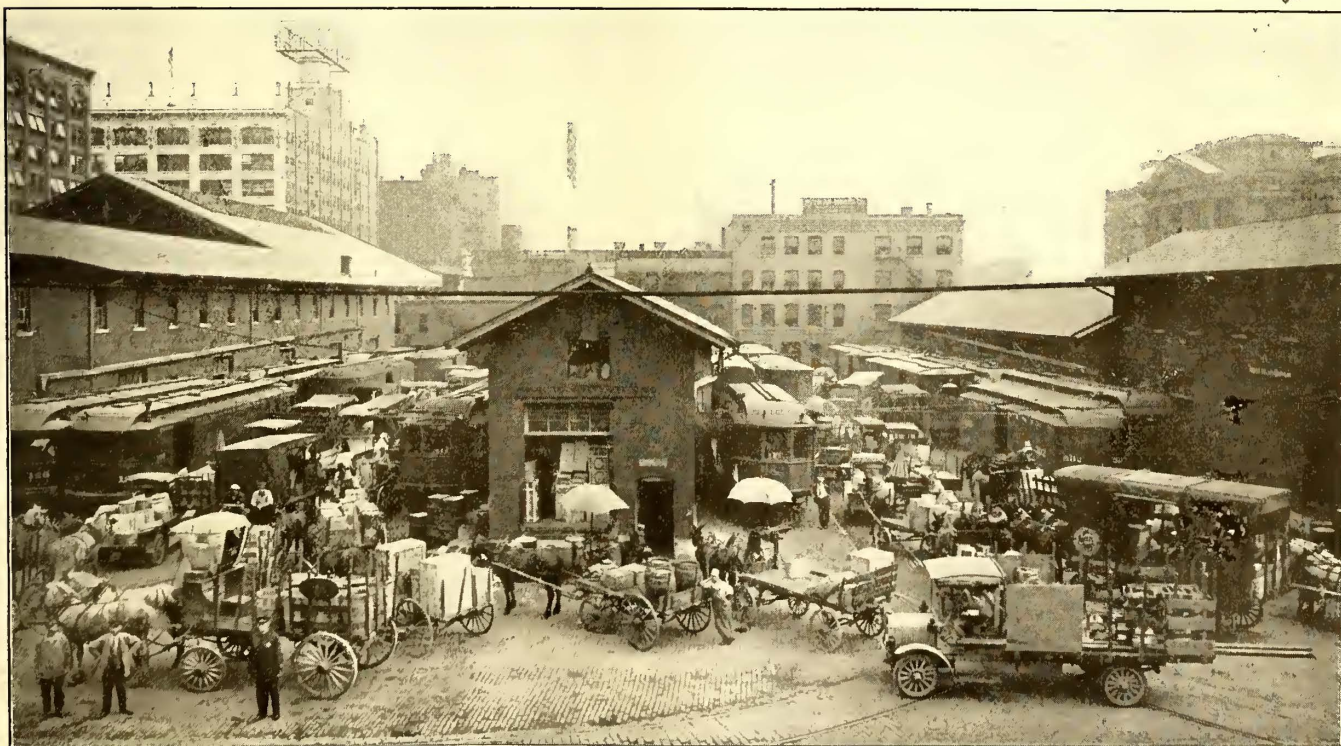
Considerable study was given the consideration of the track layout, building width, driveway areas, etc., by Thomas B. McMath, chief engineer of the Terminal Realty Company and the Indianapolis Traction & Terminal Company, and by other officials of the traction companies. The aim was to provide a general layout which would provide an egress for car and team traffic involving the least interference of one with the other, and also to provide track and driveway areas which would be commensurate with the floor space in the buildings. It was determined that more team way in proportion to the area of the house was needed for electric railway work than for steam road service, because of the fact that a much larger number of trucks and wagons must be handled for a given tonnage of freight at the electric railway terminal than at the steam road terminal. The average load delivered to



INDIANAPOLIS FREIGHT—MAP OF INTERURBAN LINES IN CITY., SHOWING RELATIVE POSITIONS OF OLD AND NEW TERMINALS.

the Indianapolis terminal is less than 1 ton, and this fact gave rise to the wide driveways shown in the general layout.

The track layout in general will involve loop operation with entrance and exit to the various tracks inside the property line along the diagonal front of the property at the southwest corner. Altogether there will be thirteen straight tracks through the yard, these being separated by the buildings, platforms and driveways. There will be five tracks along the north side of the property, of which the first three or four will be used for setting cars for loading from the north outbound freight house, and the outside track will be reserved for through movements. The four tracks between the



INDIANAPOLIS FREIGHT—CONGESTED CONDITION PREVAILING AT PRESENT INDIANAPOLIS TERMINAL

outbound and inbound houses lend themselves to very flexible use. Three of these tracks adjacent to either house may be readily used either for outbound or inbound freight purposes, making the four tracks, with the help of the two platforms, almost equivalent to six tracks. All platforms in the yard extend the full length of the straight track and are of sufficient width (10 ft.) to permit of double trucking. Two pairs of tracks at the south side of the yard will provide space either for the storage of loaded or empty cars, or for team tracks in loading commodities direct from the trucks to the cars. At the present time only the five tracks at the north side of the yard and two tracks past the future inbound freight house will be constructed.

All driveways will be paved with granite block. The track will be laid on gravel ballast with oak ties spaced on 2-ft. centers, using 70-lb. rail on the tangent tracks and 7-in., 91-lb. rail in the special work, the latter being furnished by William Wharton, Jr., & Company, Inc.

A comparison of the present facilities at the old terminal, which includes four buildings, averaging 24 ft. x 195 ft. in dimensions, with those to be provided by the new terminal, is given in the following figures:

	Old Terminal	New Terminal
Area of outbound house.....	12,350 sq. ft.	36,900 sq. ft.
Area of inbound house.....	6,650 sq. ft.	22,500 sq. ft.
Length of inbound loading track....		960 ft.
Length of outbound loading track.. }	2,000 ft.	2,320 ft.
Length of loading track in and out.. }		1,180 ft.
Length of storage track.....		1,400 ft.
Length of team tracks.....		1,340 ft.
Driveway area (track empty).....	32,400 sq. ft.	48,750 sq. ft.
Driveway area (tracks occupied)..	18,000 sq. ft.	48,750 sq. ft.

The area around the old buildings is entirely paved and is used by both teams and cars, and when not many cars are set there is ample space for teams and trucks. However, any switching movement greatly disturbs the handling of freight and the positions of teams, and delay occurs because of these obstacles. This condition will be entirely eliminated by the new terminal facilities.

How the Higher Fare Movement Is Progressing

Notes from the Electric Railway Industry to Show How Applications for Increased Fare Are Being Decided or Argued, and How the Revenue Problem Is Being Explained to the Public

THE question of higher fares for electric railway service is a live one in many communities, as the following articles will indicate. These stories are in addition to several appearing in the regular Traffic and Transportation department of the news section. All in all, the articles indicate that regulating bodies, although they are reluctant to grant relief except in individual cases after the presentation of full evidence, are considering seriously but actively the need of electric railways for higher fares.

Blanket Relief Denied in Missouri

Commission Turns Down Application of Utility Association on Ground that Individual Cases Must Be Presented

ON Aug. 7, the Missouri Public Service Commission denied the application of the Missouri Association of Public Utilities for a blanket order whereby that association would have been empowered to increase the rates of each one of its 303 member companies. In handing down its unwritten decision the commission held that a specific case should be presented by each one of the utilities that is desirous of securing higher revenues.

The commission contended that it has not the right to authorize an indiscriminate increase in rates of each of a number of individual companies on the motion of an association of which these utilities are members. Moreover, it asserted that it has never attempted to establish a rate without first knowing the valuation of the property involved. The board therefore ruled that each member company must make an individual application unless the association can show that conditions

in a number of cities are identical and that a uniform rate exists in these cities.

While the electric railway interests in Missouri were not specifically mentioned in the application, such companies are members of the association and naturally, it is said, were included in the request made. The petition for the 303 companies, which was filed on Aug. 3, sought authority to raise rates to meet "the appalling increase in operating expenses." The application included tabulated data showing, for instance, that the price of coal had increased from 50 cents a ton at the mines in April, 1913, to \$2 per ton in May, 1917, and that the maximum prices for Illinois coal fixed by the government are \$2.75 for mine-run and \$3.50 for domestic sizes.

As regards the prices of general supplies and labor, the petition set forth averages obtained from seventy-six answers to a circular letter sent to utilities in Missouri. A tabulation of these reports showed the following advances in prices during the last five years: Steam coal, 49 per cent; coke, 66.6 per cent; wood, 13.8 per cent; fuel oil, 72.3 per cent; lubricating oil, 24.4 per cent; gasoline, 71.9 per cent; office help, 32.3 per cent; plant labor, 25.4 per cent, and freight, 16.2 per cent. This made an average increase of 47.4 per cent. Coal purchased on the open market because of expiring contracts or failure to obtain supply on existing contracts resulted in an advance of 119.1 per cent. Cases of this character, however, were not taken into account above.

Data collected from the discount sheets of supply houses showed advances in prices during the last three years as follows: Malleable fittings, 78.5 per cent; cast iron fittings, 155.5 per cent; brass valves (regrinding), 78.3 per cent; straight-way valves, cast iron, 93.8 per

cent; 4-in. (10.16-cm.) boiler tubes, 226.4 per cent; 2-in. (5.08-cm.) wrought-iron black pipe, 125.7 per cent; pig lead, 188.8 per cent; waterproof copper wire, 131.4 per cent; pole-line hardware, 110 to 144.4 per cent. The average advance in this class of items amounted to 136.4 per cent.

Explaining the Six-Cent Fare

How the Bay State Street Railway Has Made Plain the Need for and the Effect of the New Rates Granted to It

ELECTRIC railway men in general are so familiar with the idea of applying higher fare units to their lines that sometimes the whole public's point of view in this matter may not be fully appreciated. Because a passenger is a regular patron, it by no means follows that he has any personal interest or knowledge of the company's financial problems. Even after a fare increase has been authorized by a commission, there are unquestionably many people to whom the news of a higher fare unit comes as a distinct surprise. Hence it is very important, even after arrangements have been made for higher fares, to let the traveling public know the reasons for the increase and just how the new units or changes in facilities apply to local lines.

An excellent example of this kind of publicity is afforded by the work of the Bay State Street Railway, Boston, Mass., in connection with the latest fare increase on its system. To make absolutely plain the necessity for the increase and the exact tariff and transfer arrangements approved by the Massachusetts Public Service Commission, booklets were prepared for every division on the road showing the price of service, the reasons for the increases and the need of co-operation on the part of the public in the handling of the new rates. Each booklet contained a foreword by President Sullivan pointing out the nub of the company's financial requirements. This touched upon the rising cost of labor and materials since the beginning of the war (labor alone is getting \$768,000 more a year than in 1914), the company's petition, the compromise rates adopted for six months' trial, and the vital importance of the public's good-will in making the experiment.

The communities whose representatives conferred with the company obtained a modified increase in rates in comparison with the charges which the company considered necessary, and the foreword frankly stated that if the increase does not prove sufficient the company will have to ask for more at the end of the six months' trial period. Finally, it was pointed out that the company intends to use the additional revenue in giving better service by improving the equipment, and in return for public co-operation the management promises to do its best to make the trial schedule a success.

On the Lawrence division, to take a single illustration, the fare changes and foreword required a twelve-page folder. Complete information was included with regard to the use of tickets, transfers and fare collections on every route maintained by the company. Opportunity was given for the purchase of tickets on the basis of twenty rides for \$1 a day in advance of the putting into effect of the new schedule. On all its divisions the company endeavored to make a general distribution

of the pamphlets and to meet the public fairly and squarely. The result, as evidenced locally in a statement of the Lawrence Chamber of Commerce, was most gratifying. This statement urged the public to be as tolerant as possible with the company, pointing out the Public Service Commission's conclusion that the railway must have more revenue if it is to continue in business. Consideration for conductors was urged on the particular ground that these employees have nothing to do with fixing the fare increase. In view of the complications of the system it was noted that some changes might be required in the rates and service as determined by experience, but in general the new plan received the commendation of the chamber.

A most satisfactory state of good feeling appears to have been maintained between the public authorities and the company since the beginning of this year's fare proceedings. But there is no question that the willingness of the public to give the 6-cent fare and ticket arrangements on the Bay State system a satisfactory trial has already been increased by the company's straightforward publicity.

Court Sustains Higher Fares

Connecticut Judge Holds that Waterbury Company Is Justified in Discontinuing Sale of Reduced Fare Tickets

IN a decision rendered in the Superior Court, New Haven County, in the case of City of Waterbury, vs. Connecticut Company on Aug. 3, Judge Gager dissolved the injunction which he himself had granted on July 27 restraining the company from discontinuing the sale of tickets at six for 25 cents or twenty-five for \$1 in Waterbury, Conn., until after an investigation and decision by the Public Utilities Commission.

In his decision Judge Gager says that the State law permits a public utility to raise or lower its rates provided the rates thus established are reasonable, except where the Public Utilities Commission has established a rate. In such a case the company must first apply to the commission to review its rate as to its reasonableness, and any city or any ten patrons of any public utility have the same privilege of requesting a review. The ticket rate in Waterbury was established by the company voluntarily when the road was operated by horses to encourage traffic, and the company was not bound by any contract, charter obligation or other undertaking to continue it. Continuing, the court said "because rates may be raised means nothing if the former rate was special or preferential," and quoted in support of this decision Myers vs. Pennsylvania Company, 2 I. C. R., page 403, and Interstate Commerce Commission vs. Chicago G. W. R. Company, 209 U. S., 108, L. Ed., Vol. 52, page 705. In this latter case the United States Supreme Court said:

"Undoubtedly when rates are changed the carrier making the change must, when properly called upon, be able to give a good reason therefor, but the mere fact that a rate has been raised carries with it no presumption that it was not rightfully done. Those presumptions of good faith and integrity which have been recognized for ages as attending human action have not been overthrown by any legislation in respect to common carriers."

The Connecticut court then reviews the testimony presented by the company on the increased cost of providing the service and concludes: "It is difficult to see when an increase demanded and granted as necessary everywhere else is not equally necessary in the street railway business. The great advance in all the necessities of railroading must be paid by the company, and what was a sufficient income a year ago may be insufficient now."

Massachusetts Fare Cases

Commission Is Active in Fare Matters—Is Sitting Practically Every Week on Pending Cases Concerning Various Railways

ELECTRIC railway revenue cases at present constitute the most important business before the Massachusetts Public Service Commission, and that body is sitting upon these matters practically every week. The board will consider in the near future the question of higher interurban fares on the Bay State Street Railway, Boston, and it is required to present to the next Legislature a report on the Boston Elevated Railway's finances with recommendations as to their betterment.

Hearings have been concluded on the fare petitions of the Middlesex & Boston Street Railway and the Norton, Taunton & Attleboro Street Railway. The proposed increase in the latter case has been suspended until Sept. 1, while in the former the board has approved a six months' trial of a compromise fare increase plan agreed upon by the company and by representatives of many of the more important municipalities which it serves. Arguments in the Boston & Worcester Street Railway fare case were heard on July 18 and 25, as noted more in detail elsewhere in this issue, the board having suspended until Sept. 1 the proposed installation of a zone system based on mile-post divisions.

The Holyoke Street Railway fare case is still before the board, although a decision may be expected soon. With the filing of a fare increase petition last week by the Springfield Street Railway, all the larger systems of the State, except that at Worcester, have appealed to the commission for relief. Meanwhile a general investigation of electric railway finances is being conducted by a legislative recess commission.

Six-Cent Fare for Nashua Lines of Bay State Company

New Hampshire Commission Approves Establishment of Six-Cent Fare in Nashua District—Changes in Transfer Arrangements Also Provided For

THE New Hampshire Public Service Commission has issued a finding approving the establishment of a 6-cent fare unit on the lines of the Bay State Street Railway in the Nashua district. The ruling makes the new rates permanent instead of provisional, as is the case for six months on the urban lines of the company in Massachusetts. Before the decision was reached, an agreement was made between representatives of the municipalities of Nashua and Hudson, N. H., and the company for the institution of the new rates.

As in the recent case before the Massachusetts commission, the new fare unit will be accompanied by the

sale of tickets at the rate of twenty for \$1, each ticket being good for one unit cash fare on the Nashua lines when presented with cover of the same number, except Saturdays after 1 p. m. and on Sundays and legal holidays. All reduced rate tickets except school tickets are to be withdrawn, the latter being sold at one-half the regular rates. Various local changes in transfer arrangements are established.

Under the new schedule the maximum increase will be from 10 to 18 cents on the run from the Nashua transfer limit to the New Hampshire-Massachusetts line, a distance of 7.86 miles. The rate per mile on through fares will range from 1.63 to 4.61 cents, and on local fares from 0.749 cent to 2.35 cents. On cars operated by agreement with the Manchester & Nashua Street Railway from Derry Lane to Nashua transfer station, the present 5-cent fare will remain pending the settlement of a subsequent petition.

Publicity on Higher Fares

Two Exhibits Showing How the Need of Higher Fares Is Being Explained to the Public

MOST of the electric railways which are asking for higher fares are telling the story of their need for it to the public. Some of this publicity as issued in Brooklyn and elsewhere has been mentioned in this paper. Other forms of publicity are shown herewith.

The first of these is a page advertisement published in the Scranton edition of the *Elmira Telegram* for Sunday, Aug. 5.

The second exhibit is the first and third pages of a two-page leaflet, distributed by the Eastern Pennsylvania Railways Company of Pottsville, Pa. It forms

THE STREET CAR!

LET us consider the Street Car. It is the Chariot, the vehicular equipage of the working man. It is the greatest institution devised for the comfort and accommodation of the toiler. It is the only pleasure car he can provide for his wife and his children. It is at his door in the morning when he arises. It is at his shop when the toil of the day is over. It brings him up town or down town. When he is through with it, the poor man does not have to stable it or send it to a garage for repairs. He does not have to clean it or to oil it or keep it in repair. He has not invested a cent of his money in it. Yet the street car is at his service night and day. But for the street car the working people—as they were in the days before the street car—would be huddled together in the cities, endeavoring to rear children in unsanitary rooms, where the sunshine is unknown and where the rents are high. In the matter of home the street car has put the working man on the same level with the man of wealth. The street car permits the poor man to go outside the city, procure a nice plot of ground and build his humble habitat thereon. The street car brings the working man and his family to church and from church. It enables him to get to the cemetery with the body of his neighbor, without the exorbitant cost of a carriage. The street car serves the working man as no other institution on earth. It is his accommodation car and his pleasure car and while he and his family are in the car their lives are insured to their full legal value.

Men in other lines of business have often wondered how a street railway company could stop a car, pick up a passenger, insure the life of that passenger at full value, haul the passenger six or seven miles and do it all for five cents. When we are permitted to understand things, they cease to be wonders. The street railway people are now admitting they cannot give the people the service they have been giving for five cents, and in order to save the service, and advance it rather than push it backward, the managers of our street railway admit they must have another cent on fare. That is, they will ask us to pay six instead of five cents.

When street railway companies employed men for twelve and fourteen cents an hour, when they worked these men as many hours as they deemed profitable, and when they laid off these men when their services had no earning value, and when street railway equipage was sixty per cent. less than it is to-day, then the street car companies could and did make a profit out of the five-cent fare.

But to-day the nickel has but a three-cent value compared with three years ago, in the labor markets and in the iron and construction markets of the country. With laws regulating the hours of labor and with wages advancing year after year, and with street car equipage advanced full sixty per cent., the five-cent fare must soon become a fare of the past.

When the milk man raises milk two or three cents a quart, when the coal dealer puts another dollar on the ton and when the merchant adds to the price of his wares, the extra cost to the buyer is a dead loss. Not so with the extra cent we will be asked to pay for street car fare. The greater part of that cent will go towards improving the street car service, towards extending the street car lines, towards more and better cars. All this has been hampered the past two years through the inability of the company to make ends meet with a five-cent fare. A six-cent fare will mean we will obtain more benefits, that more men will be put to work and that there will be means to make repairs for damages done through mine caves, which caves have caused great losses to the street railway company.

The street car ride is the cheapest ride on earth. It is the safest ride. The street car is the best friend of the poor man. It serves him in many ways. It has served him to the limit and somewhat beyond. It has not asked for the other cent until it has shown him that a five-cent fare is no longer profitable.

Think over the extra cent patiently, reasonably and intelligently and chances are you will not be inclined to frown. Like many other institutions, the war has made the street car financially sick. To restore it to its full health and to the vigor required in this valley, the street car needs the other penny. Let us meet the situation with a smile. Perhaps easier days will come soon, but until then let us keep on smiling and pumping cheer into hearts that are harassed in many ways.

HIGHER FARES PUBLICITY—ADVERTISING IN ELMIRA SUNDAY "TELEGRAM"

THE REASON

FOR

SIX CENT FARES

L. H. Palmer, General Manager of the Eastern Pennsylvania Railways system which operates in southern Schuylkill and Carbon Counties announced today that his company had filed with the Public Service Commission of Pennsylvania, a new schedule of street car fares to become effective August 30th. The new standard fare will be 6 cents as a general rule.

"Our Company held off as long as it could," Mr. Palmer said today, "hoping that conditions would adjust themselves so that it would not be necessary to increase street car fares. We find however, that it is taking more than twice as many nickels to pay our coal bill, for instance as it did three years ago, and there is every prospect that the present high cost of materials of all kinds and of labor will continue indefinitely.

simply cannot supply transportation unless the public pays the cost of it.

"For a number of years street car lines have been faced with rising costs of labor and materials, with no increase in fares. At the same time, the public has demanded constantly improved service. For a while we were able to make ends meet by instituting every economy known to the art, but now expenses have reached a point where the only way out, left, is for us to increase the cost of the service to those who use it.

"We now pay \$1.80 per ton for coal, as compared with 80 cents in 1914. Copper, one of the materials of which we use a very large quantity, cost 14 3-4 cents in 1914 and, at the present time, 38 cents. Rails have gone up from \$32.00 a ton to \$53.00 while the average wages paid, have increased from fifteen to twenty-five per cent in the past three years.

"We have given much thought to the method to adopt to increase our revenue, and after considering all the features of street car service in this territory, we have decided that the fairest way is to make a flat increase from five to six cents without disturbing the present zone system. This system has been developed to suit the habits and conveniences of the peo-

plies have advanced from 30 to 40 per cent since 1914. Steel plates have increased in cost as much as 700 per cent; copper, 120 per cent; steel castings, 100 per cent; steel forgings, 340 per cent; coal, 80 per cent; brass, 200 per cent, etc.

W. G. Kaylor, of the Westinghouse Traction Brake Company, stated that since April, 1917, air brake equipment has increased 27 per cent in price, and James S. Thompson, vice-president of the American Brake Shoe & Foundry Company, testified to a 63 per cent increase in cost of brake shoes. Wm. H. Englund, of the Electric Service Supplies Company, said that trolley wire insulators, etc., have increased 200 per cent in the last three years, owing to increased costs of labor and material.

HIGH LABOR COSTS AND FINANCIAL BURDENS

Prof. Roswell C. McCrea, of Columbia University, testified that labor costs had increased greatly in the last three years, and declared it practically a certainty that still more increases are near at hand. Professor McCrea presented tables showing the rise in wages in recent years.

Prof. Thomas Conway, Jr., of the Wharton School of Finance, University of Pennsylvania, submitted a statement and exhibits, based on reports to the Public Service Commission, to the effect that more than one-half of the petitioning companies were not only paying no dividends but were not even earning the interest on their bonds. Professor Conway stated that the net corporate income of twenty-seven of the twenty-eight companies, despite an increase of total business, had fallen from \$1,143,294 in 1912 to \$423,711 in 1916. Only seven companies showed an increase in net since 1912. Fourteen companies failed to earn their fixed charges in 1916.

Professor Conway testified that only three of the companies had income enough to enable them to market their securities. He stated that even a 6-cent fare would not make up for the loss of purchasing power of the nickel in buying of supplies for electric railways. Unless relief were granted sufficient to make the industry attractive to investors, the companies could not keep up service, buy cars or other equipment, or extend lines, and some would have to go into receivership.

COMMISSION REFUSES TO RULE IN ADVANCE ON JURISDICTION

Mr. Drummond endeavored at the beginning of the hearing to secure a ruling on the right of the commission to grant an increase in fares in special cases where charters and franchises imposed 5-cent fare limits upon the companies. Chairman Van Santvoord answered that the commission was not going to decide this question in advance; that the statute gives the commission the right to make the inquiry now under way, and that the commissioners purposed to go ahead with the taking of testimony and not to enter into an argument about the decision of legal questions. Chairman Van Santvoord said that Mr. Drummond and his associates could file objections. As noted in the issue of July 21, the commission had previously ruled that it had power to grant increases in cases not involving alleged charter or franchise restrictions.

In commenting upon the present ruling, the city rep-

HIGHER FARES PUBLICITY—PAGES FROM POTTSVILLE LEAFLET

part of a publicity campaign conducted by that company and including leaflets, newspaper advertisements, cards in the cars, notices to employees, etc.

General Evidence Presented at Albany

Up-State New York Railways Show Increased Costs of Operation and Financial Condition—Commission Reserves Ruling on Franchise Fare Restrictions

THE hearings before the Public Service Commission for the Second District of New York on the applications of the twenty-eight electric railways for permission to increase passenger fares were resumed at Albany on Aug. 7. The petitions of these companies were made under the auspices of the special committee on ways and means to obtain additional revenue of the New York Electric Railway Association. Petitions were also filed independently by three other lines in New York State, the hearings on which were begun on July 25, as noted in the ELECTRIC RAILWAY JOURNAL of July 28.

At the hearing this week the evidence presented was general in scope, covering the present situation in which all the twenty-eight petitioners find themselves. Municipal representatives argued that no general testimony should be admitted, but the commission ruled that the railways might introduce their case in this way. Corporation Counsel Richard C. S. Drummond of Auburn, representing the committee composed of the different corporation counsels of the State, appeared in opposition to the applications, and Charles E. Hotchkiss, New York, appeared as counsel for the committee representing the railways.

HOW COSTS HAVE GONE UP

In order to show the advance in prices of labor, material and equipment and the general expense of operation, testimony was presented by various experts from manufacturing companies. For example, Edmund P. Waller, assistant manager of the railway department of the General Electric Company, and Roscoe Seybold, of the Westinghouse Electric & Manufacturing Company, testified that all kinds of electric apparatus used by electric railways now costs, on account of increased prices of labor and materials, from 50 to 125 per cent more than in 1914. Labor costs in the production of these sup-

representatives later gave out a statement in part as follows:

"If the commission had ruled that it had no jurisdiction in such cases, several of the petitions would be thrown out, and the cities involved would not have to go to the expense of engaging experts and preparing to combat the claims of the companies. As the commission denied this request, it now becomes necessary for all cities, even though the commission's jurisdiction in certain cases in which several cities are involved has not yet been determined, to go to expense and trouble of preparing to oppose the petitions of the companies.

"We objected to taking general testimony alleged to be applicable to all cases. After this had been overruled, we requested that at the conclusion of the general testimony the commission take up the trial of the case to be designated by us, as involving all the questions desired to be reviewed.

"The commission at first refused this request, stating that it would determine for itself what cities should be considered first. At the close of the day the commission stated it would consent to receive a suggestion from the cities. We have decided to suggest Schenectady, as all the questions of jurisdiction are involved, and every question the commission will have to pass on will be decided in that one case."

A Simple and Effective Transfer

BY C. A. KOLSTAD

Secretary and Treasurer Elmira Water, Light & Railroad Company

We think that we have adopted a transfer that is very simple and effective and therefore that it will be of interest to other utility operators.

On account of the closeness of the various transfer points on our lines our transfers must indicate very clearly the intersection point where they are to be used.

A Spelling "Bee" on Trainmen's Rules

Great Interest and Proficiency in Rule Book Stimulated by Inter-Divisional Contests

MEANS of inducing the trainmen to read their rule books instead of forcing them to do so has been meeting with great success in the Denver Tramway Company. This comprises what in effect is an old-fashioned spelling "bee" at the monthly meeting of the Denver Tramway Brotherhood, with the rules of the transportation department as the point of contest, instead of spelling. This contest has come to be one of the features of these monthly meetings and has proved as entertaining to all the employees as it is keenly interesting to the trainmen. The manner in which the contest is arranged is as follows:

For the contest each month the four division superintendents of the company each appoint eight conductors and eight motormen to represent their division in the next rule book spelling bee. These sixteen men then begin in earnest to study the rule book, and usually they appoint a trainer who gets the men together periodically in the club room and asks them questions. Thus on the four divisions there are sixty-four men each month who are making a special drive on the company rule book. Then two days previous to the contest, the names of the two motormen and two conductors who are to represent each division in the contest are drawn by lot from the group of sixteen. At the contest, the general attorney for the company acts as chairman of the meeting, while the transportation department instructor puts the questions to the sixteen men from the four divisions. One of the company department heads acts as scorekeeper, and the claim agent who is also in charge of safety work, the superintendent of transportation and the publicity manager act as judges. The team winning the highest score is given a prize of \$10, with a second prize of \$5. The prizes, of course, are divided equally among the four members of the winning teams.

In addition to affording a lot of good fun, these contests have brought out many interesting facts. The questions asked are confined not only to the rule book, but also include the locations of all the principal buildings and institutions, parks, clubs, etc., and what car to take to reach them. It is on some of these latter questions that some of the oldest men in the company have fallen down. The losing teams in the contest thus far have shown a very excellent spirit, and instead of being greatly disappointed have declared they would get the money next time.

In selecting the sixteen men to represent their divisions the division superintendents are required to appoint no man who has been in any former contest. This insures that the group of sixty-four men in training on the system each month will gradually take in new men, so that in the course of about six months all the trainmen on the system will know the rules better than ever before. As none of the group of sixteen on each division each month knows who will be drawn for the final contest, it keeps them all "plugging" until within two days of the monthly brotherhood meeting. The spirit with which the men have entered into this contest and the very marked results which are being obtained have been a revelation to the company officials. The idea was introduced by J. C. Davidson, publicity manager.

NEW TRANSFER AT ELMIRA

20¢
 Elmira Water, Light & Railroad Co. B07999
 Good until the current trip for transfer from leaving time to the person at intermediate points on new schedule after time cancelled subject to rules of this company.

FROM		TO		AT		
WEST	EAST	WEST	EAST	WEST	EAST	If no group attached
ELMIRA HOVS.	HORSEHEADS	ELMIRA HOVS.	HORSEHEADS	MAIN & WATER	LAKE & WATER	hour punched in E.W.
FRANKLIN ST.	HOME FOR AGED	FRANKLIN ST.	HOME FOR AGED	PARK PL. & CLIN.	LAKE & DIVISION	MUST BE PROPERLY PUNCHED
WALNUT ST.	SULLIVAN ST.	WALNUT ST.	SULLIVAN ST.	FRANK & PENNA.	LAKE & DIVISION	
W. WATER ST.	MAPLE AVE.	W. WATER ST.	MAPLE AVE.	MAIN & SECOND	EMERGENCY	
CLINTON ST.	PENNA. AVE.	CLINTON ST.	CORNING	RORICK GLENENT	GOOD ONLY AT TRANSFER POINT	READ YOUR TRANSFER
		PENNA. AVE.	WAYERLY			

1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
 1 6 3 1 0 4 7 2 7 8 9 1 0 1 1 2 7 8 9 1 0 1 1 2
 JAN FEB MAR APR MAY JUNE JULY AUG SEP OCT NOV DEC

We therefore arranged our lines and transfer points in geographical order. This makes them easily readable by both the passenger and conductor, thus reducing friction from wrong punching.

As we do not print in the year, returned transfers can be used over each month, thus reducing the waste. To prevent passengers saving transfers and using them on the same day the following month, different colors are used each month besides the punch mark for the month. As the month and issuing line can be punched ahead, only three punches are required when the transfer is issued to the passenger.

We realize enough from the sale of the back for advertising to pay the entire cost of printing our transfers.

Analysis of the Power Sources of Electric Railways

Figures Show That 55 Per Cent of Companies Generate Their Power and That These Companies Operate 68 Per Cent of the Mileage and Own 70 Per Cent of the Cars in the Country

OWING to the interest in the subject of energy purchase and sale by railways, the following tables have been compiled for the purpose of investigating the present status of this business. The figures are based on those in the *McGraw Electric Railway Directory* for August, 1916. On account of the complicated organization of many companies estimates had to be made in certain cases so that the figures are only approximate, but it is thought that the tables will prove useful.

TABLE I—POWER SOURCES OF ELECTRIC RAILWAYS

Territory, State or Country	Total Number		Companies Generate Power	Companies Purchase Power	Companies Generate and Purchase	Mileage of Generating Companies	Mileage of Purchasing Companies	Number of Cars of Generating Companies	Number of Cars of Purchasing Companies	
	Number of Companies with Power Load	Number of Companies with Lighting Load								
Alabama.....	13	6	6	8	1	251.7	108.6	506	170	
Arizona.....	4	0	2	3	0	6.7	45	10	37	
Arkansas.....	10	4	5	5	0	96.6	29.5	200	87	
California.....	40	3	3	12	30	2	340	2,924.5	577	5,577
Colorado.....	12	3	4	6	7	1	355.4	86.9	628	54
Connecticut.....	20	1	1	11	9	0	788	222	1,703	384
Delaware.....	2	1	0	1	2	1	136	17	371	18
Dist. of Columbia.....	7	2	1	4	3	0	399.7	11.9	1,382	7
Florida.....	9	4	4	8	1	0	167.1	26.1	277	30
Georgia.....	13	5	6	9	7	3	409.5	56.1	692	84
Idaho.....	6	1	1	5	0	0	58	121.7	20	69
Illinois.....	70	10	11	29	42	1	1,952	1,692.9	3,566	4,333
Indiana.....	48	11	12	31	17	0	2,462	359.2	2,116	459
Iowa.....	28	11	14	19	9	0	528.4	207.3	987	343
Kansas.....	19	3	5	11	8	0	294.5	253.8	212	305
Kentucky.....	10	1	2	7	3	0	448.6	14.5	1,071	41
Louisiana.....	10	1	6	10	0	0	327.2	0.0	820	0
Maine.....	14	5	5	9	5	0	498.1	57	712	85
Maryland.....	10	3	2	4	6	0	513.5	153.1	2,233	181
Massachusetts.....	43	4	2	25	19	1	2,735.2	506	7,814	581
Michigan.....	27	5	6	18	12	3	890	774	1,714	1,063
Minnesota.....	11	1	2	4	7	0	457.9	165.8	1,140	197
Mississippi.....	11	5	10	11	0	0	123.1	0	191	0
Missouri.....	22	2	6	16	7	1	609.5	547.5	1,362	1,645
Montana.....	8	0	2	2	7	1	0	271.1	0	1,136
Nebraska.....	6	2	2	2	4	0	223.3	31.1	582	26
Nevada.....	2	0	0	0	2	0	0	10.8	0	12
New Hampshire.....	12	1	1	6	6	0	97.7	78.3	137	106
New Jersey.....	29	1	1	20	9	0	1,246	73.7	2,633	99
New Mexico.....	2	1	1	1	0	0	3.7	5	5.5	6
New York.....	98	12	14	45	56	3	3,416	2,219.1	13,315	4,378
North Carolina.....	13	6	7	7	7	1	112.7	177	240	286
North Dakota.....	4	1	1	2	2	0	3	4	24	67
Ohio.....	77	20	27	53	24	0	3,895.7	478	6,821	374
Oklahoma.....	16	3	3	7	9	0	199.4	129.5	193	194
Oregon.....	9	1	1	5	4	0	375.4	354.8	1,222	306
Pennsylvania.....	123	4	9	63	63	3	2,625.6	1,844.5	5,078	4,248
Rhode Island.....	3	1	1	2	1	0	423.6	14.5	1,343	13
South Carolina.....	6	3	3	4	2	0	95.1	14.8	154	20
South Dakota.....	3	0	0	0	3	0	0	96	0	33
Tennessee.....	14	3	4	5	9	0	295.9	205.3	755	182
Texas.....	38	4	5	14	24	0	424.4	316.2	821	620
Utah.....	5	0	0	0	5	0	0	425	0	970
Vermont.....	10	1	2	4	6	0	57	67.8	102	40
Virginia.....	18	2	5	14	5	1	467.5	41.1	977	66
Washington.....	18	6	10	13	5	0	1,154.6	98	1,800	136
West Virginia.....	21	8	7	14	10	0	357.7	94	599	62
Wisconsin.....	22	9	8	15	7	0	714	51.2	994	102
Wyoming.....	2	0	0	0	2	0	0	22	0	22
Canada.....	62	12	15	34	28	0	1,565.5	731.5	3,915	1,556
Hawaii.....	1	0	0	1	0	0	30	0	72	0
Mexico.....	14	6	8	12	2	0	385.5	37.2	998	96
West Indies.....	7	3	6	7	0	0	238.9	0	853	0
Philippine Islands.....	1	0	1	1	0	0	53.9	0	141	0
Porto Rico.....	2	1	1	2	0	0	17.7	0	133	0
Totals.....	1108	203	261	613	518	23	33,328.5	16,272.2	74,371	30,906

18.5 per cent of companies have power load.
 23.6 per cent of companies have lighting load.
 54.3 per cent of companies generate their power.
 45.7 per cent of companies purchase their power.
 2.08 per cent of companies both generate and purchase their power.
 67.3 per cent of mileage is operated by generated power.
 32.7 per cent of mileage is operated by purchased power.
 70.6 per cent of cars are operated by generated power.
 29.4 per cent of cars are operated by purchased power.

TABLE II—RAILROADS OPERATING ELECTRIC DIVISIONS

Name and Division	Purchase Power	Generate Power	Motor Cars	Loco-motives	Miles
Balto. & Ohio, Belt Div.....	P	..	..	9	8.4
Boston & Maine, in New Hampshire.....	..	G	37	..	30.72
Boston & Maine, in Mass.....	P	..	2	3	22
Bush Terminal R. R.....	P	..	..	6	6
Chicago, Milwaukee & St. Paul.....	P	..	..	44	440.6
Eric R. R., Rochester Div.....	P	..	8	..	40
Grand Trunk, St. Clair Tun.....	..	G	..	6	12
Great Northern Ry., Cascade Tunnel.....	P	..	..	4	10
Long I. R. R., Electric Div.....	P	..	591	..	217.2
N. Y., N. H. & H., all electrified divisions.....	P	G	{ 25 }	100	570
N. Y. C. & H. R., Elec. Div.....	..	G	{ 44* }	63	254.6
Norfolk Southern R. R., Va. Beach Div.....	..	G	{ 19* }	1	47
Norfolk & Western Ry.....	..	G	{ 25 }	..	88.8
Penn. R. R., Paoli Div.....	P	..	{ 17* }	..	96.6
Penn. Tunnel & Terminal Co.....	..	G	68	66	95.5
West Jersey & Seashore R. R.....	..	G	109	..	150.3

*Trailers.

Table I embraces all street railways and interurban lines, including storage-battery lines, but excludes gas electric lines, auto bus lines, horse car lines and inclined cable roads. Table II includes those roads which were originally steam roads but have since been electrified or which operate electric divisions. As the tables are intended to represent passenger roads, a few roads built primarily for the transportation of freight, such as the Chicago Tunnel Company, which operates 61 miles of narrow-gage subway lines and owns 132 motor cars and 3000 other cars, were excluded. In a good many instances where companies, such as the Detroit United Railway, generate part of their load and purchase the remainder, the figures on cars have been prorated according to the amounts generated or purchased by these companies.

Railways in Table I, which obtain their power from another sub-company of the same corporation like the Public Service Corporation of New Jersey, are classified as generating their power but not as carrying a lighting or power load, but where the operating company is both a lighting and a railway company, like the Milwaukee Electric Railway & Light Company, it is classified as generating its power and also having a lighting load. It was somewhat difficult to determine just which roads should be included in the electrified group, but for the purpose of this study only those appearing in Table II have been so designated.

From this classification it appears that about 18 per cent of the electric railway companies in this country are doing a supplementary industrial power business and 24 per cent a lighting business. Of those which either generate or purchase power, 55 per cent belong in the generating group and 45 per cent in the purchasing group; 2 per cent of the total number both generate and purchase. Approximately 68 per cent of the mileage and 70 per cent of the rolling stock are owned by railways generating their power.

There were 891 collisions between automobiles and electric cars on the Detroit United system during May of this year. This is an average of almost twenty-nine per day or more than one for every mile of track, including yard trackage. As a result of these collisions 150 claims for damages were made against the company. These figures were recently presented to the Detroit public through *Electric Railway Service*, the company's publication in an article urging greater care.

COMMUNICATIONS

Publicity and the Association

SOUTHERN PUBLIC UTILITIES COMPANY
CHARLOTTE, N. C., Aug. 7, 1917.

To the Editors:

A communication from W. F. Brashears, director of the Public Utility Publicity Bureau of Chicago, in your issue of July 28, under the heading: "The Privately Conducted Publicity Bureau," has come to my desk, and by reason of the fact that he quotes from a prior communication from the writer and because of the fact that his argument begins at the point mine starts, I am presuming upon the charity of the ELECTRIC RAILWAY JOURNAL for a bit of space.

If company publications were issued solely for the men employed by these companies, it is possible that the argument of the Chicago gentleman would hold, but that has long since been proven to be a single barreled gun. The more successfully operated publicity departments reach the public which compose the patronage, real or potential, as well as the employees, and again I submit that varying conditions make it impossible for a general publication to fill the needs of any appreciable number of localities or sections.

Mr. Brashears is happy, I think, in the selection of his comparison of the publicity bureau with the central station or a single electric railway company for a given city. But from that point his argument is faulty. It is my opinion, and has always been, that the central station idea is the proper one, and that the publicity bureau within the American Electric Railway Association is that central station. I agree with Mr. Brashears that a multiplicity of such stations would not operate to the best advantage of the industry.

But I am convinced, after a careful study of his communication, that the gentleman has confused the issue and is arguing against a central association publicity bureau when he probably means to advocate the establishment of a central *printing house*. I submit there is a wide difference between the two, and though he fears that the creation of the former would interfere with his business and that it would be unfair and unwarranted, I fail to see that an Association bureau for the dissemination of useful information, much of which would not be for publication, would interfere in any way with the publication of even a general bulletin or magazine such as he issues now for so many electric railways.

I want to be entirely fair to Mr. Brashears and therefore I am going to admit that the publication of a general bulletin for the small company, employing, as he says, twenty-five or thirty men, would and probably is, serving a most excellent purpose. Manifestly it would not be economical for a company of that size to operate an independent publicity bureau, and when this type of companies is being considered I want to admit that the general publishing house would be a valuable factor in the publicity field.

I want to admit, also, that inspirational articles are as valuable in one section as another, yet I find that even these are more forceful if they are adapted to the conditions prevailing in the various sections. Ministers of the gospel do not preach Christ and Him crucified in

exactly the same words to every congregation, owing to the different composition of congregations, and a thought expressed in different phraseology reaches the people with much greater force than the thought presented time after time in the same language. Thus it is, that a thought which appeals to the employees of a company and the public of one section when presented according to one set and specific school, will fail of its purpose in some other section.

In conclusion, I want to say that my purpose in writing the JOURNAL, in the first instance, was to bring out a full and free discussion of this most important matter, and I am more than delighted with results. Because publicity men fail to agree on all points is no argument against their respective schools or lines of action. But in the multiplicity of counsel there is wisdom, and I believe too much time, effort and space can not be devoted to the subject under discussion.

LEAKE CARRAWAY, Director of Publicity.

UNITED RAILWAYS & ELECTRIC COMPANY
BALTIMORE, MD., Aug. 6, 1917.

To the Editors:

In re the much mooted question of a publicity section, permit me to say that I have read the letters of Mr. Brashears of Chicago, Mr. Carraway of Charlotte, Mr. Davidson of Denver, Mr. Van Zandt of Detroit, the Sermon on the Mount, the Message to Garcia and sundry and divers other disquisitions touchin' on and appertainin' to the pending subject. Incidentally, I have written some on the subject myself.

I am in favor of a publicity organization associated with the American Electric Railway Association but not to usurp the functions of the very excellent data bureau now maintained by the association.

The publicity organization should perform its natural functions, just as a traffic organization, a transportation organization, and all the other company organizations within the association perform their natural and self-related functions. And there should not be any great difficulty in drawing the line between the natural functions of one department and those of another.

The whole discussion only emphasizes the healthiness of the subject and the need of getting together and threshing out the whole subject. Let's mobilize.

DWIGHT BURROUGHS, Publicity Manager.

Water Power in Canada

A table prepared from 1915 data by Charles H. Mitchell, Ottawa, Canada, shows that even though Canada occupies second place among the countries in available water horsepower (with about 8,000,000 hp. as compared with 28,000,000 in the United States), she has developed her resources until the percentage utilized almost equals that of the United States, with more than three times the amount available. The developed horsepower per capita is three times that of the United States, and the annual rate of development in Canada is probably much more rapid. The Canadian government is supreme in matters affecting navigable rivers and exercises a firm control over them. The policy of the government, while protecting the public and insisting on economic utilization, aims at fostering legitimate private enterprise.

EQUIPMENT and MAINTENANCE

HAVE YOU A GOOD WAY
OF DOING A JOB?

—*Pass It Along*

Read in This Issue :

How the Pacific Electric Railway Developed Its Mechanical Flagman

Evolution of an Automatic Flagman

Author Describes Experience in Developing an Electrically-Operated Automatic Flagman, at First on Lines of Pacific Electric Railway, Later as a Commercial Product

BY CLIFFORD A. ELLIOTT

Cost Engineer Pacific Electric Railway, Los Angeles, Cal.

The Pacific Electric Railway has been doing everything within its power and financial limits to eliminate grade crossings. In recent newly-constructed lines, overhead highway bridges or underground passages have been established wherever feasible. When financial conditions have not permitted the separation of grade at dangerous crossings either watchmen or electrically operated automatic flagmen have been employed.

In August, 1910, the Pacific Electric installed the first mechanical flagman, which was developed in its own signal shop. It was a motor-driven belt design, and the motor, which was protected in a cast-iron box and mounted on the post supporting the flagman, was placed in operation by trolley brush contactors. The current was relayed through control apparatus, employing the high-tension type of walking-beam relay, which was installed in a wooden box and placed on the trolley pole near the flagman post as shown in Fig. 1. The other relay box on the flagman post will be explained later. In 550-volt territory the current, after being carried through the relay, was conducted into a four-

tube resistance bank of 1000 ohms resistance for each tube, one tube being for the motor and the other three for three lights. The voltage was stepped down in the resistance to 220 for both motor and lamps. Mounted on the flagman were receptacles for two white incandescent lamps, while in the center of the disk were located two red lenses, between which was placed another incandescent lamp for displaying "red" at night. The resistance bank was installed in a sheet-metal box at the top of the post (not shown in Fig. 1) or immediately below the motor. When the flagman was set in operation the motor revolved the wheel and the operating belt, thus producing an arm-like motion of the signal pendulum, and caused the bell, mounted on top of the cast-iron box containing the motor, to ring. During the day the bell furnished a good warning, while at night the illumination afforded by the electric lights, both red and white, made this signal decidedly prominent. The contactors on the ordinary lines were placed about 1200 ft. preceding the crossing, while the cut-out contactor was placed just over the crossing. The approach contactor sent the annunciation into the relay apparatus, thence through the resistance bank and into the motor of the flagman which operated until car had passed through the cut-out contactor; and then the reverse movement of the walking beam relay stopped operation.

Later in the year 1912 the construction of this flagman was taken over for further development by the Railway Specialties Company, Inc., of Los Angeles, Cal. The installation of the motor-driven belt-type flagman



FIG. 1—AUTOMATIC FLAGMAN IN OPERATION

was discontinued and a motor-driven worm-gear type adopted, the principle of its operation, however, being practically the same as the motor-driven belt type. The Railway Specialty Company's signal was briefly described in the issue of the *ELECTRIC RAILWAY JOURNAL* for Jan. 23, 1915, page 176. It should be said that the flagmen of the old belt type were difficult to maintain as the belt was constantly breaking, thus greatly increasing the failures in operation. During 1916 the type was again improved by the adoption of a magnetically-operated device. This is a much better machine than the other two types formerly installed because it has no motor-driven parts. The pendulum responds more rapidly, the operations being smoother and more active, and the shaking of the machine has been minimized, thus reducing maintenance.

In the former types whenever the flagman was cut in

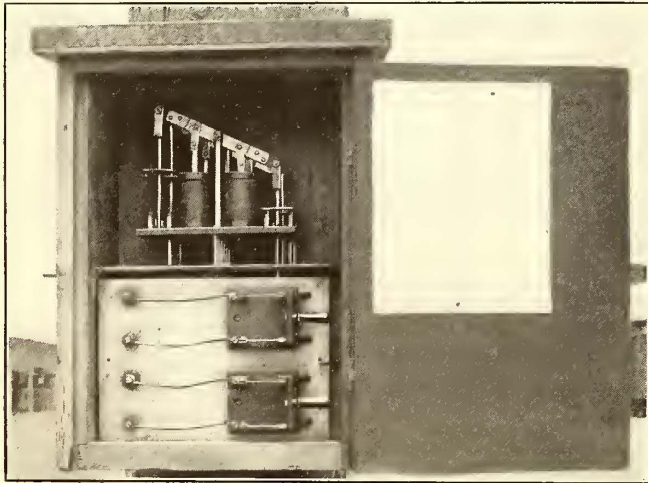


FIG. 2—HIGH TENSION WALKING BEAM RELAY AND INSPECTION CARD

and then cut out the pendulum would rest at its position when cut-out was effected, whereas with the magnetic type the pendulum always returns to center or is set on neutral when not in operation.

SERVICE RECORD IS CREDITABLE

Records show that excellent service is given by the latest apparatus, and in many instances more than 180,000 trains on an average have operated over a crossing before interruption occurred. Some of the signals on the four-track lines are put in operation as high as 1200 times per day. These particular lines carry from 1000 to 1200 train movements every twenty-four hours, and records show operation under such service for nine to twelve months without an interruption. The average, however, is approximately six months. Most of these failures are due to trolley brush contactor trouble, which it is anticipated can be eliminated by adoption of a track instrument to afford a more perfect contact. On some of the lines where the train operation is lighter, flagmen have seen service from sixteen months to twenty months without failure, and the total for the year of 1916 showed 193 automatic flagmen in operation, approximately eighty of which were the magnetic type. The records indicated that the company could operate one flagman eight months without an absolute failure,

The needed maintenance and frequent inspection of these signals have been combined by having the organization which cares for switch lights handle the main-

tenance of the flagmen, assigning as much territory to one man as he can efficiently handle with justice to both duties. These maintainers are provided with gasoline-motor inspection velocipedes advantageously to cover the ground, and they are required to inspect each flagman in their respective territories every day. A paste-board card as shown in Fig. 2 is tacked on the door of the relay box at each flagman and the inspector indicates upon each daily trip the conditions noted. These cards are collected each month to permit the compiling of records of operation of the devices for the period. During the year 1916 for a period of six months there were only 185 failures, and during this same year for the twelvemonth period the cost of maintenance of one automatic flagman, including labor and material, was approximately \$6 per month.

The cost of the complete installation varies according to conditions, ranging from \$300 to \$400 at present-day prices. The line wire used is No. 12 weatherproof iron wire, while that placed in trunking and cable is No. 14 rubber-covered double-braid copper wire. In the installation of the contactors on heavy-traffic lines, where during certain hours of the day there is as low a headway as forty-five seconds, the practice is to place three contactors 400 ft. apart, so that a train immediately preceding another will not cut the signal while the following train is approaching the crossing. The company's

operating rules require at least an 800-ft. interval, in which case there is always this length of the protection in the crossing.

BELL CAN BE CUT OUT AT NIGHT

In restricted residential districts when flagmen are installed, the company in some instances agrees with residents to eliminate the bell feature. While the flagman is of some service due to its prominence and the lighting signal effect, it is not, however, at its best where the bell is eliminated. In several cases the company arranges to have the bell ringing during the daytime but cut out during the night. This can be done to good advantage in the motor-driven type, but no scheme has yet been devised for the magnetic type.

Fig. 1, in which a car is seen approaching the flagman, shows the walking-beam relay box on a trolley pole and a second walking beam relay placed in a box on the pole supporting the flagman. There is also located in this latter relay box, and opposite the walking beam relay to which it is connected by wires, an eight-day Seth Thomas clock (Fig. 3), the face and the minute hand of which are removed, while two brass stationary arms (to serve as cut-outs and cut-ins) are placed on the clock. The hour hand at 6 p. m. cuts in the relay which cuts out the bell, and at 6 a. m. this hand strikes the other stationary arm, thereby cutting in the relay which cuts in the bell again for day operation.



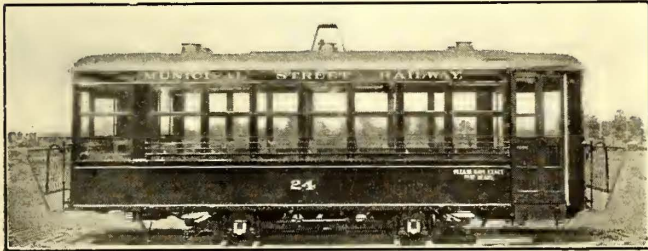
FIG. 3—CLOCK IN RELAY BOX TO EFFECT CUT-OUT AND CUT-IN OF BELL

Where the flagmen are in service on the lines adjacent to the ocean the wire brushes are greatly affected by the action of the salt air and require renewal about every four months. Another disadvantage of the brush contactor is the necessity of carrying an extra man with the maintainer, to flag approaching trains while the latter is mounting the ladder to make the inspection. As already stated it is anticipated that a track contactor will be substituted for the trolley brush type.

New Car for Louisiana Municipal Railway

New double-end, single-truck, one-man cars have recently been furnished to the Municipal Street Railway of Monroe, La. These embody a light-weight, compact design with steel underframe and side sheathing and archroof construction. The interior of the car is equipped with fourteen reversible lightweight cross-seats, giving a seating capacity within the car body of twenty-eight passengers. Folding seats on the platforms provide for four additional passengers, making a total seating capacity of thirty-two.

The car is equipped with air brakes, manually-oper-



ONE-MAN CAR BUILT FOR MONROE, LA.

ated doors and two GE-506-A-2 motors. The over-bumper length is 27 ft. 9½ in. and the over-sheathing width is 7 ft. 6 in. The truck wheelbase is 8 ft. 6 in. and the wheels are of 24-in. diameter. The weight of the complete unit is 13,500 lb. The height of the step above the rail is 15 in. and the height of the car floor is 27 in. above the rail. There is no ramp in the car floor and the platform floor is on a level with the car floor. The cars were purchased from the St. Louis Car Company.



INTERIOR VIEW OF MONROE (LA.) MUNICIPAL RAILWAY'S ONE-MAN CAR

Perpetuating the Strength of Pole Lines

Renewal of Poles at Intervals Along Line Each Year Keeps Line Strengthened—Complete Pole Record Book Makes This Possible

BY A. SCHLESINGER

Superintendent Distribution and Substations, Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.

Maintaining the maximum strength in pole lines with a minimum expenditure is a real problem. When a pole line has been up for eleven years, with little attention, for instance, what should be done? Should the line be rebuilt or are the poles good for another ten years, and should the man responsible take a chance on having the entire line down for the sake of getting the maximum life out of the poles?

In answer to these questions the Terre Haute, Indianapolis & Eastern Traction Company has adopted the plan of reinforcing the pole lines each year by replacing poles at certain intervals. For instance, on one eleven-year-old pole line, we would renew every sixth or every ninth pole, depending upon the condition of the line, the loading, the importance, and the amount of money available for renewal. If every ninth pole was renewed and a heavy storm occurred, it would very likely take down not more than the eight intervening poles and the line would not be put completely out of commission. We aim to replace about 1000 poles a year on our various pole lines, which comprise altogether approximately 17,000 poles. This would provide a complete renewal every seventeen years, but this is not quite necessary, for many of the poles are good for a much longer period. Some have already been in service more than sixteen years and are still comparatively sound.

In our ordinary maintenance work the selection of the poles to be replaced involves a thorough inspection record used in conjunction with a pole record book. In this book the individual poles are listed in a single vertical column per page and the balance of the page utilized for columns headed for successive years. Then each year, as certain poles are renewed, a symbol which designates the type and length of pole is placed in the proper year column opposite the pole replaced. The annual inspection of the poles shows the condition of each, and this is recorded and brought into the office. Those poles in worst condition which must be renewed that year are then properly entered in the pole record book, and then the additional poles for that year's reinforcing are spaced along between these imperative replacements. From this pole record book it is thus very easy to see what poles were renewed in previous years and to fill in the spaces between renewals each successive year in the manner which will most effectively strengthen the line. By this scheme the maintenance is spread out uniformly over a long period and not a maximum but a high degree of line strength is perpetuated. With this annual reinforcing there is little danger of losing many poles at one time, and yet the replacement can be so manipulated as to get practically the full life out of the remaining old poles.

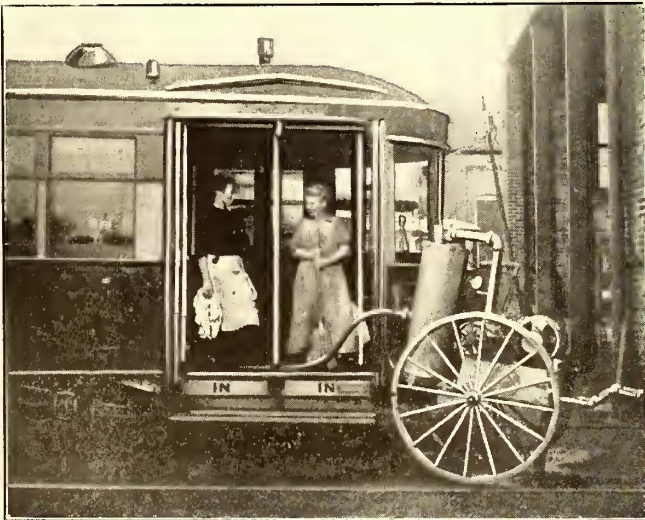
In addition to the replacements, we further strengthen the line by stubbing some of the poles with those taken down. Push braces are also set now and then, depending on the characteristics of the line. On one of the old

lines where the original poles were 35 ft. in height, we replaced every other pole with a 40-ft. pole and spanned the high-tension line 200 ft., leaving only the trolley bracket fastened to the intermediate 35-ft. pole. This line will be left in this condition for approximately four years, and when the remaining 35-ft. poles are replaced with 40-ft. poles, the high-tension wire will be supported from every pole. By this scheme, instead of having a full strength line at the beginning and somewhat weakened by age at the end of the four years, we obtain a line of practically full strength throughout a period of eight years or more, and at the same time get practically the full life out of the old poles.

By this process of renewing a certain per cent of the poles each year for reinforcements, beginning at a time when indications are that poles are becoming weak, the uncertainties of inspection are largely obliterated. We frequently have poles broken off, but the line stays up due to the reinforcements, and service is not interrupted. This is the important consideration. At present we are using chestnut poles almost entirely.

Doing Their Bit in Toledo

Like most of the other railways of the country the Toledo Railways & Light Company have met with troublous times in trying to keep their operating forces recruited to normal peace strength. This has been particularly true relative to the common labor needed for the maintenance of way and equipment. The women shown in the accompanying illustration are members of a crew of women car cleaners recently employed by the company in an effort to combat the labor scarcity problem. At present men are employed for the heavier work such as carrying water and manipulating the vacuum cleaner. The men work nine hours per day and the



WOMEN CAR CLEANERS, TOLEDO, OHIO

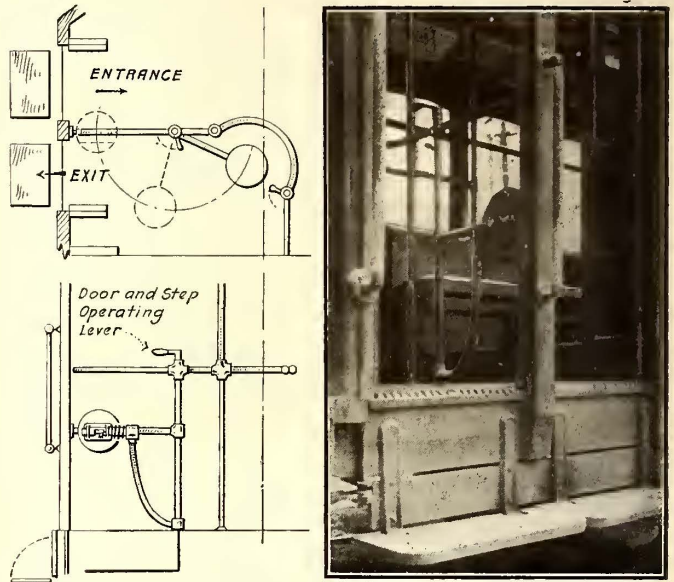
women nominally work eight hours, although because of the exigencies of the rush-hour car schedules their actual working time is nearer seven and a half hours per day. The women are paid 1 cent per hour less than the men. They say that they prefer the work to similar work in hotels, stores, office buildings and dwellings, and they take great pride in turning out well-cleaned cars. The cars are cleaned on the average once in eight days.

Convenient Type of Conductor's Seat

BY N. NESBITT TEAGUE

Augusta-Aiken Railway & Electric Corporation, Augusta, Ga.

For this company's pay-as-you-enter cars a conductor's seat has been developed by A. E. Kirkley by means of which the conductor can sit facing both the doors and passengers and at the same time operate the



CONDUCTOR'S FOLDING SEAT USED IN AUGUSTA, GA.

handles which open and close the entrance and exit doors. This also brings him into position to collect fares. When the seat is not in use it can be swung into an out-of-the-way position. A spring on the horizontal supporting brackets of the seat is arranged so that it will bring the seat itself into a vertical position when not in use. The picture and drawings indicate the other construction features.

One Telephone Booth Used for Three Phones in Noisy Office

BY J. J. CURLEY

Bay State Street Railway, Boston, Mass.

In noisy offices it is often difficult to use a telephone. To meet this annoyance this company has installed in one of its large shop offices a telephone booth. The office is provided with two public and one private telephone, the three instruments being placed on a shelf just outside of the booth and within easy reach of the clerk who answers them. The telephones are provided with extension wires connected to pulleys and weights so they may be passed to any desk. When on account of noise or the privacy of the conversation it is desired to use the booth, any one of the three telephones may be taken inside and the door closed tight, the extension cord running through casing. This arrangement has been used for some time in our shop office and has been found satisfactory.

In England the managers of a number of tramway companies are seriously considering the operating of "seatless" cars during the heavy rush-hour periods. In the Salford district, the company has removed the seats from several cars used in rush-hour service.

Storage Battery Car Operation

On a 1¼-mile line between Point Shirley and the junction between the Boston, Revere Beach and Lynn Railroad the Point Shirley Street Railway is operating a four-motor storage-battery car. It is equipped with 225 "Beach" Edison type storage batteries manufactured by the Railway Storage Battery Car Company, New York City. The batteries are located under the



STORAGE-BATTERY CAR BEING CHARGED AT POINT SHIRLEY, MASS.

longitudinal seats. Thirty-six round trips or 81 miles are made per day, and the batteries are charged at the Point Shirley end of the line after each round trip. The illustration shows the car being charged in front of one of the carhouses, energy being supplied by a gas-engine-driven generator.

In the three years that the car has been in service it has been necessary to renew the electrolyte but once, and no maintenance expenditure for new plates has been necessary in spite of the fact that they are subjected to severe overheating.

Track Joint Maintenance at Colorado Springs

Circular Saw and Electric Welder Prove Effective Aids in This Work

In rehabilitating the track work of the Colorado Springs & Interurban Railway, Colorado Springs, Col., cupped joints are removed by cutting 12 in. or 18 in. off the rail ends, and rail joints are made by welding Abbott base plates and ordinary angle-iron bars together. The old track was laid with 60-ft. 65-lb. A. S. C. E. T-rails, and where these are cupped at the joints the damaged rails are torn out and loaded onto a flat car, which is run to the company's shops. Here two air-operated hoists equipped with grip hooks lift one rail at a time off the flat car and lay it over on two rollers, properly placed for use with a regular circular steel saw. The hammered-out section at the end of the rail is then cut off and the rails placed back on the flat car. When one end has been cut off on all rails in a load, the car is run out of the shop and turned around so that the opposite ends of the rails are in the right position to be cut off with the circular saw when the car is brought back in. After this final cutting the rails are again loaded onto the car and returned to the job.

Wherever the rails are used in double-track work they are sawed off at an angle in order to get a 1-in. in

6-in. vertically beveled joint. By this means the weight of the equipment on the receiving rail is also supported by the leaving rails. This is a practice in use in several cities. Since this type of joint is valuable only for one-way traffic, it is not used on single track. In cutting off the ends, the rails are paired for length so that the joints will come opposite. By cutting off a short piece on each rail, a new length is required for about every twenty-five rails laid.

JOINT CONSTRUCTION

An Indianapolis welder is used to weld ordinary angle bars to Abbott base plates, thus forming a serviceable joint. After being cut off, the rails are drilled for the 4-bolt angle-bars, with holes at 5-in. centers. The two end holes in the rail web are, however, drilled 2 9/16 in. from the end to the center of the hole, making a length of 5 1/8 in. between the two end holes when the rail ends are right together. In assembling the joint the outside bolts are first put in, but not tightened. Then a drift pin is driven into the two end holes to take up the slack between the rails and, when the bolts are driven in, the over-length distance between bolt-hole centers in the rails, takes up the slack between the bolts and the side of the bolt hole and brings the rail ends snugly together. The bolt holes are drilled 29/32 in. in diameter for 7/8-in. bolts.

Multi-Curtain Support with Rain and Wind Deflector

New Device Which Can Be Applied to Open and Convertible-Type Cars in Summer Service

The United Railroads of San Francisco are applying to the open ends of their California-type cars a new form of curtain support which permits all the curtains on one side to be operated in unison by the conductor. This support has been patented by Amos Perry, fore-



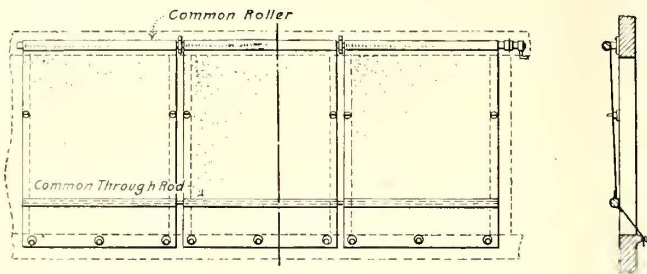
Photo by Mentz, San Francisco

CAR EQUIPPED WITH COMBINATION CURTAIN AND RAIN SHIELD

man car builder of the company, and his invention has also been adopted by the San Francisco-Oakland Terminal Railways. While designed originally for open-end California-type cars, the support is also applicable to the devilstrip side of open-bench cars and to convertible cars in summer service. Operation is effected as follows:

All of the curtains on a side are attached to one roller which is actuated by the conductor from a pawl-

and-ratchet mechanism on the platform like that in a roller-curtain sign. In addition to the top roller, the curtains have a common through rod at some 15 in. from the lower end. The bottom of each curtain has three eyelets which are hooked to headed buttons on the sills in such a way that that portion of each curtain which is below the through rod is pitched outward



DETAILS OF MULTIPLE-OPERATED CURTAIN AND RAIN DEFLECTOR

to form a rain deflector. This causes all the water to drain over the outside of the sill.

In operation when it is desired to unreel the curtains it is necessary only to release the ratchet and turn the crank. The eyelets are then hooked on and the crank is turned in the opposite direction to pull the curtains taut. The roller is then locked by lowering the pawl.

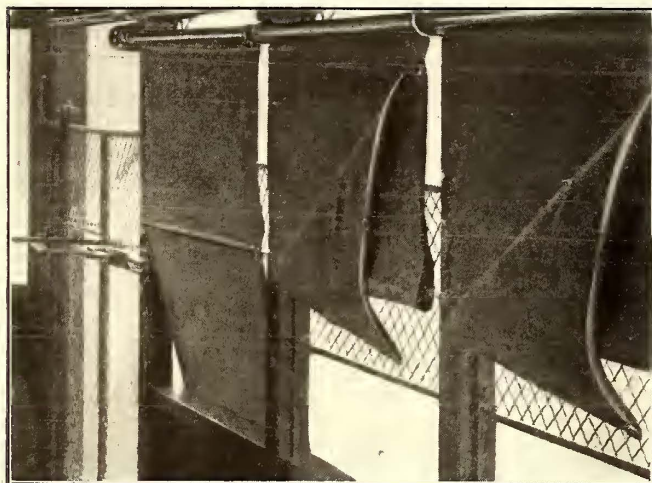


Photo by Mentz, San Francisco
INTERIOR VIEW OF COMBINATION CURTAIN APPLIED TO CALIFORNIA-TYPE CARS

No rain or wind can now enter the car nor can one passenger trifle with the curtains to the discomfort of other passengers. The common rod previously mentioned not only permits the desired deflection but also acts as a weight which causes the curtains to be tightly reeled about the roller when the curtains are raised. This rod also keeps the curtain from blowing outward.

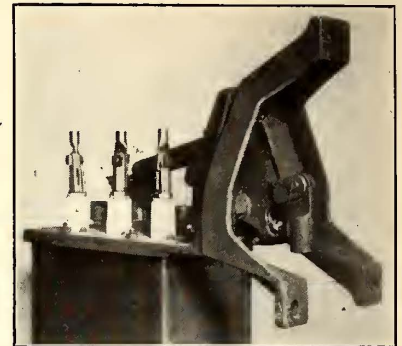
Shavings as Fuel for the Power Plant

On account of the continued uncertain condition of the coal supply and the difficulty of obtaining cars, the plant of the Hattiesburg (Miss.) Traction Company only burned two cars of coal during the month of June. The plant is getting about three cars of shavings per day from the lumber mills, and the company has been authorized to purchase six railroad cars for this purpose. This proposition will save the company in the neighborhood of \$500 a month over coal at the present prices. There is a possibility of again negotiating with

the J. J. Newman Lumber Company for the total fuel requirements, as the paper mill will not be erected until some time after the termination of the war.

Wall-Mounting Brackets for Oil Circuit Breakers

To meet a demand for brackets for use in supporting panel-mounting breakers on walls or pipe frames the Westinghouse Electric & Manufacturing Company has brought out a line of special brackets of which a typical one is shown in the accompanying illustration. The full line of brackets is described in a special bulletin recently issued.

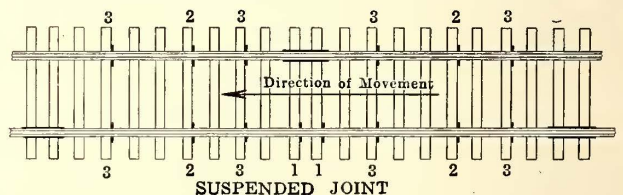


BRACKET FOR PANEL-MOUNTING OIL CIRCUIT BREAKERS

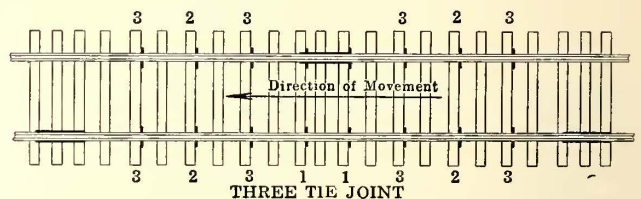
The full line of brackets is described in a special bulletin recently issued.

Anti-Creepers on Railway Track

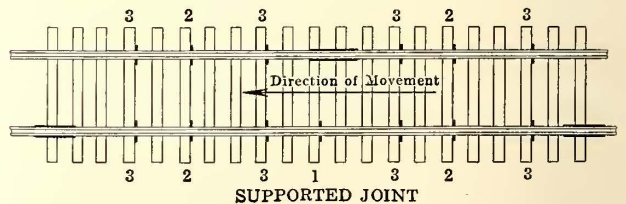
While the lighter traffic on interurban electric railways makes the use of anti-creepers for rail less important than on steam railroads, inquiry among a number of electric railway maintenance of way engineers shows that anti-creeping devices are used in a number of cases. These are principally on high-speed and elevated railways. The schedule of the track and roadway department of the Union Traction Company of In-



SUSPENDED JOINT



THREE TIE JOINT



SUPPORTED JOINT

diana with regard to the installation of anti-creepers provides as follows:

When track is running not more than 1 in. per year, anti-creepers are installed as shown at 1-1 in the accompanying diagrams. When the track is running more than 1-in. per year and on all double track that is running, anti-creepers are applied as shown at 1-1 and 2-2. In extreme cases, additional anti-creepers, as shown at 3-3 are added.

News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

San Francisco Rejects United Railroads' Offer

City Engineer Submits Revised Company Proposal, but Public Utilities Committee Votes Plan Down

At a meeting of the public utilities committee of the San Francisco Board of Supervisors on Aug. 3, the vote was four to one against accepting the compromise plan of the United Railroads of San Francisco for handling traffic on Market Street and through the Twin Peaks tunnel. The committee recommended that outer tracks for the Municipal Railway be at once constructed on Market Street and that the system beyond the tunnel be extended. The committee's report has yet to be approved by the Board of Supervisors at the meeting on Aug. 13, but it is believed that sanction will then be accorded without delay.

Plans were discussed for using a portion of the reserve funds of the Municipal Railway, which now amount to more than \$800,000, for the construction of a line from the west portal of the tunnel to Twentieth Avenue and Taraval Street, a distance of about 3000 ft. At that junction the city could exercise its charter and run cars over the line of the Taraval Street Railway, now under lease to the United Railroads and extending through Parkside. A plan for taking over the United Railroads' lines to connect with Ingleside and other subdivisions was also considered.

REPORT OF CITY ENGINEER ON COMPANY'S PROPOSAL

When the United Railroads presented its proposal for an agreement with the city, involving the use of the Twin Peaks tunnel by the company's cars, the extension of its lines beyond the peaks, the adoption of universal transfers between city and company, as noted in the *ELECTRIC RAILWAY JOURNAL* of July 14, the public utilities committee asked City Engineer M. M. O'Shaughnessy for a report to guide it in considering the offer. In his report, which the committee received on July 25, the city engineer analyzed the company's proposal from an engineering and economic standpoint, but he refrained from definitely advocating acceptance or rejection of the offer.

According to Mr. O'Shaughnessy's report, after the receipt of the proposal two conferences were had with the company, in which certain objections offered to the form and tenor of the proposal were considered. It was suggested that the proposal be revised and expanded to set forth in detail its full purpose and intent.

The offer as revised, therefore, said Mr. O'Shaughnessy, would conform in substance to various provisions, some of which are abstracted below:

1. That the company construct tracks connecting with the tunnel tracks at the west portal of the Twin Peaks tunnel, extending thence to connect with the existing Taraval Street tracks of the United Railroads at Twentieth Avenue and extending out Taraval Street to the ocean.

That the company connect its tracks with the city's tunnel tracks at the proposed terminus at Sloat and Junipero Serra Boulevards, so as to render possible through service in both directions through the tunnel to the ferry, and that the company make a connection from its existing Market Street tracks to the eastern terminus of the city's proposed tunnel tracks near Castro Street.

2. That the company pay the city \$1,333.33 a month as a rental to cover use and deterioration of the city tracks and appurtenances, until the car mileage reaches or exceeds 750 miles per day on the basis of the established schedule, and thereafter in addition 1 cent per car-mile operated above 750 car-miles per day.

That the company assume all liability for safe conduct

of transportation through the tunnel and over the city's tracks, maintain the illumination of the tunnel and stations, maintain the tracks and overhead equipment to the approval of the city engineer, and reimburse the city at cost for any power used from city lines.

3. That there be exchanged between the company and the city transfers at all connecting points, such exchange to be on a free basis and limited only by such rules as may be necessary to prevent the abuse of the transfer privilege—such transfer agreement to supersede all existing transfer agreements and to apply to all future extensions of both the United Railroads and the city.

Mayor O. K.'s Transit Lease

Mayor Smith of Philadelphia, Pa., is ready to turn over to City Solicitor Connelly for his legal opinion and for drafting in the form of an ordinance the Twining lease of the city's high-speed transit lines to the Philadelphia Rapid Transit Company. The synopsis of the lease as revised in some parts by Director Twining in the last few days was returned to the Mayor on Aug. 8 and received his approval. He expressed the belief that the draft of the lease is couched in such explicit language that the City Solicitor can pass upon it and draft the ordinance within a comparatively few hours. It is expected that the ordinance will be presented to Councils at the special meeting to be held on Aug. 17.

The Mayor said that before being acted upon by Councils the proposed lease would be given the widest publicity. The committees on finance and street railways, to which the ordinance would be referred, he suggested, would doubtless hold public hearings for discussion of the terms. The Mayor said that he would invite representatives of business organizations to go over the ordinance with him before submitting it to Councils.

The tentative draft of the new contract was handed to the Mayor by Director Twining on Aug. 2. The Mayor refused to disclose the terms. The draft, however, is supposed to represent the harmonized views of the Mayor and officials of the Philadelphia Rapid Transit Company.

Subway Vote Assured in Cleveland

A popular vote on Mayor Davis' subway plan at Cleveland, Ohio, was assured on Aug. 4, when petitions containing 5384 names had been filed. Only 5000 are required to initiate an ordinance, but it is thought that at least 20,000 names will be secured by the time Council holds its next meeting on Aug. 27. If the Council fails to act favorably on the ordinance before Oct. 6, the question will be referred to the voters at the regular election on Nov. 6.

What is known as the civic rapid transit committee, containing representatives of fourteen civic organizations, circulated the petitions and is aiding in the campaign in other ways. The names filed were secured in one day. This indicates the willingness to have the subway question considered by the voters.

The plan has been changed so that the ordinance provides only for the appointment of a rapid transit commission, in accordance with the terms of the State law. Such a commission would have power to consider the subway problem and formulate plans for its construction. The commission could not proceed further than an investigation until provision for financing the proposition was made by additional legislation.

The reason for this is that Mayor Davis thought it best to approach the matter by degrees rather than by presenting the entire plan, including a bond issue, in the one ordinance. If the commission reports favorably upon a plan,

then the bond issue can be presented in another ordinance. Thus the idea can be carried out by successive steps and will probably be much better understood, as the voters will have an opportunity to study it piecemeal.

Strike On in Kansas City

Two Hundred Men Went Out on Aug. 8—Company Refused to Consider Demands of Discharged Employees

Following the lead of a few discharged employees who had made a demand for reinstatement and the right to organize, a large group of employees of the Kansas City (Mo.) Railways struck on Aug. 8. The company states that service will be continued as far as possible and that no negotiations will be carried on with the strikers. Twenty per cent of the trainmen showed up on the morning of Aug. 9, but no cars were sent out. New men are being employed and trained, but no strikebreakers are being imported. There has been no trouble at power houses or shops, and the public is generally good natured under inconveniences.

Mangus Sinclair, national organizer of the Amalgamated Association of Street and Electric Railway Employees, has been directing the initiation of former employees of the company into a newly organized union. The present employees made no requests and the only demands came from employees discharged during the last week or so. These discharged men demanded their reinstatement and the right to organize, and they threatened to cause employees to strike at 4.35 a. m. Wednesday. Because they were not employees, their requests were not considered.

Wednesday morning car service began as usual. About 200 men had struck by noon, but service continued. Strikers and agitators gathered at the carhouses to jeer at the workers, and a few bricks were thrown, one motorman being hit while at his controller. There were no policemen on the cars, although the police had promised to protect property if necessary. Many loyal conductors were afraid to operate cars and left them in the carhouses after one or two runs. By 4 p. m. city service was practically suspended, and no cars were run after 6 p. m. All interurban lines were running near schedule, although some refused to take on passengers within city limits unless they were bound for outside points.

During the afternoon the only members of the board of directors representing the city who were in town, John W. Wagner and D. M. Pinkerton, held a conference with Robert P. Woods, city member of the Board of Control; Mayor Edwards; Police Commissioner Ranson; Clyde Taylor, vice-president of the company, and J. E. Gibson, general manager. Company officials asked adequate police protection, and city representatives also urged this. The Mayor and the police commissioner promised police for important points who would do all necessary to protect property and men.

Mysterious "System" Excites Curiosity

Circulars from Philadelphia Describe Wonderful Way of Increasing Income, but Do Not Disclose Method

Electric railway executives throughout the country have been wondering during the last few weeks what plan the United Public Service Corporation of Philadelphia, Pa., is offering them so guardedly for the increase of their net income. This "system" has been addressing correspondence to the electric railways which tells absolutely nothing about a proposition for which most extravagant results are predicted. In order to learn the details of the scheme, so secretive and confidential a procedure is outlined that the railway men are naturally tempted to go about it most any other way than that required by the company.

Electric railway men who have investigated the scheme say that it combines a phase of popular merchandising and advertising with railroading. They look upon it as the vision of one knowing more about promoting and advertising than electric railway operation. Its adoption, they as-

sert, will impose upon the conductor duties which would hamper him in the efficient operation of his car. The proposition is regarded as one calculated to use the electric railway as a means of furthering some other object than the carrying of passengers.

At his office in Philadelphia, Wallace D. Taylor, president of the company, refused to make a statement for publication at this time.

The letter sent to electric railway executives arouses interest with the following opening paragraph:

"If the net earnings of your company, applicable to dividends, can possibly be increased 50 per cent to 100 per cent without increase in population of community served, without increase in number of passengers carried, without increase in fares, without increase in rolling stock, without increase in capital invested in amusement parks, without selling more electric light, heat and power, without increase in capital of company,

would you cheerfully turn back to those making such a result possible a reasonable PORTION of the NEW profits they would ACTUALLY CREATE for you?"

The letter then proceeds to express the predictions of the promotor as to the very large increase in net revenue to accrue to the companies adopting the "plan" beyond "the slightest doubt whatever." Yet, instead of giving the reader any inkling of the details, a form of agreement was inclosed, which, if signed by the proper executive and returned, would bring the secrets of the mysterious scheme. This agreement states that if the plan is adopted a formal contract will be made. On the other hand, if the system is rejected, the signer agrees "not to make use of any of the ideas or methods contained in said public service system, or any modification thereof, without written permission, at any future time," even though brought to his attention by "some other corporation, firm or person."

It is further agreed "not to give, directly or indirectly, to any one, any of the details of said system, except officers or directors of our corporation, and this agreement will bind them not to give any details to others."

The letter closes with the postscript: "It will be USELESS to request information by letter, or wire, or send a personal representative to try to obtain it, until after we have received the preliminary agreement, properly signed."

Wages and Hours to Be Arbitrated

What Each Side Gained in Seattle and Tacoma Settlements—Big Falling Off in Jitney Operation

Formal sessions of the board of three arbitrators to determine the wages and hours of the employees of the Puget Sound Traction, Light & Power Company in Seattle and Tacoma, Wash., will probably not be held for ten days or two weeks. Charles A. Reynolds, attorney for the men, will require at least ten days to assemble data. The reaching of the strike settlement on Aug. 1 and the choosing of the arbitrators were noted in the ELECTRIC RAILWAY JOURNAL of Aug. 4.

The board of arbitrators appointed has power only to arbitrate the issues of pay and hours, and both sides have bound themselves to abide by its decision. When the carmen walked out, the highest pay any of them was getting was 36 cents an hour after five years of service. Their demands call for 45 cents an hour for the first year and 50 cents an hour thereafter. An additional 2 cents an hour for trainmen in freight service is asked, as well as an eight-hour day with double pay for overtime.

In the arbitration agreement signed on Aug. 1 concessions on important matters were made by both the parties. The company's main victory was the open shop. There is to be no discrimination against non-union men or any coercion to make them join the union. Moreover, future grievances are to be presented by company employees and not by outside labor representatives. The big point gained by the strikers is the retention of their organization. They may belong to any union they like, and there is to be no discrimination against union men. Furthermore, the employees gained the reinstatement of the two discharged Seattle employees, and the seven men discharged in Tacoma are to

be taken back if an arbitration board of their fellow employees so decides.

With return of street car operation in Seattle and Tacoma, there was a big falling off in the volume of jitney service. All of the heavy trucks that had been pressed into service went back to the freight business. Moreover, many of the automobiles that had been running on the longer car lines and charging 10 cents dropped out. In Seattle, Attorney William R. Crawford of the Auto Bus Drivers' Union, estimated that between 400 and 500 automobiles dropped entirely out of service.

Of the remainder, 197 cars under federal injunction are operating on new routes not along car tracks. Judge Neterer on Aug. 2, in the United States District Court, ruled that his former injunction, which was suspended during the strike, would now be enforced. With the resumption of service A. L. Valentine, Superintendent of Public Utilities, ordered his deputies to enforce the law in regard to all jitneys operating without the necessary for-hire license.

Upon motion of Corporation Counsel Hugh M. Caldwell, the city of Seattle's case against the Puget Sound Traction, Light & Power Company for a writ of mandamus compelling it to run street cars or show cause in court why a receiver should not be appointed, was dismissed on Aug. 2 by Superior Court Judge King Dykeman. The counter claim and cross complaint of the traction company was also dismissed.

Investigating Utilities in North Dakota

A committee of officials of North Dakota, consisting of the Governor, Attorney General, the chairman of the State Tax Commission and the chairman of the State Railroad Commission, has engaged Hagenah & Erickson, Chicago, Ill., to investigate all public utilities in the State.

The purpose of the investigation is to supply the State departments with accurate data regarding these properties. The investigation will embrace a detailed inventory and appraisal of each property and an analysis of earnings and operating expenses for a number of years.

The appraisal work has been in progress for several weeks, and engineers from the firm are now making inventories in Bismarck, Fargo, Grand Forks, Minot, Jamestown, Mandan and many smaller cities. Certified public accountants in their employ will examine the books after completing the appraisals.

St. Louis Objectors to Submit Substitute Plan

Civic Bodies Oppose Proposed Ordinances—What Frank Putnam Thinks Are Obvious First Steps to Solution

Representatives of the Civic League, the Central Trades & Labor Union and the Tenth Ward Improvement Association, in opposing the proposition pending in the Board of Aldermen for a settlement with the United Railways of St. Louis, promised the public utilities committee at the public hearing on Aug. 1 that their respective organizations would prepare and submit substitutes for the plans contemplated in the proposed ordinances. These were described in the *ELECTRIC RAILWAY JOURNAL* of July 21. Until the data promised are presented to the committee, it is said, there probably will be no further public hearings.

Objections urged at recent hearings by speakers against the two proposed ordinances were leveled at the proposal for a partnership between the city and the company, the valuation fixed, the granting of a new franchise, the long period of the grant (which is fifty years in each of the propositions), and the abolition of the mill tax.

FIRST STEPS TO SETTLEMENT

Frank Putnam, publicity agent North American Company, the holding corporation of the United Railways, in a letter to the *Post-Dispatch* on July 29, set forth what, in his opinion, should be done to settle the issues between the city and the company. According to Mr. Putnam, the obvious first steps to a rational solution of the problem are these:

"1. An agreement by stock and bond holders to scale down,

equitably to all, the face of their securities, to a total equal to the present fair value of the property and business, excluding outlawed franchise values.

"2. A decision by the city government:

"(a) To cease supertaxing the street railway service;

"(b) To co-operate with it in every way (as in Cleveland), to reduce its expenses, so that its earnings, after paying a fair return to the labor and the capital engaged, may be devoted to extending, improving and, when possible, cheapening the service:

"(c) To give the company the best possible franchise, so that it may get capital at least cost for desired extensions and other permanent betterments of the system."

Cincinnati Transit Progress

Change of Location of Proposed Interurban Terminal Under Consideration—Chamber of Commerce Man for Railway Commissioner

At a meeting of the Cincinnati Rapid Transit Commission on Aug. 3 Chief Engineer Frank S. Krug reported that he has under consideration the construction of an interurban terminal station and loop under Government Square, to take the place of the proposed station at Canal and Walnut Streets, as originally proposed. As yet, however, the plans and estimates have not proceeded far enough to determine the practicability of the idea.

Mr. Krug is of the opinion that the wide area under the square would provide an ideal location for the terminal station, as it would not only furnish the most convenient service for the traveling public, but would provide plenty of room for the storage of interurban cars and a loop for turning them.

As only three of the members of the commission were present, discussion of the new plan was postponed to a later meeting. It is expected that Mr. Krug will then be prepared to submit plans and specifications and an estimate of the cost of such a terminal station.

Mr. Krug reported that he had completed plans for a concrete elevated structure on Pearl Street to take the place of the steel structure originally contemplated. The concrete structure, he said, will be more ornamental and will now involve less cost than steel work.

DIRECTOR OF STREET RAILROADS TO BE APPOINTED

The commission approved the proposed section of the new charter creating the office of director of street railroads and defining his powers and duties, with the exception of a clause which stipulated that the Rapid Transit Commission and City Council could not act, except upon the recommendations of the director on proposals for new extensions, new routes or change of routes. The charter commission was asked to eliminate this, as it encroached on the powers of the Rapid Transit Commission and the City Council.

The new charter commission on Aug. 6 submitted a draft of the clause about the director of street railroads. As it now stands, the clause clothes this official with authority to exercise the powers of the Mayor and Street Railway Commission under existing ordinances, and also the powers of the Rapid Transit Commission which are not reserved specifically to the commission by the rapid transit act.

It is provided further that the City Council and the Rapid Transit Commission shall refer all matters regarding extensions, new routes and change of routes to the director of street railroads for his advice. It is understood that the clause is now satisfactory to all city officials and commissions and to the railroads.

CHAMBER OF COMMERCE SECRETARY CHOSEN

William C. Culkins, for some years executive secretary of the Cincinnati Chamber of Commerce, notified Mayor George Puchta on Aug. 1 that he would accept the appointment of street railway commissioner, recently made by the City Council, on condition that provision for the office be made in the new city charter, so that it be removed from the control of the City Council. As has been noted above, the charter commission has made such a provision under another name. The salary will be \$7,500 a year.

The appointment must be ratified by the Rapid Transit Commission, but it is understood that all the members are favorable to Mr. Culkins, and that in this case the approval will be only a matter of form. Mr. Culkins stated that he would submit his resignation to the Chamber of Commerce within a few days. He will assume his new position on Sept. 1.

Reading Men Receive More Wages.—Effective Aug. 1, the Reading Transit & Light Company, Reading, Pa., has increased the wages of motormen and conductors 1 cent an hour, making the maximum 28 cents an hour. The increase benefits 600 employees of the company. This is the fifth increase granted during about the last year and means an increase of \$20,000 in the annual payroll.

Newspaper Comments Upon Strike Handling.—In a leading editorial the Oregon *Journal* on July 31 praised F. T. Griffith, president Portland Railway, Light & Power Company, for his handling of the recent strike in Portland. The newspaper attributed the present harmony between company and men to the fact that Mr. Griffith promptly announced his willingness for the employees to unionize.

Cars Again in Operation at Lima.—After a lapse of almost a week street cars were again put into operation at Lima, Ohio, on Aug. 6. No more violence was expected, but rioting started again late on Aug. 9 and three men were shot. State arbitrators have endeavored to adjust the differences between the Ohio Electric Railway and the striking motormen and conductors, but failed. The strike began July 11.

Militia Called Out in Springfield.—Five hundred National Guardsmen on Aug. 7 were ordered on strike duty in Springfield, Ill., by Governor Lowden as the result of the killing of a policeman during an attack on a street car of the Springfield Consolidated Street Railway. The rioting followed an attempt by the company to resume night service, which had been suspended for ten days. The beginning of the strike was noted in the *ELECTRIC RAILWAY JOURNAL* of Aug. 4.

Wages Increased in Quincy.—The minimum wages of trainmen of the Quincy Railway & Light Company, Quincy, Ill., have been increased, effective Aug. 1, 40 cents a day, to a total of \$2.20 a day. The maximum wage has been increased 10 cents a day, bringing this up to \$2.75 per day. An increase is also under consideration for the carhouse and office men. The increase for the trainmen was brought about as a result of a conference between a committee of the employees and the officials of the company.

For an American Academy of Engineers.—A bill has been introduced in the United States Senate by Senator Brandagee to incorporate the American Academy of Engineers with 200 members. Among those who submitted arguments in favor of this plan were J. A. L. Waddell, Gen. G. W. Goethals, S. W. Stratton and C. O. Mailloux. Others mentioned as incorporators and members of the Academy were: Dr. Louis Bell, Dr. W. F. M. Goss, Dr. A. C. Humphreys, William Barclay Parsons, E. W. Rice, Jr., Frank J. Sprague and John F. Wallace.

Women Conductors Not to Be Used at Norfolk.—It was the idea of the Virginia Railway & Power Company, Norfolk, Va., to try one of two women with a view to determining whether or not they could take the place of the regular conductors on the company's cars in the event that the shortage of labor in the vicinity of Norfolk should make it necessary to replace men with women. Owing to the ability of the company to secure men from other parts of Virginia and from outside the State, however, the idea of using women has been abandoned for the present.

Railroad Valuation Act Declared a Failure.—Evidence is accumulating that the federal valuation of railroads, begun pursuant to an act of Congress four years ago, has in reality progressed so little that the expected value of the work has far from materialized. There have been interminable arguments in regard to the theories followed by the Interstate Commerce Commission and the practices of its valuing engineers, and now the few companies that had completed their inventories as of June 30, 1914, have been ordered to bring them down to date. It is reported that some railroads declare the valuation act is a failure and that a repeal

will be asked at the next session of Congress, when the war business may be finished.

Wage Increase in West Milton.—The conductors and motormen of the Dayton, Covington & Piqua Traction Company, West Milton, Ohio, have been granted an increase of 3 cents an hour, together with the premiums as received during the last five years. The premiums are 5 cents a day additional after five years of service, and 1 cent a day additional for each year of service thereafter. The men also receive \$5 extra for each six months that their record of service is without demerit. It is reported that some of the employees have organized and desire a larger wage increase.

West Side Contract Nears Completion.—The drawing of a new contract between New York City and the New York Central Railroad Company for the west side electrification and park improvement, which has been going on for several weeks, is practically completed. Reports as to the progress were submitted on Aug. 3 at a meeting of the joint conference committee of the Public Service Commission and the Board of Estimate. Under the law enacted at the last session of the Legislature an agreement must be reached by Dec. 1, or full control of the matter will pass into the hands of the Public Service Commission. During the drawing of the contract a careful examination was made of the franchises, rights, easements and property titles of the railroad along the west side, and an early report covering all of these points will be made. Public hearings will soon be held to discuss fundamentals and to receive any suggestions the public may care to make.

Bonus Granted Chicago & Joliet Employees During War.—The Chicago & Joliet Electric Railway, Joliet, Ill., has granted all its employees a bonus of 7.5 per cent of their wages, dating from July 1 and extending through the war period or until conditions become normal. This increase affects about 300 employees and will increase the payroll between \$15,000 and \$20,000 a year. While the company had a contract with the local division of the Amalgamated Association of Street & Electric Railway Employees which fixed the scale of wages until June 30, 1919, it was deemed advisable to grant this special wage increase to offset the large increase in the cost of living and the advanced wages paid for labor in other lines of industries. Both of these conditions have tended to make it difficult to hold the men in the employ of the railway or to secure the additional help required for increased business.

Commission Wants Junior Electrical Engineer.—The New York Civil Service Commission has announced an open competitive examination on Sept. 8 for a junior electrical engineer for the Public Service Commission for the First District of New York, at a salary from \$901 to \$1,200 a year. The duties are to inspect the power houses and equipment of subway, elevated and street railway, lighting and power companies in New York City. Candidates must have had at least three years' training in a technical school of recognized standing and not less than one year's experience in electric railway or electric lighting work or in the manufacturing or installation of electrical or mechanical apparatus. Subjects of examination and relative weights: Theoretical and practical questions relating to the construction and operation of power house and railway equipment, electric distribution, measurements, standards and other pertinent subjects, 5; experience and personal qualifications, 3; education, 2. The examination is open to non-residents.

Program of Association Meeting

National Association of Railway Commissioners

Notice has been issued in regard to the twenty-ninth annual convention of the National Association of Railway Commissioners in Washington on Oct. 16-20. At this convention the present vital problems of regulation, including the functions of utilities in serving in the nation's need, the requests of utilities for increases in rates and for authority to diminish or discontinue service and the requests of the public for reasonable rates and more adequate service will be discussed with a view to uniform constructive action by the various commissions.

Financial and Corporate

Annual Reports

Terre Haute, Indianapolis & Eastern Traction Company

The income statement of the Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind., for the year ended Dec. 31, 1916, follows:

Gross earnings from operation.....	\$3,199,523	
Operating expenses	1,863,678	
Net earnings	\$1,335,845	
Taxes	161,451	
Operating income	\$1,174,394	
Other income:		
Dividends on stocks owned, etc.....	\$138,436	
Sale of power.....	122,860	
		261,296
Gross income	\$1,435,690	
Deductions and rentals:		
Bond interest	\$769,323	
Dividends	221,833	
Interest on notes.....	38,565	
Maintenance of organization, leased lines.....	3,000	
		1,032,722
Surplus	\$402,968	
Sinking fund	198,822	
Balance	\$204,146	

The gross earnings for 1916 showed an increase of \$245,404 or 8.31 per cent over those for the year 1915. This increase was made up of \$206,438 or 8.44 per cent in the railway department, and \$38,966.63 or 7.64 per cent in the light and power department. All divisions showed increases. Operating expenses for 1916 were \$1,014,555 or 5.76 per cent in excess of those for 1915, principally on account of the increased cost of labor and material. The total expenditures on the railway property during 1916 on account of maintenance were \$503,038, or 19.3 per cent of railway earnings. A sum of \$330,315 was expended for maintenance of way and structures, and \$172,722 for maintenance of equipment. Taxes in the last year increased \$12,128.

During 1916 there was expended for added property and charged to capital account the sum of \$41,560. The total amount to Dec. 31, 1916, expended for construction purposes, for which no securities have been issued, is \$996,964. In 1916 the company paid to the trustees on account of sinking funds \$198,821, making the total invested in sinking funds to Dec. 31, 1916, \$710,046. With \$261,134 invested in securities of affiliated companies, the total investment of company funds amounts to \$1,968,144.

Miscellaneous traffic and operating statistics for the year ended Dec. 31, 1916, follow:

Passengers carried—interurban lines.....	8,638,749
Passengers carried—city lines.....	13,073,586
Total passengers carried.....	21,712,335
Freight handled (tons).....	89,085
Express handled—exclusive of Wells-Fargo Express (tons)	15,646
Car miles operated—interurban lines.....	5,826,710
Car miles operated—city lines.....	2,127,328
Coal consumed at power stations (tons).....	209,569
Power generated, main power stations (kilowatt-hours).....	91,061,040

Oakland, Antioch & Eastern Railway

The total operating revenue of the Oakland, Antioch & Eastern Railway, Oakland, Cal., for the calendar year 1916, amounted to \$620,216, this being divided as follows: Passenger, \$471,121; freight, \$108,701; express and milk, \$25,887, and other sources, \$14,506. The operating expenses totaled \$437,255, giving an operating ratio of 69.4 if a fire loss of \$6,930 be excluded. The gross income amounted to \$153,476, and deductions to \$363,708, so that the net result was a deficit of \$210,231 for the year.

The number of passengers carried in 1916 was 722,138, and the tons of freight hauled were 158,027. The total car mileage amounted to 1,987,267. The passenger earnings in 1916 were \$35,865 or 7 per cent less than those of 1915, on account of the Exposition business being ended. The

gross revenues, however, exceeded those of 1915 by \$14,799, this being due mostly to an increase of \$44,575 or 69 per cent in freight.

During 1915 and 1916 the company worked under the financial plan adopted by its security holders. The average gross earnings during these two years, or \$612,816, exceeded the 1914 gross by \$131,507 or 27 per cent. For the two months of January and February and the first twenty-four days of March, 1917, the gross earnings showed a gain of \$28,979 or 30 per cent.

While it is problematical whether this rate of increase can be maintained, the company says, its territory is beginning to awaken, and it would seem that in two years its earnings should about equal operating expenses and interest on funded and unfunded debt. The financial difficulties now present are the formulation of a plan to meet the interest charges until they are fully earned, and the devising of a method for funding or liquidating \$1,000,000 of floating indebtedness.

Omaha Ouster Suit Argued

The first hearings in the suit of the city of Omaha, Neb., to secure a settlement from the Omaha & Council Bluffs Street Railway under the reversion clause of the legislative franchise of 1867 to the Omaha Horse Railway, were held on July 26 and 27. This franchise, the city asserts, expired on Jan. 1, 1917. The city wants an accounting for its alleged interest in the present property.

The company, however, states that the tangible property of the old horse-car line now amounts to nothing, and that the city cannot hold any intangible interest after voluntarily permitting the old line to be abolished. The company, therefore, has moved that the city should not be allowed to trace the funds of the horse-car railway through subsequent mergers, and the judges in the United States District Court have reserved decision.

Previous references to this case were made in the ELECTRIC RAILWAY JOURNAL of Jan. 20, 1917, and March 17, 1917.

Modified Dry Dock Plan

Protective Committee of Third Avenue Subsidiary Certificate Holders Urges Acceptance of New Refunding Plan

The protective committee for the 5 per cent certificates of indebtedness (\$1,100,000 outstanding) of the Dry Dock, East Broadway & Battery Railroad, New York, N. Y., has issued a circular in regard to a modification of its refunding plan. On June 21, 1916, the committee gave notice that a refunding plan had been adopted. Counsel for the committee has advised it, however, that as the Public Service Commission has not authorized the issue of \$1,501,500 par value of series "C" refunding bonds but only of \$1,300,200 par value, there is serious doubt as to whether the Third Avenue Railway, the controlling company, is under any obligation to modify the agreement made in June, 1916, and accept one-half of the amount of series "C" bonds now authorized.

The Third Avenue Railway, nevertheless, has offered to accept \$528,000 par value of series "B" bonds and \$650,100 par value or one-half the authorized issue of series "C" bonds, provided the holders of the 5 per cent certificates of indebtedness will accept the other half of the series "C" bonds. The entire issue of series "C" bonds, however, is to bear interest at the rate of 5 per cent, if earned, from July 1, 1915, to July 1, 1925, and thereafter at the fixed rate of 4 per cent with an additional 1 per cent, if earned, until the maturity of the bonds in 1960.

During the nine and one-half years which have elapsed since the committee was organized, it is said, the gross passenger earnings and the net earnings of the Dry Dock line have steadily decreased, so that at the present time it does not seem likely that any interest on the series "C" bonds will be earned for a number of years. The reduction of the rate of interest, if earned, from 6 per cent to 5 per cent will not, therefore, be of any real disadvantage to holders of the 5 per cent certificates of indebtedness, as it is most unlikely that as much as 5 per cent interest will

be earned prior to 1925, or that any interest in addition to 4 per cent will be earned thereafter.

The Third Avenue Railway holds not only \$480,000 of 6 per cent receiver's certificates, but also other 6 per cent claims against the Dry Dock company which the federal court has allowed at \$1,500,000. Under the plan now proposed the Third Avenue Railway will surrender all these claims for the \$528,000 of series "B" bonds and \$650,100 of series "C" bonds. Unless the plan now proposed is accepted, the claims will be valid in full for the amount stated with arrears of interest. If the certificate holders do not agree to this modified refunding plan, the committee says, they are not likely to get anything.

The committee has, therefore, adopted a further modified refunding plan which is binding upon the depositing certificate holders unless the holders of more than one-third in amount of the certificates file written notice of dissent with the Union Trust Company, New York, before Sept. 15, 1917. The debts which are to be refunded aggregate \$4,162,000, exclusive of interest. This indebtedness will be refunded and future requirements provided for by making a general refunding mortgage covering the property with the priorities as follows:

Series "A" 5 per cent bonds, to be a prior lien and preferred as to both principal and interest—not over . . .	\$1,500,000
Of this amount \$950,000 is applicable only to refund the outstanding \$950,000 of general mortgage bonds. A total of \$550,000 may be issued to acquire additional property and for betterments.	
Series "B" bonds, to bear interest at the fixed rate of 4 per cent per annum from July 1, 1915, until Jan. 1, 1960. A prior lien over, and preferred as to both principal and interest over series "C" bonds.	528,000
Series "C" bonds, to be dated July 1, 1915, and to bear interest as noted above.	1,300,200

The holders of \$1,100,000 of certificates of indebtedness are to receive in full settlement of principal and all accrued interest thereon \$650,100 of series "C" bonds, these to be distributed pro rata in the ratio of \$59.10 in face value of series "C" bonds for each \$100 face value of certificates of indebtedness. The Third Avenue Railway will contribute \$21,000 in cash toward the expenses of the committee, the fees of their counsel and a reasonable allowance to the members of the committee.

Northwestern Penn Amalgamation Nearing Completion

In January, 1916, the Northwestern Electric Service Company, a new company, was authorized to issue: (a) \$200,000 of first preferred stock, viz.: \$173,500 for cash, \$20,000 for property and \$6,500 in exchange for an equal amount of stock of twelve light and power companies which were merged to form the company; (b) \$455,000 of second preferred stock in exchange for second mortgage bonds of the Northwestern Pennsylvania Railway, Meadville, Pa., and (c) \$1,050,000 of common stock in exchange for the stock of the railway. These exchanges were to give to the Northwestern Electric Service Company the control of the railway through ownership of all the common stock of the latter.

The amalgamation, it is now said, has not yet been completed. The management, however, has the promise of sufficient stock of the Northwestern Pennsylvania Railway to give the new company a voting majority which would make the exchange proposition operative. It is hoped to complete this exchange of securities within thirty days.

It is contemplated that between \$800,000 and \$1,000,000 of common stock will be issued in purchase of a majority of common and preferred stock of the Northwestern Pennsylvania Railway on an offer which was extended on the following basis: In purchase of common stock, Service common at par for Railway common at 30. In purchase of preferred stock, Service common at par for Railway preferred at par.

No definite action has been taken as to cancellation of interest on the railway second mortgage. The largest holders of these bonds are agreeable to such action, and an effort is being made at this time to form a bondholders' committee to represent all or a majority of these bondholders, such committee to act with the company in carrying out the plan. Should the cancellation of interest for a

proper period go into effect, the proposed exchange for second mortgage bonds would probably, it is said, be withdrawn.

The present property of the Northwestern Electric Service Company consists of the following: (1) 50 miles of 23,000-volt transmission line between Erie and Harmonsburg, with a branch between Erie and Kearsarge. (2) Distribution lines in the following localities, all of which are in Erie and Crawford Counties, Pa.; Saegerstown, Venango, Cambridge Springs, Edinboro, Middleboro (McKean), Fairview, North Girard, Linesville and Harmonsburg.

Atlantic City & Shore Railroad, Atlantic City, N. J.—The Atlantic City & Shore Railroad has arranged to take over and operate in connection with its Ocean City and Central Passenger Railway lines the single-track road leading into Venice Park, known as the Venice Park Railway. The line has been closed for more than a year and the residents of the park section had to walk or use a jitney. The Atlantic City & Shore Railroad has arranged a system of transfers so that people can ride from any part of the shore resort to Venice Park for a fare of 5 cents.

Boston (Mass.) Elevated Railway.—A quarterly dividend of 1½ per cent has been declared by the Boston Elevated Railway, payable on Aug. 15 to holders of record on Aug. 2. On May 15, one-half of 1 per cent was paid. Since 1916 dividends have been paid as follows: February, 1½ per cent; May, one-half of 1 per cent; August, November and February, 1917, 1½ per cent; May, one-half of 1 per cent.

Chickasha (Okla.) Street Railway.—On account of an increase in valuation from \$32,000 to \$120,000 by the State Board of Equalization, it has been announced that the operations of the Chickasha Street Railway will be suspended unless a fair valuation is made without delay. The company has never paid dividends and has barely been able to meet bond interest.

Columbus, Delaware & Marion Railway, Marion, Ohio.—Judge Kinkead has ordered the following payments in the receivership case of the Columbus, Delaware & Marion Railway, which was recently sold to the Columbus, Delaware & Marion Electric Company: Eli M. West, receiver and master commissioner, \$10,000; receiver's counsel, Harry F. West, \$7,000; Bankers' Trust Company, Cleveland, \$1,500; bank's counsel, \$7,500; Cleveland Trust Company, \$3,000; bank's counsel, \$3,700; Guaranty Trust Company, \$500; bank's counsel, \$1,250. Receiver West was instructed to file his final report, preliminary to discharge.

Columbus Railway, Power & Light Company, Columbus, Ohio.—The Columbus Railway, Power & Light Company has arranged to issue \$576,000 of 6 per cent secured notes, dated Aug. 2, 1917, maturing Aug. 1, 1918, and secured by deposit of first refunding and extension mortgage bonds. The Public Utilities Commission has granted authority to sell the notes, because of the company's failure to sell all of the \$1,846,000 of 5 per cent bonds authorized for sale at 90. The company desires to continue the construction of its power plant, and the proceeds will be used for this purpose.

Dunkirk (N. Y.) Street Railway.—The Public Service Commission for the Second District of New York has reserved decision on the application of the Dunkirk Street Railway, operated under lease by the Buffalo & Lake Erie Traction Company, for approval of a declaration of abandonment of portions of the route in the city of Dunkirk.

El Paso (Tex.) Electric Company.—Stone & Webster are offering at 97½ and interest, to yield about 6.94 per cent, a new issue of \$300,000 of three-year 6 per cent gold coupon notes of the El Paso Electric Company, dated Aug. 1, 1917, and due Aug. 1, 1920. The notes are in \$1,000, \$500 and \$100 denominations, and are callable as a whole at 100 and interest on any interest day upon sixty days' notice. The proceeds will provide funds for additions and improvements. The company owns all of the securities of the companies doing the entire electric lighting, commercial power and street railway business in El Paso, Tex., and Juarez, Mexico, and operating an electric railway between El Paso and Ysleta. The population served approximately 93,000.

Interborough Rapid Transit Company, New York, N. Y.—The Public Service Commission of the First District of New York has issued an order authorizing the Interborough Rapid Transit Company to issue \$23,053,000 of 5 per cent bonds, dated June 1, 1913, and maturing on June 1, 1966. The bonds are to be issued by the company as of March 20, 1913, and are to be sold to net not less than 93.5 per cent. The proceeds of the bonds, to the extent of \$21,554,290, are to be applied to meet the cost of equipment of new rapid transit lines operated by the company, while the remaining \$1,498,710 of face value is to cover the expenses of the sale of the bonds and the discount. A large part of the new bond issue is made necessary by increased costs not foreseen in the original dual system estimates of 1913. The commission has also resettled an order of May 25, 1917, at which time it permitted the company to issue bonds for \$11,436,000 for the cost of plant, structure and equipment of third and additional tracks upon the elevated lines by increasing the amount upon further application to \$16,436,000.

Lehigh Valley Transit Company, Allentown, Pa.—The following notice has been sent by the Girard Trust Company to holders of certificates of deposit issued for stock of the Lehigh Valley Transit Company: "The Electric Bond & Share Company having exercised its option, under the agreement dated Feb. 7, 1917, to purchase the preferred and common stock of the Lehigh Valley Transit Company, and having paid to the depository \$48 per share for each share of preferred stock and \$28 per share for each share of common stock deposited, you are hereby notified to present your certificate of deposit, properly indorsed in blank, to receive payment therefor."

Memphis (Tenn.) Street Railway.—The Tennessee Railroad Commission has reduced the assessment of the Memphis Street Railway for the years 1917 and 1918 from \$4,514,380 to \$4,230,200, or \$284,180, over the protest of the county. It is reported that the county will carry the matter before the State Board of Equalization in September. The claim of the attorneys for the company was based on loss of revenue through jitney competition of last year, increased expenses occasioned by street paving, demand by the public for more and better cars, extension of lines in sparsely settled territory and the increased cost of coal and other material.

Middle West Utilities Company, Chicago, Ill.—A syndicate consisting of the Illinois Trust & Savings Bank, Russell Brewster & Co., McCoy & Company, Halsey Stuart & Company of Chicago, and A. H. Bickmore & Company of New York, is offering at 97½ and interest \$1,000,000 of three-year 6 per cent collateral gold notes, series "A," of the Middle West Utilities Company. The notes are secured by deposit of securities in the aggregate principal amount of 120 per cent of all notes outstanding. The notes are dated July 1, 1917, and are redeemable all or in part at 100 and interest at any time upon sixty days' notice. They are in denominations of \$1,000, \$500 and \$100.

Reading Transit & Light Company, Reading, Pa.—William B. Bonbright & Company, New York, N. Y., have purchased an issue of \$2,300,000 two-year 6 per cent secured notes of the Reading Transit & Light Company, subject to the approval of the Public Service Commission of Pennsylvania, and an advance offering is to be made. The purpose of the issue is to provide in part for the acquisition of all the outstanding common stock of the Metropolitan Edison Company of Reading and Lebanon, and the property of the United Traction Company, which owns or controls lines in and about Reading, all of which were heretofore held under leaseholds. The notes are secured by the deposit with the trustee of \$3,000,000 of Reading Transit & Light Company general and refunding mortgage thirty-year 5 per cent bonds and all of the outstanding \$3,000,000 of common stock of the Metropolitan Edison Company.

Seattle, Renton & Southern Railway, Seattle, Wash.—Judge A. W. Frater, in the Superior Court, Seattle, Wash., recently signed an order dismissing the receivers, Scott Calhoun and Joseph Parkin, of the old Seattle, Renton & Southern Railway. The receivers were appointed in connection with the case of William R. Crawford, which has

been in court for five years. The court allowed the receivers, in addition to their salaries of \$12,000, \$5,195 for personal expenses. The remainder of the funds available is to be paid over to the new owners of the road.

Seattle (Wash.) Municipal Street Railway.—The municipal street railway system in Seattle was operated during the month of June at a loss of \$2,361, making a total loss of \$111,251 to date. June was the first month of the fourth year of operation.

Terre Haute & Merom Traction Company, Terre Haute, Ind.—Philip Lahr has been reinstated receiver of the Terre Haute & Merom Traction Company by Judge John W. Gerdink in the Terre Haute Superior Court. He was appointed receiver several years ago as the result of the filing of the case of Don M. Roberts against the company and was discharged in 1914. The company, it is said, is the owner of some property and steel rails which can be sold, and it was asked that Mr. Lahr be reinstated so that he could dispose of the parcels.

Electric Railway Monthly Earnings

		BERKSHIRE STREET RAILWAY, PITTSFIELD, MASS.					
Period		Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	
1m.,	June, '17	\$91,446	*\$90,312	\$634	\$27,557	†\$26,901	
1 "	" '16	82,913	*52,328	30,585	7,850	†2,907	
6 "	" '17	510,250	*454,190	56,060	165,483	†108,926	
6 "	" '16	458,221	*388,497	69,724	150,660	††179,756	
		CONNECTICUT COMPANY, NEW HAVEN, CONN.					
1m.,	June, '17	\$861,397	\$656,201	\$205,196	\$95,457	†\$132,011	
1 "	" '16	816,940	501,178	315,762	101,524	†206,507	
6 "	" '17	4,763,660	3,788,687	974,973	574,995	†503,941	
6 "	" '16	4,495,551	3,079,714	1,415,837	591,446	†930,082	
		FEDERAL LIGHT & TRACTION COMPANY, NEW YORK, N. Y.					
1m.,	May, '17	\$206,448	*\$149,350	\$57,098	\$44,642	†\$12,456	
1 "	" '16	194,772	*136,515	58,257	48,592	9,665	
5 "	" '17	1,138,905	*753,023	385,882	243,077	†142,805	
5 "	" '16	1,056,561	*711,357	345,204	243,988	†101,216	
		LEHIGH VALLEY TRANSIT COMPANY, ALLENTOWN, PA.					
1m.,	June, '17	\$248,707	*\$162,729	\$85,978	\$51,351	†\$34,513	
1 "	" '16	206,616	*125,222	81,394	50,571	†31,115	
12 "	" '17	2,671,669	*1,750,275	921,394	625,192	†246,228	
12 "	" '16	2,333,408	*1,386,050	947,358	635,888	†242,676	
		NEW YORK & STAMFORD RAILWAY, PORT CHESTER, N. Y.					
1m.,	June, '17	\$38,780	*\$33,139	\$5,641	\$7,982	†\$2,302	
1 "	" '16	36,597	*25,462	11,135	7,979	†3,193	
6 "	" '17	174,559	*170,865	3,694	47,908	††43,949	
6 "	" '16	168,251	*143,300	24,951	47,900	†22,711	
		NEW YORK, WESTCHESTER & BOSTON RAILWAY, NEW YORK, N. Y.					
1m.,	June, '17	\$46,282	*\$44,912	\$1,370	\$21,338	†\$9,252	
1 "	" '16	44,886	*45,436	†550	\$23,434	†11,379	
6 "	" '17	274,446	*277,223	†2,777	\$46,688	††43,146	
6 "	" '16	256,190	*304,369	†48,179	\$55,954	††60,951	
		REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO					
1m.,	June, '17	\$375,345	*\$254,386	\$120,959	\$80,514	†\$44,747	
1 "	" '16	321,024	*188,705	132,319	68,579	†64,083	
12 "	" '17	4,283,069	*2,688,304	1,594,265	907,876	†719,560	
12 "	" '16	3,598,296	*2,112,749	1,485,547	755,680	†742,086	
		RHODE ISLAND COMPANY, PROVIDENCE, R. I.					
1m.,	June, '17	\$511,983	*\$412,343	\$99,640	\$121,123	†\$5,399	
1 "	" '16	500,107	*313,402	186,705	122,158	†91,950	
6 "	" '17	2,829,890	*2,364,658	465,032	718,154	††169,333	
6 "	" '16	2,728,612	*2,021,860	706,752	679,781	†111,797	
		SAVANNAH (GA.) ELECTRIC COMPANY					
1m.,	May, '17	\$74,213	*\$52,139	\$22,074	\$24,144	†\$2,070	
1 "	" '16	64,343	*44,401	19,942	23,688	†3,746	
12 "	" '17	877,833	*582,620	295,213	285,654	9,559	
12 "	" '16	785,175	*526,525	258,650	279,246	†20,596	
		TAMPA (FLA.) ELECTRIC COMPANY					
1m.,	May, '17	\$82,012	*\$48,366	\$33,646	\$4,370	\$29,276	
1 "	" '16	72,781	*46,209	26,572	4,394	22,178	
12 "	" '17	992,882	*539,245	453,637	52,281	401,356	
12 "	" '16	978,851	*519,135	459,716	52,238	407,478	
		TWIN CITY RAPID TRANSIT COMPANY, MINNEAPOLIS, MINN.					
1m.,	June, '17	\$853,195	\$541,990	\$311,205	\$145,846	\$165,359	
1 "	" '16	853,190	511,481	341,709	140,000	201,709	
6 "	" '17	5,175,944	3,406,572	1,769,372	877,511	†93,861	
6 "	" '16	5,009,415	3,142,623	1,866,792	853,387	†1,013,404	
		WESTCHESTER STREET RAILROAD, WHITE PLAINS, N. Y.					
1m.,	June, '17	\$22,667	\$24,583	†1,916	\$2,193	††\$4,081	
1 "	" '16	22,880	22,589	291	1,808	†1,489	
6 "	" '17	115,196	136,702	†21,504	12,450	††33,790	
6 "	" '16	118,534	127,369	†8,835	10,558	††19,240	

*Includes taxes. †Deficit. ††Includes non-operating income. \$Includes interest on bonds, charged income and paid by the New York, New Haven & Hartford Railroad under guarantee; also interest on notes held by the New York, New Haven & Hartford Railroad, not credited to income of that company.

Traffic and Transportation

Trenton Company Loses Fare Case

Supreme Court of New Jersey Upholds Effort of City to Prevent Withdrawal of Six-for-a-Quarter Tickets

As noted briefly last week the Trenton & Mercer County Traction Corporation, Trenton, lost its case in the Supreme Court of New Jersey, to which it had appealed for permission to abandon the sale of six tickets for 25 cents. Under a writ of certiorari the company carried to the Supreme Court the order of the Utility Board forbidding it to put into effect the proposed withdrawal of the tickets. The Supreme Court states that the withdrawal of tickets would be an increase of an existing rate under which 82 per cent of the passengers carried paid a fare of 4 1/6 cents. By the proposed withdrawal they would be required to pay a fare of 5 cents. The court's decision, however, can be appealed to the Court of Errors and Appeals. The company has pending in the federal courts an action to test the sale of tickets on constitutional grounds.

The writ of certiorari reviewed two orders of the Public Utility Commission. One was dated Aug. 17, 1915, and suspended the proposed abolition of the tickets, and the other dated Jan. 16, 1916, and permanently ordered the company, after a hearing, not to make the change.

The practice of selling tickets was inaugurated twenty-two years ago, but the company endeavored to change the plan in 1909. After negotiations in 1909, an ordinance was passed by the city requiring the tickets. The company agreed to the ordinance in advance, in writing, and promised to accept by a confirmatory agreement after the measure had been passed. The confirmatory agreement was never actually executed.

Justice Swayze says that the Supreme Court found it unnecessary to pass upon the question whether the original ordinances and their acceptance amounted to a contract by which the companies were authorized to charge as much as 5 cents, or whether they amounted only to a limitation by which the companies were forbidden to charge more than 5 cents. The consideration of the reasonableness of ticket selling was also omitted.

In referring to the understanding about the ordinance, on the faith of which the city passed the measure, Justice Swayze said:

"Had the agreement been signed by the officers of the company no question could have arisen."

The directors of the company held that the ordinance permitted of alterations whenever demanded in the judgment of the Common Council, and that this was a false understanding. On this point the court remarked:

"It is a little difficult to understand upon what theory it is supposed the false recital vitiates the action of the company. It is not charged that the city did anything to mislead the company in this respect. Manifestly the company ought not to be permitted for its own mistake to withdraw from the agreement after the city had acted thereon.

"There was sufficient legal consideration for the agreement by the company. It is true that the ordinance did not affirmatively concede any benefit to the company, on its face was rather a detriment; but that is too narrow a view to take . . . the benefit to the company was what the ordinance omitted, not what it contained."

To the allegation that the Mercer County Traction Company and the Hamilton & Ewing Traction Company could not be affected by the ordinance because no official action was taken by either with reference to its terms, the court comments:

"This argument overlooks the fact that both these companies were at the time under lease to the Trenton Street Railway for a term of which more than 990 years was still to come. The probability of the two lessor companies being affected prejudicially by the ordinance is negligible."

Six Cents Proposed for Oil City

Citizens' Traction Company Would Charge 6 Cents and Introduce Workingmen's Tickets—Company's Service Commended

The Citizens' Traction Company, Oil City, Pa., proposes to begin charging a 6-cent fare on its lines in Oil City and Franklin on Sept. 1. The company has filed tariffs to this effect with the Public Service Commission of that State. To offset inconvenience to patrons in paying 6 cents instead of a nickel, special workingmen's tickets will be issued in books of eighteen tickets for \$1 or ninety tickets for \$5. These will be accepted for one cash fare on all lines of the company. In a formal statement on the necessity for the increase, J. H. McClure, general manager of the company, said:

"Confronted by a situation which threatens the impairment, not only of the capital invested, but of its services to the public, the Citizens' Traction Company has moved to secure an increase in rates, which will at least give it some relief and which has been forced upon the company by the constantly rising prices of materials, taxes and labor. This step is absolutely imperative and is in line with the tendency of the times in other industries, many of which directly affect this company. The conditions which have brought about this situation threaten bankruptcy for electric railways in general, and in this case menace the ability of the company to provide the service which is so necessary to Oil City, Franklin and vicinity. This action has been caused by present conditions which have disorganized all values the world over."

PUBLIC'S ATTITUDE APPARENTLY FAVORABLE

Although the property is being operated under a franchise which calls for a maximum fare of 5 cents, officials of the company do not anticipate that the application will be denied. According to several local newspaper reports following the announcement of the company's proposal, the public seems to accept the move very much in a co-operative spirit. The request for more revenue was not a surprise, for many in close touch with the development of the local property had already questioned its ability to continue against the rising costs of operation. Evidently the citizens of Oil City and vicinity are satisfied with their electric railway service and stand ready to help in having that service maintained.

Speaking editorially of the present national conditions and their effect on the electric railway field generally, the *Oil City Blizzard* says:

"That the local concern has been hard hit, there seems to be no doubt. That it costs more than 5 cents to haul each passenger is the patent fact that makes some action necessary. If, under the abnormal conditions of war times, with no relief in sight, the company is giving a service at less than cost, it must raise its charges proportionately.

"An electric railway is a public service corporation. Its chief end is public service. When it fails to give adequate service, either in quantity or quality, the public has a right to demand to know the reason why. On the other hand, the public must return to the company an adequate recompense for the service rendered. If the fare is not enough to do this, then—in justice to public and to company alike—the fare must be increased."

Similarly, the *Oil City Derrick*, under the title "To Every One His Due," commented on the proposed increase as follows:

"The proposal of the Citizens' Traction Company to increase its fares to 6 cents is in accord with the general advance in the price of all articles, and as the company's detailed statement shows, seems to be essential to the continuance of good service. Under such conditions there can be no ground for complaint from anyone.

"Citizens of Oil City are proud of their electric railway system, of its comfortable cars and frequent schedule; they would be loath to have its service changed. But a public service corporation cannot serve the people unless it is given adequate return. If the 5-cent charge for service was fair in 1910, it obviously is not reasonable to-day, when every item entering into the business has increased in cost."

Improved Service on Bay State

Company Contemplates the Use of One-Man Cars Besides a General Program of Car Replacements

The Bay State Street Railway on Aug. 1 filed with the Public Service Commission of Massachusetts a request for permission to operate all-automatic one-man cars on some of its lines. This step by the company marks its efforts to reduce the cost of operation and at the same time maintain a good standard of service. President P. F. Sullivan made the following statement in this connection:

"We are especially interested in these cars because they will enable us to give satisfactory service economically. The use of cars of this kind is in line with the suggestions of the Public Service Commission and with our policy to give the best service at the lowest possible cost. We are trying in every way to cut down expenses—something these one-man cars will assist us to do."

The company has also filed with the commission a statement of equipment to be replaced. It will place in operation 200 new double-truck cars as fast as they are received from the manufacturer. The first of these cars has arrived and will soon be placed in service in Lynn. In the interests of better service 297 old cars will be scrapped, which, together with forty-one horse cars and thirty-nine snowplows which will also be scrapped, are valued at \$989,507. Recently thirty-seven reconstructed cars were put in commission, and as soon as the financial condition of the road will permit, other cars will be reconstructed and changed for prepayment operation, which will bring the total number of reconstructed cars up to 200. This is part of the Bay State's general betterment plan.

Skip Stop Extended in Buffalo

The skip-stop plan of operation on the city lines of the International Railway, Buffalo, N. Y., has been extended to the West Utica, Abbott-South Park and Broadway lines. Elk Street cars operating over the Abbott-South Park line from Main and Perry Streets to Elk Street and the Abbott Road will also skip stops. Officials of the company, co-operating with the municipal traffic commission, have made a thorough study of the skip stop on the two initial skip-stop lines, Main Street and Elmwood Avenue, and have found that it has greatly reduced the running time of cars and has made it much easier to maintain schedules. The estimated saving of time on a one-way trip on the West Utica-Abbott-South Park lines is twelve minutes and on a one-way trip on the Broadway line, six minutes.

Commission's Authority Denied

Circuit Court Holds Commission Cannot Change Rates of I. U. T. Company, Fixed by Contract

Judge J. F. Charles in the Circuit Court of Grant County, Indiana, has ruled that the Public Service Commission of Indiana has no authority to change a rate which has been fixed by contract between a traction company and a county. The court held that the county has the right to make a contract with the traction company for certain fares between specified points and that the State has no right to change the contract. The case grew out of an agreement between the Union Traction Company of Indiana and Grant County by which fares between points in the county were fixed. The company was authorized by the commission in March, 1916, to increase these specified fares to a flat rate of 2 cents a mile. The town of Fairmount and Grant County thereupon brought separate suits against both the traction company and the commission. The company has been charging the increased rate since April, 1916, and the present ruling on demurrer will not bring back at once the old rates.

The plaintiffs in the two actions have obtained a rule to answer against the defendants and will ask a judgment if the case stands on the rulings on demurrer. If the next step is a trial of the issues, evidence will be submitted. It is said that the case is one which the Supreme Court may be called upon to decide.

Girl Employed as Station Agent

Some difficulty has been experienced by the Cleveland, Southwestern & Columbus Railway, Cleveland, Ohio, in maintaining competent agents at several stations, owing to the greater inducements attracting the men to industrial positions. Recently a vacancy occurred at Elyria, which is the company's largest office with the exception of that at Cleveland, and E. F. Schneider, general manager of the company, decided to give Miss Emma Sharfenberg a trial at the work. In this position it is her duty not only to act as ticket agent but to serve as cashier for the entire Western division, since all conductors on that division turn in at Elyria.

The young lady had been employed for about a year as clerk in the office of the local superintendent in Elyria, where she proved to be unusually efficient. She has now been acting as the Elyria agent for two months and is said to be doing the work very successfully. Baggage is handled by the electric package crew at this point, so her duties do not include any work for which a woman would be physically unqualified. This is the first important position the Southwestern Company has intrusted to a woman, although a lady agent has been employed at Crestline, a small station, for a long time.

Monmouth County Reduces Fare.—The Monmouth County Electric Company, Red Bank, N. J., has reduced its fare between Long Branch and Red Bank from 15 cents to 10 cents. The question of reduction of fare has been under consideration for a long time, having been taken up by the Chamber of Commerce on several occasions.

Louisville Traction Revises Tariff.—The Louisville (Ky.) Traction Company, operating through electric service between Louisville and Indianapolis, Ind., has completed a revision of its local fares. The rate between terminals has not been affected but the local rates have been changed to correspond with the rates of competing steam roads and are based on 2 cents a mile.

Railways to Exchange Transfers.—The Seattle & Rainier Valley Railway and the Seattle (Wash.) Municipal Street Railway has each agreed to honor transfers of the other company. The agreement is to be permanent and was arranged by Walter M. Brown, general manager of the railway company, and A. L. Vanetine, superintendent of public utilities.

Fare Increase Asked by Small Illinois Road.—The Galesburg & Kewanee Electric Railway, Kewanee, Ill., a 14-mile line connecting Kewanee, Wethersfield and Galva, Ill., has issued tariffs, effective Sept. 1, increasing the city fare from 5 cents to 7 cents, and also the interurban zone fares from 5 cents to 7 cents. These are the principal increases asked for, although various ticket rates have also been advanced in the new tariff.

Auto-Bus Line to Army Post.—Satisfactory traffic arrangements have been made by the city of Tacoma, Wash., and Pierce County authorities with the bus drivers operating to the American Lake army post. Bus men will be organized into an auto-bus company, with stringent rules as to regulation of traffic on the army post highway. Before the conference of the men with the city and county authorities, there had been numerous complaints of violations of the State traffic law.

Six-Cent Fare Wanted in Dover.—The Dover, Somersworth & Rochester Street Railway, Dover, N. H., proposes to raise its fare from 5 cents to 6 cents in each fare zone, effective Aug. 20. Its new schedule has been filed with the Public Service Commission of New Hampshire. F. E. Webster, treasurer of the company, states that the road is obliged to make the increase because of the steady increase in operating expenses. It is said that the Dover Board of Trade will protest the action.

Segregation of Passengers Ordered.—The Mayor of Oklahoma City, Okla., supported by the City Commission, has ordered the chief of police and all his officers to see that the electric railways operating in Oklahoma City, hereafter strictly enforce the "Jim Crow" law. This action follows a recent assault on the conductor and the motorman of an

electric railway car on the Fair Park line, which was the outgrowth of an attempt of negroes to ride in that section of the car reserved for white passengers.

Information Booklet for Birmingham.—A well-illustrated booklet, entitled "Playgrounds," including a list of car schedules of the Birmingham Railway, Light & Power Company, Birmingham, Ala., has just been issued by that company. The folder is made in the form of a railway time-table and contains much interesting information about points of interest in Birmingham and adjacent towns. A map of the electric railway system of the district is also included.

Open Trailers Permitted by Lifting Military Order.—The Louisville & Southern Indiana Traction Company, New Albany, Ind., has resumed use of trailers on its Louisville-Jeffersonville and Jeffersonville-New Albany lines. As noted in the *ELECTRIC RAILWAY JOURNAL* for July 7, page 37, an order issued by the military authorities prohibiting cars from crossing bridges over navigable streams with windows open made it necessary to abandon the use of open trailers. Now that that order has been rescinded the open cars are used to the satisfaction of patrons of the company.

I. R. T. Withdraws Free Transportation.—The privilege of free transportation on the subway and elevated lines of the Interborough Rapid Transit Company, New York, which was extended to members of the National Guard of New York on April 3, was withdrawn upon the mustering of the National Guard into the federal service. Theodore P. Shonts, president of the company, explained that the privilege could no longer be extended, there being a federal statute forbidding the acceptance of voluntary service for the government except in cases of sudden emergency involving the loss of human life or the destruction of property.

Freight and Express Service Planned for Poughkeepsie.—Tentative plans are being considered for an express and freight service on the Poughkeepsie City & Wappingers Falls Electric Railway, Poughkeepsie, N. Y., to give through deliveries to the boats, railroad stations, Vassar College and the State Hospital at Poughkeepsie. With the development of the Standard Aniline Products factory at Wappingers Falls there is a growing demand for quick transportation from that factory to the forwarding facilities at Poughkeepsie. It is said that the matter is only contemplated, however, as investigations are being conducted to ascertain whether necessary arrangements can be made and whether the company can enter the business profitably.

Railway Wants List of Licensed Jitneys.—The Washington Railway & Electric Company has requested the District of Columbia Public Service Commission that it be furnished a list of all licensed jitney operators, together with the routes traversed and the rates and schedules maintained. Since the recent railway strike in Washington more than 400 jitney licenses have been issued and the commission is preparing to investigate the situation. In its letter to the board the company asked if any steps are in contemplation to require the jitney men to give bond as a protection to patrons in cases of accident and to prevent overcrowding. The company objects to the jitneys paralleling its lines, which was permitted as an emergency measure during the strike, and claims that it is fully able to handle the traffic in its territory.

Illinois Company Fare Increase Upheld.—The new schedule of rates on the interurban division of the Chicago & Joliet Electric Railway, Joliet, Ill., which was approved by the Illinois Public Utilities Commission after a hearing and went into effect on July 1, has been upheld by the Circuit Court. J. R. Blackhall, general manager of the company, reports that although the new rates are considerably higher than the old ones, they have not in any way affected the volume of traffic. The city of Lockport took an appeal from the order of the commission to the Circuit Court of Sangamon County and, as the case could not be heard until the September term of court, the city asked for a stay order suspending the tariff until that time. The hearings on the stay order came up on July 30, and the court denied the petition. The company anticipates no difficulty in connection with the trial, which will not be held until the latter part of the year.

Spokane Trainmen Oppose Jitneys.—Trainmen of the Washington Water Power Company of Spokane recently circulated on the cars for patrons' signatures a petition which was addressed to the Mayor and city. The petition read in substance as follows: "We petition your honorable body that if the jitney buses are to be permitted to run on the streets of the city you confine their operation to streets not already served by electric railway cars. We believe that former experience with jitneys has shown that the competition among them, and between them and the street cars, makes the streets occupied by both dangerous to the public and gives a duplication of service to those streets to the neglect of streets not served by the cars. We also believe that if there is a demand for more transportation service the interests of all would be better served and protected if additional transportation facilities were not allowed on streets which are already served by electric railways."

Reduction of Service Proposed.—The Public Service Commission for the First District of New York is conducting an investigation as to the merits of an application by the Staten Island Rapid Transit Railway, a steam road, for permission to eliminate eighty-eight trains on its north and south shore divisions. The service it is proposed to eliminate consists of trains which have been operated late at night and in non-rush hours. The company contends that the trolley lines which parallel the road are sufficient to care for all the traffic. The Richmond Light & Railroad Company, the adjacent electric railway, has agreed, in the event that the commission acts favorably on the application, to provide additional facilities. At a hearing before the commission on Aug. 7 the case was adjourned to Sept. 5. The commission has in mind the stress of the present times and, while not wishing to curtail the service to the public, especially that which is necessary, is desirous to co-operate with the government in conserving the transportation facilities of the country.

Ohio Road Has Large Special Car Business.—During the year 1916, 542 special cars were chartered from the Cleveland, Southwestern & Columbus Railway, Cleveland, Ohio, or an average of forty-five cars a month. This business brought in an average gross revenue of \$20.30 a car. A good many of these special cars were ordered for short trips. The company requires a minimum of fifty passengers and issues special-rate tickets good only on the special car. The contract signed by the person chartering the car calls for the payment of a certain sum for fifty persons or less and so much per passenger for all over fifty. It also specifies that the car must be paid for in advance, not less than twenty-four hours before it is to run, otherwise the contract is declared void. The company's funeral car was frequently chartered and this is included in the above total. The remainder of the business came from various clubs, from parties going to the resorts and from the colleges at Oberlin and Wooster for athletic teams and theater parties. Some advertising was carried in the college papers for this last-named business, but the remainder came very largely unsolicited.

"Be Careful" Campaign Launched.—Another far-reaching campaign is being conducted in the interest of public safety by interests in Philadelphia, Pa. It is termed a "Be Careful" campaign and is supported by more than 150 manufacturing interests, financial institutions, public service corporations, insurance companies, firms and individuals. Full-page advertisements are published in local papers calling attention to the hundreds of killed and wounded on electric railways and steam roads in Pennsylvania in 1916, most of whom were trespassers and careless pedestrians. The people are urged to exercise more care to prevent the little accidents that arise from simple dangers and in that way to reduce the number of fatalities or bodily losses which make life a burden. Among the companies supporting the campaign are: the Philadelphia Rapid Transit Company, the Trenton, Bristol & Philadelphia Street Railway, and the Philadelphia Electric Company. Several individuals also are interested, among whom are: Samuel T. Bodine, president of the United Gas Improvement Company; John Gribbel, vice-president of the American Railways, and John A. Rigg, president of the Interstate Railways.

Personal Mention

R. A. Wilson has been appointed treasurer of the Quebec Railway, Light, Heat & Power Company, Ltd., Quebec, P. Q.

John M. Reifsnider has been appointed a member of the Public Service Commission of Maryland in place of P. D. Laird, resigned.

C. H. Byers has been appointed district engineer of the division of valuation of the Interstate Commerce Commission, Pacific district. **W. H. Davisson** was appointed assistant district engineer.

Frank I. Hardy, general manager of the Chicago, South Bend & Northern Indiana Railway, has been appointed general superintendent of the Northern Ohio Traction & Light Company, with offices at Akron, Ohio.

C. O. G. Miller, a member of the board of directors of the San Francisco-Oakland Terminal Railways, Oakland, Cal., has been elected president pro tem of that company, filling the vacancy which has existed since G. K. Weeks resigned from the presidency last September. Mr. Weeks is still on the board of directors.

George Scott, chief engineer of power stations for the Moncton Tramways, Electricity & Gas Company, Ltd., Moncton, N. B., has been appointed superintendent of the company to succeed A. B. Coryell. Mr. Scott has been in the service of the company in various capacities for several years. Mr. Coryell, as reported in this paper recently, resigned to enter private business in Buffalo, N. Y.

Howard H. George, formerly assistant engineer under Martin Schreiber, who is chief engineer of the Public Service Railway, Newark, N. J., reviewed his training camp experiences in a communication which appeared in the July issue of the *Trolley Wheel*, that company's publication. Mr. George has the rank of first lieutenant in the Officers' Reserve Corps, and has been on active duty since early in May.

Fred W. Proctor, city engineer of North Adams, Mass., has resigned to become engineer of the Berkshire Street Railway, Pittsfield, Mass. Mr. Proctor was graduated from Tufts College in Massachusetts, and was for several years a member of the engineering staff of the Boston & Maine Railroad. After serving several years as assistant city engineer at North Adams, he became superintendent of streets and in 1914 was made city engineer.

J. R. Blackhall, general manager of the Chicago & Joliet Electric Railway, Joliet, Ill., and president of the Universal Concrete Products Company, has resigned his official position with the latter company, but will continue as a director. Mr. Blackhall was active in the development and marketing of the concrete pole manufactured by this company by the centrifugal process. The separation of the manufacturing company office in Chicago and the railway company office in Joliet made it difficult to do justice to both duties, and Mr. Blackhall has, therefore, concluded to devote his entire attention to the railway position.

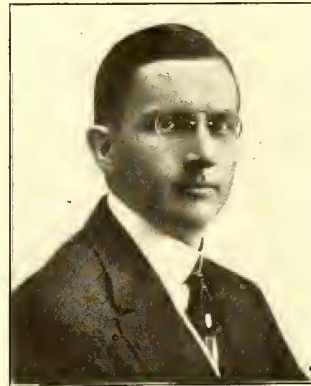
F. Kingsley, associate editor of the *ELECTRIC RAILWAY JOURNAL*, has been granted indefinite leave of absence to take up his duties as First Lieutenant of Ordnance, Officers' Reserve Corps. He was ordered into active service on Aug. 10, 1917. Mr. Kingsley was graduated from the mechanical engineering department of Cornell University in 1900. He served as apprentice and machinist in the locomotive shops of several western railroads and later was general foreman of the Helena shops of the Northern Pacific Railway. Following this he was connected with Westinghouse Church Kerr & Company for five years in power station and shop construction and equipment work. He became a member of the editorial staff of this paper in January, 1912.

A. Kordick has been appointed superintendent of the Milwaukee Division of the Milwaukee (Wis.) Northern Railway. Mr. Kordick has been connected with that company for the past eight years, and has been engaged in engineering work since the completion of his early education. He began at

the age of fifteen as an oiler at the pumping station of the Sheboygan Waterworks. In the spring of 1907, three years later, he accepted the position of engineer of power stations for the Greensboro (N. C.) Electric Company, where he remained for one year and then returned to Sheboygan. In February, 1909, he entered the employ of the Milwaukee Northern Railway as substation operator and two years later received a position in the interurban train service. Mr. Kordick has been train dispatcher for that company since February, 1913.

Albert Eastman, vice-president and general manager of the Windsor, Essex & Lake Shore Rapid Railway, Kingsville, Ont., was elected vice-president of the Canadian Electric Railway Association at its recent annual meeting. Mr. Eastman entered transportation service in 1889 and remained for about twelve years in the steam railroad field. He then served in various capacities the Detroit (Mich.) United Railway and in November, 1903, became superintendent of employment for the Public Service Corporation of New Jersey. Four years later Mr. Eastman was appointed general express and passenger agent of the Syracuse and Utica lines of the New York State Railways, and in May, 1910, he accepted his present position as general manager of the Windsor, Essex & Lake Shore Rapid Railway. He was elected vice-president of the company in 1914.

J. C. Nelson has been appointed general manager of the Empire United Railways, Inc., Syracuse, N. Y., to succeed T. C. Cherry. Mr. Nelson was graduated from the University of Alabama in the



J. C. NELSON

civil engineering department and afterwards took a special course in civil and electrical engineering at Cornell University. In the year 1902 he became connected with Ford, Bacon & Davis, engineers, New York, N. Y., with whom he has been associated since that time. He was at first employed in the construction department of properties in the South operated by that firm and later was engaged in their New York office organization on construction, valuation and the making of investigations of the operation of public utilities. Mr. Nelson then entered the operating field in May, 1916, when he was appointed general manager of the Gary & Interurban Railroad at Gary, Ind., to succeed A. C. Miller. From there he was transferred by Ford, Bacon & Davis to Syracuse to his present position of general manager of the Empire United Railways, Inc.

William J. Lynch, who, as reported recently, has been appointed general manager of the Quebec Railway, Light, Heat & Power Company, Ltd., Quebec to succeed the late H. G. Matthews, has been in the service of that company and its predecessors for twenty years. Mr. Lynch was born in 1882 and began his commercial career in 1897 when he entered the employ of the Montmorency Electric Power Company as office clerk. Two years later he was appointed cashier when that company was amalgamated with the Quebec, Montmorency & Charlevoix Railway and the Quebec District Railway. He was later promoted successively to the positions of accountant and treasurer, and in 1909, when the public utilities in the city of Quebec and vicinity were merged, he was appointed treasurer and comptroller, the position he occupied until the time of his recent promotion. The Quebec Railway, Light, Heat & Power Company, Ltd., controls the following companies: The Quebec Railway, Light & Power Company, the Quebec-Jacques Cartier Electric Company, the Canadian Electric Light Company, the Quebec Gas Company, the Frontenac Gas Company, the Quebec County Railway and the Lotbiniere & Megantic Railway. Mr. Lynch's popularity in the community and his long connections with utility problems will no doubt prove very helpful in the execution of his new and responsible duties.

Construction News

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

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

RECENT INCORPORATIONS

Muscle Shoals Traction Company, Florence, Ala.—Incorporated to construct the proposed interurban railway from Florence to Huntsville, via St. Floraine, Bailey Springs, Killen, Center Star, Rogersville and Athens, 64 miles, with a branch to Lexington, about 12 miles. Officers: Solon L. Whitten, Chicago, president; Tracy W. Pratt, Huntsville, vice-president and treasurer, and Thurston H. Allen, secretary and general manager. [July 21, '17.]

***Alton & Edwardsville Railroad, Alton, Ill.**—Incorporated at Springfield to construct a line from Alton to Edwardsville, via East Alton, Blinn, Silver Ridge, Woodrider and Wanda. Capital stock, \$6,000. The line will handle both passenger and freight business. Directors: Louis A. Schlafly, Phil M. Gervig, Henry S. Baker, Don A. Barrus and E. E. Wilson, Alton. It is stated that the project is backed by H. H. Ferguson, vice-president of the Illinois Terminal Railroad.

***Petersburg, Hopewell & City Point Railway, Petersburg, Va.**—Incorporated with a capital stock of \$1,000,000. The company plans to acquire the Petersburg & Appomattox Electric Railway, operating from Petersburg to Hopewell, Va., 9 miles, and the Hopewell & City Point Railway, operating from Hopewell to City Point, about 2 miles. It is proposed to construct a branch line to Prince George Court-house, 6 miles, and 2 miles of second track from Petersburg to Camp Lee, the new army cantonment near Petersburg. Officers: Richard Mann, Petersburg, president; J. L. Vaughn, Shawsville, Va., vice-president; L. W. Zimmer, secretary and treasurer, and H. E. Mason, auditor.

***Blacksville & Western Railway, Morgantown, W. Va.**—Incorporated to construct a line from Blacksville, W. Va., to Brave, Pa., about 5 miles. Capital stock, \$25,000. Incorporators: Raymond E. Kerr, Charles A. Goodwin, Ammon I. Derr, C. S. Bailey and David E. Adams, all of Morgantown.

FRANCHISES

Long Beach, Cal.—The Pacific Electric Railway has received a franchise from the city commissioners of Long Beach to lay a single-track, standard-gage line on Water Street to connect with the main line and serving the Craig Shipbuilding Company and other industrial establishments.

Youngstown, Ohio.—The Youngstown & Suburban Railway has received a franchise from the City Council to double-track its line on Front Street and South Avenue.

Henryetta, Okla.—An election has been called at Henryetta for Aug. 16 for the purpose of voting a franchise to the Henryetta, Dewar & Kusa Traction Company for the construction of an electric railway through the city. Morton Henderson, Kusa, is interested. [June 9, '17.]

Easton, Pa.—The Phillipsburg Transit Company has applied to the Public Service Commission of Pennsylvania for permission to operate at Easton and vicinity.

El Paso, Tex.—The El Paso Electric Railway has received a thirty-year franchise from the City Council to construct a line on Baltimore Street from Campbell Street to Madeline Park.

Port Arthur, Tex.—The Jefferson County Traction Company has asked the City Commission for a franchise authorizing the extension of its car line on another street, which would nearly double the street car mileage in Port Arthur.

Tacoma, Wash.—The Puget Sound Traction, Light & Power Company has asked the Board of County Commissioners for a twenty-five-year franchise to construct transmission lines in Pierce County.

Tacoma, Wash.—The city of Tacoma will be granted a twenty-five-year franchise by the Commissioners of Pierce County for the construction of a street car line on the tide-flats. A few minor points in the contract are to be arranged before the franchise is signed. The time limit clause will provide that the Eleventh Street line be completed within six months, an extension up Hylebos Waterway to Lincoln Avenue made within sixteen months, and the line completed back along Lincoln Avenue to the city limits within twenty-four months.

TRACK AND ROADWAY

Alabama Power Company, Anniston, Ala.—Plans are being considered by the Alabama Power Company for the construction of an extension to Camp McClellan.

Pacific Electric Railway, Los Angeles, Cal.—A new connecting link of the Pacific Electric Railway, joining Glendora and San Dimas, will soon be built, and will make the Los Angeles-Monrovia-Glendora line a through route to San Bernardino, by connection at San Dimas, over the Los Angeles, Pomona, Ontario and San Bernardino track.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—The Railroad Commission of California has authorized the Oakland, Antioch & Eastern Railway to discontinue the operation of the line of the Sacramento Valley Electric Railroad extending from Dixon Junction to Dixon, 11 miles.

Municipal Railway of San Francisco, San Francisco, Cal.—It has been announced that the Church Street line of the Municipal Railway will be opened to traffic on Aug. 11.

San Francisco-Oakland Terminal Railways, San Francisco, Cal.—Work will be begun at once by the San Francisco-Oakland Terminal Railways improving its line on Telegraph Avenue, from Broadway to Fortieth Street, and College Avenue, from Broadway to the Berkeley line, at a cost of about \$143,000.

Southern Pacific Company, San Francisco, Cal.—Under instructions from the City Council, City Attorney D. J. Hall has taken up with the Southern Pacific Company the matter of building the electric line on Butting Boulevard, for which the company obtained a franchise and made surveys some time ago.

Peninsular Railway, San Jose, Cal.—Work will be begun at once by the Peninsular Railway on the construction of an extension to the army cantonment at Palo Alto.

Jacksonville (Fla.) Traction Company.—An extension has been completed by the Jacksonville Traction Company to the industrial section of the city on the Talleyrand Avenue water front.

***Melbourne, Fla.**—It is reported that C. T. Miller, chief engineer, is making preliminary inspection of the proposed route of an electric railway from Melbourne to Tampa, via Haines City, Lake Alfred, Winter Haven, Lucerne Park and other points, 115 miles.

Georgia Railway & Power Company, Atlanta, Ga.—This company plans to construct about 5 miles of line to Camp Gordon, near Chamblee, Ga.

Chicago, North Shore & Milwaukee Railroad, Highwood, Ill.—Important improvements will be begun at once by the Chicago, North Shore & Milwaukee Railroad in Waukegan.

Chicago & Joliet Electric Railway, Joliet, Ill.—This company is reconstructing 1½ miles of single track on streets in the city of Joliet, where the city is putting in paving improvements. The railway company will pave its right-of-way with brick.

Rockford & Interurban Railway, Rockford, Ill.—This company will construct an extension to Camp Grant.

Plymouth & Sandwich Street Railway, Plymouth, Mass.—Operation has been begun by the Plymouth & Sandwich Street Railway over its completed line from Plymouth to Sagamore; also from Plymouth southward to the Cape towns. The line formerly operated to Manomet, and the work of extension has been carried on for the past few years. The road was completed late last spring. Eventually the line will be connected with that of the New Bedford & Onset Street Railway, via the route followed by the Cape Cod Canal.

Grand Rapids (Mich.) Railway.—Work has been begun by the Grand Rapids Railway repairing its street car tracks in the main thoroughfares of the city. The company plans to construct a downtown loop from Monroe Avenue to Michigan Street, probably on Ottawa Avenue N. W., to relieve the downtown streets of street car congestion. This will greatly facilitate street car traffic through the center of the city.

Duluth (Minn.) Street Railway.—A resolution has been introduced in the City Council granting the Duluth Street Railway temporary permission to install double tracks on the present Morgan Park line from Seventy-first to Eighty-fourth Avenue west on Grand Avenue. The new double track will take the place of the present single-track line operating beyond Fairmont Park into Morgan Park.

Mesaba Railway, Virginia, Minn.—This company contemplates replacing its wooden poles with steel towers.

Binghamton (N. Y.) Railway.—This company plans to construct an extension of its Stella line to Lester Avenue, connecting with the Main Street-Lester Avenue route.

Panama Traction Company, Jamestown, N. Y.—The Public Service Commission for the Second District of New York has approved the application of the Panama Traction Company to issue \$150,000 in bonds and \$60,000 of common stock. The money will be used to build the first link of the line between Ashville and Panama. The proposed line will connect with the main line of the Lake Shore Railway at Erie, Pa., with steamer service at Chautauqua Lake points. D. L. Davis, Jamestown, general manager. [April 28, '17.]

Lake Shore Electric Railway, Cleveland, Ohio.—It is reported that this company will construct a line to the Cromwell steel plant in Lorain.

Ottawa (Ont.) Electric Railway.—This company will reconstruct its track on Sussex Street from Rideau Street to St. Patrick Street with 80-lb. T-rail.

Toronto (Ont.) Civic Railway.—Work has been begun on the construction of an extension of the civic car line on Bloor Street from Quebec Avenue west to Runnymede Road. A single track will be laid on the north side of the street, thus allowing for future double track when required.

Pacific Power & Light Company, Astoria, Ore.—A contract has been awarded by the Pacific Power & Light Company for the reconstruction of a bridge for its car line in upper Astoria. The company will extend its terminals in upper Astoria 1 mile to reach the present city limits. Besides these improvements the company will spend \$35,000 this year in other work in Astoria.

***Canton & Ohio River Railways, Pittsburgh, Pa.**—This company has been organized under the laws of Ohio and West Virginia by Cincinnati, Canton and Cleveland men for promoting a project to construct an electric railway from Canton, Ohio, to Wheeling, W. Va., via Toronto, Ohio. Executive offices have been established in Pittsburgh. It is authorized by its charter to issue stock to the amount of \$10,000,000. The line as projected is 105 miles long.

Pittsburgh (Pa.) Railways.—The Pittsburgh Railways refusing to lay tracks on new Wheatland Street until final disposition of the city's complaint against it and its underlying companies before the Public Service Commission, the public works committee of Council in a resolution recently adopted instructed Director John Swan of the Department of Public Works to lay the track and complete the improvement of the street. The resolution instructed the director to prepare the proper ordinance for the issuance of bonds to provide money for the track-laying.

Southern Traction Company, Dallas, Tex.—Work has been begun by the Southern Traction Company on the construction of an extension of its line to Camp MacArthur.

Seattle (Wash.) Municipal Railway.—The Board of Public Works of Seattle has approved plans for the construction of a city street car line on Fifteenth Avenue N. W. and Leary Avenue to Market Street; also plans for changing Division A of the city line from double to single trolley. By this change enough copper will be obtained to build the line into the Ballard District. The new tracks will cost about \$25,000 and the trolley changes will cost from \$5,000 to \$10,000.

Wisconsin Interurban System, Madison, Wis.—This company has filed with the Secretary of State a trust deed for \$9,000,000 with the Chicago Title & Trust Company, as trustee. The deed, which is the basis for bond issues, embraces practically 250 miles of proposed and partly constructed lines with Madison as the hub of the system. The first line, upon which construction is promised by General Manager J. E. Jones of Portage, to begin at once, will connect Madison and Janesville by way of Stoughton and Edgerton. [July 21, '17.]

SHOPS AND BUILDINGS

Petaluma & Santa Rosa Railway, Petaluma, Cal.—This company has awarded a contract to H. P. Vogensen, Petaluma, for the construction of a new station at Sebastapol.

Chicago & Joliet Electric Railway, Joliet, Ill.—Ground has been broken for a new two-story building to be erected on the site of the old building at the northwest corner of Ottawa and Clinton Streets, Joliet. It is expected that the new building will be ready for occupancy early in 1918. In the meantime the company has taken temporary office quarters in the Adams Arcade Building on Ottawa Street.

Worcester (Mass.) Consolidated Street Railway.—A contract has been awarded by the Worcester Consolidated Street Railway to J. P. Keeting of Westboro, for the construction of two trolley freight stations between Shrewsbury Street and Albany Street near Boulevard Park. The estimated cost is \$75,000. One station will be used by the Boston & Worcester Street Railway and the other by the Worcester Consolidated Street Railway.

Durham (N. C.) Traction Company.—This company will construct a new carhouse on East Maine Street at a cost of about \$7,500.

Bartlesville (Okla.) Inter-Urban Railway.—Work has been begun on the new Masonic building in Bartlesville, and when it is finished most of it will be occupied by Doherty companies. The Bartlesville Inter-Urban Railway will have one-half of the ground floor, and the Empire Gas & Fuel Company will occupy five floors. The Indian Territory Illuminating Oil Company, another Doherty company, will also have a floor.

Sand Springs (Okla.) Railway.—This company reports that it will build a new carhouse to replace the one recently destroyed by fire.

Sudbury, Copper Cliff Suburban Electric Railway, Sudbury, Ont.—This company has under construction at Sudbury a carhouse 50 ft. x 115 ft., and a station building 20 ft. x 30 ft.

Canadian Northern Railway, Montreal, Que.—This company is erecting new car shops in Port Mann.

Newport News & Hampton Railway, Gas & Electric Company, Hampton, Va.—It is reported that this company is considering the construction of a freight depot in Newport News.

POWER HOUSES AND SUBSTATIONS

Little Rock Railway & Electric Company, Little Rock, Ark.—The Quartermaster's Department has awarded a contract to the Little Rock Railway & Electric Company to furnish electricity to the Twelfth Division cantonment near Little Rock.

Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.—It is reported that this company plans to construct an addition to its Spy Run power house at a cost of about \$85,000.

Iowa Railway & Light Company, Cedar Rapids, Iowa.—A transmission line will be built by this company to State Center.

Ottumwa Railway & Light Company, Ottumwa, Iowa.—This company is improving its plant and will construct a new transmission line.

Puget Sound Traction, Light & Power Company, Seattle, Wash.—This company has been awarded a contract for all outside wiring for the permanent cantonment at American Lake, including furnishing electricity for lamps and motors.

Manufactures and Markets

Discussions of Market and Trade Conditions for the Manufacturer, Salesman and Purchasing Agent
 Rolling Stock Purchases Market Quotations Business Announcements

Car Manufacturers Marking Time

Present High Prices and Lack of Steel and Wood Responsible for Slow-Up in Building—Government Order for 100,000 Cars Pending

Railway car manufacturers are marking time but will await with interest the action of the government in regard to the purchase of rolling stock for the railways for emergency service. Early in June the co-operative Committee on Cars of the Advisory Commission, of which S. M. Vauclain is chairman, after much discussion proposed purchase by the government of 50,000 box cars and 100,000 gondola cars. This plan of the government to purchase rolling stock, which it is interesting to note originated with the committee on cars of the Advisory Commission and not with the railway car manufacturers, is now the all-absorbing topic in this field, and pending a decision or recommendation by the Council of National Defense, few orders are being placed for equipment.

CAR PLANTS WORKING AT ONE-THIRD CAPACITY

At the present time car manufacturers have a reasonable amount of business in their establishments but have been unable to get steel and lumber in any quantity. The cars on order from steam and electric roads on June 1 amounted to approximately 100,000, of which 70,000 are for domestic use. With the car shops working at their normal capacity, this industry requires somewhat more than 200,000 tons of steel and approximately 40,000,000 ft. of lumber per month. On account of car shortage, embargoes, etc., only about one-third of the amount has been received at the shops, with the result that just at the period when the national life is suffering from a country-wide shortage of cars, the car manufacturers are working at only one-third of their normal capacity. One well-informed man in this industry is reported to have said: "If the government were to buy these 100,000 freight cars and turn them over to the railroads, the immediate use of this great number of cars in carrying raw materials for the steel industry would be sufficient to increase the output of steel necessary to supply all the needs of the car manufacturers without diminishing deliveries to other interests."

GOVERNMENT PLAN FOR PURCHASE OF CARS

The plan for the purchase of cars by the government contemplates that they be leased to the railroad on a per diem basis until the close of the war, when they would be sold to the railroads at a reasonable price. The government is now in a position to buy the cars at lower prices than the railroad but can cover itself by this per diem charge, while the railroad would eventually receive the cars at a much lower figure than it would cost to build them under present conditions.

According to annual statistics published by the *Railway Age Gazette*, car shops in the United States and Canada have been operating at one-half their capacity for the last year or two. Only 135,000 freight cars were bought last year, according to this publication, as compared with more than 200,000 in 1913 and similar amounts in previous years. A careful study of the car situation in the last ten years shows that only on one or two occasions has the car surplusage reached as high as 12 or 14 per cent. In the last few years the surplusage, if any existed, did not amount to more than 2 to 4 per cent and in a number of cases an actual shortage existed. It is known that a car surplusage to the railroad is just as necessary as a surplus capital is to the banker or a surplus of raw materials to the manufacturer.

Paint and Varnish Deliveries Good

Railways Show Good Judgment by Buying the Best Grades of Paints and Enamels—Prices Increase Slightly—No Large Orders Reported

Although many companies are rebuilding or remodeling cars, and despite the fact that there have been some large car orders placed in the last few months, trade conditions in the paint, oil and varnish fields have been comparatively quiet. Unsettled business conditions due to war preparations have had their effect and are to a degree largely responsible for the present inactivities in this business. Many railway companies which expected to paint cars this summer according to schedule have deferred their work on account of the extremely high prices now prevalent.

This time last year linseed oil sold for eighty-two cents a gallon. This was considered a high price at that time, but this same product is now quoted at \$1.14 a gallon. Zinc, white enamel, gums, fillers, etc., have all gone up considerably. In addition tin cans have increased greatly in price and are very difficult to obtain. Steel drums which formerly cost \$6 now cost \$10. Everything in connection with the paint industry has increased in cost, including even the labels which are pasted on the cans and boxes in which such cans are shipped.

RAILWAYS USING GOOD GRADES OF PAINTS

Heretofore, some railways have been content to put on a cheap grade of paint or varnish and have found that it had been necessary to repaint the cars very often. Most railways are now using the best grade of paints, varnishes and enamels because they realize that it doesn't cost any more for labor to put on a good grade of paint than it does for a poor grade and that the principal cost is the labor cost. High-grade varnishes and paint are expensive, but are well worth the money invested. The old saying that you can't buy a gold dollar for 90 cents proves true in regard to these products as well as any others. Recently a well-known salesman approached a company executive in regard to a sale of a certain paint. After going over the matter thoroughly the salesman made the executive a price which was very low. The executive said that he could not afford to pay anywhere near that price as he had quotations from so-and-so that were more than 25 per cent cheaper. In fact, the price was cheaper by 15 per cent than the cost of linseed oil, one of the principal constituents. The nigger in the woodpile was discovered immediately when the paint was tested and was found to have been weakened.

WAR CAUSES SHORTAGE IN COLORS

There are some shades of paint which are not now obtainable on account of the war. Certain reds, yellows and greens which came from Germany cannot now be purchased, although greens and yellows have been made up in this country. The red, however, has not yet been duplicated, although it is known that certain manufacturers have been working along these lines. A good many railways are adopting a new system of varnishing and enameling for wooden or steel cars. This is called the quick painting system. Formerly it was necessary to shop a car for three or four weeks in order to paint it, but now the process can be completed in six to eight days by this new enameling system. In the case of a steel car, it must be sand blasted in order to remove every rust spot. The car is then given several coats of enamel and a finishing coat of varnish. The most expensive practice a man can follow is to use a poor paint on a canvas roof. Good results can

be obtained by giving the canvas roof a first coating of a good canvas preserver to make it flexible, and then follow this by two coats of good roof paint.

Although the increases in the price of materials used in paints and varnishes have been very great, the prices have not been increased appreciably. As a whole, the paint and varnish men have been holding back waiting for the other fellow to boost prices, and as a result there has been very little increase in the price of these products. Deliveries are normal and for the most part orders can be filled directly out of stock.

No Relief in Malleable Market

As an evidence of the tight condition of the market on malleable iron castings, a manufacturer in Philadelphia had to pay 12½ cents a pound for small malleables last week. In order to obtain fairly prompt deliveries even at this figure it was necessary to place the order with a New England foundry. Consumers of this line of product state that the production has not kept pace with the ordinary requirements of the trade. It does not take much of a rush of business such as is now being experienced therefore, to simply swamp the foundries. The only relief, manufacturers say, is to be found in the increase of the productive capacity of the foundries. This they claim is not only warranted but sorely needed. Foundries which have been built for making railway malleables, have in the lull in business of this class in recent years taken on other classes of work as for the automobile industry, building trades, etc. These lines now constitute the bulk of their output at the expense of railway work.

New Construction Work in Philadelphia

Manufacturers of electric railway supplies and equipment are keeping an eye on the situation in Philadelphia. Indications point to an early settlement of the difficulties which have held up the completion and equipment of the Frankford Elevated line and the energetic construction of the rapid transit subways. Director of Transit W. S. Twining has prepared a form of lease whereby the Philadelphia Rapid Transit Company is to take over and operate the proposed city high-speed transit lines. This will be submitted to the Council on Aug. 17. Although the details of this lease have not been made public as yet it is reported by those in a position to know, that its terms are satisfactory to all parties concerned.

The Frankford elevated structure which is about two-thirds finished is to cost \$7,400,000. This amount represents just the bare steel structure. Several million dollars will have to be spent for track and accessories, rolling stock and equipment. On the subway, contracts aggregating \$14,000,000 have been awarded for construction work. The total cost of construction is estimated from \$50,000,000 to \$65,000,000. Only a small section is actually under construction, the amount of the contract covering it being about \$3,000,000.

If the Philadelphia Rapid Transit Company takes over all of this work its activity in construction and equipment work will not be limited to these projects. A large amount of work in the way of surface line extensions will be put forward which has been held back pending the settlement of the controversy between the city and the company. The earnings of the Philadelphia Rapid Transit Company for the year just closed amounted to \$2,000,000, which is double the earnings of the year previous. The bulk of this amount has been added to the company's sinking fund for extension work.

Few Second-Hand Cars Available

A leading dealer in second-hand cars states that big double truck cars are "scarcer than hen's teeth." There is a big demand for this type of equipment from electric railways which will be called upon to serve the army cantonments and other government concentration and training camps. As a substitute, this dealer is selling single truck

motors and trailers. An energetic search is also being made among the steam roads for day coaches to serve as trailers. Electric roads having orders placed for the popular "one-man" cars to supplant the big double truck cars are very fortunate for they will now find an active market for their old equipment.

NEW YORK METAL MARKET PRICES

	Aug. 3	Aug. 10
Prime Lake, cents per lb.....	29	28
Electrolytic, cents per lb.....	29	28
Copper wire base, cents per lb.....	36	36
Lead, cents per lb.....	10 7/8	10 7/8
Nickel, cents per lb.....	50	50
Spelter, cents per lb.....	8 3/4	8 3/4
Tin, Straits, cents per lb.....	63 3/4	63 5/8
Aluminum, 98 to 99 per cent, cents per lb.....	56	56

OLD METAL PRICES

	Aug. 3	Aug. 10
Heavy copper, cents per lb.....	23 1/2	24 1/2
Light copper, cents per lb.....	20 1/2	21 1/2
Red brass, cents per lb.....	19	19 1/2
Yellow brass, cents per lb.....	15 1/2	16
Lead, heavy, cents per lb.....	8 1/2	8 1/2
Zinc, cents per lb.....	6	6
Steel car axles, Chicago, per net ton.....	\$45.00	\$41.00
Old car wheels, Chicago, per gross ton.....	\$31.50	\$31.50
Steel rails (scrap), Chicago, per gross ton.....	\$43.00	\$40.00
Steel rails (relaying), Chicago, per gross ton.....	\$60.00	\$55.00
Machine shop turnings, Chicago, per net ton.....	\$16.50	\$16.50

CURRENT PRICES FOR MATERIALS

	Aug. 3	Aug. 10
Rubber-covered wire base, New York, cents per lb.....	36 1/2	36 1/2
No. 0000 feeder cable (bare), New York, cents per lb.....	36 1/2	36 1/2
No. 0000 feeder cable (stranded), New York, cents per lb.....	33 3/4	33 3/4
No. 6 copper wire (insulated), New York, cents per lb.....	33	33
No. 6 copper wire (bare), New York, cents per lb.....	36	36
Rails, heavy, Bessemer, Pittsburgh.....	\$38.00	\$38.00
Rails, heavy, O. H., Pittsburgh, per gross ton.....	\$40.00	\$40.00
Wire nails, Pittsburgh, per 100 lb.....	\$4.00	\$4.00
Railroad spikes, 9/16 in., Pittsburgh, per 100 lb.....	\$7.00	\$7.00
Steel bars, Pittsburgh, per 100 lb.....	\$4.50	\$4.50
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.....	\$8.35	\$8.35
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.....	\$9.55	\$9.55
Galvanized barbed wire, Pittsburgh, cents per lb.....	\$4.85	\$4.85
Galvanized wire, ordinary, Pittsburgh, cents per lb.....	\$4.65	\$4.65
Cement (carload lots), New York, per bbl.....	\$2.22	\$2.22
Cement (carload lots), Chicago, per bbl.....	\$2.31	\$2.31
Cement (carload lots), Seattle, per bbl.....	\$2.60	\$2.65
Linseed oil (raw, 5 bbl. lots), New York, per gal.....	\$1.13	\$1.18
Linseed oil (boiled, 5 bbl. lots), New York, per gal.....	\$1.14	\$1.19
White lead (110 lb. keg), New York, cents per lb.....	12 3/4	12 3/4
Turpentine (bbl. lots), New York, cents per gal.....	42 1/2	42 1/2

ROLLING STOCK

Northern Ohio Traction & Light Company, Akron, Ohio, has purchased four Baldwin 87-40 AA trucks to be used on heavy interurban cars in cantonment service.

Cienfuegos, Palmira & Cruces Railway & Power Company, Cienfuegos, Cuba, is in the market for ten storage battery cars. The executive offices of this company are at 80 Maiden Lane, New York City.

Inter Urban Railway, Des Moines, Iowa, has ordered one electric locomotive from the Westinghouse Electrical Manufacturing Company to be used in handling traffic to the cantonment near Des Moines.

Bay State Street Railway, Boston, Mass., is reported to be considering the use of one-man cars on twelve of its routes and has petitioned the Public Service Commission for permission to operate this type of car.

Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., has specified the following details for two box cars which are being built by the St. Louis Car Company:

Number.....	2	Control, type.....	West, H-L.
Date of order.....	April, 1917	Couplers.....	Tomlinson No. 12
Date of delivery.....	August, 1917	Fenders.....	Locomotive steel pilot
Builder.....	St. Louis Car	Gears.....	Tool Steel Gear and Pinion
Type.....	Box	Hand brakes.....	Peacock Nostaff
Weight (total).....	64,000 lb.	Headlights.....	Luminous Arc
Bolster centers.....	33 ft. 0 in.	Journal boxes.....	Symington
Over bumpers.....	55 ft. 0 in.	Lightning arresters.....	West.
Over vestibule.....	53 ft. 0 in.	Motors.....	West. No. 85, inside hung
Width over all.....	8 ft. 6 in.	Paint.....	Builder's Standard
Rail to trolley base.....	13 ft. 0 in.	Sanders.....	Builder's pneumatic
Body.....	Wood	Springs.....	Crucible steel
Roof.....	Arch	Trolley retrievers.....	No. 2 Knutson
Air brakes.....	West, D.2E.G.	Trolley base.....	U. S. No. 14
Axles.....	Carnegie steel	Trolley wheels.....	Moore-Jones
Bumpers.....	Channel	Trucks.....	Baldwin, 78-in. wheelbase
Conduits.....	Crouse-Hinds	Wheels.....	37-in. roll. steel

Northwestern Pennsylvania Railway, Meadville, Pa., has specified the following details for five three-compartment double-end passenger cars, being built by the Wason Manufacturing Company.

Number of cars ordered.....	5	Fare boxes	None
Date of order.....	June	Fenders	Pilots-Wason
Date of delivery.....	October	Gears and pinions.....	Nuttall
Builder	Wason	Hand brakes,	
Type	Three compartment	Pittsburgh drop handle	
Seating capacity	46	Heaters	Peter Smith
Weight (total)	53,000 lb.	Headlights	None
Over bumpers.....	47 ft. 3 1/2 in.	Journal boxes	Symington
Over vestibule	45 ft. 11 1/2 in.	Lightning arresters,	
Width over all.....	8 ft. 6 3/4 in.	Westinghouse	
Rail to trolley base.....	12 ft. 6 in.	Motors....	Four Westinghouse
Body	Semi-steel	306, inside hung	
Interior trim	Mahogany	Registers	None
Headlining	Agasote	Sanders	Nichols-Lintern
Roof	Arch	Sash fixtures	Edwards
Air brakes	Westinghouse	Seats	Brill
Axles	Standard Car Works	Seating material,	
Bumpers	Rico anti-climber	Plush and leather	
Car trimmings	Wason	Step treads	Mason
Conduits and junction boxes,		Trolley catchers.....	Keystone
Wason		Trolley base	Westinghouse
Control, type	H-L	Trolley wheels,	
Couplers	Tomlinson	Erie Trolley Wheel Co.	
Curtain fixtures	Forsyth	Trucks	Baldwin
Curtain material	Pantasote	Ventilators.....	Not yet specified
Designation signs.....	Northwestern	Wheels	Davis
Door mechanism	None		

TRADE NOTES

Die Casting Company, Irvington, N. J., has taken over the business of the Irvington Die & Tool Works.

Edgar N. Dollin, organizer and president of the Acme-Die-Casting Company, has sold his holdings in the company and is retiring from active management.

H. H. Cudmore has left the Mazda lamp department of the General Electric Company to join the Argus Lamp & Appliance Company of Cleveland, Ohio.

R. W. Shauman has been made president of the Universal Concrete Products Company, manufacturer of the centrifugal process concrete pole, to succeed J. R. Blackhall, resigned.

National Pneumatic Company, New York, N. Y., has greatly enlarged its offices at 50 Church Street by taking over the adjoining offices formerly occupied by the Electric Service Supplies Company.

Electric Service Supplies Company, Philadelphia, Pa., announces that its New York office is located temporarily at 30 Church Street, but that on May 1, 1918, will return to larger quarters at 50 Church Street.

Sullivan Machinery Company, Chicago, Ill., announces the removal of its San Francisco office from the Sheldon Building at 461 Market Street to the Hobart Building, 582 Market Street. Ray P. McGrath is manager at San Francisco.

L. A. Starrett, who has been connected with the Westinghouse Electric & Manufacturing Company for a number of years, has resigned his position with that company and will hereafter cover Ohio and Michigan territory for the Ironton Engine Company.

Holden & White, Inc., Chicago, Ill., general sales agents for the Anderson Brake Adjuster Company, have received an order from the Tri-City Railways, Davenport, Iowa, for 270 of these brake adjusters. This order covers two adjusters per car for 135 cars, and is placed for early delivery.

Safety Car Devices Company, St. Louis, Mo., announces that it has received orders for two sets of safety car equipments from the Pacific Power & Light Company, one set from the Boston Elevated and a considerable number of sets of equipments of which the ultimate orders are not as yet known.

Unit Ventilation Company, Queens, N. Y., has been incorporated to manufacture ventilating devices and to do a general electrical and mechanical engineering business. The incorporators are: A. Bautz of College Point; W. F. Brown, 911 Whitlock Avenue, the Bronx, and J. F. Maguire, 375 Fulton Street, Brooklyn, N. Y.

Edward R. Mason, assistant general sales agent of the Ohio Brass Company, has resigned to accept a commission as lieutenant commander in the National Naval Volunteers and has taken up his new duties in the United States Navy. The commission which Mr. Mason holds in the navy is equivalent in rank to a major in the United States Army.

NEW ADVERTISING LITERATURE

Farnsworth Company, Conshohocken, Pa.: A book on its Farnsworth tilting steam traps.

New York Brass Foundry Company, New York, N. Y.: A booklet on the Monitor detector system.

D. R. Sperry & Company, Batavia, Ill., has issued an attractive catalog on the Sperry filter press.

Mitchell-Rand Manufacturing Company, New York, N. Y.: A mailing card containing a few plain tape samples.

Edison Storage Battery Company, Orange, N. J.: Bulletin 606 on Edison batteries for use in storage-battery locomotives.

National X-Ray Reflector Company, Chicago, Ill.: Leaflet "It's Never Too Late," emphasizing the use of this company's products.

V. V. Fittings Company, Philadelphia, Pa.: A forty page catalog on new types of V. V. fittings, safety devices and vapor-proof fittings.

Barrett Company, New York, N. Y.: Booklet on "How a Tarvia Macadam Roadway Is Constructed"; also a booklet, "Tarvia B," on road preservation.

Crocker-Wheeler Company, Ampere, N. J.: Bulletin No. 179 descriptive of its alternating-current oil switch for reversing service for two-phase or three-phase work.

Whiting Foundry Equipment, Harvey, Ill.: Catalog No. 130 descriptive of Whiting cranes. A number of special cranes for railway and transfer service are shown and described.

American Chain Company, Inc., Bridgeport, Conn.: A pamphlet devoted to the Campbell hammer-lock self-spreading cotter pin. Describes method of inserting, locking and removing pins, also gives price lists of all sizes made with the different sizes of packages with weights of 1000 pins.

Viele, Blackwell & Buck, New York City, N. Y.: A bulletin descriptive of the engineering and construction work which this firm has carried on. Photographs are shown of various plants in the United States, Canada and Mexico. The bulletin is well prepared and handsomely illustrated.

Stanley Building Corporation, Chicago, Ill.: A pamphlet on this company's special line of solid woven cotton belting impregnated with a special compound. The advantages claimed for this belting, the economy gained by its use, tables giving horsepower transmitted for various speeds and price lists of various sizes are included.

Western Block Company, Lockport, N. Y.: A pamphlet on this company's line of blocks for use with Manila and wire rope. Catalog includes description and illustration of blocks that can be supplied out of stock. Table of prices and sizes along with description of various iron and steel special blocks, bearings, bushings, small eyehooks, etc., are given.

Solvay Process Company, Syracuse, N. Y.: A blue book entitled "Solvay Alkali" which deals with the various forms and uses of alkali and contains notes on alkalimetry and various chemical and commercial tables useful for the consumer. This edition has been published as the direct result of the popularity of the preceding edition as a ready reference book on these products.

Shepard Electric Crane & Hoist Company, Montour, N. Y.: A 116-page bulletin on hoisting machinery for industrial work. This pamphlet is intended to present in clear and exact form such data as will enable engineers and managers to consider applications of hoisting and conveying units to the various uses for which they are adapted. Various types of hoists and cranes are described and illustrated.

NEW PUBLICATION

Congress of Human Engineering. Bulletin No. 16 of the College of Engineering of the Ohio State University, Columbus, Ohio. 160 pages. Paper.

This interesting little volume contains the text of addresses on the human side of engineering and business delivered at a congress held last October. It will appeal to all employers of men who regard them as more than mere machines.