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The Proposed War Board Should Begin Work Promptly

THE unanimous approval by the executive committee of the American Electric Railway Association of the recommendation of the committee on military transportation that a war board of five should be appointed promptly to take up important matters at Washington is significant. We explained last week how the electric railways of the country could help the nation in these periods of national stress by hauling freight. To promote this class of traffic would be one of the main functions of the board. It could co-operate with the committee on transportation of the Council of National Defense in a way similar to that followed by the corresponding committee of the American Railway Association, it could determine where electric transportation would be more economical and more expeditious than haulage by steam railroads or motor trucks, it could make easily available and expand for the War Department the statistics already compiled of the electric railway freight facilities of the country, it could take up individual cases by advising the authorities as to the facilities which the companies have at their disposal and by advising the companies as to the facilities which the authorities need, and from its knowledge of the conditions it might be able in some cases to remove municipal restrictions where they stand in the way of greater national service on the part of the companies.

The Duty of Every Industry Is to Help Win the War

THIS is a time when the energies of every industry as well as of every individual should be devoted to helping win the war. There is no question of the final result, but the greater the effort now, the more quickly and with less loss of life will the end be gained. One of the greatest needs of the country now is for more transportation, but if the electric railway industry expects the government to use its transportation facilities to any considerable extent it should have a representative at Washington to be ready to explain what service individual roads can supply and to arrange any details with the least possible delay. The board selected for this work is a strong one and should be the best evidence to both the government and the industry at large that the undertaking is in competent hands. We earnestly hope that the plan for Washington representation will receive the approval of member-companies of the association when the whole plan is explained to them by the executive committee.

American Railways Important in Peace as Well as in War

DURING the past year this country has learned many lessons, but perhaps none more important than the necessity for preparedness. The present activity to put the country on a war footing and make up in one year what our opponents have taken fifty years to accomplish is evidence of the necessity of being prepared for war, but it is equally important to be prepared for peace when peace comes. Whatever the commercial conditions then, there is no reason to suppose that the needs for urban transportation will be less. Indeed, if we are to maintain our industrial efficiency to compete in the markets of the world, our urban transportation systems should be in a far better physical condition than they are now. We have learned the benefits of the co-ordination of all of our resources—natural, manufacturing and financial—during the past strenuous six months. The railways will be the arteries of the nation's life, as the President has expressed it, in the coming period of peace as they now are in war, and this fact should be kept in mind in the fare hearings now being conducted by state commissions in different parts of the country.

Low-Grade Fuel Can Be Burned Successfully

ALTHOUGH a great deal has been said from time to time about boiler room efficiencies, the present problem of electric railways operating steam power plants is to find out what grades of fuel can be obtained in regular deliveries and then to investigate their boiler grates to ascertain which of the obtainable grades can be burned successfully without too costly changes in existing equipment. Many kinds of low-grade fuel are being burned with satisfactory results. Among these are the soft coals with high ash content, culm, bone coal, lignites, coke breeze, anthracite screening and practically every form of mine refuse. However, companies that cannot afford to reduce materially their boiler capacities must remember that the low-grade fuel, even though of the same size as the high grade formerly used, will not produce the same kilowatt-hour output. Too great a reduction in output has been avoided in many instances by mixing a large percentage of coke breeze and hard coal screening with the regular fuel, thus reducing the consumption of the latter.

Many of the low-grade fuels which are coming into use have ash contents of 25 to 30 per cent and even higher. This increase in the amount of ash over usual

values of course tends to increase clinker troubles, but these have been successfully overcome in most cases without radical changes in stoker equipment. For example, Iowa coal with an ash content of 30 per cent and a heating value of about 9000 B.t.u. per pound is practically the only grade of coal being burned by the Iowa Railway & Light Company. In this case the stoker equipment is standard except for a lower ram extension which helps to maintain a uniform speed of the coal while being burned. An even lower grade of Iowa coal is being used successfully by the Fort Dodge, Des Moines & Southern Railroad at Boone, Iowa. Another example of low-grade fuel burning is furnished by the United Light & Railways Company, Moline, Ill., which is burning Illinois coal having a heating value of 9500 B.t.u., and containing 16 to 20 per cent moisture and 15 per cent ash.

One method of reducing clinker troubles is to keep the grate in continuous motion so that there will be a shearing action which will break up the clinker mass before it has had a chance to grow large. This shearing action can also be carried to the bridge wall, where large accumulations of clinkers are liable to occur. Another scheme is to use steel water boxes placed along the fire line. Exhaust steam can also be used to break up the clinkers, but when low-grade fuels are used, the amount of steam required is often excessive. In addition to clinkering, firebrick troubles are worse with low-grade than with high-grade fuels on account of the sulphur and the large ash content. This may necessitate more frequent renewals, but the use of the highest grade of properly selected firebrick will reduce this trouble. The best method here is to consult the brick manufacturers as to the type of brick most suitable for the grade of coal being used.

Coal Situation Improving but More Effective Measures Needed

The two outstanding causes contributing to the coal shortage—labor and cars—have both been dealt with by the government during the past ten days in a manner which would seem to warrant the expectation of some increase in the supply of coal in the near future. The present rate of production is 660,000,000 tons per annum as compared with 600,000,000 tons last year, so that with transportation and production well synchronized there should be no serious shortage, especially after the Great Lakes trade has been taken care of for the winter. Authorities predict a great improvement in the situation during the next six weeks.

The increased allowance of 45 cents a ton for bituminous coal makes possible a substantial wage increase, and this is coupled with a penalty for failure to work. The higher wage and the penalty provision went into effect on Nov. 1 in most of the coal fields and should, theoretically at least, induce a further increase in the supply of coal. In a statement made by Fuel Administrator Garfield in his letter to the President recommending the 45 cents per ton increase, he stated that "if the miners

now at work would labor in the mines eight hours a day during even five days of the week, there would be no shortage of coal." Of course, the penalty feature has existed before, but the difficulty has been in enforcing it, and even under the present condition it will be difficult to force the miners to work if they do not wish to. However, every little helps and it is to be hoped that operators will be able to keep the miners working a reasonable number of hours per week.

The other step taken by the government to remedy the situation was the issuing of priority order No. 2 reserving the open-top cars for the transportation of coal, coke, ore, and a few other commodities considered necessary to national defense and security. This order should increase somewhat the number of cars available for coal haulage purposes, say of the order of 1 per cent. It will not, however, in our opinion, fully bring about the desired result because the order reads that "priority *should* be accorded" coal, coke, etc., thus leaving it to the volition of the railways to carry out the wishes of the administration. The railways have unquestionably and repeatedly shown their earnest desire to co-operate in every way possible to assist in the great national crisis, but in the absence of command in the order, the use of the cars is in a measure beyond the control of the railways. It would seem that the order might have carried with it some provision that a railway should know for what purpose an open-top car is to be used before it is set on an industry track, and when loaded with other than the scheduled commodities, that the shipper should then be required to unload it and then haul it out empty. Then the requirement of a weekly or monthly statement showing just what percentage of the open-top cars had been used for coal, what percentage for ore, etc., would have brought about a more nearly 100 per cent use of these cars for the necessities.

The railways will undoubtedly do all they can to carry out the priority order but theirs is not the entire responsibility. In other words, the order lacks the force of federal law to carry it out. Presumably the administration has the power to make it a matter of law breaking to use these cars for other than the necessities, but it has chosen instead to make this simply directional rather than mandatory. It would seem to us that the element of requirement should be injected into the order if a supply of cars sufficient for the needs of the situation is to be insured.

There undoubtedly needs to be a concentration of car supply for a short time for the benefit of the coal industry, which is so essential to the prosecution of the war. This is particularly true in those sections where the situation is acute. It is questionable if the present priority order will bring about the desired concentration. We must realize, however, that the whole matter is a most complicated one because it is desirable to keep down dead mileage, and coal is not always available for transportation in certain directions. There is reason also to look forward to an early improvement in the whole situation.

Chicago's "I Will" Should Be Exemplified in Traction Improvements

THESE is both encouragement and portending disappointment in the recent action of the local transportation committee, Chicago City Council, in ordering its special counsel to draw up two separate traction ordinances as a basis for the committee to work upon. One of these is to embody specifically the recommendations contained in the report of the Chicago Traction and Subway Commission made last year. The other is to embody these recommendations but only in so far as the city now has the power without enabling legislation to carry them into execution.

There is encouragement for the people of Chicago and the elevated and surface line companies in the fact that despite the scant consideration which the enabling legislation received in the Lower House of the State Assembly last spring, there is to be another attempt to bring about an acceptable solution of the transportation situation. The plan to frame an ordinance and secure its approval by the people of Chicago before seeking the enabling legislation puts the proposition on a much more certain footing than existed on the previous attempt, when the legislation was sought before it was really known what the city proposed to do with the new powers if granted. In this respect, at least, there is better reason to anticipate a successful end to negotiations and an opportunity not only to make use of the extension report of the Traction and Subway Commission but also to realize in due time the magnificent transportation service which would result from putting the plan of that report in operation.

In the order for the drawing of an ordinance of scope no greater than the present powers of the city lies the cause for anticipating dismal failure to reach any material accomplishment in the local transit situation for long periods ahead. The ordinance itself could mean nothing except the extension of the present agreement between the city and surface lines for a period of another twenty years. It cannot embody any particular recommendations of the subway commission, for the fundamental idea of that body's report was the assumption that all the traction facilities would be unified, and such unification cannot be brought about without enabling legislation. Subways cannot be built and a longer than twenty-year franchise deemed necessary in order to finance any project of moment cannot be granted. What the drawing of this ordinance does mean is that it may be the forerunner of an effort which, as in previous agitation, will be manifest in the committee, and more strenuously in the Council, to becloud the issue and keep the whole traction problem in politics. This ordinance is favored by the municipal ownership advocates, but their motive in attempting to keep within the present powers of the city is uncertain, for not even could municipal ownership be brought about without enabling legislation to extend the city's ability to raise money with which to purchase the traction systems. It is to be hoped that the real in-

terest of the people of Chicago may be served by a prompt adoption of at least the principal recommendations of the Traction and Subway Commission. The improvements are badly needed, and nothing should be allowed seriously to delay the formulation and beginning of an early construction program.

Reducing the Drop in the Return Circuit

RAILWAY operators are interested in any plan that will bring about reduction in power losses in distribution, for in addition to the direct saving a reduction in distribution losses is accompanied by better voltage at the cars. When the saving occurs in the return circuit there is in general also a reduction in the difference of potential between parts of the track and neighboring pipes and cable coverings, and hence less liability of dispute as to the effects of stray currents from the rails. One of the schemes for reducing distribution losses, particularly in the return part of the circuit, is known as the three-wire system, embodying the principle which Mr. Edison early found to be so effective in the distribution of current for light and power purposes. In this system the voltage is doubled by connecting two generators in series, a common or neutral conductor being connected to the junction of the machines. Until comparatively recently electric railway engineers have taken little interest in applying the three-wire principle to their work on account of the complications involved. In fact, in the report of the American Committee on Electrolysis published last year only two examples of three-wire installations in this country were cited, and one of these was in an experimental stage. For this reason special importance attaches to an article in this week's issue of the **ELECTRIC RAILWAY JOURNAL** in which the results of the operation of the three-wire system in Omaha, Neb., are outlined by the superintendent of electric lines of the local railway. The report which he gives indicates that no serious difficulties have been encountered and that the complication of the distribution is not seriously increased.

In its report the American committee listed as some of the inherent disadvantages of the three-wire system the complications in machinery, the difficulty of successfully insulating trolleys of different polarities, the difficulty of equalizing the load between different sections, and the necessity for the installation of larger generator units than are required in a single trolley balance system to compensate for the difficulty in balancing. This list should be kept in mind in reading the article referred to in order that the reader may appreciate the ways in which these objections have been overcome in Omaha. It is difficult to say at this time just how far the three-wire system will go in assisting in the solving of the problems of electric railway power distribution, but the railway fraternity as a whole cannot but be grateful to every company which adds a contribution to our knowledge of the subject as the Omaha & Council Bluffs Street Railway has done.

Line Drops and Rail Potentials Reduced by Three-Wire System

Installation of Three-Wire Principle in One Substation District in Omaha, Neb., Has Materially Improved Conditions—Changes in Substation and Overhead Necessary to Comply with Bureau of Standards Recommendations Are Described

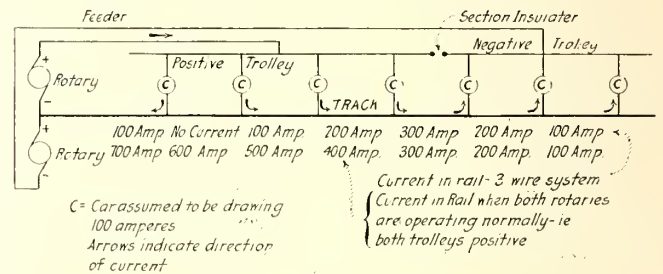
By E. H. HAGENSICK

Superintendent of Electric Lines Omaha & Council Bluffs Street Railway, Omaha, Neb.

IN THE fall of 1916 the United States Bureau of Standards made an electrolysis survey in Omaha and Council Bluffs at the joint request of the local utility companies. Among the recommendations for mitigating electrolysis was one to instal the three-wire principle of distribution in one of the substation districts of the Omaha & Council Bluffs Street Railway.

Our Lake Street substation serves quite a large territory, and four of the outlying lines supplied by it showed over-all potentials of considerable magnitude. The load on this station is quite large, so that fairly high potential gradients were encountered in its vicinity. With the prevailing high prices of materials, the cost of installing new substations or additional insulated negative return cables to reduce the gradients to a safe value would have been prohibitive. Reversing the polarity of the trolley in the outlying sections gives the same effect, so far as the return circuit is concerned, as a substation located in the reversed trolley section. The cars in this section draw their current through the track in adjacent positive trolley sections, so that the current in the return circuit in the vicinity of the substation is reduced by an amount equal to twice the current used in the reversed trolley section. This is clearly brought out by the sketch, Fig. 1, in

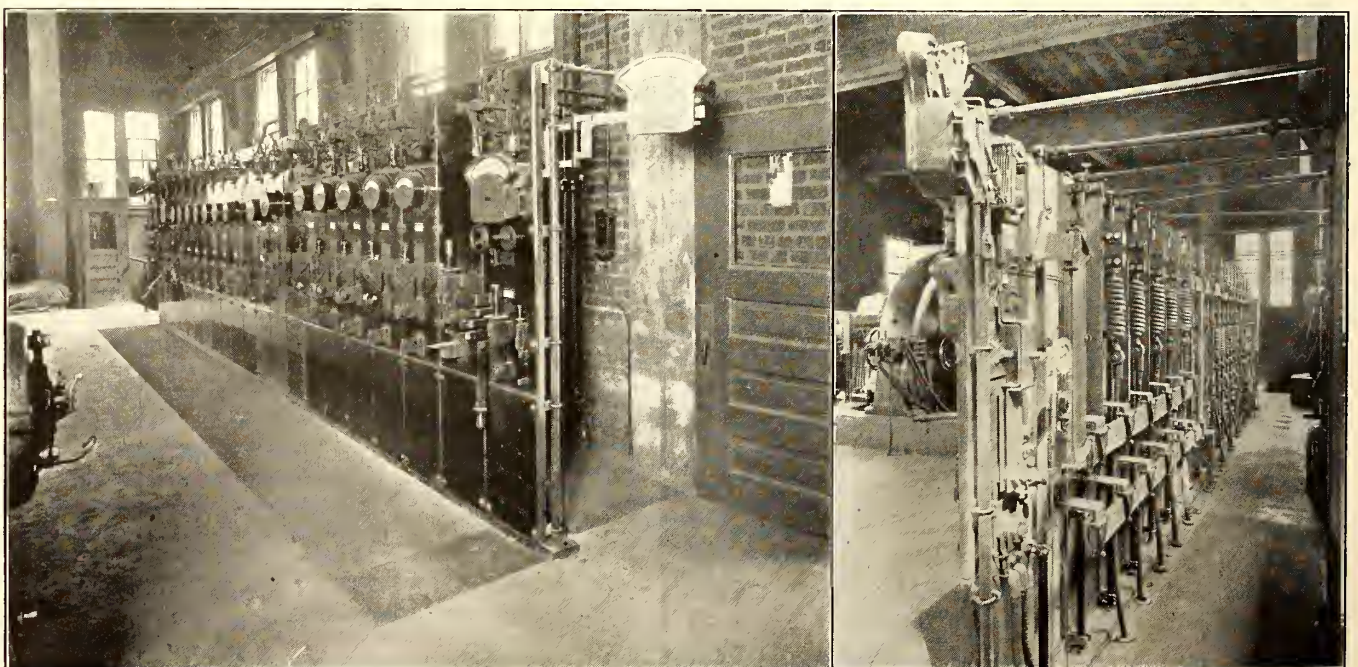
preparing which it was assumed that seven cars are operating, each drawing 100 amp. Three are assumed to be in the reversed trolley section. It will be noted that the two rotaries are operating in series and that six of the cars—two sets of three in multiple—are in series. The current of only one car would return to the



OMAHA THREE-WIRE SYSTEM—FIG. 1—DIAGRAM OF SYSTEM SHOWING THEORETICAL CURRENT FLOW IN RAILS

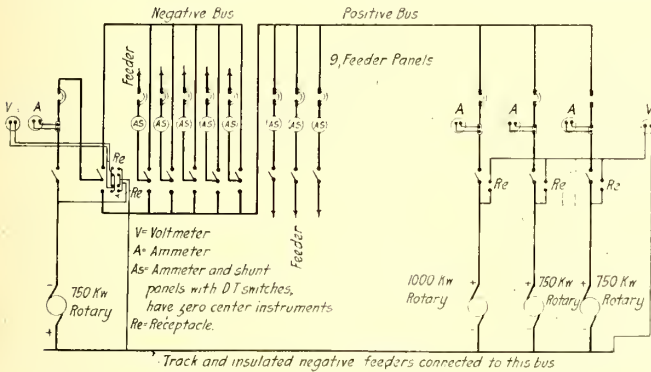
substation over the rail in this theoretical case. The upper set of figures (Fig. 1) shows the current in each section of track with the three-wire system in operation and the lower figures indicate the values that would obtain if both trolley sections were operating positive.

The three-wire principle of distribution has been in operation for a number of years at Los Angeles, Cal.



OMAHA THREE-WIRE SYSTEM—FRONT OF SWITCHBOARD CONTROLLING REVERSED TROLLEY SECTIONS. AT RIGHT, REAR OF SWITCHBOARD SHOWING POSITIVE AND NEGATIVE TROLLEY BUSES

(as described in the ELECTRIC RAILWAY JOURNAL for Feb. 26, 1916, page 395), and experiments along this line were carried on at West Springfield, Mass., last winter under the supervision of the Bureau of Standards. The Omaha Street Railway, after a thorough investigation, decided to carry out the recommendations of the bureau, and early this spring the system was put in operation in the Lake Street substation district. This substation is equipped with one 1000-kw. and three 750-kw. rotary converters. It was decided to utilize one of the 750-kw. rotaries as a negative machine. The direct-current panel for this machine was removed from the other three rotary panels and placed



OMAHA THREE-WIRE SYSTEM—FIG. 2—DIAGRAM OF CONNECTIONS IN LAKE STREET SUBSTATION, OMAHA

at the opposite end of the switchboard in order to reduce the danger of short-circuit between two machines working in series, and to simplify the bus construction.

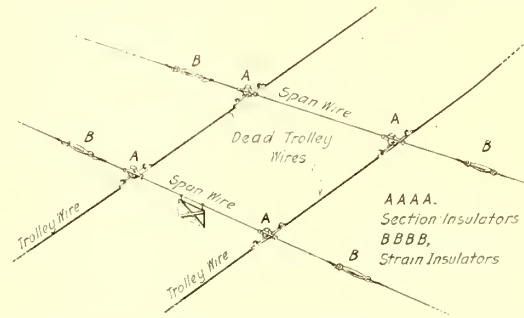
ALTERATIONS AND ELECTRICAL CONNECTIONS FOR THREE-WIRE SYSTEM

One side of the rotary is permanently connected to the track circuit (Fig. 2) and the other side to the direct-current rotary panel, and connection made thence to the middle point of a single-pole double-throw switch, which can be thrown to either the positive or the negative bus. The voltmeter for this machine is a single-scale instrument, and is connected to two receptacles located to the left of the large double-throw switch. When the switch is thrown up the potential plug is placed in the upper receptacle and when down in the lower receptacle. The substation operator then simply brings the machine up at the polarity which gives an indication on the voltmeter and he has the machine on the line for either positive or negative operation. When the machine is run negative the equalizer switch is left open.

The panels for all feeders supplied by the negative machine are provided with double-throw switches, so that, in case of emergency or overload, the feeder can be thrown to the positive bus. The double-throw switch in the rotary circuit is supplied for use only in case of emergency. In the event that one of the rotaries became disabled at a time when the load on the station was excessive, it would be possible, by means of this double-throw switch, to shut down the reversed machine and quickly place it back on the line in parallel with the other machines. Connected in this way a much better diversity factor would prevail on all the machines and they would be able to carry the load with one machine out, where they might not be able to with one or two rotaries running with reversed polarity.

This double-throw switch is normally left closed on the negative bus and the possibility of ever having to use it is remote.

In the distribution system no change was made other than providing additional insulation between the posi-

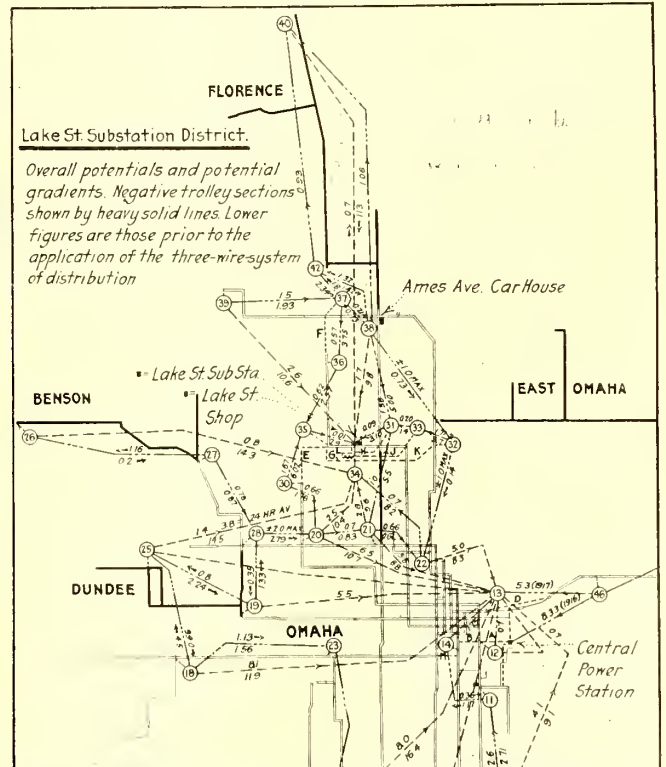


OMAHA THREE-WIRE SYSTEM—FIG. 3—INSULATING SECTION IN TROLLEY BETWEEN POSITIVE AND NEGATIVE OVERHEAD DISTRICTS

tive and negative trolley sections. Two section breakers were used with 6 ft. of trolley between them, as shown in the sketch (Fig. 3).

DISADVANTAGES OF THREE-WIRE SYSTEM

In the operation of cars no objection has presented itself on this system on account of the reversal of polarity on a number of trolley sections. The motormen throw off their power and drift across the dead sections of trolley. No auxiliary equipment such as coasting recorders, wattmeters, arc headlights, etc., are in use. Coasting recorders and wattmeters, however, would not be affected in any way. Arc headlights to operate properly should be provided with a double-pole double-throw switch for reversing when running on negative sections. Ampere-hour meters would run backward when the cars were on negative sections.



OMAHA THREE-WIRE SYSTEM—FIG. 4—MAP OF OMAHA SHOWING NEGATIVE TROLLEY SECTIONS AND OVER-ALL TRACK POTENTIALS

Multiple-unit control would operate satisfactorily where only one trolley is used; where more than one trolley is used it would be necessary to provide an exceptionally long break between positive and negative trolley sections, which would be a very objectionable arrangement.

The objection to the three-wire system from a substation operating standpoint is the resultant lowering

TABLE I—OVER-ALL TRACK POTENTIAL MEASUREMENT REFERRED TO RAIL AT LAKE STREET SUBSTATION—READING STATION No. 34

Reading Station Number	Location	Before	After
		Three-Wire System Was Installed, Volts	Three-Wire System Was Installed, Volts
20	Thirty-third and Cumings.....	10.4	2.5
21	Twenty-fifth Avenue and Cumings..	9.6	2.6
22	Seventeenth and Burt.....	8.2	0.7
25	Fiftieth and Underwood.....	14.5	1.4
26	Benson Avenue.....	14.3	0.8
38	Twenty-fourth and Ames Avenue..	9.8	1.7
39	Forty-second and Grand Avenue...	10.6	2.6
40	Florence Avenue.....	11.3	0.7

of the diversity factor since the negative machine does not run in parallel with the rest of the machines in the station. It works out very nicely on our system, however, due to the fact that we are able to load the machine with five trolley sections that have been reversed, five being carried in the valley of the load and only four during the peak. In laying out a new substation with the three-wire system in view, machines of proper sizes could be provided so that this objection would be eliminated.

The objection to the system from an electrolysis standpoint is the slightly positive area set up in the reversed sections. As mentioned before, the effect of the reversed trolley potential on the return circuit is the same as that of a substation located on the section which creates a positive area. This condition can be taken care of by suitable drainage of the underground structure.

ADVANTAGES OF SYSTEM AND RESULTS OBTAINED IN OMAHA

The benefits derived are several, namely, a considerable reduction of the line losses in the return circuit resulting in an increased voltage at the cars; a reduc-

TABLE II—CURRENT FLOW IN WATER PIPES, LAKE STREET DISTRICT

Location	Size Main, Inches	Before Three-	After Three-
		Wire System Was Installed, Amp.	Wire System Was Installed, Amp.
Twenty-seventh and Ohio.....	48	113.0	13.6
Twenty-seventh and Grant.....	36	29.6	5.0
Lake St. E. of Twenty-seventh.	36	17.1	11.4
Twenty-fourth and Miami.....	36	35.3	9.5
Lake St. east of Twentieth....	36	28.5	4.4
Twentieth St. north of Lake....	20	7.8	1.2
Thirtieth St. north of Spencer..	8	0.8	0.3
Twenty-eighth St. N. of Spenc'r	48	101.0	15.3

tion in over-all potentials and potential gradients with corresponding reduction of current on all pipes and underground structures; and a reduction of potential differences throughout the entire district served. The accompanying map shows the territory served by the Lake Street substation and the sections of track over which the trolley has been reversed. It also shows the over-all and potential gradients. In Table I are shown over-all potentials and potential gradients. Table II shows the current flow on water mains. These two tables jointly give a graphic picture of the results accomplished in Omaha. On the map the locations and serial numbers of reading stations are indicated by small circles surrounding the figures.

Steam Railroad Statistics for 1916

The Interstate Commerce Commission has issued an abstract based upon its compilation of steam railroad statistics for the year ended June 30, 1916. The total capital actually outstanding for all operating railroads and their non-operating subsidiaries was \$19,681,493,082, consisting of \$8,743,406,639 of stock and \$10,938,086,453 of funded debt. The total amount of capital, including securities held by the companies as well as the public, was \$21,092,372,245, divided \$9,058,982,733 for stock and \$12,033,389,512 for funded debt. Of the total capital stock actually outstanding, \$3,581,434,810, or 40.96 per cent, paid no dividends. The amount of dividends declared during the year by both operating and non-operating companies was \$411,975,955 or 7.98 per cent on dividend-paying stock. The average dividend paid on all stock actually outstanding was 4.71 per cent. The investment in road and equipment increased by \$258,457,485 to a total of \$17,525,576,908 on June 30, 1916.

The operating revenues for the year amounted to \$3,472,641,941, or \$13,461 per mile of line operated. The operating expenses totaled \$2,277,202,278, or \$8,827 per mile of line operated. For companies having annual revenues of more than \$100,000 the number of passengers carried in 1916 was 1,005,683,174, as compared to 976,303,602 in 1915, while the number of tons of revenue freight carried was 2,225,943,388, as compared to 1,802,018,177. The operating ratio in 1916 for such carriers was 65.44 per cent, as compared to 70.52 per cent in 1915.

"Camouflage and the Nickel"

E. J. Cooney, executive assistant Rhode Island Company, Providence, R. I., has just issued a striking booklet under the above-stated title for use in his company's campaign for higher revenue. The booklet, fifteen pages in length, contains a statement signed by A. E. Potter, president, showing in simple form the situation confronting the company.

The word "camouflage," it is said, may be used in the electric railway field to denote a deceptive appearance of the value of the nickel. In an effort to give better service, in spite of higher costs, the company has installed better cars, made faster trips, issued more and more transfers, given longer rides, etc., with the result that the nickel has been strained and stretched until it is unable to recognize its former self.

After discussing the various burdens of present-day operation, the statement says that investors will no longer put capital into electric railways. The reason is succinctly stated thus:

"The street car business is unlike any other business, because:

"The company sells only one thing—SERVICE.

"And sells it to only one customer—THE PUBLIC.

"But the customer not only dictates the amount and the quality of the service—IT SETS ITS OWN PRICE." But, it is said, investors cannot be coerced, and if the price paid for electric railway service does not make the business attractive, the investor will go into something else, and both the service and the public will suffer. The Rhode Island Company needs more revenue, and the only way to get it is in increased fares.

Business as Unusual

By M. W. GLOVER

Auditor Mobile Light & Railroad Company, Mobile, Ala.

WHEN the war started, some Englishman coined the slogan, "Business as Usual," and it was taken up generally by business men in England as the proper attitude to assume in the conduct of business, although it was contrary to the advice given by government officials and bankers generally.

When the United States entered the war a number of business men proclaimed the same slogan for this country, and some of them still hold it to be the proper method of dealing with the conditions arising from our participation in the war, notwithstanding the fact that our government officials and bankers advise us to practice economy and not to try to continue conducting business as we have been for the past few years. Much has been written on both sides of this question, but it must be admitted, first of all, that we cannot carry on business as usual when conditions are most unusual. The experience of England should be a lesson to us, and it is now generally admitted there that business during the war cannot be conducted as usual. The volume of business may equal or exceed that done during the period immediately preceding, but the kind of business is different. Where \$100,000 was expended for building ships before the war, \$100,000,000 will be expended now, and while some of the same men who received the \$100,000 will receive the \$100,000,000, more will share it with them.

On a basis of the prices prevailing four years ago, the wheat crop this year will bring nearly three times as much as then and the cotton crop twice as much; the prices of other crops have increased proportionately. All manufactured articles, as well as raw materials, have increased enormously in price, and somebody is getting the difference between the old and the new prices. It is not difficult to determine who is profiting by the increases, but it is not possible just yet to say who is unduly profiting by them. No one objects to the farmer, the coal operator or the manufacturer making a reasonable profit on his commodities, but there is serious objection to anyone getting exorbitant and unjust prices for the necessities of life because of conditions created by the war. There is a difference between a reasonable and an unreasonable profit on commodities, particularly on those which are admitted to be necessities. The profit on luxuries may be permitted to take care of itself. One of our leading financiers, Otto H. Kahn, has admirably expressed it:

It is, of course, absurd to preach—as is being preached in some quarters—that no one should be allowed to make more money during a war than his bare living expenses.

* * But it is entirely right to preach * * * that no one

should be permitted to use the urgent necessities caused by war to exact extortionate prices.

The problem of the electric railways, which is the same as that of their employees, is how to make both ends meet when prices of everything necessary for the carrying on of business have increased 25 to 300 per cent, yet rates of fare, which in many cases are limited by franchises or regulatory commissions, are not permitted to be increased. If the war continues several years longer, and at present, owing to the situation in Russia and Italy, this is not improbable, conditions will get worse instead of better. Therefore something must be done sooner or later, and the longer we wait the harder it will be to correct the trouble. At the present time many are working in their own way, endeavoring to correct the trouble so far as it affects them personally, but through co-operation much more good could

be accomplished. There may be differences as to the proper remedy to be applied as well as regarding the methods to be employed, but there should be no difference of opinion among electric railways as to the necessity of something being done to relieve the situation.

Co-operation among electric railway owners, more than among operators, is what is needed. The operators of electric railways must necessarily be guided in their actions by the wishes of the owners. Therefore it is necessary, before any good can be accomplished, for the owners to get together and discuss the problem from every angle, to call in expert advice and then decide upon their course of action. Unless this is done many lines will face receiverships in the near future. Some lines of business and some sections of the country are most prosperous now. Persons in these lines of business or from those parts of the country do not seem to realize that there are others not sharing in their prosperity, and when they proclaim "Business better than usual" they overlook their unfortunate neighbors who do not share in their good fortune and whose very existence is threatened unless some relief is obtained.

THE RAILWAYS NEED RELIEF

Business cannot be as usual when you have to pay double, and even more, for everything, and yet receive the same for your services as formerly. Why should the coal dealer be permitted to charge \$3 or more per ton for coal which he was anxious to sell for \$1 per ton three years ago. Granting that he may pay the miner a few cents more per ton than formerly, there is no good reason why he should be allowed to charge an

The writer takes the position that the "business as usual" slogan is wrong, and that business cannot be conducted "as usual" when the times are most unusual. He believes that the electric railway business is in danger of serious trouble unless something is done to relieve the companies of the burden caused by increased prices for materials and their inability up to the present time to obtain increased rates of fare, except in a few cases. He argues in favor of united action if relief is to be obtained.

exorbitant price simply because coal in Paris or Berlin is selling for more than \$50 a ton. Suppose electric railways should increase their rates of fare 100 per cent or more, in line with the increases they are required to pay for material, you would hear objections from all sides, yet they have just as much right morally to increase the price of the commodity which they offer for sale, namely, transportation, as any other business has to increase the price of the commodity sold, and when it is suggested that an increase of only 15 to 20 per cent in fares be permitted, there is objection made. Permission has been refused to the steam railroads to raise freight rates 15 per cent, yet other commodities, which are just as necessary as the commodity of transportation, have increased in price 50 to 100 per cent. Is this not discrimination and should not something be done to remedy it? "Business as usual" under present conditions is impossible. "Business as unusual" requires that certain readjustments be made, and if they are not made serious trouble will ensue.

President Wilson has many things to contend with at this time, and necessarily he must, to a great extent, depend upon the advice of those associated with him. And while the Council of National Defense, which is composed of able representatives and leaders in business, is bending its energies to adjust conditions to meet the present needs of the country, is it not true that the needs of electric and steam railways are not being given proper attention, while other lines of business are being adjusted to meet present conditions? Under the authority recently given, the President has taken up the question of exorbitant prices and will no doubt succeed in reducing some of the prices charged for supplies. There should be allowed a good margin of profit, more than normal, because of the greater risks during war times, but this should not mean exorbitant profits in one line of business and less than normal profits or even losses in other lines, whose prices (or rates of fare) are not permitted to be increased even proportionately with the increases they are required to pay for material.

The Secretary of the Treasury estimates that the government will require during the coming year for our own needs more than \$4,000,000,000, practically all of which will be spent in the United States. In addition, we will loan about the same amount to our Allies, all of which will be spent in this country. When we consider this enormous expenditure of money in our midst, how can we expect business to be as usual? With the enormous subscriptions for Liberty Loan bonds where will the money come from for the expansion of electric and steam railways? If this expansion is retarded, how can the additional business be handled? Many lines are overtaxed in handling their present business, and relief must be obtained from some source.

One of the best articles on the subject of economy appeared in the *Saturday Evening Post* from the pen of Secretary of Agriculture David F. Houston, entitled "Big Crops versus Big Guns." Those who know Secretary Houston are not surprised at the remarkable record he has made at the head of the Department of Agriculture. He was always noted for being absolutely sure of his facts before passing judgment on anything. I think the expression "safe and sane" applies most appropriately to him. You may be sure that what he advises is the result of his mature judgment,

and if you follow his advice you will not go far wrong. While his advice is given particularly to farmers, what he says applies to every line of business, and his suggestions to consumers should be carefully noted. Among other things he says:

There is a food shortage in the United States but it is not sufficient to cause hysteria. No nation that can raise 2,900,000,000 bushels of corn in a year is in danger of starvation. We shall not starve, and we shall not have to go on short rations, but we shall need for ourselves and our Allies abroad more food than we have ever needed to produce before. There is no apparent economic justification for the present extremely high prices of many foodstuffs.

We might add that neither is there any apparent justification for the high prices now prevailing for many other commodities.

When 1,000,000 or 2,000,000 men are withdrawn from their normal business pursuits and changed from producers to consumers overnight, a condition is bound to be created which demands the greatest efficiency to overcome. Efficiency more than economy should be the watchword of these times. The fact is, both words mean practically the same thing—you cannot be efficient without practicing economy, and you cannot practice economy without becoming efficient. While enormous amounts of money will be spent for war supplies in this country, electric railways must realize that a very small proportion will come into their hands, and unusual business will require unusual methods of handling. Efficient methods must be adopted to prevent the serious trouble which is now confronting electric railways, trouble which should not be lost sight of because a few lines are temporarily handling an abnormal business brought about by the war. Capital is necessary to build new cars, new tracks and new power houses. Where this capital is coming from, unless relief is granted, is a serious question, and deserves the careful thought and study of all interested in the future of the electric railway industry. Short-time notes and other temporary methods of raising money only postpone the day of reckoning. We should face the situation squarely and demand the necessary and just relief to which we are entitled.

The Shortest Railroad in the World?

Filing of a court action in Missoula, Mont., disclosed the fact that the Missoula Belt Line Railway is probably the shortest railway in the world. F. J. Bischoff and E. D. Mulroney, attorneys for the company owning the 100-ft. railroad line, filed suit in the district court against the Missoula Gas Company, George T. Smith and Ella A. Smith, for \$8,000 said to have been collected by the defendants in their capacity as agents for the railway. The line connects the Northern Pacific and the Chicago, Milwaukee & St. Paul line in South Missoula, where the tracks of the former pass over the latter. The line has no equipment, no employees, and no stations, but gets its earnings by renting its tracks to the Milwaukee for transfer privileges. The Milwaukee has agreed, the complaint says, to pay 50 cents for every car taken over the line, and it is estimated that 16,000 cars have been so transferred.

Kobe, one of the most interesting cities of Japan, is to have an elevated railway. It will connect Fukiai and Takatori with the centre of the ancient city.

Use the Backs of Transfers

The Backs of Transfers Furnish Excellent Space for Advertisements, but if It Is Valuable to Outside Commercial Concerns It Is Even More So to the Company for Its Own Announcements—The Kind of Notices Which Should Be Printed

By DWIGHT BURROUGHS

Publicity Agent United Railways & Electric Company, Baltimore, Md.

“THE thing that first impressed me when I reached Baltimore was that the reverse side of the electric railway transfers was used for safety talks instead of being occupied by advertisements of Jigger Oil and other commodities, as is the case in every other city I have visited.”

This was the opening sentence of an address by a gentleman from a large Eastern city who was attending the annual convention of the American Safety Federation in this city last December.

And it is true that advertisements grace the backs of transfers in many large cities, the sum paid for the use of the space being considerable, regulated by the number of transfers upon which the advertisements appear.

The United Railways & Electric Company of Baltimore has always felt that if this space was of value to the general advertiser, it must be valuable to the company itself, and as long as the company had something to advertise it was the part of wisdom to avail itself of this great medium.

If Jones & Jones could attract people to their store and sell them goods through advertising on transfers, there was no reason why the electric railway company could not sell its commodities or its service by using the same advertising agency.

Every business man to whom an advertising proposition is presented has to consider several features of that proposition, including:

1. Quantity of circulation; how many people will it reach?
2. Quality of circulation; will it reach the people who will be interested in what I have to sell?
3. Position of the advertisement, or place it will occupy in relation to other advertisements or reading matter.
4. Cost.

There are other details that may be taken into account, but these four must invariably turn the scales in favor of or against signing the contract.

THE TRANSFER FITS THESE REQUIREMENTS

As far as the quantity of circulation is concerned there is no question that the electric railway transfer reaches a multitude of readers. The newspapers of Baltimore, in their announcements of daily “press runs,” say they print an aggregate of about 310,000 papers. The “press run” of the Baltimore transfers, or the number printed for each day’s use, is something like 350,000, or 125,000,000 a year. All of the transfers do not get into actual circulation, of course, but neither do all the newspapers printed. So, without any intention of disparaging newspaper advertising, it is a pretty good illustration of the extensiveness of the


circulation of the transfer to compare it as about equal that of all the daily papers of the city combined.

That the transfer advertisement reaches the class of people who are interested in what we have for sale there is no question. They are car riders, and it is to car riders that we have to preach a very goodly portion of our message or messages. And it is for this reason that an electric railway advertisement is more valuable on a transfer than would be any other advertisement. Every man who rides on an electric car is not interested in Jigger Oil, or the Tombs Tooth Paste,

Do Not Hold an Umbrella in Front of Your Face
While Crossing the Street.

IT IS BETTER TO GET WET THAN BE RUN OVER

Two Triple Alliances

<u>Carefulness</u> <u>Safety</u> <u>Happiness</u>		<u>Carelessness</u> <u>Injury</u> <u>Gloom</u>
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On Which Side are You?

THINK

of yourself and SAFETY, and you will not
have to think of the doctor and his bills.



HOW TO
GET OFF
A CAR



THE BACKS OF BALTIMORE TRANSFERS CARRY COMPANY ANNOUNCEMENTS

or Streams of Wheat, but every man who rides is interested in riding, and we may rightly presume that he is more apt to read an advertisement of car rides than he is to peruse one concerning the merits of something in which maybe he has no special concern.

There is also no question concerning the prominence of the place occupied by the advertisement. There is no danger of it being swallowed up in a mass of irrelevant advertising, or placed in an obscure position where it is not likely to be seen by a large proportion of those into whose hands the medium falls. Men who study the science of advertising do so with a view not only of learning the quantity and quality of circulation and the position of the advertisement in a given medium, but with regard to the percentage of persons procuring that medium who will actually see the advertisement. A newspaper advertising manager will tell you that if you place an advertisement of a certain size on a certain page of his paper it will reach the eyes of such and such a percentage of the readers of the paper. A magazine man will give you another figure. The billboard man claims such and such a percentage.

The man who advocates advertising on the screens of moving picture houses affirms that such advertisements must be read by 100 per cent of the patrons of the places where they are shown. He is doubtless very nearly correct. The figures given by other agencies cannot be supported by quite as convincing argument.

And the percentage of persons who get transfers who read the advertisements on them is also a matter that must be determined largely by guesswork. But it certainly seems to be a pretty fair guess that as many transfer owners read the advertisements on the little slips of paper as do the purchasers of a periodical. Granted that a great many persons fold their transfers when they receive them and hold them in their hands until they are turned over to the conductor of the next car. But that tens of thousands, or hundreds of thousands, scan these rectangular strips of paper daily is easy to believe when we find that advertisers are always ready to pay well for the use of the space.

Baltimore believes that a very large proportion of riders read the transfer backs, and one of the reasons for this is that an effort is made to make the reading matter thereon of an attractive character. If John Jones knows that the back of every transfer bears the advertisement of Jigger Oil, he is not likely to take the trouble to read it. But if he understands that there is a variety of catchy phrases and reading matter on the transfers, he, out of curiosity, if for no other reason, turns the slip of paper over and scans it.

The folding of transfers, which railway operators strive to discourage, probably possesses one virtue—that of helping to bring the attention of the owner of the transfer to the matter printed on the reverse side.

The cost of printing the back of the transfer is insignificant when considered in connection with the advantages to be derived. Transfers are produced on specially designed cylinder presses which print both sides at one operation, and the difference in cost of a slip printed on one side only and that of one printed on both sides, whether the printing is done in the company's own print shop or by one of the big ticket-making concerns, is relatively small. Certainly the additional cost of back printing is inconsiderable if regarded in comparison with the cost of any similar advertisement produced in any other conceivable manner.

WHAT MAY A COMPANY ADVERTISE?

What may an electric railway company advertise on its transfers? Whatever it may advertise through any other medium—car rides, good-will and safety. Much money is expended by the companies throughout the country annually in presenting these matters to the public. Surely they could in no way be more effectively presented than through this medium, the quantity and quality of whose circulation is the most advantageous that could possibly be conceived.

The backs of the transfers of the United Railways are used to tell of the delights of trolley riding in the suburbs and of the advantage of chartered cars for special occasions, but a very large proportion of them are now devoted to the dissemination of the doctrine of safety.

The selection of the subject matter of a transfer advertisement and the text of the advertisement should be carefully considered with a view to employing only those that are appropriate, attractive and effective. A

funeral car is not the thing to advertise on the back of a transfer. A person riding on a car, or standing on the corner waiting for the car to which he is to transfer, does not care particularly to be regaled with a very graphic description of the advantages and home comforts of some special means of getting him or his near and dear ones to the graveyard. Very few persons who ride on the cars have any immediate need for a hearse. Those recently bereaved have left the details of the funeral to their favorite undertaker. He is the man to whom the funeral car should be advertised by means of circulars, etc.

The use of transfers for advertising "Special Cars for Twilight Trolley Trips," "Special Cars for Sunday School Excursions," "Chartered Cars for Lodges and Other Organizations," is especially proper, and should prove a means of selling transportation.

The advertising of resorts, bathing beaches, "Ride to Keep Cool," etc., on transfers is likewise advertising that is generally recognized as the paying kind.

These things are looked to to produce revenue for the company, and they doubtless do. Safety advertising is designed to prevent the revenue slipping away, as well as for a humane purpose. Safety advertising on transfers catches the reader's eye at the time when it should impress the normal person most forcibly. He is either on a car or on a street traversed by cars. It is the time when he should have his wits about him to guard against danger. He may not be, and generally is not, in a position of danger, but a false step or a thoughtless moment may throw him into a position of danger. A word of caution to him at this instant may save him from accident, and here it is on the back of the transfer in his hand.

Will he read it?

It is the business of the advertising writer to make him read it. That can be done by teaching him that the little messages on the transfers are terse, interesting and worth reading. There should be variety and, while the same transfer safety lesson may be used over and over for months, new ones should be introduced frequently enough to sustain the interest of the car riders.

There may be different ideas as to what constitutes the best sort of safety advertisement, but it should be borne in mind that anything that preaches safety, that will attract the eye and tersely drive the lesson home, comes in the category of good work.

Some attention should always be given typographical appearance. Neatness and refinement appeal here as elsewhere. It is better suited to the needs of your advertisement that it be set forth in a smiling, light-faced type than that it should be a bunch of heavy, somber gothic. Exceptions may be found to this general rule in presenting some features, but they are not numerous.

The Cleveland (Ohio) Railway subscribed for \$250,000 of Liberty bonds and the employees invested a very considerable sum in the bonds, having conducted a campaign of their own. The train of two cars, covered with Liberty bond banners, mentioned in the ELECTRIC RAILWAY JOURNAL some time ago, was kept in constant operation over the different routes. The company also aided the bond campaign in various other ways.

War Board for Electric Railways to Be Organized

At Conference Held on Nov. 2 Recommendations Were Passed Favoring Board of Five Members with Headquarters at Washington to Co-operate with the Government in Electric Railway Affairs—President Stanley Appoints A. W. Brady, P. H. Gadsden, Britton I. Budd, L. S. Storrs and T. N. McCarter to Board

DEFINITE action was taken on Nov. 2 by the executive committee of the American Electric Railway Association authorizing the appointment by President Stanley of a war board to represent electric railway interests at Washington. The meeting on Nov. 2 was a joint meeting of the executive committee with the members of the committee on military traffic, with a few others who had been especially invited, and its purpose was to consider the recommendations of the committee on military traffic that the association should be represented at Washington along lines somewhat similar to those of the war board of the steam railroads. In introducing the subject, President Stanley said:

"The purpose of this meeting is to consider whether the association will provide a means whereby the electric lines may fulfill their duty to the government, which is to see that every facility they possess is made readily available for use in the solution of the great problem of transportation which the country faces, and to make sure that the proper authorities in Washington and elsewhere are acquainted with the facilities. It is our duty to show the government that not only are the electric lines anxious to do their duty, but to indicate how and where they can help in this emergency."

The national situation was then described by members of the committee on military transportation who had attended the meeting in Washington of that committee on Oct. 23 and 24, including A. W. Brady, L. S. Storrs, C. Loomis Allen and Britton I. Budd. They explained that at present, under an arrangement between the War Department and the American Railway Association, all military transportation matters in the Central District are handled through the Central Passenger Association, but there are many places where electric railway transportation could be more effectively used. Reference was also made to the proposed storage warehouses for war supplies under consideration by a sub-committee of the Council of National Defense, of which Morris L. Cooke of Philadelphia is chairman, as described on page 774 of the issue of this paper for Oct. 27, and to the suggestion that motor trucks could be used extensively for transportation in connection with these storage warehouses. The speakers pointed out that the use of motor trucks would require, in many cases, extensive expenditures on highway improvement, which, in the aggregate, would amount to much more than would be required to put the electric railways in such condition that they could handle this traffic.

Important as this question of transportation was, however, the speakers explained it was not the only

matter in connection with administration affairs at Washington in which electric railways are interested. There is the priority board and the fuel board, in both of which the electric railways are vitally concerned. Then there is a board making a survey of the industries of the country, with the idea of determining which are non-essential, and one working on a plan to supply industries with housing facilities; and there may be a board similar to one in England, the man-power distribution board, controlling the distribution of industrial operatives, through which the industries may appeal for additional labor.

It was most important, in the opinion of these speakers, that the electric railways get together so as to have some one speak authoritatively for them as a unit, and also to take up with the proper authorities at Washington cases where any individual railway companies might require assistance to relieve them of municipal or engineering restrictions which at present prevent them from assisting the government as much as they otherwise could. It is also important, in the opinion of these speakers, that whatever policy should be adopted by the government should apply to all properties. Individual action cannot secure this.

P. H. Gadsden of Charleston, in speaking in favor of the plan, explained that it would not relieve the companies from the necessity of sending representatives to Washington at times. He suggested a composite board, made up of representatives of all of the public-utility interests.

P. F. Sullivan, M. C. Brush and others, however, expressed the belief that a purely electric railway board would accomplish better results. T. N. McCarter and C. M. Clark agreed with this latter view. J. D. Mortimer, H. G. Bradlee, H. L. Doherty, James H. McGraw, and Charles L. Henry also spoke in favor of the appointment of a separate board.

The meeting then adopted a set of resolutions in favor of such a board, to consist of five members, with headquarters at Washington, D. C., and the president announced that he would shortly send a letter to the members explaining the situation.

After the passage of this resolution Mr. Gadsden suggested that the American Association, with the associations representing the other public utilities of the country, such as gas, electric light, etc., ask the United States Chamber of Commerce to consider the whole question of the situation of public utilities to-day, somewhat in the same way as the chamber had studied and reported on the steam railroad situation. This suggestion was seconded by Mr. Brush, who thought it would

be of great help with the local chambers of commerce.

At the close of the meeting the president announced that he had appointed the following gentlemen to compose the board: Arthur W. Brady, president Union Traction Company of Indiana, Anderson, Ind.; Thomas N. McCarter, president Public Service Railway Company, Newark, N. J.; Britton I. Budd, president Chicago, North Shore & Milwaukee Electric Railroad, Chicago, Ill.; L. S. Storrs, president Connecticut Company, New Haven, Conn.; P. H. Gadsden, president Charleston Consolidated Railway & Lighting Company, Charleston, S. C.

Revenue Secured from Advertising Space in Stations

THE necessity of obtaining additional revenue to offset the increased cost of operation has induced the British Columbia Electric Railway, Vancouver, B. C., to sell space in its interurban stations for advertising purposes. The company has 139 stations, twenty-five of which are at important traffic centers. The advertising has taken two forms, namely, showcases on the pillars and walls of the three main interurban stations, and 3-ft. x 5-ft. signs on the walls of these stations and on the railings of the smaller station platforms. The photograph reproduced herewith shows the Carrall Street station in the company's office building, which is entered by about 15,000 persons daily.

The advertising is handled by a separate company which pays the railway company a percentage of its



DISPLAY ADVERTISEMENTS IN INTERURBAN STATION OF BRITISH COLUMBIA ELECTRIC RAILWAY

gross earnings or a minimum annual amount. The advertising company caters only to the best classes of business houses and accepts advertising from only one firm in each line. The showcases have undoubtedly developed business, as advertisers receive daily inquiries about goods displayed.

Accidents on Interstate Roads

Accident bulletin No. 62, just published by the Interstate Commerce Commission, contains the statistics of accidents on interstate electric railways during 1916. The two principal tables are reproduced below:

TABLE I—CASUALTIES TO PERSONS—ELECTRIC RAILWAYS—YEAR ENDED DEC. 31, 1916

Cause	Number of Accidents	Passengers and Persons Carried Under Contract		Employees on Duty		Employees not on Duty		Other Persons not Trespassing		Trespassers		Total Persons	
		Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
TRAIN ACCIDENTS:													
Collisions.....	139	6	517	4	57			1				11	574
Derailments.....	53	2	163	2	22							4	185
Accidents to trains or cars, except collisions and derailments, and boiler explosions.....	24		26	1	5				1			1	32
Total.....	216	8	706	7	84			1	1			16	791
TRAIN-SERVICE ACCIDENTS													
Coupling or uncoupling cars, excluding accidents with air or steam hose.....	***			7	23							7	23
While doing other work about trains (not in shops or engine houses) or while attending switches.....	***			10	144							10	144
Coming in contact, while riding on cars, with overhead bridges, tunnels, or any signal apparatus, or any fixed structure above or at side of track.....	***	15	22							9		2	46
Falling from cars.....	***	6	47	4	43			1		4		10	95
Getting on or off cars.....	***	6	776		64		1		5	3	11	9	857
Other accidents on or around trains not here named.....	***	290	322	2	1	5	34	1	3	11		350	
Being struck or run over by cars at stations or yards.....	***	10	15	3	5	1		15	19	14	14	43	53
Being struck or run over by cars at highway grade crossings.....	***					1	177	647	5	4	182	652	
Being struck or run over by cars at other places.....	***	4	2	8	10	3		50	207	112	63	177	282
Total.....	***	26	1145	37	333	6	3	248	913	135	108	451	2502
Grand total, exclusive of non-train accidents.....	***	34	1851	44	417	6	3	248	913	135	108	467	3293
Non-train accidents.....	***											151	11313
Grand total.....	***	***	***	***	***	***	***	***	***	***	***	518	24606

*Not distributed by class of person.

**See corresponding note under Table II.

TABLE II—SUMMARY OF CASUALTIES TO PERSONS—ELECTRIC RAILWAYS—YEAR ENDED DEC. 31, 1916

Item	YEAR ENDED DEC. 31, 1916		YEAR ENDED JUNE 30, 1916		YEAR ENDED JUNE 30, 1915	
	Killed	Injured	Killed	Injured	Killed	Injured
Passengers:¹						
In train accidents.....	8	706	4	708	9	769
Other causes.....	26	1145	21	1208	26	1696
Total.....	34	1851	25	1916	35	2465
Employees on duty:						
In train accidents.....	7	84	10	97	9	111
In coupling accidents.....	7	23	4	22		14
Overhead obstructions, etc.....	2	22	1	20		21
Falling from cars, etc.....	4	107	4	106	7	134
Other causes.....	24	181	18	214	8	221
Total.....	44	417	37	459	24	501
Total passengers and employees on duty.....	78	2268	62	2375	59	2966
Employees not on duty:						
In train accidents.....						4
In coupling accidents.....						
Overhead obstructions, etc.....						
Falling from cars, etc.....		1	1	1		16
Other causes.....	6	2		2	3	5
Total.....	6	3	1	3	3	25
Other persons, not trespassing:						
In train accidents.....	1	1		7	1	25
Other causes.....	247	913	216	926	190	1093
Total.....	248	914	216	933	191	1118
Trespassers:						
In train accidents.....			1			
Other causes.....	135	108	130	103	103	106
Total.....	135	108	131	103	103	106
Total in accidents involving train operation.....	467	3293	410	3414	356	4215
Non-train accidents².....	51	1313	36	1160	16	932
Grand total.....	518	4606	446	4574	372	5147

¹Includes persons carried under contract.

²Figures for the years ended Dec. 31, 1916, and June 30, 1916, include certain classes of casualties that for the year ended June 30, 1915, were included in the items "Other causes," under the various classes of persons shown in the table. Figures for the year 1915 cover only industrial accidents to employees not involving train operation. The corresponding figures for the year ended Dec. 31, 1916, are thirty employees killed and 1133 injured; for the year ended June 30, 1916, fifteen employees killed and 974 injured.

Commission Regulation of Utilities Is Itself on Trial

The Responsibility for Prosperous Public Utilities and Good Service Is with the Commissions—If They Fail in This Duty, the Public Will Suffer Far More than It Would Through Such Slight Increase in Rates as Would Be Required to Keep Them in Good Condition

By IVY LEE

IT is about thirty years since the railroad commissions of New York and Massachusetts were established, but it is only since 1907, the year of the establishment of the New York Public Service Commissions that the era of commission regulation of public utilities may be said to have really begun. And while the Interstate Commerce Commission, governing the steam railroads, had been sitting in Washington for three decades, the Hepburn law of 1907 was the first railroad legislation that really had teeth in it. So with the steam railroads as with local utilities the period of regulation began in the last decade.

This scheme of regulation was undertaken frankly as an escape from the alternative of public ownership. It was realized that the unrestricted private control of public utilities was not a success.

The object sought through the public service commissions is the establishment and maintenance of good public service at reasonable rates. That is what the public considers "success."

The definition seems fair. How has the system panned out?

It is doubtful if even members of public service commissions would contend that commission regulation has entirely fulfilled the hopes of its sponsors. It has accomplished much good. At any rate, we know where power is and therefore where the responsibility is. The machinery for doing the work needed to provide good service at reasonable rates is there. If it has not brought forth the product expected it is not due to lack of ways and means. And some big, stubborn facts are these:

1. The results are not yet satisfactory.
2. The fault is either with the system of commission regulation or with the commissioners.
3. The public's judgment is about to be passed on the system of commission regulation.

When once it has made up its mind that it has waited long enough and spent enough money, the public is not likely to accept excuses, no matter how well founded they are. The public wants results. If it doesn't get them from this system it will try another. It is up to those who believe in public regulation to make that system "make good" and to find out why it hasn't.

SOME THINGS COMMISSIONS HAVE NOT DONE

Its critics hold that public regulation is not a success—yet. They point to the fact that commissioners are quick to see that rates or fares are unreasonably high, but slow to see that they are unreasonably low. *Commission regulation is not going to be a success*

until it will regulate rates up to a reasonable level as quickly as it will regulate them down to a reasonable level.

Some commissions hold to the mistaken idea that the public is on one side and the utility on the other and that any benefit that the utility gets is at the expense of the public when the true view is that the utility can serve the public well only when it is prosperous. Anything that harms the utility injures its power to give good service. The public and the utility are partners, and they must co-operate. "An impecunious company is a bad public servant, and often an unsafe one," as the Massachusetts Commission has well said.

With this view of things a bankrupt company is a reflection upon the commission. Yet, in Massachusetts, where the Public Service Commission has exercised its power for three decades, where no capital has been put into electric railways except with the approval of the commission, receiverships are by no means rare. Only a few days ago the Providence & Fall River Railway was sold by the receiver to the junk man. The latter had stopped the service and sold some of the cars, when the townspeople hastily got together and bought out the junk man at a handsome advance and now hope to operate the line at a profit. If this line was a necessity, commission control over it had not preserved it to the public.

CONDITIONS IN NEW YORK STATE AND ELSEWHERE

Electric railway affairs in New York State, indeed in the whole country, have grown steadily worse in the last ten years. In August testimony before the up-state commission showed that not only are about one-half of the up-state companies in New York not earning even their fixed charges, but that twice as many failed to earn these charges in 1916 as in 1908.

Not a single up-state company in ten years has paid regular dividends to the amount judicially held justifiable, namely, 8 per cent.

Not a dollar's worth of stock has been issued by up-state companies since 1911, for investors have washed their hands of the business. Money can be borrowed by only a few of the strongest companies and by them only at ruinous rates.

New building is impossible and has ceased. In 1909 there were put into operation 150 miles of new electric lines; in 1910, 64 miles; in 1911, 37 miles; in 1914 there was no increase, and in 1916 not only was no new mileage built, but 10 miles of line were actually torn up.

In August last the Hornell Traction Company asked

the upstate commission for the right to raise its fares. There was no charge of over-capitalization. The city authorities made no objection to the advance. The line had once paid some small dividends, but advancing costs of materials and wages, together with a fixed fare, had brought the inevitable result. The service this company performed for Hornell and Canisteo may or may not have been worth while, but public service regulation in this State has initiated no steps to preserve it. If the reply be that the commission did all it could, the rejoinder is that either a way must be found by which the commissions can do better or the system will be rejected.

If the present tide of rising costs and fixed fares threatens serious curtailment of the public's service—and this is what the companies, very properly, are warning the public is the fact—the public will hold the commissions and commission system responsible.

It will take some good old-fashioned moral courage in the commissioners to tell the demagogic politician and the demagogic press the solid truth about this matter and to rise to their official duty in preserving the public service.

The steam railroads of this country failed to get their freight rates increased as they asked, although they pointed out that it meant inability to increase facilities. Some freight bills were a few cents lower, but now, because, in part, for lack of shipping facilities, the price of coal to householders on millions of tons is dollars per ton higher.

SUPPOSE THE LINES SHOULD STOP

Suppose the electric service in any town to be stopped—as, for instance, along the line of the Providence & Fall River Railway above cited—what is the loss on values of suburban homes, to business property of the town, and to farmers who can no longer get to that market?

The great point is that the public authorities get

their relative values properly estimated and their perspectives correct. Service is the prime requisite. No haggling over fares will ever excuse losing a once-established service. No one can imagine the ruin that would follow if all the public utilities of this country—or even in one city like New York, for instance—were absolutely to cease for even one week. Modern ways of life, present-day civilization in fact, are founded upon them. You cannot push the oak back into the acorn; you cannot discard the trolley car and go back to the stage coach, nor exchange the Mazda lamp for the old-fashioned candle. The next step will be not backward to the old but forward to a new system, from regulated private ownership to complete public ownership, if commission regulation fails.

Shore Line Publicity Material

When the Shore Line Electric Railway, Norwich, Conn., recently increased its zone rates, as noted in the ELECTRIC RAILWAY JOURNAL of Oct. 20, page 738, it placed posters in its cars and ran a series of notices in the daily newspapers. Some of these are reproduced in the accompanying illustration. The publicity material used explained the general burdens confronting the company and the electric railway industry, the importance of electric railway service to the community, the exacting demands of public service, the fairness of the new rates in putting the increased burden on the most expensive traffic zones, and the like. One advertisement summed up the situation as follows: "The old rate of fare will not pay the company's bills and return even savings bank interest on its investment. Talk about electric railway 'profiteering' is sheer idiotic bunk. Napoleon Bonaparte, Alexander Hamilton, Benjamin Franklin, Andrew Carnegie and Shylock all taken together would not have brains enough to provide electric railway 'profiteering' at the present price of materials and supplies and the present intake for rides per mile."

Do You Appreciate the Fact That the Street Railway Is Absolutely Essential to the Life and Development of the Community?

That to satisfactorily fulfill its mission it must earn enough to pay fair wages and its other necessary operating expenses?

That its expenses are governed just as the expenses in other industries are?

That its selling price or rate of fare must be adjusted from time to time just as the price of everything else that you buy?

That the management did not raise the rate just to learn how much it would annoy its patrons, or how much business it would drive away?

That if the people are unwilling to pay a rate of fare that will pay for operations of the present service it will have to be reduced?

That if patronage is not sufficient to pay operating expenses and leave something for interest the roads would have to be abandoned?

That entire street railways have been sold as junk and the tracks taken up right, here, in New England?

That within a month a Street Railway between Providence and Fall River was sold as junk and operations abandoned by the Company?

That no new Street Railways are being built or old ones extended in Connecticut, and that the reason of this is the fact:

That Street Railway securities are a drug on the market and that you and other investors won't risk your money in them.

That this condition is not peculiar to Connecticut but is true of Street Railways almost everywhere.

Then isn't it infinitely more important that your road should receive an income sufficient for its needs so that it may in turn meet your needs of more and better service, more and better cars than that rates should be low.

A poorly nourished railroad means a railroad unable to respond to the demands made upon it by a growing and vigorous community.

Connecticut is today suffering because its railways are impoverished.

The Shore Line Electric Railway Co.

Who Is To Blame?

INCREASED OPERATING EXPENSES
have forced us to
INCREASE OUR RATES OF FARES

You Require
Us To Give Service
Don't Blame
the Company
Instructions must be
obeyed

Don't Blame
the Conductor

The Shore Line Electric Railway Co.

The New Rates of The Shore Line Electric Railway Are Fair Because the Burden of Meeting the Increased Cost of Operation Is Put Heaviest on the Traffic Zones Which Are Most Expensive to Maintain

The principle of the zone fare system is to secure that a penny of fare paid shall receive as nearly as possible its money's worth of ride, neither more nor less.

If less, the man who pays the penny is unjustly treated; if more, then other patronage is by so much deprived for his benefit.

The profitability of a given length of road depends upon the number of well patronized cars that are regularly run over it.

The more patrons there are in a given zone, the less expensive it is to carry them, the less each person need pay for the ride—or the longer the ride may be for the same money. That is why the rate is equitably lower for city traffic than for country traffic. It is the reason, also why some country zones are longer than others.

The city man gets a benefit from his cheaper ride, because it costs the street railway company less to carry him. The less it costs the more his money's worth of ride can be.

The city man gets a benefit from the fact of country transportation even above that which he pays for when he uses it. The cities prosper from the lines of communication which radiate from them. But this benefit cannot be justly apportioned among individuals, and it is not practicable to utilize it as a basis of rate making.

A town like Montville gets more benefit from the trolley to Norwich or New London, than Norwich or New London gets from the trolley to Montville. This rule applies equally to Saybrook or Guilford.

The man who lives in the country cannot reasonably expect that the man in the city shall pay the greater transportation cost, arising from the fact that there are more miles in the country per inhabitant than there are in the city.

The new rates are higher because costs are higher. The costs would utterly swamp the company except for the measure of relief that will be afforded by increased revenues.

The percentage of growth in maintenance costs for the divisions affected by the revised rate schedule is far heavier than the percentage of revenue increase now hoped for. All that it can stand of the cost burden the company will continue to bear.

THE SHORE LINE ELECTRIC RAILWAY CO.



ALBANY PARADE—ONE FLOAT CARRIED A RÉPLICA OF A SUBMARINE CHASER

Liberty Bond Parade at Albany

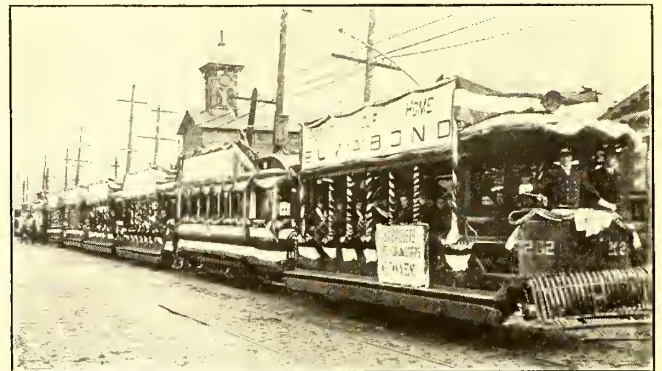
Car Floats Advertise the Issue—Bonds Purchased by More than 93 per Cent of the Traction Employees

THE United Traction Company of Albany, N. Y., through the co-operation of its officials and employees, took a leading part in the recent drive which was made by the cities of Albany, Troy, Cohoes, Rensselaer and Watervliet in securing subscriptions to the second Liberty Loan of 1917.

The executive officers of the company extended to the employees every assistance in the payment for bonds by arranging for deductions from wages on easy installments and by appointed committees consisting of officers and employees from the various departments for the purpose of securing at least one subscription from every person connected with the company. As a result 1483, or 93.86 per cent, of the employees subscribed for \$50 bonds, the total of these subscriptions amounting to \$74,150.

In addition to this work, the committee arranged for a special demonstration by the company in the form of an electric car parade as one of the features of the Liberty Day celebration conducted by the cities through which the company operates. The parade consisted of eight gayly decorated cars carrying banners urging the purchase of Liberty Bonds, and two special floats. One

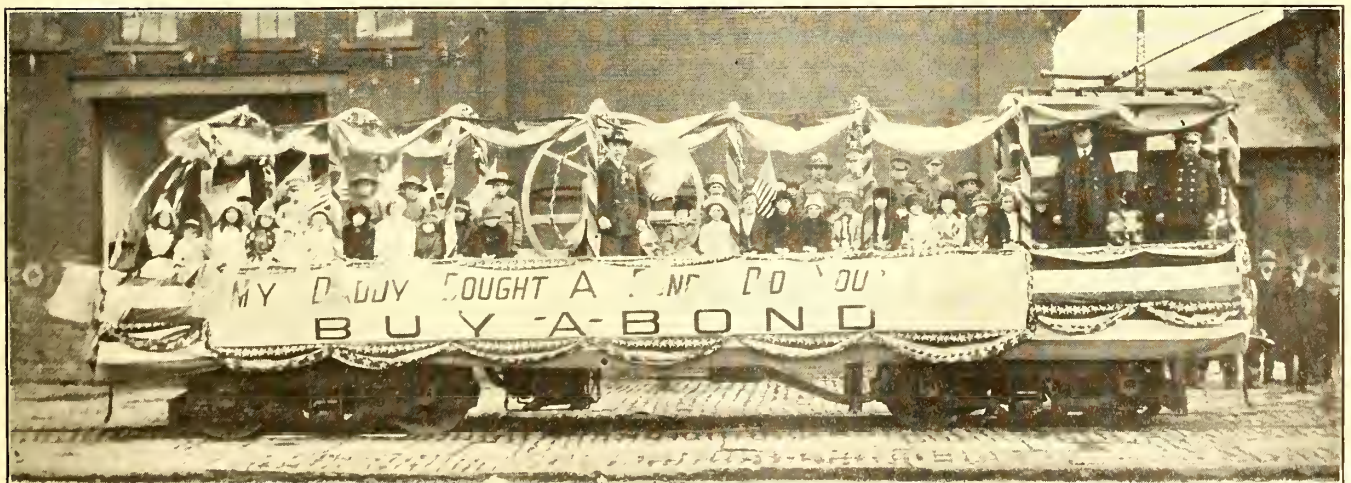
of these bore a huge Liberty bell which was rung during the entire parade. On the other car was mounted a replica of the government's new submarine chaser, with a regulation United States Navy gun protruding



ALBANY PARADE—EIGHT DECORATED CARS ADVERTISING LIBERTY BONDS

from the stern. Both floats were manned by children in sailor costumes and Red Cross nurses. They are shown in the accompanying engravings.

During the evening all of the cars were illuminated with red, white and blue lights and presented a very spectacular appearance as they toured over the lines of the United Traction system.



ALBANY PARADE—A LIBERTY BELL CARRIED ON ONE FLOAT WAS RUNG DURING THE PARADE

Denver Tramway Publishes Unique Street Guide

"Where Is Such and Such a Place?" and "How Can I Get There?" Are Questions Quickly and Clearly Answered in This Guide—20,000 Sold by Trainmen in Three Days

J. C. DAVIDSON, publicity manager the Denver Tramway, has compiled a new street guide for Denver which has a very unique method of answering the questions "Where is such and such a place?" and "How can I get to such and such an address?"

The book, of course, is intended to stimulate transportation on the street cars, but it nevertheless serves a very good purpose in directing accurately to any street and any number on any street. For instance, if it is desired to go to 1137 Adams Street, one turns in the directory to the alphabetical index of streets and under Adams Street notes that, for numbers between 1100 and 1300, the place could be reached by taking route No. 33 or No. 30. Then at another place in the booklet a table shows at what point cars on these routes can be boarded.

Wherever possible all the car lines running near a given address have been given because it was thought that most people would rather walk an extra block and take the first car that came along rather than wait ten or fifteen minutes for a car that would save them only one or two blocks' walk.

An important feature is that all named apartment houses and flats are listed, and also parks, clubs, banks and trust companies, location of freight depots and repair shops, telephone and telegraph companies, newspapers, hospitals, asylums and sanitariums, homes for boys and girls and the aged and the tubercular, railroad passenger, freight and general offices, theaters, associations, etc., etc., and in each case the directions are given as to how to reach any particular one of these places. The booklet also contains a compilation of the routes of street car lines and a list of the special transfer privileges which are granted. Another important tabulation shows where the different route tramway cars may be boarded in the downtown district.

One of the most interesting features about the street guide is the manner in which it was distributed. The first edition numbered 20,000 copies, and it was printed with some misgivings on the part of the company officials regarding their ability to dispose of them. About a week of preliminary advertising was given the guide before it was put out, by running cards in the cars. At the same time a scheme was devised for selling the guide through a committee of trainmen who enlisted the services of all other trainmen in selling them. It was arranged to sell the guide for 10 cents a copy and to give the largest part of the profit to the trainmen,

the remainder going to the Associated Tramway Trainmen's Clubs. The company itself not only made no profit on the guide, but spent several hundred dollars in its compilation and financially backed the trainmen's association in publishing it.

The guide went on sale on Saturday morning, Oct. 13, each conductor being required by the committee to take ten copies and pay 70 cents for them in advance. Although considerable grumbling was caused by this requirement, within an hour from the time the conductors took cars out there was a general demand for more copies, and all the men were enthusiastic about the scheme. The more alert conductors bought from fifty to 100 more copies as promptly as the company's distributors on the streets could give them out and collect the money. One of the company's automobiles was kept busy in the downtown district throughout that day keeping the distributors on the streets supplied with sufficient copies. These street distributors were so located that they could board each car as it came through the downtown district.

Almost the entire edition was sold the first day and by Monday night, Oct. 15, there were only about 1000 copies of the book unsold on the system. Since then the demand has continued and a second edition is being printed. After it was once started, the scheme proved very popular and very profitable to the trainmen, who netted in some cases as much as \$5 and \$6 a day from the sale of the book, in addition to their wages. The associated clubs reaped between \$600 and \$700. The Tramway Company purchased 2000 specially bound books and distributed them free to the trainmen for their personal use.

As Mr. Davidson realized that it is impossible to publish such a street guide without having some errors either in typography or information, he put a note on the inside cover commenting on this fact and requesting anyone who found an error to let the company know. This made proofreaders of all those who purchased guides. Many very complimentary references to the new guide have been made, but the manner in which the public bought it was of course the most significant compliment, and the character of the guide is sure to stimulate car riding as well as to be of great service to patrons.

Employees' Association Report

The Third Avenue Railway (New York) Employees' Association on June 30, 1917, had a membership of 3412 and had to its credit on that date New York City bonds valued at \$79,833 and cash on deposit amounting to \$13,283, or total assets of \$93,116. During the year the association collected in dues from the members \$15,561, and the various companies comprising the Third Avenue Railway System contributed a similar amount. The association physician treated 572 members at their homes and treated 8987 cases in the medical and surgical departments. A total of 826 members were relieved by the payment of sick benefits amounting to \$16,312, and families of thirty-four members who died during the year received \$1,000 each under the group insurance plan. The clubrooms and reading rooms were liberally patronized throughout the year and the surgical department was enlarged to provide additional facilities for the treatment of injured employees.

How to Get to Any Point in the City	
Acorn St. 4200 to 5200	2, 3, 7, 9, 75-Globe
Adams St. 900 to 2700	3
Adams St. 400 to 700	4
Adams St. 700 to 1100	30
Adams St. 1100 to 1200	33-30
Adams St. 1300 to 1400	14, 15, 30
Adams St. 1600 to 1700	C P
Adams St. 2400 to 2700	30, 30, 30, 30
Adams St. 3200 to 3500	C Colfax
Adams St. 3800 to 5100	64-E
Adams St. 610 to 700	Acro
Adams St. 900 to 1200	Acro
Adams St. 1200 to 1400	Acro
Adams St. 1400 to 2700	Acro
Alameda St. 810 to 900	9-3
Alameda St. 900 to 700	9-7-6-56
Alameda St. 700 to 1300	58
Alameda St. 1300 to 2500	V Bikes
Alameda St. 2500 to 5000	Acro
Alameda St. W. 910 to 200	2-3-2
Alameda St. W. 2000 to 2300	V Bikes
Alameda St. W. 2300 to 5200	75-Bir
Alaska St. W. 610 to 200	2-3
Alaska St. W. 100 to 200	72
Albion St. 610 to 500	Acro
Albion St. 500 to 700	6-30
Albion St. 700 to 1200	V Bikes
Albion St. 1200 to 1500	15-14
Albion St. 1600 to 3200	45
Albion St. 3200 to 5200	V Bikes, Acro
Albion St. 500 to 5200	Acro
Albion St. 610 to 300	Acro
Alcott St. 610 to 500	75-Bir
Alcott St. 500 to 900	75-Bir
Alcott St. 900 to 1300	61-W, 75-Bir
Alcott St. 1300 to 2300	12
Alcott St. 2300 to 3100	23-W, 23rd Ave, 29-W
Alcott St. 3100 to 3300	10-18-19
Alcott St. 3300 to 1000	37-36
Alcott St. 1000 to 5200	28-W
Alice St. 910 to 200	Acro
Alice St. 900 to 1100	39-Arco
Alyn St. 1100 to about 1270	72

SAMPLE PAGE FROM DENVER TRAMWAY STREET GUIDE

Practical Hints from the "Em-an-Ess" How This Ohio System Maintains Cordial Relations with Newspapers and Reporters—How It Handles Accident Publicity and Complaints from Patrons

THERE are kinks in all trades, and public relations work has its full share. In such work local conditions exert a large influence, and the way in which efforts to improve public relations are adapted to the community is a real test of the wisdom and the ingenuity of the responsible corporation official.

As a necessary corollary to the above proposition it follows that, with fundamentals omitted, some of the ideas or methods that have proved effective in one locality may not be at all advisable for another. Nevertheless, similar conditions are not infrequently found to exist in different communities, and then it is the case of like begetting like.

With such a statement of the general situation, the public relations manager of the Mahoning & Shenango Railway & Light Company, Frank Wert, has mentioned to a representative of the ELECTRIC RAILWAY JOURNAL a few points that have proved important in his work and may be helpful to others. These supplement the general descriptive article by Mr. Wert in the issue of this paper for Jan. 6, 1917, page 23.

GETTING PUBLICITY

The public relations work of the "Em-an-Ess" system in and around Youngstown, while concerned with commercial advertising, complaints and a house organ, is based primarily on newspaper publicity. It is felt that the railway is too vital a force in the life of the communities to have nothing from it but silence, and the facts of any occurrence are always placed at the disposal of the public through the press.

Mr. Wert freely answers requests for information, prepares memoranda regarding earnings, service changes and the like, and co-operates with the newspapers by telephoning late news. He firmly believes that publicity which originates in the brain of the newspaper man is the really valuable kind. A total avoidance of press-agency methods, therefore, but a maintenance of willing and frank service to the editors have made matter concerning the company acceptable to the local papers. On a controversial matter the public relations department may issue an official statement, to be handled in quotation marks, but this has been done only a few times.

In general, the editors are made to feel that company information is at their disposal to be used as they see fit, the only limitation being that of truthful presentation. In case a correction has to be made, it is presumed that it was the result of a mistake and the error is tactfully pointed out to the reporter when a convenient occasion arises. Very rarely is it necessary to issue a formal corrective statement.

Publicity is also secured through the use of advertising—commercial advertising for the lighting division and "good-will" advertising for the railway. The latter class covers notices of such things as schedule changes, new fare-collection methods and other important operating modifications. Such advertising, the company feels, serves to remove the element of surprise from any change and at the same time permits the company to point out the advantages thereof. It thus tends to

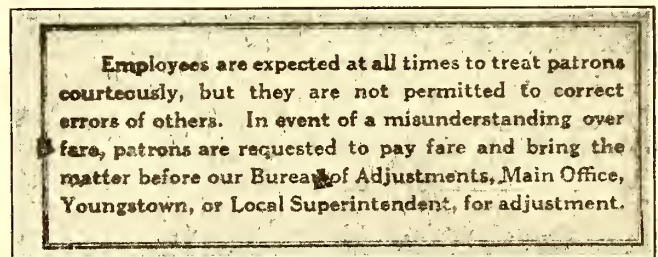
prevent the hostile editorial comments that are sometimes poured out before the reasons for an operating change are thoroughly understood.

DEALING WITH REPORTERS

The company does not raise any barrier against a reporter talking with a responsible official if he wishes to do so. Nor is there any objection to the superintendents in the company's scattered towns talking on purely local matters.

In the main, however, it is felt that Mr. Wert can secure the desired information with the minimum loss of time to the reporter. Furthermore, it is believed that the more the publicity work is concentrated, the more dependence the reporter will place on the information secured and the more influential the public relations department will be. Hence in actual practice it is preferred to have as much information as possible pass through Mr. Wert's hands.

The question has often arisen as to whether it would be advisable to take reporters on trips to the company's new power-house installations, etc. Occasionally this has been done, but owing to the scattered locations of the company's properties it is believed that the drain



OUTLINING ON THE BACK OF TRANSFERS THE PROPER COMPLAINT PROCEDURE

upon the reporters' time might in most cases be too great. Better results are secured by giving the newspapermen a story with pictures and telling them that the company would be most happy to have them inspect the plant if their time permits. Such a combination of service and the open-door inspires confidence on the part of the reporters, even if no visit is made.

COMPETING WITH THE NEWSPAPERS

The ten daily and several weekly papers in the company's territory are large in size, several running from twenty to thirty-six pages, but they are by no means so crowded with news as the big metropolitan dailies. In the large cities, if a railway wishes to reach the public on matters not of livest news value, it must use its own car bulletin. In the smaller city, however, Mr. Wert avers, the use of a car bulletin when a reasonable amount of newspaper space is available is considered an affront to the local papers.

For this reason the "Em-an-Ess" system depends upon the press for its appeal to the public. If there were in the cities served a paper persistently and unjustly rabid in its opposition, there might be an excuse for entering the local publishing field. Even then, it is felt, the work should be undertaken only as a defensive measure. The public looks upon the press as unbiased, upon car bulletins as *ex parte*. Hence the defense, to succeed, would have to be conducted in a dispassionate and dignified manner, with strict observance of all rules of fair debate.

Through its bureau of adjustments, operated as an adjunct to the public relations department, the company seeks to meet individuals who feel that they have been unfairly used and to right speedily any wrong that exists. To let the public know of the existence of this bureau the company attaches postscripts to its advertising, prints a reminder on its post-card electric bills and outlines the proper complaint procedure on the back of transfers. The wording in the last case is shown in the illustration on page 863.

The company does not, however, advertise directly for complaints, for in its opinion this would not be entirely fair to employees. The conductors know the rules and try to enforce them fairly, and they would be justly aggrieved if the company went "fishing" for complaints against them. As it is, the transfer notice helps the conductors by minimizing the possibility of argument with passengers, for the proper source of satisfaction can be indicated with courtesy but with finality. The conductors know that in most cases when a point in dispute is taken to the bureau, the passenger's misconception will be removed, more readily than they could do it, and they appreciate how the company combines consideration for them with its public relations work.

PUBLICITY ABOUT ACCIDENTS

In Mr. Wert's opinion, there may be a clash of interest between the claim department and the public relations department in the matter of publicity about accidents. A news account of a street railway accident may give a valuable tip to an ambulance chaser. Yet this fact, it is believed, argues for prompt work on the part of the claim department rather than for suppression of facts by the publicity official.

In the case of all accidents that are not so trivial as to have no news value, the papers are certain to secure a story, and no good-will is created for the company if it withholds the facts. Not long ago, when the company met with a fairly serious accident, Mr. Wert gave out a full list of the injured. A reporter who had direct knowledge of the occurrence and was watching developments, confessed himself quite surprised to find more names on Mr. Wert's list than he had secured.

Needless to say, this sort of occurrence has put the company in solid with the reporters. They know that they can depend upon the veracity of the public relations department. Hence, when a careless automobile driver is to blame for a collision, and the company so states, the story is not taken with a grain of salt but is published as the truth. This has a very beneficial effect in cutting down absurd claims in such instances.

PERSEVERANCE IS NECESSARY

Turning away from his own work, Mr. Wert in conclusion called attention to what he considers a most important maxim in publicity. This is that the mere telling of facts does not always create the impression that facts are being told. In other words, some communities are more obdurate than others in accepting facts as the truth.

Thus, while a publicity agent must believe in the fairness of the public, he should not sometimes expect a reception immediately free from suspicion. In such cases perseverance is what counts.

The beautiful edifice of better public relations cannot be raised in a day. If the work of a company in the

past has been destructive rather than constructive, the case is doubly difficult. The least that the company then can do is to give its public relations official time and view with patience his persistent efforts to overcome the past.

St. Louis Bonus System in Operation

In view of the fact that in the first month of operation a large majority of employees earned a bonus through the elimination of accidents, the care of mechanical equipment, the building up of passenger earnings and in general a greater interest in company affairs, it is believed by Bruce Cameron, superintendent of transportation of the United Railways of St. Louis, Mo., that the company's efforts in regard to the new bonus system have not been in vain. The preparation for the use of this system was described in the *ELECTRIC RAILWAY JOURNAL* of Oct. 6, page 622.

The result of the bonus system in September, for motormen and conductors, was that 2804 men have drawn a bonus. A total of 2053 had a perfect score, and men numbering 846 were demerited. Of these 751 were demerited but not to the extent of 250 points and did, therefore, receive some bonus. Ninety-five were demerited 250 points or more, causing them to lose their bonus. In the class of carhouse clerks, foremen, supervisors, superintendents, etc., 140 made a perfect score, while six men had imperfect ones and six lost out entirely on participation in the bonus award. Thirty-nine miscellaneous employees (car hostlers, curve cleaners, flagmen and switchmen) had perfect scores; four, imperfect ones, and two, excessive demerits. Approximately \$9,100 has been divided.

Of the different headings under which employees were demerited, "missing" took the lead, with 702 men demerited. "Schedule time" with 113 men demerited was second. Other causes follow: "Collisions," ninety-eight men; "reliefs," fifty-nine men; "visiting," forty-nine men; "accidents," forty-four men; "speeding," twenty-seven men; "brakes," twenty-one men, and "cardoors," twenty men. The violation of the rule on "switches" was very expensive and took considerable money out of the bonus pot.

Possession of Explosives Regulated

Any person in the United States found with explosives in his possession after Nov. 15, and who does not have a license issued by the federal government showing the purpose for what the explosives are to be used, is liable to a \$5,000 fine or imprisonment for one year or both. In each state there will be appointed a state explosive inspector, who will represent the federal government in the administration of the law within the state. Only citizens of the United States or of countries friendly to the United States and the Allies may so obtain licenses. Contractors, mining companies, quarrymen and others using large quantities of explosives, which are handled by employees, may issue explosives to their employees only through those employees holding a license, called a foreman's license. The purchaser of dynamite, in obtaining a license, must state definitely what the explosive is to be used for and will be held accountable for its use as stated and the return of any explosive that may be unused.

American Association News

Work to Be Accomplished Is the Topic at Toledo Joint Section Meetings—Biographical Notes About Section Officers, the Capital Traction Company Section Being Mentioned in This Issue

Section Meeting Precipitates Liberty Loan Campaign

A total of 209 employees of the Capital Traction Company, Washington, D. C., subscribed to the second Liberty Loan as a result of a campaign initiated at a meeting of the company section held on Oct. 11. The campaign followed an appeal by a representative of the Washington Liberty Loan Committee. Several company officials addressed separate meetings in the interest of the loan on a day set apart for the big drive.

Facts About Company-Section Officers

Following the custom of giving some biographical notes regarding the officers of the several company sections, the following is presented concerning those in charge of the work of the Capital Traction Company section this year. Mention will be made later of the new officers of other sections.

Elon von Culin, president of Section No. 8, was its vice-president last year. He has been in the service of the Capital Traction Company, Washington, D. C., since December, 1898, for several years in the engineering department and since in the operating department. He

of the company since January, 1916, following four years as chief clerk of the engineering department in charge of records of the department, cost-keeping system, etc. His service with the company dates from 1907. Mr. Heberle was born in Olean, N. Y. He received his education in the parochial and public schools of that city and in Westbrook's Commercial College.

Toledo Section Begins Year's Work

The Toledo Railways & Light Company section held its first meeting of the season on Sept. 26 with about 375 members and guests present. President T. J. Nolan first outlined the program to be followed during the coming year. He said that besides the monthly meetings class work would be conducted along lines similar to those of last year, and that the educational work would be supplemented by outside courses in which meritorious work would be rewarded. Those present manifested unusual interest and enthusiasm to get started in the year's work. It is hoped that the section membership will be materially increased and a campaign has been started for that purpose.

Moving pictures featuring Doherty properties in different parts of the country were shown to acquaint the employees with the parent organization. The Rail-Light orchestra also gave a delightful concert.

The second meeting was held on Oct. 24 with approximately 175 in attendance. Reports from committees were received bearing upon the general program of the year, which will consist of educational work the first and third weeks of each month, departmental meetings the second week and general monthly meetings the fourth week. The publicity committee will issue an interesting bulletin on the first of each month beginning with November. The program committee announced the following speakers for the next three monthly meetings: November meeting, M. Luckiesh of Nela Park Laboratory of the National Lamp Works; January meeting, Marcus A. Dow, chief supervisor of safety, New York Central System; February meeting, E. E. F. Creighton of the General Electric Company. No meeting will be held in December.

Moving pictures were shown of the company's Water Street Power station, the Overland automobile factory and the construction of the Acme Power Company's Front Street plant. L. P. Beaver, one of the company's men in the service, gave a very interesting talk on life at Camp Sherman. The Rail-Light orchestra again furnished music. At the close of the meeting a buffet luncheon was served.

At the October meeting of the Connecticut Company section Frank Jewell Raymond of East Orange, N. J., spoke on "Business Mastery." A nominating committee was appointed preparatory to the election of officers at the annual meeting. The results of the election will be announced later.



ELON VON CULIN
President Capital Traction
Company Section



Photo by Clinedinst Studio
J. E. HEBERLE
Secretary Capital Traction
Company Section

is now superintendent of traffic. Mr. von Culin's business career has been devoted entirely to railway work. From 1890 to 1895 he was in the office of the chief engineer, and later in the office of the president of the Baltimore (Md.) Traction Company. For the next two years he was associated with Edmond Saxton, who built the cable railway systems in Washington and part of the underground electric railways in that city. His next connection was with the Nassau Construction Company, New York, after which he was engaged for a short time on the construction of the Huntington (L. I.) Railroad.

J. E. Heberle enters upon another term as secretary of the Capital Traction Company section, having held the office during the past year. He has been chief clerk

COMMUNICATION

It's Time for Action on the Transfer Problem

To the Editors:

Nov. 1, 1917.

At the recent New York conference of the American Electric Railway Association, President Brush of the Boston Elevated Railway struck the keynote of war-time efficiency when he advocated action instead of talk on the broad policies of the railway industry. One has only to look back over a number of years of association meetings to realize how numerous have been the discussions and how few the results following presentation of many important committee reports. As an example, one has but to consider the present agitation for higher fares and a charge for transfers. This growing transfer problem has been discussed time and again. The attention of the industry has been called to the diminishing "average fare per passenger" and the importance of a closer check on transfers. Yet years have passed with little or no change in the methods of companies whose transfer practice was clearly in need of improvement. Happily there have been some progressive operators willing to "take a chance." This alone is responsible for the present day extensive use of prepayment cars. This, too, accounts for the growing demand for fare boxes of one type or another. If all managers were "stand-patters" we would still be ringing up our fares on the old-fashioned "brothers-in-law" with their possibilities for petty thievery and inaccurate accounting.

The New York companies now have pending before the Public Service Commission an application for a 2-cent charge for transfers to help defray the constantly increasing cost of carrying passengers. Twenty of the largest railways in the United States last year carried 2,193,983,240 transfer passengers. If each of these passengers had paid 2 cents for a transfer there would have been added \$43,879,664 to the revenues of these twenty companies. It is not likely, of course, that so many transfers would have been requested if they were not free. Many would have walked the short distance covered by their transfer ride. Nevertheless it is undoubtedly true that most transfer passengers travel greater distances than the passengers who do not use transfers, and therefore they are adding to the cost of transportation.

At the 1912 convention some figures on the growth of transfer traffic were presented by a committee which had secured data from a limited number of companies. This showed that in the previous ten-year period the revenue passengers per car-mile operated had increased 16 per cent, whereas the transfer passengers per car-mile operated had increased 40 per cent. The average fare per passenger for these same companies had decreased nearly 6 per cent. These figures are probably conservative. At least they give an indication of unusual growth in a class of passengers which was not known for many years after the railway business began.

Recent increases in the cost of paper and printing for transfers should arouse electric railway managers to a study of means by which waste can be minimized. This may mean a change from the dated to the undated

transfer, a reduction in size of the transfer or a cheaper quality of paper. It may lead to the development of a transfer issuing or printing machine with a view to preventing waste. It should at least bring about a closer check on the distribution of these troublesome bits of paper.

Take the case of a company which uses dated transfers. They are ordered from the printer in such quantity as to guard against possible shortage on any day and are then distributed among the various operating stations. Each station foreman gives out a certain number to his conductors, but keeps a reserve for emergency during that day. The conductor issues some to his passengers, in many cases without waiting to be requested to do so. A certain percentage of these passengers do not use the transfers which they have received. Others give them away or sell them so that the company is deprived of fares to which it is entitled. To discover the margin of waste, one need only figure the difference between the number of transfer passengers carried and the number of transfers printed. In some instances this is said to be more than 50 per cent. The 1913 committee on fares and transfers reported that the proportion of transfers given to conductors and not issued was in some cases as high as 80 per cent. These, of course, may have been undated transfers, which were not thereby wasted. The committee also reported that the percentage of transfers collected to those issued varied from 46 to 97, and it would be a safe guess to say that the higher figure belonged to the company where a refund was made for transfers not used.

The company which gives only one transfer with a 5-cent fare has a simple job of checking up conditions compared with the company which issues transfers on transfers without limit. It has been found, however, that many companies, regardless of their size, keep absolutely no record of transfers issued, destroyed or given away. Even if these bits of paper did not have a potential value of 5 cents each it would appear to be a part of efficient management to discover whether or not there is any waste. Having that potential value, it might almost be called criminal negligence for a railway operator to continue in ignorance of actual conditions.

This leads again to the plea made by Mr. Brush at the New York conference for action. Soon the utility commissions of many states will have under consideration various appeals for financial relief for suffering railway utilities. In addition to whatever relief may be granted by these authorities, the prudent manager can demonstrate his own efficiency by looking carefully into such problems as the one outlined above.

SUPERINTENDENT.

Passengers on electric railway cars and pedestrians and drivers of vehicles taken as a whole and combined, have an excellent opportunity of escaping injury from the operation of the Municipal Railway, San Francisco. City Attorney George Lull, who has to deal with all injury claims, has figured out the exact percentage of risk. A person has about 29,999 chances of escaping injury to one of being hurt, according to the city official's reckoning. Or, in other words, the percentage of accidents to passengers, etc., is 0.0033 of total passengers carried.—*Journal of Commerce*.

EQUIPMENT and MAINTENANCE

HAVE YOU A GOOD WAY
OF DOING A JOB?
—Pass It Along

These Articles Have Been Selected to Provoke Thought and Stimulate Discussion. All of the Technical Departments Are Represented

A Spring Shock Absorber for Interurban Cars

Canadian Railway Company Develops Device to Reduce Damage by Collisions

BY G. J. MEYER

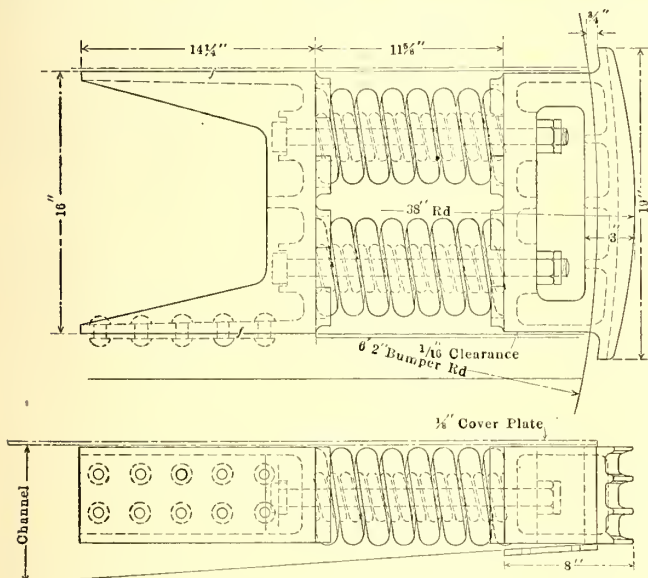
Chief Engineer and General Superintendent Montreal & Southern Counties Railway, Montreal, Canada

In order to reduce the damage by collisions of its heavy interurban cars this company has found it desirable to install spring bumpers or shock absorbers on its cars. These are of a very simple design and were constructed and applied by the Ottawa Car & Manufacturing Company.

The shock absorber consists of a corrugated bumper block of malleable iron, a pair of double helical springs

bumper block. The play of the bumper block is limited by means of two 1-in. bolts passing from the stop block to the bumper block. These bolts are provided with lock nuts.

As stated above, the helical springs are double. The outer, heavier one is made of 1 3/8-in. rod bent so as to have an outside coil diameter of 6 in. When set solid its length is 11 in. and when free it is 13 in. The inner spring is made of 1 1/16-in. rod, the outside diameter being 3 in. Its solid and free lengths are 11 in. and 13 in. respectively. To compress the heavy spring solid requires 17,636 lb. and the light spring 4414 lb. In actual use these bumpers have proved very satisfactory and, we believe, will greatly reduce maintenance costs.



SPRING SHOCK ABSORBER USED ON CARS OF CANADIAN ELECTRIC RAILWAY

and a malleable iron stop block. These parts are shown in the drawing reproduced herewith.

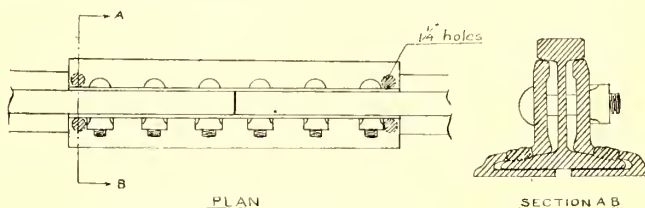
The stop block is securely riveted between two of the channel-iron platform knees, the casting being shaped so as to provide room for a number of rivets sufficient to give a total shearing strength in excess of the total force which can be imposed upon them by the springs, namely, about 40,000 lb. To relieve the rivets, however, the surfaces in contact are finished so as to introduce considerable friction. The side of the stop block in contact with the springs is furnished with bosses which act as sockets for the spring ends, and similar bosses are cast on the inside surface of the

Brazilian Railway Uses Substitute for Copper Bonds

BY FELIX FERRÁS

Chief Engineer Track and Roadway Department, Sao Paulo Tramway, Light & Power Company, Ltd., Sao Paulo, Brazil

Owing to the high price of copper and the difficulty in getting deliveries the writer has devised a method of welding continuous joint plates to the rail. After a year's trial in old and new track work this has proved



SPOT-WELDED BOND USED IN PAVED STREETS

an effective substitute for copper bonding. Of course, it is only used in paved streets where rails are not subject to expansion and contraction.

Before putting the joint plates in place 1 1/4-in. holes are drilled at each end, as shown in the drawing. The joint plates are then put on and the base of the rail under the holes and the sides of the holes are carefully cleaned with a file or drill. Then by the use of an Indianapolis welder steel is melted into the holes, thus forming a weld between the plates and the rail. The cost of the joint made by this process is about one-fifth the cost of the copper-bonded joints without taking into consideration the time and expense of placing the joint plates temporarily for aligning and levelling the track and then taking them off again to install the copper bond inside the joint plates.

Special Work Repairs Made by Standardized Procedure

Foreman in Charge of Work Receives Work Order Stating the Order in Which Each Operation Is to Be Done

BY W. L. WHITLOCK.

Office Engineer Denver (Col.) Tramway

In the maintenance of special work in Denver it has been practical to develop a standard plan of procedure for the repair of square crossings in paved streets. We have a large number of these crossings of identical design and construction, about the only variation at the different locations being the amount of traffic. One of the illustrations shows the condition of part of a crossing just previous to repair. This is typical of the crossings on which work is required from time to time to place them in good shape.

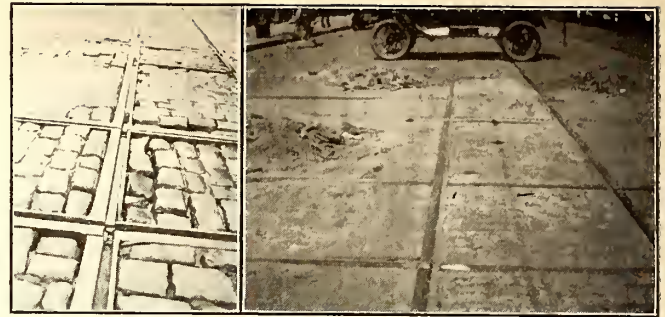
For such work as this the regular routine of the Denver Tramway engineering department, as described in the ELECTRIC RAILWAY JOURNAL of July 28, 1917, is followed. The track inspector or office engineer reports the kind and amount of repairs necessary, and a work order is made out to cover this. This is approved by the superintendent of track and the chief engineer, and the expenditure is authorized by the general manager. All materials and the instructions and order of work for the track foreman are listed on this work order. For the standardized repair routine on these square double-track crossings the foreman's instruction sheet reads as follows:

Remove paving.	Build up low places on rail (surface welding).
Re-bolt crossing.	Grind the rail.
Change out rails (if on order).	Place oak shims on intermediate ties, between steel shims.
Adze ties.	Repave street opening.
Place steel shims under each corner of crossing.	Clean up job.
Weld shims to base of rail.	
Weld knee iron to rail.	
Weld all machine bolts, nuts and heads of bolts to knee iron.	

The average material used in connection with one of these standard crossing repair jobs and the total labor, cartage and material costs are given in the following tabulation:

128 7/8-in. x 3 1/2-in. machine bolts.....	\$12.77
Sixteen steel plates as per drawing "x".....	4.00
10 gal. coal oil.....	1.10
Two 5-gal. cans.....	.96
Twenty-one sacks cement.....	12.39
4 1/2 cu. yd. paving sand.....	7.90
One pair 72-lb. angle bars.....	.75
One pair 72-lb. angle bars offset 1/8 in.....	.75
Twelve 1/4-in. oak shims.....	.15
Twenty-four 5/8-in. oak shims.....	.30
Twelve 1/2-in. oak shims.....	.15
Twelve 3/4-in. oak shims.....	.12
3/4 keg 1 in. x 3 3/4-in. track bolts.....	2.76
100 second-hand 5-in. square paving blocks.....	10.00
1/4 keg second-hand track spikes.....	.75
Water.....	.09
Use of welder twenty hours at 75 cents an hour (including power and operator's wages).....	15.00
Welding metal (varying with amount of head wear on rails).....	5.00
<i>Salvage</i>	
Twenty-one empty cement sacks.....	\$2.10
100 lb. scrap bolts and spikes.....	.45
	2.55
	\$2.55
Net total material.....	\$72.39
<i>Labor and Cartage Cost</i>	
Removing paving.....	\$9.42
Replacing paving.....	23.70
Repairing crossing.....	39.57
Cartage.....	13.22
Total.....	\$85.91
Total cost of standard crossing repair.....	\$158.30

The cost chargeable to the rail grinder, used to smooth off the work of the welder, does not amount



TYPICAL CONDITION OF STANDARD CROSSING BEFORE REPAIR, AND SAME CROSSING REPAIRED UNDER STANDARD PLAN

to much and it is included in the general labor item above for repairing the crossing. The item of expense for the welder use and material is estimated, as the cost department has kept records on the welders only since Sept. 1 and no actual average cost is yet available for this item.

Effects of Storage on the Heating Value of Coal

Authoritative Tests Show that Bituminous Coal Does Not Lose Heating Value Materially While in Storage

The results of tests covering a period of five years to determine the deterioration in the heating value of coal during storage are given in Bulletin No. 136 just issued by the Bureau of Mines, Department of the Interior, Washington, D. C. The tests were confined to determination of loss in heating value and also the degradation of lumps by weathering. No examination was made into the resulting deadening effect or decrease in original ease of burning. In general the tests showed that the decrease in heating value has commonly been overestimated.

The tests of New River (W. Va.) and Pittsburgh coals were made to determine the effect of storage under water, particularly under salt water. It was found that submergence storage of the former effectively prevents deterioration of heat value and that storage in the air under severe weather conditions causes a loss of only 1 per cent in one year's exposure and about 2 per cent in two years. After two years the loss is continuous but slow, increasing from 2.5 to 3 per cent in five years. Salt water possesses no advantage over fresh water. The deterioration of Pittsburgh coal during one year's storage in open air was practically negligible. During the remaining four years the deterioration proceeded very slowly and did not exceed 1.1 per cent. The submerged portions suffered practically no loss measurable by the methods used. With these coals it is felt that the expense of under-water storage equipment is not justified except as a preventive of fires from spontaneous combustion.

The effect of storage in air only was determined for Pocahontas (Va.) and Sheridan (Wyo.) coal. The former, a semi-bituminous coal, deteriorated in heating value less than 1 per cent during two years of exposure. The Sheridan sub-bituminous coal, known also as "black lignite," is commonly supposed to deteriorate rapidly, especially by "slacking" or crumbling. This coal lost from 3 to 5.5 per cent of its heat value during about three years' storage, the greater part of this loss

being in the first nine months. In general, the lumps became badly cracked, but they changed their form sufficiently to permit greater oxidation, due to a better access of air. However, they were weakened so that they broke up badly in handling. By the use of bins with air-tight bottoms and sides and a protective layer of fine slack on the surface, the loss in heat value of Sheridan coal can probably be kept less than 3 per cent in one year and the physical deterioration in the lower layers can also be greatly prevented.

The Engineering Experiment Station, University of Illinois, Urbana, has also made studies of the effect of storage upon the properties of coal, the results of which have just been reported in Bulletin 97, published by the University. These investigations show also that the loss of heat value is small. The report states that freshly mined coal is chemically very active and certain constituents will combine with oxygen at ordinary temperatures. The extent of this reaction depends on the variety of the coal and the amount of the active constituents, an important factor being fineness of division and the accessibility of the oxygen. This chemical process is accompanied by generation of heat, the amount of which is insignificant compared with the total heat available in the coal. It is questioned whether the heat losses are not more apparent than real, since the increase in weight due to the absorption of oxygen lowers the indicated heat value per pound of coal. Moreover, the increase in slack which results from storage, together with the saturation with oxygen of the free burning constituents, slows up the fire as if heat value were lacking. However, this can be largely offset by increased draft and correct combustion conditions.

Other facts established by these studies are that bituminous coal can be stocked without appreciable loss in heat value provided the temperature is not allowed to rise above 180 deg. Fahr. Under-water storage prevents loss of heat value and is not accompanied by physical deterioration. The water retained by the coal upon removal is substantially only that held by adhesion or capillarity. The safety of dry storage can be increased by screening out the fine material and stocking only the lumps.

How Electrified Steam Railroads Save Coal

In connection with our present patriotic duty to conserve the coal supply, W. D. Bearce of the General Electric Company has made some interesting calculations showing the amount of coal which the present electrified railroads save each year by burning coal economically in large generating stations instead of wastefully in locomotive boilers. He assumes a coal consumption of 2½ lb. of coal per kilowatt-hour for the up-to-date power house and 7 lb. for the steam locomotives. Hence a road using steam-generated power saves approximately two-thirds the coal which would be necessary for steam locomotives. Of course where

water power is used for generating purposes the coal saving is 100 per cent. The summary below shows the amount of coal saved. In the case of roads using oil, the coal equivalent of the oil has been used.

Insulator Problems Affected by Kind of Poles Used

In discussing transmission line insulation problems recently, A. O. Austin, chief engineer Ohio Insulator Company, said that it is advisable to remember that the relative cost of the insulator as compared with the remainder of the system is often under 3 or 4 per cent, and that there are only a few systems which could not afford to use more insulation, simply as a matter of good business investment in safeguarding their systems.

As the investment dependent upon the transmission line increases, greater expense will be warranted in the transmission line, and it is usually the best policy to use steel construction with ample insulation for the largest lines. It must be remembered, however, that a large expenditure in the line does not necessarily mean reliability, for if steel towers or structures are used in place of wood, the insulator must be very much larger to give the same reliability.

Unless the insulator is sufficiently large, a large investment might readily warrant the use of a wood pole line to gain greater reliability, as the greater reliability would more than offset the increased depreciation of the wood over steel construction.

Air Rectifier for Preventing Freezing of Brakes Adopted by Many Lines

The air rectifier, a device for preventing the freezing of air brakes, was described in the ELECTRIC RAILWAY JOURNAL for Jan. 1, 1916, page 50. Since that time a considerable number of railways in different parts of the country have used the device and the reports as to its effectiveness are sufficient to indicate that it provides a most satisfactory means of preventing freezing.

The device operates on the well-known principle that mixing a small amount of alcohol with water will greatly reduce the freezing point. The apparatus consists of a casting 12½ in. high by 4 in. in diameter, which is connected in the air-brake system, between the air reservoirs and the conductor's valve. This casting is filled with alcohol, and when the pressure in the air pipe is reduced a small amount of alcohol flows out into the air-pipe system. The device is particularly applicable to old cars on which there is insufficient space underneath the car to install a second air-storage tank to prevent freezing. When used instead of a second air tank, there is also a considerable saving in weight.

It is further reported that the small amount of alcohol which is injected into pipes upon each application of the brakes tends to cut any gummy formation

COAL SAVING DUE TO ELECTRIFICATION (BEARCE)

Miles of electrified track in United States.....	Source of Electric Power		
	Steam	Water	Total
Kilowatt-hour consumption per year at power station.....	1,485	873	2,358
Coal equivalent in tons (if steam engines had been used) based on 7 lb. per kilowatt-hour..	440,617,006	191,627,930	632,244,936
Coal saved per year in tons.....	1,542,898	670,552	2,213,450
	1,029,460	670,552	1,700,012

in the valves, thus keeping them clean for a much longer period and necessitating less frequent inspection. The amount of alcohol, however, is not sufficient to affect the lubrication of the valves, as was suggested as a possibility by railway men at the time the device was brought out.

Some thirty companies are at present using one or more of these devices, among which are the Union Traction Company of Indiana; the Chicago & Joliet Electric Railway; the Chicago & Oak Park and the South Side Elevated lines in Chicago; the Aurora, Elgin & Chicago Railway; the Milwaukee Northern Railway; the Chicago, South Bend & Northern Indiana Railway, and the Twin City Rapid Transit Company. It is said that the Chicago Surface Lines have been licensed by the National Safety Device & Manufacturing Company to build the device in their own shops and that a large number will be used this winter.

Taking Care of Copper Busbar Expansion

To facilitate the determination of the amount that copper busbars and such structures will expand or contract due to temperature changes, the accompanying chart can be used. The chart is based on the varying coefficient of expansion for copper which has been established by the Bureau of Standards. The horizontal lines show the change in the length of a 100-ft. copper

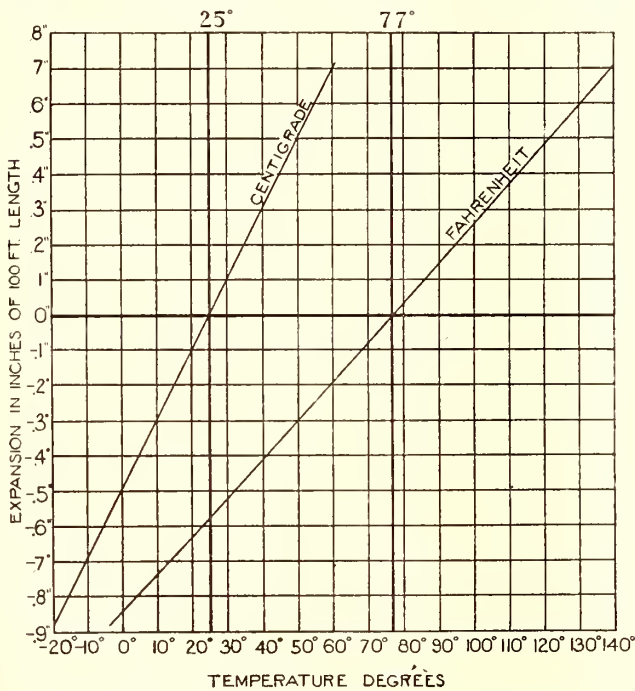


CHART FOR DETERMINING EXPANSION AND CONTRACTION OF COPPER BUSBARS

bus in tenths of an inch, while the vertical lines represent degrees either Centigrade or Fahrenheit according to which of the temperature lines is used.

An example in the use of the chart follows: If the busbar is installed at 77 deg. Fahr. and the lowest temperature to which it will be subjected is 50 deg. Fahr., it will contract a maximum of 0.3 in. per 100 ft. of length. If the temperature increases to 130 deg. Fahr. the busbar will expand 0.6 in. per 100 ft. above its installation length. The total change in length for the

80 deg. change in temperature is 0.9 in. It should be added that the expansion determined from this chart is the actual change in the length of the copper and that this change is a little greater than the change relative to the structure on which the busbar is mounted. The supporting structure, of course, also expands and contracts with changes in temperature, but it is generally



BUSBAR EXPANSION JOINT

less affected by such changes and also responds much more slowly to variations in temperature than does the copper busbar.

The use of this chart has been suggested by the General Devices & Fittings Company, Chicago, Ill. This company has also developed the expansion joint shown above to take up the changes in busbar length. These joints can be bolted into the bus stack and cause no reduction in the conductance.

Hopper and Conveyor Facilitate Unloading Cars of Ballast

For unloading and piling ballast delivered in cars the Pittsburgh Railways have a rig consisting of a bucket running up an incline which leads from beneath the unloading track to a hopper at the top of a framework made of telephone poles. The ballast is dumped into the hopper and distributed through steel chutes, not shown in the picture, which can be moved properly to pile the ballast.

The cars of ballast dump into a specially built steel hopper underneath the track, where there is a chute which feeds the elevator bucket. This is raised and dumped automatically by a motor-driven hoist. The most difficult part of constructing this ballast-distributing apparatus was the necessary excavation underneath the track. This had to be large enough for both the steel hopper and the bucket, and the track had to be supported over them.



BALLAST-DISTRIBUTING RIG AT PITTSBURGH RAILWAYS' STORAGE YARD

Cost Data on Special Work Renewals—VI

By M. BERNARD

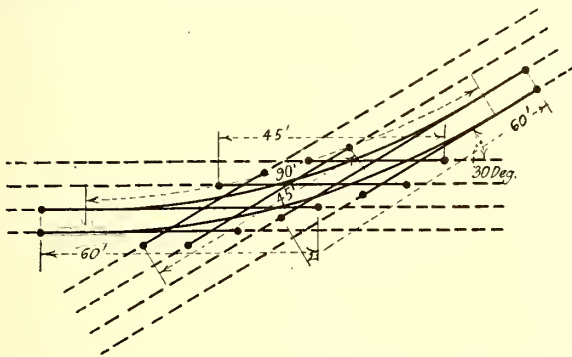
Assistant Engineer Way & Structures Department,
Brooklyn (N. Y.) Rapid Transit System

This is the sixth plate of the series of Cost Data on Special Work Renewals. The previous plates were published in the issues for July 21, page 108; Aug. 18, page 279; Sept. 8, page 406; Sept. 29, page 588, and Oct. 27, page 781.

Fig. 19—Single Track Outer Connecting Curve (30 Deg.)

Length—300 ft. single track

Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.

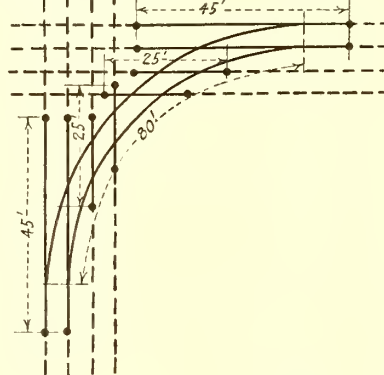


	Light Traffic	Average Traffic	Heavy Traffic
Labor.....	\$550.00	\$680.00	\$820.00
Handling.....	220.00	245.00	285.00
Miscellaneous.....	130.00	155.00	185.00
Total (except materials).....	\$900.00	\$1080.00	\$1290.00
Cost per single track foot.....	3.00	3.60	4.30

Fig. 20—Single Track Outer Connecting Curve (90 Deg.)

Length—220 ft. single track

Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.

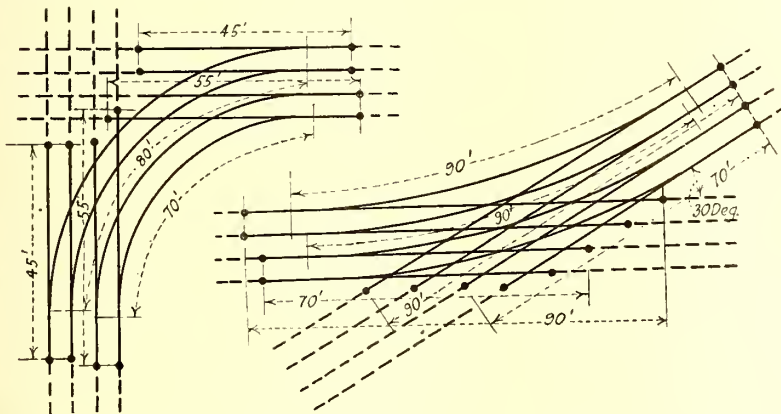


	Light Traffic	Average Traffic	Heavy Traffic
Labor.....	\$380.00	\$465.00	\$560.00
Handling.....	150.00	160.00	175.00
Miscellaneous.....	75.00	90.00	110.00
Total (except materials).....	\$605.00	\$715.00	\$845.00
Cost per single track foot.....	2.75	3.25	3.84

Fig. 21—Double Track Connecting Curve (90 Deg.)

Length—350 ft. single track

Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.

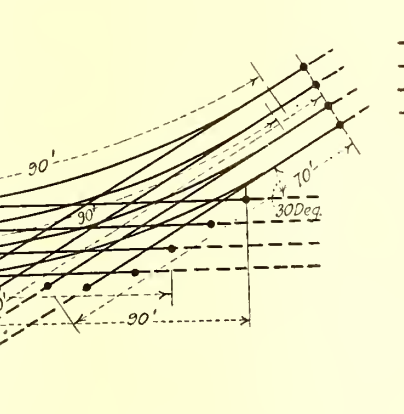


	Light Traffic	Average Traffic	Heavy Traffic
Labor.....	\$600.00	\$740.00	\$890.00
Handling.....	215.00	240.00	265.00
Miscellaneous.....	105.00	130.00	155.00
Total (except materials).....	\$920.00	\$1110.00	\$1310.00
Cost per single track foot.....	2.63	3.17	3.74

Fig. 22—Double Track Connecting Curves and Crossing (30 Deg.)

Length—500 ft. single track

Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.

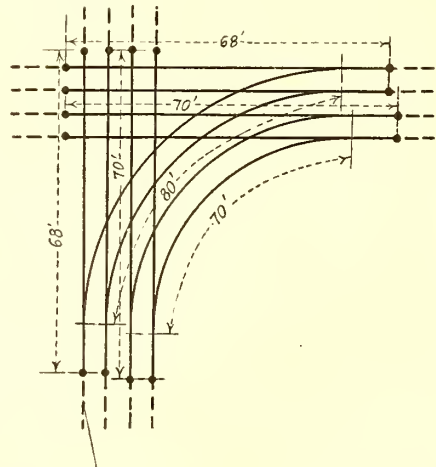


	Light Traffic	Average Traffic	Heavy Traffic
Labor.....	\$930.00	\$1160.00	\$1330.00
Handling.....	370.00	400.00	430.00
Miscellaneous.....	200.00	250.00	300.00
Total (except materials).....	\$1500.00	\$1810.00	\$2120.00
Cost per single track foot.....	3.00	3.62	4.30

Fig. 23—Double Track Connecting Curves and Crossing (90 Deg.)

Length—426 ft. single track

Construction removed—9-in. girder rail*—8-in. granite on sand.
New construction—9-in. girder rail*—8-in. granite on concrete.



	Light Traffic	Average Traffic	Heavy Traffic
Labor.....	\$830.00	\$1040.00	\$1250.00
Handling.....	275.00	305.00	335.00
Miscellaneous.....	140.00	175.00	210.00
Total (except materials).....	\$1245.00	\$1520.00	\$1795.00
Cost per single track foot.....	2.92	3.59	4.21

*Hard-center construction. *Explanation:* By "light traffic" is meant either the divergence of cars during progress of work, or a traffic of not more than 150 cars per day of twenty-four hours. "Average traffic" denotes the passage of about 325 cars per day of twenty-four hours, and "heavy traffic" that of 750 or more.

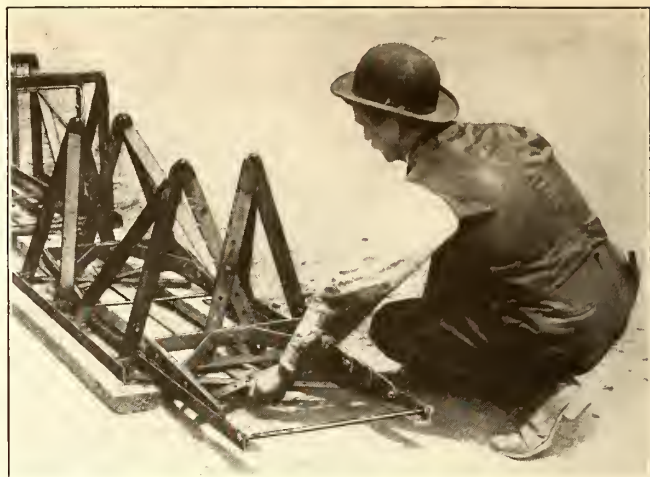
By "labor" is meant the labor cost of tearing out the old paving and special work and installing the new at the location where the work is done. "Handling" signifies the cost of loading the necessary materials at the various storage yards as well as the unloading of same at the place of renewal. It also includes the cost of transportation and the cost of removal of old or left-over material. Since the transportation

is done by a subsidiary company, which adds profit and overhead expense to the net cost, this item may differ considerably from that obtained on other railways. Under "miscellaneous" are included the expense of city inspectors, expense incurred when portable crossovers are used for divergence of cars during renewal, watchmen's wages, and incidental engineering expense. The total of these three items—labor, handling and miscellaneous—therefore includes everything except the cost of materials.

On account of the unsettled labor conditions prevailing since the beginning of the war, the costs given are based on pre-war wages, the average track labor on which these costs are based is 20 cents per hour, including the foreman's wages.



PULLING BOTTOM BAR COLLAPSES FORM FROM THE TOP



PULLING CENTER BAR DRAWS IN BOTTOM SIDE PIECES OF FORM

New Collapsible Culvert Form of Wide Utility

A new type of a collapsible form which by using two sizes will serve to build thirty-nine different culvert openings has just been brought out by the Storms Manufacturing Company, Chicago, Ill. This new form is constructed in sections 4 ft. long which may readily be handled by a single workman. By having a set of four sections culverts of any length from 4 ft. to 30 ft. can be built. By means of the smaller form culverts can be built with cross-sections ranging from 14 in. x 16 in. to one 22 in. x 28 in., while the larger size will make culverts ranging from 24 in. x 26 in. to 36 in. x 46 in. in cross-section. The length of the culvert to be built determines the number of the collapsible units and the spacing between them. The practice recommended by the manufacturer is a spacing of 4 ft. between forms, which may be varied somewhat to suit conditions.

One of the particular requirements for a culvert form is that it be rigid and strong, and in this re-

spect it is claimed that these forms will bear up a thickness of fully 2 ft. of concrete mixture for the entire length of the culvert without sagging. This feature makes it perfectly safe to fill in over the concrete before it has set.

One of the particular features of the form is the ease with which it can be withdrawn after setting of the concrete. By simply pulling on the horizontal bar at the base of the form the framework is caused to collapse at the top, thus giving the necessary vertical clearance. Then by pulling the center bar extending through the bottom of the form, the cross pieces holding the bottom side members in position hinge at their central point and draw the side pieces toward each other. The form is thus completely released from contact with the sides and roof of the culvert, and may be readily pulled out of the opening.

In building a culvert of the box type the excavation is made and then the concrete base is laid. If this is allowed to harden before constructing the remainder of the culvert, the form may be placed directly on the concrete, otherwise this must be covered with lumber to prevent the form from becoming embedded and stuck in the base. The form is then adjusted for the size of the opening desired and it is set in place with the bracing legs which hold the form in rigid position and are pulled forward at the bottom in the direction in which the form will be removed just enough to bring them off center, so that the forms will easily trip when the time to remove comes. The forms are so constructed that they can be tripped from either end. By using a layer of light-weight building paper on the outside of the lumber casing the boards will remain perfectly free and clean when the form is removed and can thereby be more readily removed and kept in shape for reuse.



COLLAPSIBLE FORM IN PLACE WITH CASING BOARDS READY FOR CONCRETE

The Hutchinson (Kan.) Inter-Urban Railway is remodeling cars with the prospect of using them eventually in one-man car service. The right-hand front entrance and exit plan is being used and National Pneumatic door and step mechanisms are being installed. For the present the cars are manned by a motorman and conductor, both standing in the front vestibule. On the remodeled cars the 1/2-in. wooden body covering is being replaced with No. 12 gage steel. This will increase the total weight of the car about 800 lb.

News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

St. Paul's Contract for Power

W. A. White Explains Some of the Workings of the Award Made by the Railroad to the Washington Water Power Company for Juice

Last fall the Washington Water Power Company, Spokane, made contracts with the representatives of the Chicago, Milwaukee & St. Paul Railroad for electric power for the trains of that company to be operated on the western extension of the present electric system of the road over the Rocky Mountains. In respect to this contract W. A. White, chairman of the finance committee of the Washington Water Power Company, who has been in Spokane, says:

"The Chicago, Milwaukee & St. Paul Railway contract calls for payments to begin on the contract on Nov. 1, although the railroad has not completed the work necessary to use the power. It stopped the work on that part of the line south of Spokane to put the men on the electrification through the Cascades. The greatest saving in operating by electricity is through the mountains. At the present cost of copper and other materials, as well as labor, the railroad can well afford to lose the interest on the payments its contract calls for if it saves the extra cost of construction under present conditions. When the electrification of the railroad through the Northwest has been completed the company will require more power than it has contracted for, and we expect the railroad to increase the amount it now has under contract with us.

"The construction of our proposed power line to Chewellah, 45 miles north of Spokane, is something still to be decided. I believe that present labor and materials expense make construction cost 40 per cent more than it will be four years from now. The demand for electric power from us in the Coeur d'Alene mines country is, I estimate, about 25 per cent more than it was a year ago. We expected that our new power line through the Fourth of July Canyon would be completed this winter, but it will not be. Construction work, however, will go on through the winter. It is difficult to say just when it will be completed."

Agreement in St. Louis

Proposed New Ordinance Considered Burdensome to the Company, but Public Hearings Will Begin

Richard McCulloch, president of the United Railways, St. Louis, Mo., and the public utilities committee of the Board of Aldermen on Nov. 2 reached an agreement on the proposed ordinance looking toward a settlement of the mill tax and franchise problems of the company. Mr. McCulloch filed a protest against some of the clauses in the bill, but announced that if the ordinance was passed by the Aldermen he would recommend to the stockholders and bondholders that it be accepted. Mr. McCulloch declared that he regretted the aldermanic committee had made material changes in the original ordinance and said that if the negotiations failed the responsibility would not rest on the United Railways.

The amendments agreed upon on Nov. 2 follow:

1. Reduction of the franchise extension from fifty to thirty-one years.
2. Reduction of capitalization of the United Railways to \$60,000,000.
3. Agreement to sell to the city for \$60,000,000 as the initial purchase figure, with allowances for moneys expended from the present time.
4. Agreement to pay the city 25 per cent of net profits above 7 per cent on \$60,000,000, and 50 per cent on surplus profits above 8 per cent. This is in addition to payment

of 3 per cent on gross earnings, which the company had agreed to in the first bill.

5. Agreement to let the city select any citizen to act on the joint board of control, instead of a man "skilled and experienced in the operation of public utilities."

6. Agreement to forfeit the franchise for failure or neglect to live up to franchise agreements, without making the city prove that neglect or failure was "willful."

In a statement which he read Mr. McCulloch said in part: "We regret that your committee has found it desirable to make material changes in ordinances which we believe we could have persuaded our security holders to accept.

"If we fail in this effort to bring about a better understanding between the city and the railway and to obtain a workable and feasible plan of reorganization predicated upon a municipal ordinance, the responsibility should not rest on the railways.

"This company has done and will do its utmost to save this situation, but we cannot be so assured of a successful reorganization under the drastic changes now proposed by the city as we would be under ordinance No. 1 or No. 2 as originally drafted."

Public hearings on the measure as redrafted were scheduled to begin on Nov. 6.

Coal Shortage in Kansas City

Railway Service Receives Preference Over Demand for Current for Light and Power

The citizens of Kansas City, Mo., demonstrated during the last few days by their cheerful acceptance of hardships with reference to electric lights and power, their conviction that electric railway service is a paramount and practically indispensable adjunct of city life. The Kansas City Railways was short of coal and for several days was unable to supply current sufficient to run its cars and also to meet the need for lighting through the Kansas City Light & Power Company. It maintained nearly its normal schedules of traffic during morning and evening for this period, but cut off lights from homes and from power users.

The Kansas City Railways has had difficulty several times during the past year in getting coal. The situation became acute late in October, when expected shipments from Illinois did not arrive. Coal could not be purchased in the open market in adequate quantities. It became absolutely necessary to conserve the supply in order to avoid a complete shutdown of electric railway transportation. The railway supplies much current to the Kansas City Light & Power Company. For several months now large power users had been co-operating to minimize the loads at the peaks of electric railway travel, in consideration of the necessity of getting people home safely and promptly at night. When the situation grew more critical during the week ended Nov. 2 some nineteen industries suspended operations entirely on Saturday. The light company had for several days previous been cutting out current to various sections for short periods during the evening, no one section being without light more than an hour. On Friday and Saturday many sections were without electricity in the homes during the railway peak load of evening. Many merchants darkened their display windows and their electric signs from 5 p. m. to 7.30 p. m. With many families lacking coal, with little gas for lighting or cooking, and with electricity for cooking cut off at the dinner hour, there was considerable hardship, but it was suffered generally with cheerfulness because the people could get home. The railway had 120 cars of coal tied up that should have arrived on Nov. 3. Thirty-five cars arrived on Sunday, and the industries started up Monday, though still on curtailed schedules.

New Chicago Traction Drafts

Chicago Transportation Committee Orders Two Tentative Ordinances Drawn—Also Passes Resolution for Forced Extension of Surface Line on Street Now Occupied by an Interurban Operating Into the City

As reported in the *ELECTRIC RAILWAY JOURNAL* for Oct. 27, the City Council of Chicago, Ill., recently directed the local transportation committee to draw up an ordinance embodying the best opinion of the committee in the solution of the local transportation situation. At its meeting on Oct. 31 the committee passed a resolution instructing Walter L. Fisher, special counsel for the committee, to draw up two separate ordinances which could be placed before the committee as a basis of discussion and development of the final committee recommendations to the Council. One of these ordinances is to embody specifically the recommendations of the Chicago Traction & Subway Commission made in its \$250,000 report last year.

The drawing of the second ordinance was proposed as an amendment to the original resolution calling for the drawing of the above ordinance, by the municipal ownership advocates in the committee. In the ordinance it is intended to include the recommendations of the traction and subway commission in so far as they can be carried out with the powers which the city already has, or, in other words, without any enabling legislation. The possibility of submitting either one or both of these ordinances to the people for referendum vote was discussed.

Another interesting resolution passed by the committee was one for a 3-mile forced extension during 1918 of the Chicago Surface Lines on Archer Avenue from Cicero Avenue to the city limits, a distance of 3 miles. The Chicago & Joliet Electric Railway now has an interurban line operating along the sides of this street between these limits and extending beyond the city limits to Joliet. People living in this vicinity, although within the city limits, are therefore now required to pay a 10-cent fare to come further into the city than Cicero Avenue, which is 5200 ft. west. The Chicago Surface Lines has been unable to come to an agreement to purchase this 3-mile section of the interurban line and operate it as a portion of the city property. The local transportation committee now proposes a forced extension of the surface lines down the center of the street. With such a line in service no one would pay 10 cents to the interurban to ride beyond Cicero Avenue when the distance on the city lines could be traveled for one fare. The franchise of the interurban company on this street has about fifteen years to run.

This resolution of the committee will have to be passed upon by the corporation counsel, drafted in the form of an ordinance and then passed by the City Council before it becomes an effective order.

Wages Increased in Atlanta

Georgia Railway & Power Company Announces Voluntary Increase of Two Cents an Hour to Help Meet the Higher Cost of Living

An increase in pay of 2 cents an hour for all motormen and conductors in the service of the Georgia Railway & Power Company, Atlanta, Ga., was announced a few days ago, to become effective on Nov. 1. The increase was voluntary on the part of the company. It will amount to about \$60,000 a year. The schedule of wages per hour for motormen and conductors will be as follows: first year, 22 cents; second year, 24 cents; third year, 26 cents; fourth year, 27 cents; fifth year, 28 cents; sixth year and thereafter, 29 cents.

In a statement which it issued the company said: "The increase is made notwithstanding the fact that the net earnings of the company show a decrease, due to the high cost of all materials which it purchases, and high taxes, without any increase in the rate of fares.

"The increase is made, however, because of the increased cost of living to the men, and for the purpose of assisting them in meeting such increased living expenses."

What Portland Arbitrators Found

Statement of Majority of Board at Portland, Ore., Presented Substantially in Full

O. R. Hartwig and Thomas Roberts represented the majority of the board of arbitration whose award in the matter of wages for the employees of the Portland Railway, Light & Power Company, Portland, Ore., was referred to briefly in the *ELECTRIC RAILWAY JOURNAL* of Oct. 27, page 784. The minority report was presented by J. P. Newell. The findings of Messrs. Hartwig and Roberts follow substantially in full:

"1. That the employees are entitled to a living wage.

"2. That we agree with the Public Service Commission that the present wage paid said employees is inadequate and insufficient to meet actual living expenses during this period of unusually high prices.

NEW WAGE SCHEDULE

"3. That the scale of wages presented by the employees and embodied in the tentative agreement submitted by the employees to the company is fair and reasonable and should be adopted. Said scale for car men being as follows: For car men in the service of the company less than one year, 38 cents an hour. For car men in the employ of the company more than one year and less than two years, 40 cents an hour. For car men in the employ of the company for more than two years, 45 cents an hour.

"4. We agree with the findings of the Public Service Commission that inasmuch as the welfare of most of our citizens is affected by the street railway service, the present long hours of street railway employees are neither good for the men nor for the best interest of the public.

"5. We agree that eight hours should constitute a working day as adopted by the federal, state and municipal governments now prescribed on all steam railroads and in nearly all industrial occupations.

"6. That in street railway operation it is impossible that all platform men should have a day's work in consecutive hours of employment. That the rush hours of traffic in the morning and evening hours, with lighter movement between, makes it necessary that the hours of employment of many platform men be spread over a period of from twelve to fourteen hours of the day.

"7. That from and after Nov. 15, 1917, actual working time in excess of eight and one-half hours shall be deemed overtime and paid for at the rate of one and one-half times regular pay.

"8. That inasmuch as some readjustment of service will be required we find that the fixing of elapsed time within which regular runs shall be completed should be determined by agreement between the association and the company on or before Nov. 15, 1917, and thereafter become a fixed rule, but no regular runs shall require more than fourteen hours and nine minutes of elapsed time.

AUTOMOBILES REDUCE REVENUES

"9. Owing to the large number of private automobiles in the city of Portland, the higher prices for materials and labor, the increase in charges imposed by the public and many other causes beyond the control of the company, the present revenue of the company is not sufficient to permit it properly to maintain the property, provide for its necessary depreciation, meet the expenses of operation, pay living wages and grant proper hours to the employees and also provide interest on the bonds which form a mortgage on the railway to the extent of approximately two-thirds of the present investment in the railway, as determined by the Public Service Commission.

"10. That in the revision of rates ordered by the Public Service Commission on Oct. 5, 1917, sufficient provision has not been made to meet the elements of cost set forth in paragraph nine hereof, or to provide any return to the stockholders of the street railway or to meet the increased expenses resulting from the wage adjustment approved by this board.

INCREASED FARES NEEDED

"11. That the rates of fare, based upon the valuation of the railway fixed by the Public Service Commission, should

be sufficient to enable the company to discharge the elements recited in paragraphs 9 and 10 of these findings, including the wages and conditions for its employees approved herein, and the present rates of fare are clearly insufficient for this purpose.

"12. The agreement to arbitrate provides that the award of this board as to hours and wages shall continue in effect until June 30, 1918, with the provision, however, that the company may annul the award on Jan. 1, 1918, and cause said question to be resubmitted to arbitration. It is the hope of this board that fare adjustment will be made prior to said Jan. 1, 1918, sufficient to avoid any annulment of this award."

Messrs. Hartwig and Roberts commended highly the spirit of moderation and fairness shown by the officials of the company and the officers of the union in the negotiations.

OPINION OF MINORITY ARBITRATOR

Mr. Newell in presenting his minority report also expressed his favorable opinion along the same lines. He said that with the greater part of the findings of the majority of the board he was in hearty agreement. He differed, however, from the members of the majority in one important particular. He said that the company received the privilege, if the burden added by the findings of the board should prove oppressive, of setting aside the order after Jan. 1 and submitting the whole matter again to arbitration. He feared that if the necessity for the re-opening of the question should arise the same conciliatory spirit might not again prevail. The employees, feeling that their objects had been attained and that they were permanently established in the enjoyment of more desirable conditions, would naturally be very reluctant to submit to an arbitration which might deprive them of any of these advantages. Mr. Newell said that he was desirous of prescribing such conditions as would avoid the necessity of any appeal from the award, but would automatically provide the means of any relief which the company might require. He feared that the added revenues would be inadequate to meet the increased cost of operation by establishing the eight-hour day. If that condition should be found to exist at the end of the experimental period, he said the schedule of hours should be lengthened and the hourly wage should be reduced so that while maintaining the approved standard of daily wages the expenses of the company should be reduced to a point where they could be met. He was of the opinion that the board should prescribe such a method so that there might be no necessity for a further recourse to arbitration.

COMPANY ENTITLED TO AT LEAST 6 PER CENT

Mr. Newell believed that the company should be entitled to retain its earnings without further adjustment of wages and hours or reduction in fares until its net earnings had reached the minimum of 6 per cent upon the actual value of the railway as determined by the Public Service Commission. He ventured the suggestion that when the company reached a point where its revenues provided the full cost of transportation and a minimum return of 6 per cent upon the investment there should then be a division of the surplus profits in which the public, the employees and the company should all participate upon an equitable basis.

Hearing on Philadelphia Lease

Public Discussion of Lease Terms Continues, with Prospect That Amendments Will Be Ready Nov. 23

Sidney M. Earle, chairman of the transportation committee of the United Business Men's Association, was the first to address the joint committee on finance and street railways of Councils of Philadelphia at the hearing on Nov. 2 in regard to the terms of the proposed lease of the high-speed rapid transit lines to the Philadelphia Rapid Transit Company. Mr. Earle declared that the organization he represented was of the opinion that the proposed lease fell short of fully protecting the city and the citizens from

the payment of large sums of money unjustly and predicted the necessity of raising fares and possibly increasing taxes. He said that any lease covering a period of forty years and involving an expenditure of more than \$200,000,000 and the collection of and disbursement of more than \$2,000,000,000 should be drafted in unmistakable terms and be drawn without resource or reference to the 1907 contract.

C. Oscar Beasley, the second speaker, declared that before any lease was negotiated the 1907 contract should be so amended that the city would be relieved of part at least of the street repair burden. He declared that the Twining lease would perpetuate the evils growing out of the 1907 contract. He said that increased fares would retard the natural progress of the city and re-create the slums, while it would be a public crime to make up any deficit from the city treasury.

Col. Sheldon Potter, a representative of the city on the board of directors of the company, declared that he had been informed by Ellis Ames Ballard, counsel for the Philadelphia Rapid Transit Company, that the company did not want the Twining lease, but that it did want the Taylor lease, which was rejected by Councils. Dr. William Draper Lewis, the Mayor's special adviser in transit matters, read a formal statement at the conclusion of the hearing in which he declared that if for any reason Councils or the company was unwilling to perfect and execute the lease on the general lines of the Twining proposal, such an attitude would probably result in independent operation of the high-speed lines and that independent operation would mean changes in the construction plan and program.

At the meeting of the committee set for Nov. 23 it is expected that Dr. Lewis will present the amendments to the Twining lease offered during the course of the hearings before the committee and those which Dr. Lewis and Director of City Transit Twining may deem necessary.

Key Route Wages Increased

Arbitration Board Gives Increase to Men in Employ of the San Francisco-Oakland Terminal Railways

An increase in wages totaling approximately \$140,000 a year was awarded by the arbitration board on Nov. 2 to the 1100 motormen, conductors and brakemen of the San Francisco-Oakland Terminal Railways, Oakland, Cal. Previous references to the formation and purpose of the board appeared in ELECTRIC RAILWAY JOURNAL of Sept. 1, page 365; Sept. 29, page 594, and Oct. 20, page 734. The new wage schedule decided upon by the board is to prevail for one year, when the matter will automatically come up for readjustment.

The board decided upon a rate of pay between that now in force and that demanded by the men. The men have been averaging about \$3.50 for a ten-hour day. Under the new rate they will receive approximately \$4 a day. The old scale on the Oakland Traction division starts at 30 cents an hour and increases to 40 cents an hour after ten years of service. The new scale ranges from 32 to 42 cents an hour with the maximum attained in five years. On the Key Route division the scale ranges from 38 to 42 cents an hour. All of the 102 men in this division, however, have been drawing the maximum rate. The new scale is from 43 to 45 cents an hour and on this basis all of the men will be on the 45-cent rate. The ten-hour day prevails on both systems.

ABNORMAL CONDITION MADE INCREASE NECESSARY

The main basis of the board's award was the abnormal condition prevailing. This the investigation disclosed caused an increase in the cost of living, amounting to 20 to 30 per cent for clothing and 67 per cent for food. The board took the view, however, that the new wage was a concern of the community as well as the company and that the company, because of the extra burden imposed upon it, should have the privilege of a rearrangement of its charges. Decision on this point, however, will rest with the State Railroad Commission. The decision of the board will be presented by the company in its hearing before the Railroad Commission on

Nov. 12 as additional evidence that there must be an immediate increase in passenger revenue. The new wage scale is to go into effect on Dec. 1 and will be paid without further discussion, pending the settlement of the application for increased rates which the company had filed with the Railroad Commission.

The rates of pay under discussion are as follows:

Division	Present Rate	Demanded Rate	Arbitration Rate
Oakland Traction:			
First six months.....	30	40	30
Second six months.....	30	41	32
Second year:			
First six months.....	31	43	34
Second six months.....	31	43	36
Third year.....	32	45	38
Fourth year.....	33	45	40
Fifth year.....	34	45	42
Key route:			
First year.....	38	51	43
Second year.....	40	53	44
Third year.....	42	55	45

Lee F. Laytham, president of the local division of the Amalgamated Association of Street & Electric Railway Employees, announced that the men would stand by the decision of the board, although the decision was for a rate much lower than the men had expected.

Reports on United Railroads

California Commission Reports to San Francisco Supervisors on Condition of Local Railway

The Railroad Commission of California on Nov. 1 made a report to the Board of Supervisors of San Francisco, Cal., on the financial condition of the United Railroads in response to the request made by the city on Sept. 17 during the strike of the trainmen of the railway. The report makes no recommendations and does not include a valuation of the properties of the company. The commission experts are working on a valuation in connection with another proceeding.

AVERAGE PAY INCREASED FROM 30½ TO 55 CENTS

The report shows that platform men of the company are being paid from \$8 to \$24 a week and that the average pay rose from 30½ cents an hour in 1916 to 55 cents an hour during August this year when the strike was on. The report also shows that during August of this year expenses exceeded revenue by about \$200,000. During July the road made a profit of \$200,000, so that the falling off in August was more than \$400,000. The strike began on Aug. 12. No estimate is filed for September.

The company's balance sheet for Dec. 31, 1916, is included among the exhibits. It shows that the corporation values its road and equipment at \$81,000,000.

The report shows that during 1916 the company paid \$1,682,525 for 5,484,384 hours of work by platform men or an average of 30½ cents an hour. During the first six months of 1917 the company paid \$865,111 for 2,691,623 hours or an average of 32 cents. During July this year the average was 33 cents and during August, including the eighteen days of the strike, the total was \$164,978 for about 300,000 hours or 55 cents. The report says that the platform men are paid only for the actual running time of the cars, and receive no pay for the time they are waiting at the car-house.

Eleven exhibits accompany the report including an analysis of the payroll for general officers; another of the payroll for platform men; a comparative statement of revenue and expenses from 1912 to date; an analysis of tax accruals; a statement of funded indebtedness, etc.

REPORT MADE AT REQUEST OF SUPERVISORS

The Supervisors asked the investigation for the purpose of deciding whether the United Railroads was right in its statement that its financial condition prevented it from granting the demand of the men for an increase in wages and also for the purpose of deciding whether the city would be justified in paying the United Railroads' employees the same wage as the Municipal Railway employees should the city take over the lines. The report gives no answer to these questions but submits the data obtained. The report covers 113 typewritten pages.

Danville Men Receive Two-Cent Raise

By the terms of an agreement entered into between the employees and representatives of the Danville Street Railway & Light Company, Danville, Ill., Nov. 3, all conductors, motormen and carhouse employees will receive a wage increase of 2 cents an hour, dating from Sept. 17 and effective for one year from that date. After the settlement of the recent strike on this property, all working conditions were decided upon except that of wages. This matter was left to the decision of a board of arbitrators. The two members of this board to represent the company and the men were appointed, but upon their meeting to select the third member, there appeared a disposition on the part of both sides to settle the question without resorting to arbitration. The conferences which followed resulted in the agreement calling for an increase of 2 cents an hour, or 18 cents a day. An increase of 20 cents a day was allowed the employees in May and 15 cents additional in July of this year. All of these increases also apply to other city lines in this territory operated by the Illinois Traction System.

SIXTEEN EMPLOYEES APPREHENDED

As a result of an investigation covering a period of several weeks, sixteen employees of the Danville company have been discharged from service. Warrants charging petty larceny have been sworn out against these men and the hearing for the first case is set for Nov. 6. It is alleged that the fare boxes of the company have been tampered with in various ways, and statements confirming the accusation are said to have been signed by several of the employees concerned.

Increase in Wages in Bristol.—The Trenton, Bristol & Philadelphia Street Railway, Philadelphia, Pa., announced that, effective on Nov. 1, a raise of 2 cents per hour above the present rate of wages would be paid to all employees of the company until further notice.

Interborough Bonus Increased.—The Interborough Rapid Transit Company, New York, N. Y., has increased the bonus of all workers who receive less than \$150 a month from \$3 to \$6 a month. The \$3 bonus was adopted in August. The increase in the bonus dates from Oct. 15.

No Wage Demand in Cleveland Until Next May.—No increase in wages will be asked by the platform men of the Cleveland (Ohio) Railway until their two-year agreement expires on May 1, 1918. This was decided at a meeting of the local branch of the Amalgamated Association held on Oct. 25.

Further Montana Power Developments.—According to reports, a hydroelectric power plant at the Kootenai Falls, between Libby and Troy, Mont., generating 68,000 hp., is planned by the Montana Power Company, the current generated to be used in the electrification of a portion of the Great Northern Railway system.

Short Electrification Goes Over.—It is reported that the failure of the Caldwell (Idaho) Traction Company to dispose of \$100,000 of bonds to provide funds for the purpose of electrifying its Wilder branch, and to make some extensions, means that these improvements will not be made until after the war or until such time as the money market improves.

Engineers' Country Club House Burns.—The club house near Roslyn, Long Island, of the Engineers' Country Club of New York was destroyed by fire last week. Fortunately the club has a building now on the grounds which is well located for club purposes. This building will be fitted up this winter and will be ready for the use of members as a club house in the spring.

Wages Increased on Portland Interurban Lines.—The Portland Railway, Light & Power Company, Portland, Ore., has granted an advance in wages to the employees of the interurban lines. The new scale is 41½ cents an hour for the first year, 43½ cents an hour for the second year, and 48½ cents an hour after the second year. There are 140 employees affected by the new scale. The eight-hour basic day will also apply to interurban lines.

Gradual Restoration of Service in Chattanooga.—The Chattanooga Railway & Light Company, Chattanooga, Tenn., the employees of which repudiated their contracts with

the company and went on strike a second time on Oct. 16, is gradually restoring service and gives promise of an early return to normal conditions on its railway lines. The efforts of the company along these lines have been attended up to the present with only sporadic attempts at disorder on the part of the strikers or their sympathizers.

Seattle Wage Arbitrators Proposed to Meet on Nov. 5.—The board of arbitration appointed to settle the questions that led up to the strike of the trainmen on the lines of Puget Sound Traction, Light & Power Company, Seattle, Wash., and the Tacoma Railway & Power Company, Tacoma, planned to call a meeting on Nov. 5, following the return of Dr. Henry Suzzallo, chairman of the board, from the East, where he has been attending Eastern committee work connected with government war activities.

Chicago Council Invests Traction Fund in Liberty Bonds.—At its meeting on Oct. 22, the City Council of Chicago, Ill., approved a resolution presented by Alderman Henry D. Capitain, chairman of the local transportation committee, to purchase \$2,000,000 of the Second Liberty Loan bonds from the moneys accumulated in the traction fund. This fund now amounts to more than \$20,000,000. Mr. Capitain proposed a similar resolution at the time the first Liberty Loan was floated, but the finance committee did not report on it.

Increase in Wages in Trenton.—The Trenton & Mercer County Traction Corporation, Trenton, N. J., has announced an increase of 2 cents an hour in the wages of its motormen and conductors, dating from Nov. 8. Peter Hurley, general manager of the company, says the increase is due to the high cost of living and to encourage the men to help get all the company's cars into service every day. The men will now receive 31 cents an hour. Employees will now be required to present a doctor's certificate when they fail to report for work.

Police Employ Plain-Clothes Method.—Because the United Railroads, San Francisco, Cal., is now operating a non-union system, workers in union plants avoid using the cars as much as possible and have of late caused much disturbance by damaging company property. Anticipating the stoning of cars during the rush hour, a squad of twelve policemen in plain clothes recently mingled with the union workers returning from one of the shipyards and when a fusillade of rivets and bolts was directed toward a United Railroads car from the workers who had boarded a municipal car, twenty men were arrested upon the charge of disturbing the peace.

Increase in Wages of Southern Public Utilities Employees.—The Southern Public Utilities Company, Charlotte, N. C., has announced an increase of 9 per cent in the wages of its platform men, effective from Nov. 1. This is the third increase in the wages of the employees within the last twelve months, two others of about 5 per cent each having been made during that time. The new rate provides a wage of 18 cents for new men, to continue for the probationary period of three months instead of six months under the old scale. The rate for the second three months is 19 cents instead of 17 cents. The new scale reaches a maximum of 25 cents an hour for men who have been with the company five years as against 23 cents under the old schedule.

Increase for Illinois Traction Trainmen.—The Illinois Traction System, Peoria, Ill., has entered into a new one-year agreement with its interurban trainmen, who are members of the Brotherhood of Interurban Trainmen, which includes a wage increase of practically 7 cents an hour for trainmen on main lines and 6 cents an hour for trainmen on branch lines. The new scale will become effective on Dec. 1. Motormen and conductors on main line service will receive 40 cents an hour; on the Vermillion Heights line, 38 cents an hour, and on the Homer & Mechanicsburg line, 35 cents an hour. Brakemen on all lines will receive 30 cents an hour. The wages of the interurban trainmen were last increased about two years ago. The new agreement was reached without difficulty.

Liberty Loan Extra of Employees' Magazine.—The *Pacific Electric Magazine*, published by the Pacific Electric Company, Los Angeles, issued an extra number on Oct. 25 called the "Liberty Loan Extra." The issue contained eight pages devoted entirely to the second Liberty Loan.

Among the articles contained in the issue were the following: "The Liberty Loan," by Paul Shoup, president of the Pacific Electric Railway; "War Taxes and the Second Liberty Loan," by S. A. Bishop, general claim agent; "Why I Am Buying Liberty Bonds," by F. L. Annable, superintendent; "Thrift and Liberty Bonds," by J. McMillan, general manager; "Our Duty," by Hon. William G. McAdoo; "Accrued Interest," "Liberty Bonds or Direct Taxes," "More Bonds and Less Blood," "A Short History of the First Liberty Loan" and "Resources of the United States."

Investigation of Strike Settlement Complaint.—Formal complaint made by members of the trainmen's union that the Twin City Rapid Transit Company, Minneapolis, Minn., is not executing the recent order of the Minnesota Public Safety Commission by which the trainmen's strike was ended has led to the appointment by the commission of an investigating committee. This committee is composed of the following: Rev. S. F. Kerfoot, president of Haline University, St. Paul; Mr. Norman, a St. Paul clerk, and Robert Jamison, former county judge in Minneapolis. Horace Lowry president of the company, welcomes a searching investigation and permanent settlement of the controversy. T. F. Shine, vice-president of the union, said he can see no reason for shifting the investigation to another body. The commission will not condone any violation of its order. The resolution read that all agitation ought to cease.

Agreement Reached on Seattle Bridge Operating Terms.—The Puget Sound Traction, Light & Power Company, Seattle, Wash., and the city of Seattle have come to an agreement by which the company may use the West Waterway bridge at West Spokane Avenue. The company has agreed to pay 6 per cent interest per annum on one-third the cost of construction of the span fully equipped, and to build its own approaches. A. H. Dimock, city engineer, estimates that the approaches will cost between \$35,000 and \$40,000. The company will also pay as its share of the depreciation one-third of the cost of the span in ten yearly installments. The company is to furnish power free for the operation of the bridge, and at 1 cent per kilowatt-hour for the operation of city-owned or other cars that may go over it. The city will condemn the west approach at the expense of the company. It is not expected that the railway will be in operation over the bridge before next spring.

Program of Association Meeting

Conferences on War Conditions

The Merchants' Association of New York has made arrangements for several conferences between the special commission from the British Ministry of Munitions now in this country and employers in New York City for the consideration of problems of employment caused by the war. In cities where similar conferences have already been held the questions and answers have brought out valuable information concerning changes in industrial processes made necessary by the utilization of underskilled in place of skilled labor, greater use of female labor in industries, methods of increasing the supply and efficiency of labor, differences arising between employer and employee, and similar problems. The conferences will be held at the offices of the Merchants' Association. Those of most interest to electric railway manufacturers and operators are scheduled as follows:

Tuesday, Nov. 13, 10 a. m.: Munitions, machinery, engines, boilers, motors, railway equipment and supplies.

Wednesday, Nov. 14, 10 a. m.: Traction companies, electric light, power and gas companies, steam railroads, express companies, telephone and telegraph companies.

The conferences are open to any manufacturer or other person interested.

The commission, two members of which will be in charge of each conference, consists of Sir Stephenson Kent, K. C. B., a member of the Council of the Ministry and director-general of the Labor Supply Department; H. W. Garrod, deputy assistant secretary of Labor Regulation Department; G. H. Baillie, chief technical dilution officer of the Labor Supply Department, and Captain Cyril Asquith, director of the Artificer's Allocation of the Labor Supply Department.

Financial and Corporate

Rate of Return Should Be Higher

Tightness of Money Market and Increased Operating Costs Justify Larger Returns on Utility Capital, Says Mr. Mortimer

In the opinion of James D. Mortimer, president North American Company, New York, N. Y., facts now justify a higher rate of return on utility capital than in the past. Mr. Mortimer's views on this subject were expressed at a recent hearing before the Missouri Public Service Commission in a St. Louis lighting subsidiary case.

When regulatory commissions some years ago announced that capital invested in public utilities was entitled to 7.5 per cent to 8 per cent per annum after providing for all ordinary operating expenses and future replacements, Mr. Mortimer said, the market for public utility securities rapidly expanded and strengthened. In arriving at a return of 7.5 to 8 per cent, it was reasoned that the bare interest cost of money was 6 per cent and that 1.5 to 2 per cent in addition should be allowed for profit. This return would probably have been sufficient in normal times for a utility enjoying a monopoly in a large city and with the equivalent of a guarantee that such return would be continued during both good and poor industrial conditions.

NEW MONEY COSTS MORE THAN UTILITIES EARN

The recent rise in the cost of labor and materials, however, has increased operating expenses at a rate much faster than any possible economies. To the utilities the purchasing power of money has decreased; their selling prices have been fixed, and they cannot procure increased returns except with the approval of the regulating commissions. This lack of stability in return and the hesitancy on the part of some commissions to authorize badly-needed increases in rates have made public utility investments far less attractive, and they have largely passed out, for the time being, from the conservative class. The inflation in values resulting from the enormous government borrowings is certain to remain during the war and is likely to continue for some years after its termination.

These facts, Mr. Mortimer believes, now place the junior securities of public utility corporations in the semi-hazardous class and justify the payment of a higher rate of return than has been the custom in the past. All interest rates are certain to attain and maintain themselves on a much higher level than during the period preceding the outbreak of the war. Permanent financing of public utility corporations is not possible at this time. Temporary financing by the sale of short-term notes secured by bonds in ample margin was possible up to a month or so ago, but the interest rate cost to the issuing company was 8 per cent or more. Thus new money cost a higher rate than the utilities were earning, and even then the amount of money that could be borrowed was very limited compared with the cost of the additions to physical property.

RETURN OF 10 TO 12 PER CENT NOT TOO HIGH NOW

At the present time, continued Mr. Mortimer, there is no market for short-term bond-secured notes even at high interest yields. The only method of financing now open is that of selling 7 per cent preferred stock to customers. The amount of money that can be obtained from this source is presumably limited. Mr. Mortimer added:

"A return of 10 per cent or 12 per cent would not be too high for public utilities during these times. Even these rates would not likely attract any large sum into the business during the continuation of the war, although they might be regarded as reasonable after the war's termination. The point to be emphasized is that pre-war standards are useless in estimating reasonable rates of return for public utility investments because the whole plane of interest rates and security yields has been very much elevated.

"In the long run, the utility jointly with the regulating commission should endeavor so to adjust rates that the

actual rate of return earned on the utility capital will neither be higher nor lower than the cost of money to the utility. This we believe is the equitable viewpoint. It will assure the lowest rates consistent with fair cost and prevent speculation in securities of public utility corporations."

Annual Reports

Kentucky Securities Corporation

The combined income statement of the Kentucky Securities Corporation, Philadelphia, Pa., and its operating companies in Kentucky, exclusive of inter-company charges, follows for the fiscal years ended June 30, 1916 and 1917:

	1917	1916
Operating revenues	\$912,540	\$850,684
Operating expenses	480,265	438,163
Net operating revenue	\$432,275	\$412,522
Miscellaneous income	39,289	29,206
Gross income	\$471,564	\$441,728
Fixed charges	264,496	245,576
Surplus	\$207,068	\$196,152

The railway gross earnings of the subsidiary Kentucky Traction & Terminal Company in the last fiscal year reflected the generally satisfactory business conditions prevailing. The receipts showed an increase of 5.3 per cent. The number of passengers carried, including transfers, etc., were as follows for the last two fiscal years:

	1917	1916
Lexington city lines	4,507,286	4,389,905
Interurban lines	1,599,197	1,482,881
Other cities	438,324	497,054

The aggregate traffic, showing an increase of not far from 3 per cent, was secured without materially changing the number of car-hours or car-miles run. The present conditions indicate further improvements on account of prosperous local business conditions.

During the year just ended the operating companies spent \$210,019 on new construction. Of this total \$45,216 was for additions in the railway department and \$20,878 for paving in this department. The new construction covered the necessary requirements of the increased business of the operating companies.

Under an agreement effective on July 1, 1915, 18.5 per cent of the total combined gross earnings derived from transportation of passengers and freight of all classes is applied, first, to motormen's and conductors' wages and, second, to the payment of damages, any remaining balance being divided among the trainmen. The balance so divided for the year ended June 30, 1917, was equivalent to approximately 1.5 cents an hour.

Melbourne Tramways

The traffic returns of the Melbourne (Australia) Tramways for the year ended June 30, 1917, are said to have been very satisfactory. There was a steady increase of both passengers carried and traffic receipts. The latter reached their maximum during March, when £77,274 were obtained, the greatest revenue earned in any month since the construction of the system. Notwithstanding the reduced fare paid per passenger, caused by the introduction of a cash fare of 2d. over most of the routes, the revenue per train-mile at 1.261d. exceeded that in any recent year.

During the last year the cost of operation rapidly increased, the expenditures being higher than ever before. The extra expenses were mainly caused by the increase of wages granted to employees and the enhanced cost of all material, stores, cables and fuel as a result of war and other conditions.

The traffic receipts during the last fiscal year were £841,784, and the total receipts £843,300. The working expenses amounted to £462,132, and after the transfer of £25,000 to renewal reserve and £100,000 to the reconstruction reserve, there remained a net surplus of £240,019. The number of passengers carried was 103,118,379, an increase of more than 7 per cent over the total for the preceding year. The operating ratio for the last year was 54.8 per cent. The average distance traveled per 1d. was 1.628 miles, and the rides per capita per year were 229. The average speed, including stops, was 9 m.p.h.

Service at Cost Proposed

At the hearing on Nov. 7 of the special Massachusetts legislative commission on street railway financial problems Homer Loring, representing the Association of Owners of Massachusetts Street Railway Securities, submitted a constructive plan for restoring the credit of the street railways of the State. He said that the present critical situation was inevitable, as a result of a fundamental weakness which started with the adoption of a 5-cent fare. The association proposes a service-at-cost plan which would give the public railway service at actual cost and insure invested money a reasonable return. An important feature of the plan as advanced is a reserve fund which would act as a barometer, and rise and fall as business varied. It is estimated that the owners of more than \$60,000,000 of securities are included in the membership of the association which Mr. Loring represented.

Spokane Merger Apparently Off

No immediate plans are being made for the merger of the Washington Water Power Company and the Spokane Traction Company, as suggested by the Washington Public Service Commission early this year. This announcement was made at Spokane during the week ended Nov. 3 by W. A. White, New York, chairman of the finance committee of the Washington Water Power Company, who was in Spokane on his annual inspection of the company's Spokane property. Mr. White said:

"There is no question but that the plan would mean economy in operation and advantages for the public in more frequent service and universal transfers. I understand, however, that the Spokane Traction Company's status is such as to make it difficult for that company to work out a plan by which its lines might be consolidated with ours. When the time comes the Washington Water Power Company will probably form a separate corporation to take over the electric railway lines which it now operates and separate them from the light and power end of our business."

The railway lines of the Washington Water Power Company and the Spokane Traction Company, controlled by the Inland Empire Railroad, in Spokane, have been in competition for fourteen years. The first move toward their consolidation was made in January of the present year. Later a merger bill was passed by the Legislature and survived the time limit set for the Governor to accept or reject it. The merger negotiations were referred to in the *ELECTRIC RAILWAY JOURNAL* of Feb. 17, page 318, and April 7, page 664.

Removal of Railway Protested

Spurred by the Prospect of Losing Their Transportation Service Bowling Green Residents Act at Eleventh Hour

Men in the employ of Cal Hirsch & Sons, St. Louis, who bought the tangible property of the Southern Traction Company of Bowling Green, Ky., under foreclosure recently, have been stopped in their work of dismantling the system by injunction proceedings. These are directed against the several parties interested. It is pleaded that a public service corporation cannot at its option junk its property. The price realized at the sale is understood to have been sufficient to meet the payment on the bonds. Meanwhile citizens are agitating the project of obtaining by subscription a sum sufficient to purchase the property from the St. Louis house and keep their city railway. The manner in which Clarksville, Tenn., some time ago took over its property is being cited for Bowling Green's benefit.

Boise (Idaho) Railway.—Holders of the first mortgage 5 per cent sinking fund gold bonds of the Boise Railroad, Ltd., the predecessor of the Boise Railway, were ordered to present their bonds on or before Nov. 10 to H. E. Dalton, special master, for final cancellation, indorsement and pro rata payment of the amount distributed from the proceeds of the sale of the property under foreclosure recently.

Boston (Mass.) Elevated Railway.—At the meeting of the stockholders of the Boston Elevated Railway, on Nov. 5, Matthew C. Brush, president of the company, urged every stockholder to appear in person before the legislative committee investigating the railroad situation and give his moral support to the question of increasing the revenues of the company. The retiring directors of the company were re-elected. The stockholders authorized the issue of \$2,000,000 of bonds to run for fifteen years at such rate of interest as may be determined by the board.

Chambersburg & Gettysburg Electric Railway, Chambersburg, Pa.—The Borough Council of Chambersburg, through the solicitor, presented a petition in Argument Court on Oct. 23, asking that Judge Gillan name a receiver for the Chambersburg & Gettysburg Electric Railway. The company has advised Council that it is unable to pay for its share of paving the streets of the town in which its tracks run, and this refusal, it is contended, forfeits the franchise rights in town and perhaps in the county. Twenty days' time was given to answer the petition. The protest of the company against the paving charges and the plans which it advanced for the settlement of the problem were referred to in the issue of the *ELECTRIC RAILWAY JOURNAL* of Oct. 13, page 695.

Lincoln (Neb.) Traction Company.—The Lincoln Traction Company has applied to the Nebraska State Railway Commission to issue \$176,000 of additional 6 per cent preferred stock. The total authorized issue of preferred is \$1,500,000. At the present time there has been issued and sold \$1,186,700 of this amount. The new stock is to be sold to reimburse the company for extensions and betterments already made.

Northern Ohio Traction & Light Company, Akron, Ohio.—The Northern Ohio Traction & Light Company has applied to the Ohio Public Utilities Commission for authority to issue \$1,532,000 of first mortgage 5 per cent bonds, to be sold at 85, and \$500,000 of preferred stock, to be sold at par. The proceeds of these issues are to be used in paying for improvements made in 1916 and 1917.

Philadelphia (Pa.) Rapid Transit Company.—The Market Street Elevated Passenger Railway, the Union Traction Company and the Philadelphia Traction Company, constituent companies in the Philadelphia Rapid Transit system, appealed to the United States District Court on Oct. 22 for restitution of \$73,768 and interest collected by William McCoach, former collector of internal revenue, under the excise tax law of 1909. The companies assert they are leased to the Philadelphia Rapid Transit Company, but maintain a corporate existence for the collection of rents and income for distribution among their stockholders. The government, it was claimed, levied taxes against the related companies for the years 1911 and 1912 on the ground that they were subject to the excise law. Counsel for the companies claimed the taxes were unjustly assessed, as the parties were acting under lease agreement and were not doing business under the provision of the excise tax law. Decision was reserved.

St. Louis, Lakewood & Grant Park Railway, St. Louis, Mo.—Bondholders of the St. Louis, Lakewood & Grant Park Railway filed suit in the St. Louis Circuit Court on Oct. 31, alleging that they have received no interest on their bonds since October, 1914. W. G. Carpenter, attorney for the bondholders, says the company operated two passenger cars until the floods of 1915 washed away a bridge over the River Des Peres. Traffic has not been resumed since then. The petition says some of the rails have been stolen and that little or no care has been taken of the company's property. The line extends from the end of the Cherokee line 4 miles into St. Louis County. The bondholders seek the appointment of a receiver to foreclose the mortgage securing the bonds and to sell the property for their benefit.

Steubenville, East Liverpool & Beaver Valley Traction Company, East Liverpool, Ohio.—The Steubenville, East Liverpool & Beaver Valley Traction Company has been incorporated under the laws of Ohio with an authorized capital stock of \$4,500,000 as a consolidation of the Steubenville & East Liverpool Railway & Light Company, the

East Liverpool Traction & Lighting Company and the Ohio River Passenger Railway. The application to the Ohio Public Utilities Commission for permission for the consolidation and the terms of the proposal were referred to briefly in the ELECTRIC RAILWAY JOURNAL of July 7, page 34. The approval of the consolidation was noted in the issue for Aug. 4, page 203.

Traffic and Transportation

Car Safety Equipment Insisted Upon Massachusetts Public Service Commission in Connecticut Valley Case Requires Safety Equipment on One-Man Cars

One-man cars will not be authorized by the Public Service Commission of Massachusetts unless such rolling stock is provided with the safety equipment now looked upon as standard for this class of service or with subsequent improvements upon present designs. This policy was made known by Chairman McLeod at a hearing in Boston on Nov. 8, when the Connecticut Valley Street Railway appeared before the board in behalf of a petition to obtain the commission's consent to the use of two one-man cars on the Millers Falls branch of the road. R. H. Holt of Gaston, Snow & Saltonstall, Boston, appeared as counsel for the company. John A. Taggart, Greenfield, Mass., its general superintendent, also took part in the proceedings.

THE COMPANY'S PLEA

Mr. Holt said that one-man cars had formerly been operated on the Millers Falls branch of the company's system until the commission ordered two-man service some time ago. At present traffic was lighter than formerly. The company had endeavored to obtain one-man cars from three manufacturers, but without success. Bids were in hand from the Wason Manufacturing Company, Brightwood, Mass.; the Osgood Bradley Car Company, Worcester, Mass., and the Laconia Car Company, Laconia, N. H., when the railway company was notified that the first two manufacturers must withdraw their tenders on account of entry into war material production for the federal government. The third company also withdrew its bids before the road acted upon the matter. Hence the railway company's officials sought permission to convert existing equipment into one-man cars, closing up the rear door and operating without the usual automatic safety apparatus. It was felt that the high initial cost of a new car provided with full automatic equipment was an obstacle to its purchase at this time. The management also desired to use a truck built in two sections in order to minimize oscillation, and felt that the trucks of some makers were not entirely suited to its conditions.

Chairman McLeod called upon George W. Bishop, chief of the commission's inspection department, for his opinion of the proposed use of non-automatic cars of the one-man type. Mr. Bishop discountenanced the use of such equipment. The chairman informed the petitioner that the board would hesitate to approve the operation of one-man cars without safety equipment and ordered the petition placed on file, pending further efforts on the part of the company to procure the necessary safety appliances. At the hearing the commission did not take the position that the company should purchase entirely new rolling stock units for the proposed service, but insisted upon the adoption of the full safety equipment in all rebuilt as well as in new rolling stock of the one-man type.

Appeal to Council for Fare Change

According to recent reports, Marshall P. Sampesell, president of the Seattle & Rainier Valley Railway, Seattle, Wash., formerly known as the Seattle, Renton & Southern Railway, will ask the Council of Seattle for relief from the franchise obligation requiring the sale of 4-cent tickets. In the event the City Council refuses to amend the company's franchise as it relates to car tickets, the company will still have the alternative of a petition to the State Public Service Commission. Amicable settlement of differences between the city of Seattle and the Seattle & Rainier Valley Railway recently has prompted the railway to ask the Council for relief rather than carry the matter to the Public Service Commission.

Electric Railway Monthly Earnings

AURORA, ELGIN & CHICAGO RAILROAD, WHEATON, ILL.		Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m.,	Sept., '17	\$202,865	*\$138,015	\$64,850	\$35,574	\$29,276
1"	" '16	183,593	*124,894	58,699	35,935	22,764
9"	" '17	1,638,859	*1,165,943	472,916	321,659	151,257
9"	" '16	1,537,671	*1,021,229	516,442	326,495	189,947
BATON ROUGE (LA.) ELECTRIC COMPANY						
1m.,	Aug., '17	\$18,122	*\$9,772	\$8,350	\$3,606	\$4,744
1"	" '16	17,352	*8,528	8,824	3,528	5,296
12"	" '17	225,492	*110,971	114,521	42,432	72,089
12"	" '16	207,284	*104,233	103,051	37,623	65,428
BROCKTON & PLYMOUTH STREET RAILWAY, PLYMOUTH, MASS.						
1m.,	Aug., '17	\$15,509	*\$11,605	\$3,904	\$1,252	\$2,652
1"	" '16	15,933	*10,446	5,487	1,105	4,382
12"	" '17	125,442	*121,453	3,989	14,073	†10,084
12"	" '16	120,329	*103,765	16,564	13,242	3,322
CAPE BRETON ELECTRIC COMPANY, SYDNEY, N. S.						
1m.,	Aug., '17	\$39,683	*\$26,667	\$13,016	\$6,552	\$6,464
1"	" '16	35,264	*19,185	16,079	6,568	9,511
12"	" '17	437,604	*266,661	170,943	78,718	92,225
12"	" '16	385,278	*225,932	159,346	78,532	80,814
CENTRAL MISSISSIPPI VALLEY ELECTRIC PROPERTIES, KEOKUK, IOWA						
1m.,	Aug., '17	\$26,687	*\$19,565	\$7,122	\$2,371	\$4,751
1"	" '16	24,196	*17,081	7,115	2,014	5,101
12"	" '17	302,865	*216,995	91,870	25,796	66,074
12"	" '16	293,038	*190,390	102,648	23,220	79,428
COLUMBUS (GA.) ELECTRIC COMPANY						
1m.,	Aug., '17	\$92,681	*\$36,376	\$56,305	\$31,075	\$25,230
1"	" '16	74,427	*29,465	44,962	28,654	16,308
12"	" '17	1,023,721	*388,162	635,559	347,146	288,411
12"	" '16	814,064	*339,132	474,932	344,091	130,841
COLUMBUS RAILWAY, POWER & LIGHT COMPANY, COLUMBUS, OHIO						
1m.,	Sept., '17	\$949,881	*\$244,555	\$105,326	\$42,209	\$62,187
1"	" '16	289,975	*177,917	112,058	42,862	69,196
12"	" '17	3,884,890	*2,664,680	1,220,210	543,204	677,006
12"	" '16	3,426,016	*2,007,953	1,418,063	509,659	908,404
COMMONWEALTH POWER, RAILWAY & LIGHT SYSTEM, GRAND RAPIDS, MICH.						
1m.,	Sept., '17	\$1,695,725	*\$1,058,018	\$637,707	\$442,529	\$195,178
1"	" '16	1,434,201	*799,304	634,897	421,048	213,849
12"	" '17	18,843,595	*11,290,067	7,553,528	5,178,205	2,375,323
12"	" '16	16,340,522	*8,746,988	7,593,534	4,961,774	2,631,760
CUMBERLAND COUNTY POWER & LIGHT COMPANY, PORTLAND, ME.						
1m.,	Sept., '17	\$281,195	*\$159,490	\$121,705	\$70,230	\$51,475
1"	" '16	270,012	*155,575	114,437	69,098	45,339
12"	" '17	3,049,224	*2,001,371	1,047,853	814,815	233,038
12"	" '16	2,803,676	*1,701,853	1,101,823	802,307	299,510
EASTERN TEXAS ELECTRIC COMPANY, BEAUMONT, TEX.						
1m.,	Aug., '17	\$79,889	*\$45,938	\$33,951	\$12,419	\$23,755
1"	" '16	71,088	*39,148	31,940	9,059	22,881
12"	" '17	916,137	*498,222	417,915	125,164	\$301,672
12"	" '16	813,903	*428,528	385,375	106,249	279,126
EL PASO (TEX.) ELECTRIC COMPANY						
1m.,	Aug., '17	\$105,941	*\$71,710	\$34,231	\$6,339	\$27,892
1"	" '16	84,156	*78,121	6,035	4,919	1,115
12"	" '17	1,265,299	*760,604	504,695	61,913	442,782
12"	" '16	1,054,363	*603,227	451,136	54,883	396,253
GALVESTON-HOUSTON ELECTRIC COMPANY, GALVESTON, TEX.						
1m.,	Aug., '17	\$183,597	*\$116,715	\$66,882	\$37,907	\$28,975
1"	" '16	168,724	*104,365	64,359	36,429	27,930
12"	" '17	1,976,953	*1,313,944	663,009	444,620	218,389
12"	" '16	1,935,343	*1,215,651	719,692	437,338	282,354
GRAND RAPIDS (MICH.) RAILWAY						
1m.,	Sept., '17	\$114,773	*\$73,920	\$40,853	\$18,219	\$22,634
1"	" '16	111,638	*72,249	39,389	15,842	23,547
12"	" '17	1,308,439	*872,905	435,534	212,329	223,205
12"	" '16	1,279,977	*839,802	440,175	176,619	263,556
HOUGHTON COUNTY TRACTION COMPANY, HOUGHTON, MICH.						
1m.,	Aug., '17	\$29,133	*\$19,243	\$9,890	\$5,096	\$4,794
1"	" '16	29,459	*16,327	13,132	5,241	7,891
12"	" '17	339,876	*203,514	136,362	61,950	74,412
12"	" '16	313,999	*175,833	138,166	65,042	73,124
JACKSONVILLE (FLA.) TRACTION COMPANY						
1m.,	Aug., '17	\$53,176	*\$36,982	\$16,194	\$15,815	\$379
1"	" '16	49,422	*34,769	14,653	15,408	755
12"	" '17	663,524	*444,714	218,810	187,483	31,327
12"	" '16	617,874	*419,744	198,130	180,890	17,240
KEOKUK (IOWA) ELECTRIC COMPANY						
1m.,	Aug., '17	\$21,479	*\$15,920	\$5,559	\$2,319	\$3,240
1"	" '16	19,794	*13,897	5,897	2,011	3,886
12"	" '17	242,986	*168,818	74,168	25,675	48,493
12"	" '16	239,439	*154,239	85,200	22,890	62,310

*Includes taxes. †Deficit. ‡Includes non-operating income.

Passenger Profiteering

Short Shrift Likely for Passengers Who Seek to Evade War Tax on Their Car Fares

Interurban passengers between Alton, Ill., and St. Louis, Mo., who try to evade the war tax by paying their fare in installments will have to make explanations to the federal authorities. W. C. Myers, general superintendent of the Alton, Granite City & St. Louis Traction Company, has instructed conductors to report any case in which through passengers insist on paying their fare in amounts so small as not to be taxable. The one-way fare is 45 cents, and the 8 per cent tax applies to all fares over 35 cents. The tax on the 45-cent fare is 4 cents. Any passenger who pays fare to an intermediate point and then remains on the car and pays for the rest of the trip with the apparent intention of avoiding the war tax will be turned over to the federal authorities. The tax applies to single fares of more than 35 cents, but does not apply to commutation tickets or season tickets between St. Louis and Alton, which are sold by the electric railway and two steam railroads.

Unprofitable Lines to Go

Portland Company Makes Request to That Effect—Suggest Subsidy as an Alternative

F. I. Fuller, general manager of the Portland Railway, Light & Power Company, Portland, Ore., recently requested the City Council for permission to discontinue service on a number of short ends and stub lines in various districts of the city so that the cost of operation may be reduced. The discontinuance of these lines and a general reduction in service as planned are in accordance with the suggestions recently made by the State Public Service Commission when the company petitioned that body for permission to raise its fares to 6 cents. When he made the request to the Council Mr. Fuller stated that if his appeal was granted the company would be relieved of an expense of several thousand dollars a month.

In regard to a number of lines built to certain additions to the city and operated at a loss, Mr. Fuller said the company would refuse to operate such lines unless the real estate owners guaranteed the full expense of operation over the revenues received from their operation. Owners along the Kings Heights and Arlington Heights lines have already made such arrangements, and the owners of the Errol Heights line are negotiating to this end.

The City Council decided that it would go over the various lines which the company desires to abandon and hold a hearing later on the petition so that all parties interested would receive an opportunity to be present before any formal action is taken.

Traffic Studies in Connecticut

Utilities Commission Reports on Conditions in Waterbury—Traffic Expert Retained by Bridgeport Recommends Cars in Trains and Purchase of Light-Weight Cars

The Public Utilities Commission of Connecticut reported on Nov. 2 in regard to the inquiry made by it with respect to service and equipment furnished by the Connecticut Company on its Waterbury lines. The inquiry by the commission was made following a request of Mayor Scully. The commission visited Waterbury on Oct. 19. A meeting was held in the Mayor's office at which J. K. Punderford, vice-president and general manager of the company, was present. Mr. Punderford admitted that the service in Waterbury was lacking in some essentials, but said that this was due very largely to the abnormal industrial conditions with which the company was confronted. In its finding the commission said that in considering what is or would be reasonably satisfactory service certain unavoidable and abnormal conditions with which the company was confronted, particularly at Waterbury, should be taken into consideration. It did say, however, that these conditions should not prevent the company from having all cars in service in sanitary condition.

J. Peyton Clark, traffic expert, who was engaged recently by the city of Bridgeport to report on the service of the Connecticut Company in that city, presented a preliminary report to the Council on Nov. 5. Mr. Clark declared that the poles, wires and other property of the company were in a fair condition, but that better service could be given with more modern rolling stock. He reported that the suburban service was better than the city service, which failed to provide adequately for rush-hour demands. With respect to jitney competition, he said that the jitney could not exist on a 5-cent fare in a city where adequate electric railway service was in effect. He recommended a loop in Water Street to relieve congestion and suggested the operation of cars in trains during the rush hours. He urged an increase in the number of cars, and suggested the purchase of fifty light-weight cars at an approximate cost of \$250,000. He is said to have declared that this expenditure for new cars would be returned to the company in six months' time by the saving which would be effected in operating costs and by the increased revenue which would result to the company.

Increase in Fare Postponed.—The proposed increase of fare on the Northern Massachusetts Street Railway, Athol, Mass., scheduled to go into effect on Nov. 2, has been postponed until Dec. 1 by order of the Public Service Commission of Massachusetts. A hearing will be held at the office of the commission in Boston on Nov. 8.

Survey of Trenton Traffic Proposed.—The City Commission of Trenton, N. J., decided recently to employ experts to make a survey of conditions on the lines of the Trenton & Mercer County Traction Corporation. The report of the experts to the City Commission will be transmitted to the State Board of Public Utility Commissioners.

Connecticut Fare Hearing Postponed.—The hearing on the petition of the city of Hartford, Conn., for a reduction in the fare of the Connecticut Company from 6 cents to 5 cents, arranged to be held before the Public Utilities Commission of Connecticut on Nov. 12, has been postponed until Dec. 3 at the request of Corporation Counsel Cole of the city.

School Tickets Will Be Sold.—The Columbus Railway, Power & Light Company, Columbus, Ohio, has put on sale five-day-a-week school tickets, good on its Westerville interurban line. They will be on sale the last five days of each month and will be sold only to persons having credentials showing that they are connected with some university, public or private school.

Fare Increase Sought in Wheeling.—Application has been made to the Public Utilities Commission of West Virginia by the West Virginia Traction & Electric Company, Wheeling, for an increase in fare on the Elm Grove line from 5 to 6 cents. This will affect the line only between Wheeling and West Alexander. The company claims that the increase is necessary if it is to make the improvements desired by the public at the present time.

Dormitory for Bridgeport Men.—The Connecticut Company has opened a dormitory for its men on the spare list at Bridgeport and has taken out a permit to conduct a lodging house, in accordance with the State statutes. A large room has been set apart for this purpose at the Congress Street carhouse, and twelve white enamel beds for the use of motormen and conductors assigned to extra trips have been installed. No charge is made to the men for their night's lodging.

Rehearing in Jitney Bonding Case Denied.—Litigation in the fight of the jitney drivers of Seattle, Wash., to compel H. O. Fishback, State Insurance Commissioner, to issue to their mutual bonding company a certificate to do business without posting the necessary cash reserves required by law, was concluded recently when the Supreme Court at Olympia denied the jitney drivers' petition for a rehearing in the case. The court sustained the stand taken by Commissioner Fishback.

Believe in Electric Freight Transportation.—One of the planks in the platform of the Democratic candidates for freeholder in Bergen County, N. J., at the recent election

was: "We believe that the electric railways of the State should be compelled to carry freight, at least during the war, under the direction and supervision of the Public Utilities Commission. This would enable the farmer to get his produce to the consumer in the cities quickly and cheaply. It would reduce the high cost of living."

Hearing on One-Man Cars Postponed.—The hearing on the petition of the Worcester & Warren Street Railway, Brookfield, Mass., for authority to operate one-man cars, scheduled to take place before the Public Service Commission of Massachusetts on Oct. 29, was postponed until Nov. 5. Officials of the railway appeared before the board to give their reasons why the road between Worcester and Warren should be allowed to use the one-man car, but the board was of the opinion that the road did not inform the public sufficiently of its intention to make a change in the service.

Ohio Company Appeals for Aid in Collection of War Tax.—In order that mistakes may be avoided in making change, due to the addition of odd cents for the war tax on interurban fares, the Northern Ohio Traction & Light Company Akron, Ohio, is appealing to the public through newspaper advertisements to buy tickets at the regular ticket offices, instead of paying fares to conductors. The advertisements of the company say: "It should be borne in mind that conductors have many duties to perform in addition to collecting fares and that when this part of their duty is lessened it enables them to give better service."

Interurban Tariffs Suspended.—The Public Service Commission of Oregon has suspended until Nov. 30 the tariffs filed by the Portland Railway, Light & Power Company, which were to have become effective on Oct. 30. The tariffs advance the freight rates 15 per cent on all class and commodity rates, and switching rates on the interurban lines. They also abolish the passenger transfer between the interurban and city lines, together with all commutation and round-trip fares. The latter fares were put in by order of the commission in 1911, and cannot be changed without a formal hearing, which will be set in the near future.

Utilities Need Not Advertise New Rates in Advance.—The Public Utilities Commission of Ohio has notified Governor James M. Cox that there is no law to compel utilities companies to advertise proposed increases in rates in local papers previous to filing them with the commission. Governor Cox had suggested that giving notice in this way thirty days in advance would afford full information to patrons, who could then have an opportunity to file objections. The commission may find a way around this by inserting advertisements on its own account. It is believed that the receipt of complaints or objections at an early date would facilitate the work of the commission.

Accidents in New York and New Jersey During October.—According to the report of the National Highways Protection Society, eighty-eight persons, of whom thirty were children, were killed by automobiles on the streets and highways of New York State during October. In New York City forty-two persons were killed by automobiles, five by surface cars and three by wagons, as compared with thirty-nine by automobile, four by surface cars and eleven by wagons in October, 1916. In New Jersey twenty-six persons were killed by automobiles, two by trolley and one by wagon. Twelve persons were killed at highway grade crossings in New York State and five in New Jersey.

Business of Motor Truck Extension of Railway Grows.—The Shelbyville & Mount Eden Motor Truck Company, originally designed as a freight transportation line to connect with the freight cars of the Louisville & Interurban Railway at Shelbyville, Ky., is now carrying passengers. In addition to a light passenger-carrying car which meets the passenger trains of the company, the freight trucks have been fitted with folding seats which let down from the sides of the car. Outgoing passengers or incoming passengers are picked up by the truck drivers and transported over the route for a nominal fare. With more than a year and a half behind it, the motor truck extension of the interurban line has proved that it meets a need. This concern is independent of the railway, but, having given a bond, it operates under a joint rate with the electric line. Sometimes three trucks are required to handle the business.

Personal Mention

E. S. Bigelow, secretary-treasurer of the Kansas City (Mo.) Interurban Freight Terminal Company, is secretary-treasurer of the Kansas City, Kaw Valley & Western Railway.

L. P. Baurhenn, superintendent of the Hudson division of the Public Service Railway, has been appointed to a similar position on the Essex division, with headquarters in Newark.

Elmer L. Williams, division superintendent of the Public Service Railway at Essex, N. J., will hereafter do special work connected with the office of the general superintendent at Newark.

A. P. McCullough, supervisor at the West New York car-house of the Public Service Railway, Newark, N. J., has been appointed superintendent of the Hudson division to succeed L. P. Baurhenn.

Henry T. Ledbetter, for some time auditor of the Empire District Electric Company, Joplin, Mo., has been appointed auditor of the Toledo Railways & Light Company, Toledo, Ohio, to succeed C. E. Murray.

M. S. Sloan, upon his resignation as vice-president and general manager of the New Orleans Railway & Light Company, New Orleans, La., which was noted recently in these columns, was the recipient of a tea service and chest of solid sterling silver from the employees of the company.

W. E. Herring, industrial agent of the Puget Sound Traction, Light & Power Company, Seattle, Wash., has been elected chairman of the new industrial opportunities committee of the industrial bureau of the Seattle Chamber of Commerce and Commercial Club. The committee is composed of thirty-six men engaged in manufacturing and mercantile lines.

W. E. Grogman, freight agent of the Kansas City (Mo.) Interurban Freight Terminal Company, has been in railroad freight work for fifteen years. For the last ten years he has been with the Kansas City Terminal Company, the organization of railroads operating the Union Station, of which he has been chief clerk in the freight department for three years.

C. E. Murray, who recently resigned as secretary and auditor of the Toledo Railways & Light Company, Toledo, Ohio, was tendered a dinner at the Toledo Club on Oct. 25 by seventy-five company officials and associates. He was presented with a platter, on which the names of his associates were engraved. Mr. Murray will become secretary and auditor of the Empire Gas & Electric Company of Bartlesville, Okla.

J. R. Harrigan, general manager of the Kansas City, Clay County & St. Joseph Railway, on Oct. 31 was also elected president of the Kansas City (Mo.) Interurban Freight Terminal Company, the station of which was opened for business on Oct. 10 for use by the interurban electric railways operating into Kansas City. All the officers and directors of the terminal company are actively engaged in the interurban electric railway business. The stock of the company is owned by interests associated with two of the interurban electric railroads that enter Kansas City. Other railroads entering the city will use the terminal under lease.

C. F. Holmes, one of the directors of the Kansas City (Mo.) Interurban Freight Terminal Company, is president of the Kansas City-Western Railway, which position he has occupied since 1903, when he secured his interest in the property. He had previously for several years been general manager of the Metropolitan Street Railway, Kansas City, Mo., and had effected the consolidation of three groups of companies into the Metropolitan. Before that Mr. Holmes was connected with the Westport & Belt Railway, of which his father, Nehemiah Holmes, had been president. C. F. Holmes worked for the Westport & Belt Railway successively through the stages of horse, cable and electric op-

eration, being general manager of the company through the last two periods.

J. F. Holman, vice-president of the Interurban Freight Terminal Company, is general freight agent of the Missouri Short Line. He started railroading fifteen years ago with the Hocking Valley line at Columbus, Ohio, as assistant receiving clerk in the freight department and advanced in the following three years through all positions. He then entered the office as bill clerk and later was promoted to rate clerk. He was with the Hocking Valley for six years. From that company he went to the Ohio Electric Railway as local freight agent at Columbus. Four years later, in 1912, he went to Kansas City and for three months he was in the rating department of the local freight office of the Santa Fé railroad. Subsequently he served three months as chief clerk and rate clerk of the joint offices at Kansas City of the Pere Marquette and Missouri & Northern Arkansas railroads. Mr. Holman's freight experience with railroads in the Kansas City territory prepared him especially well for the appointment he then received of general freight agent of the Kansas City, Clay County & St. Joseph Railway, the Missouri Short Line. Mr. Holman made the first tariffs for the company and has built up its freight business from the ground.

W. F. Carr, for the last seven and one-half years engineer of maintenance of way of the Chicago, Ottawa & Peoria Railway, Ottawa, Ill., included in the system of the Illinois Traction Company,

has resigned to become engineer of the Chicago, South Bend & Northern Indiana Railway, South Bend, Ind. While acting as consulting engineer for all departments, he will have direct supervision of all roadway, track, bridges and buildings. Mr. Carr was born in 1881. He began his work in the railway field in 1897 with the Wabash Railroad serving successively in section work, as rodman and as transitman. He was employed as a transitman on the Frisco Railroad for a short period, and in all spent



W. F. CARR

about eight and one-half years in the steam road field in various occupations connected with the roadway department. He began work with the Illinois Traction System eleven years ago, serving the first two years of this period as a transitman in making a resurvey of the entire system for record purposes. For the next three and one-half years he was employed as assistant engineer of the system, working under L. B. Martin and taking part in the construction of the line into St. Louis, and the Belt Lines in Decatur, Edwardsville and Springfield. Since April 1, 1910, he has been engineer of maintenance of way of the north property of the Illinois Traction System, the Chicago, Ottawa & Peoria Railway, in charge of track and roadway, buildings, bridges, overhead lines and signals. He continued in this position until the present time.

E. M. Walker, whose resignation as general manager of the Dubuque (Iowa) Electric Company was reported in the ELECTRIC RAILWAY JOURNAL for Sept. 15, has been appointed general manager of the Terre Haute division of the Terre Haute, Indianapolis & Eastern Traction Company. In this capacity Mr. Walker will have full charge of the electric lighting and power work in the city of Terre Haute and a number of suburban towns, the city railway system and certain sections of the interurban lines radiating from Terre Haute. In announcing Mr. Walker's appointment to the people of Dubuque, in which city he was formerly located, the local newspapers reviewed the many improvements installed under his direction, and had only words of praise for the manner in which he had managed the local property. They expressed great regret at the loss to the civic and social life of Dubuque as well as to the public service.

C. S. Keever, as noted recently in the ELECTRIC RAILWAY JOURNAL, has been appointed superintendent of transportation of the Union Traction Company of Indiana, with office



C. S. KEEVER

at Anderson. As stated previously, he was the oldest division superintendent in point of service, having worked up through the ranks of the Union Traction System. Mr. Keever was born at Fountain City, Ind., in February, 1882. He entered the service of the Union Traction Company in 1901 as a conductor and was later appointed a motorman on one of the interurban lines. In 1903 he was made instructor of motormen and conductors for the entire system. The following year he became division superintendent at Tipton. He held

that position until Jan. 1, 1907. Since that time he has been superintendent of the Muncie division, which office he has just relinquished.

Luke Grant has been appointed publicity manager of the Chicago (Ill.) Elevated Railways and the Chicago, North Shore & Milwaukee Railroad, both of which are under the management of Britton I. Budd. Mr. Grant has been connected with Chicago newspapers for more than fifteen years, during which time he covered much of the traction news in the city. He left the newspaper field three years ago to enter upon special investigation work for the United States Industrial Commission. Upon completion of this work and the discontinuance of the commission, he entered upon general publicity work for himself, handling among other campaigns the publicity for the Universal Military Training League. Mr. Grant has been editing the *Elevated News* since it was begun. He is now planning to bring out a new publication for use on the Chicago North Shore & Milwaukee Railroad which will be known as the *North Shore Bulletin*. This will be a monthly publication, as is also the *Elevated News*. A third publication which will be established is *The Safety Bulletin*. It will be issued for the company's employees to promote safety work. Both the *Elevated News* and the *North Shore Bulletin* will be for the use of the employees and the public. Mr. Grant was born in Scotland. He has been a resident of Chicago for more than twenty-seven years.

A. G. Snell, who has been appointed division superintendent at Muncie for the Union Traction Company of Indiana, has been in railway work nearly twenty years,

about fifteen of which were spent continuously with the Union Traction Company. He began in the shops at Muncie in 1898 and soon afterward became connected with the transportation department, which he served in various capacities. He was for six years following 1904 chief clerk to C. A. Baldwin, then superintendent of transportation of the Union Traction Company, and in June, 1910, was appointed division passenger and freight agent with headquarters in Indianapolis. He held that position for about three years, when he



A. G. SNELL

resigned to become superintendent of transportation of the Rockford & Interurban Railway at Rockford, Ill., in charge of the interurban divisions and the city lines in Rockford, Ill., and Janesville, Wis. He returned to the Union Traction Company on Oct. 1 of this year. Mr. Snell was educated at Culver Academy in Northern Indiana.

New Publications

Business Law for Engineers. By C. Frank Allen. McGraw-Hill Book Company, Inc., New York, N. Y. Cloth, \$3.

This is an instructive as well as an entertaining book on the important fundamental features of law that an engineer should understand. The first section, dealing with elements of law, is a readable discussion from which the engineer can obtain a general idea of when and how to act for himself and when to seek expert advice. No attempt is made to list the exceptions arising under varying laws. The second part of the book deals with the writing of forms and other essentials of contract letting.

Transactions of the American Society of Mechanical Engineers, Vol. 38. Published by the Society, New York, N. Y., 1371 pages.

Electric railway men will find the following papers in this volume of the A. S. M. E. Transactions of special interest: "Standardization of Power Plant Operating Costs," by Walter N. Polakov; "Report Upon Efficiency Tests of a 30,000-Kw. Cross-compound Steam Turbine," by H. G. Stott and W. S. Finlay, Jr.; "Clasp Brakes for Heavy-Passenger-Equipment Cars," by T. L. Burton; "Mechanical Design of Electric Locomotives," by A. F. Batchelder. The paper "How Does Industrial Valuation Differ from Public Utility Valuation?" by John H. Gray, is also of interest to utility men in general.

J. E. Aldred Lectures on Engineering Practice. The Johns Hopkins Press, Baltimore, Md. 254 pages; paper, \$1.

These lectures are the first series of a course of lectures established about a year ago in the department of engineering of the Johns Hopkins University. They are designed to present the essential features of the planning, construction and operation of modern engineering projects. This series contains nine lectures. Those of special interest to electric railway engineers and utility men are: "Some Things Engineers Should Know Concerning the Rudiments of Corporate Finance," by Ralph D. Mershon; "The Development of Power from the Standpoint of the Boiler Room," by C. F. Hirshfeld; "Rapid Transit Problems in American Cities," by George Staples Rice; "Some Practical Problems Met with in the Design and Construction of Bridges and Similar Structures," by W. W. Pagon; "Public Utility Engineering and Finance," by Herbert A. Wagner. Only a limited number of copies are available.

Lubricating Engineers' Handbook. By John R. Battle. J. B. Lippincott Company, Philadelphia, Pa. 333 pages. Price, \$4 net.

To quote the sub-title of this work it is "a reference book of data, tables and general information for the use of lubricating engineers, oil salesmen, operating engineers, mill and power plant superintendents, machinery designers and others." It covers in a large number of short chapters the essentials of the subject, including briefly the characteristics of different lubricants, oil and grease testing, mechanical and lubricating data, and the application of the principles of lubrication to many different types of machinery. The economics of the subject are also briefly treated. One very short chapter is given to electric street and interurban cars. In view of the wide range of topics covered and the comparatively small compass of the book the treatment is necessarily somewhat superficial, but it contains a mass of hints and facts drawn from practice. It should, therefore, prove suggestive to every electric railway man who has to do with the lubrication of motors, compressors, machine tools, power-house machinery, etc.

According to the report of the railway bureau of the government-general of Chosen (Corea) for the year ended March 31, 1916, the open light railway and tramway lines at the end of the year had a mileage of 64.9, as compared to 44.5 miles the year before. A total of 144.4 miles are not yet opened. It is said that the results of traffic were very good, reaching 445,348 yen in total receipts.

Construction News

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

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

RECENT INCORPORATIONS

***Empire State Railroad Corporation, Syracuse, N. Y.**—This company has been incorporated to take over, under the conditions noted in the *ELECTRIC RAILWAY JOURNAL* for Nov. 3, page 835, part of the property of the Empire United Railways, Inc., sold recently under foreclosure. Officers: H. S. Holden, president; Frank R. Ford, chairman of executive committee; J. C. Nelson, vice-president and general manager; H. J. Clark, treasurer; S. C. Stivers, secretary and comptroller; J. H. Yoder, auditor; H. C. Beatty, assistant secretary, and J. M. Hyland, assistant treasurer.

***Steubenville, East Liverpool & Beaver Valley Traction Company, East Liverpool, Ohio.**—Incorporated as a consolidation of the Steubenville & East Liverpool Railway & Light Company, the East Liverpool Traction & Light Company and the Ohio River Passenger Railway. Capital stock, \$4,500,000. Incorporators: J. H. Maxwell, George H. Faulk and J. E. Delaney.

FRANCHISES

Baltimore, Md.—An ordinance has been introduced in the City Council of Baltimore to authorize the United Railways & Electric Company to construct a number of small sections of connecting and second tracks from one to six blocks long, also curves and switches to improve car service.

Boston, Mass.—The Public Service Commission of Massachusetts has granted permission to the Boston Elevated Railway to construct a loop at the new Everett terminal of its line.

Westfield, Mass.—The Turners Falls Power & Electric Company has received a franchise from the Selectmen of Westfield for entering Westfield and the privilege of selling power to the Springfield Street Railway. The line will be brought in from the Southampton line to the town dike and then proceed to the West Springfield line.

Walkerville, Ont.—Acting on the application of the Co-operative Essex County Hydro-Radial Association, the Ontario Railway Board has refused to sanction the by-law recently indorsed by the electors of Walkerville to allow the Sandwich, Windsor & Amherstburg Railway to make track extensions in Walkerville.

TRACK AND ROADWAY

British Columbia Electric Railway, Vancouver, B. C.—This company is reconstructing its track on Main Street between Seventh Avenue and Broadway with heavier rails. The cost is estimated at \$6,000.

Key West (Fla.) Electric Company.—This company proposes to lay new rails on Eaton Street.

Georgia Railway & Power Company, Atlanta, Ga.—This company, which is now operating cars to Nancy's Crossing, $\frac{3}{4}$ mile south of the point where camp activities begin, has begun laying rails for the extension of its line along the western side of the Southern Railway to the remount station, directly across the railroad from Peachtree Road and the camp proper. Street car passengers will be discharged at a point directly in front of the old Georgia cavalry field, at which point a viaduct is being built to span the railroad tracks. By this method the company, in reaching Camp Gordon, does not cross the tracks of the Southern Railroad Company.

Joplin & Pittsburg Railway, Pittsburg, Kan.—Work on the final survey for the extension of the Joplin & Pittsburg Railway from a point 1 mile south of the Waco station to $1\frac{1}{2}$ miles west has been begun. This line will serve three ore mills already in operation and several others now under construction, and will later be extended to Lawton.

Twin City Rapid Transit Company, Minneapolis, Minn.—Commissioner Oscar Keller has announced that the construction of all extensions of the Twin City Rapid Transit Company in St. Paul planned for this year have been completed and the lines are open for traffic. These extensions include that of the St. Clair-Hope line from Oxford Street to Fairview Avenue and the Payne Avenue line on Maryland Street from Forest Street to Duluth Avenue. A wye has been constructed on the Como-Harriet line at Eustis Street, which permits the turning of St. Paul-St. Anthony Park cars without their being run into Minneapolis. Next year the Mississippi line will be extended from Edgerton Street and Brainerd Avenue to Ivy Street, thence out Payne Avenue to the city limits; also it is hoped to have Margaret Street graded so that the St. Clair-Hope line may be extended from the present terminus at Atlantic and Fourth Streets up Atlantic Street and thence out Margaret Street to the city limits.

Kansas City (Mo.) Railways.—A new reinforced-steel and concrete viaduct will be built jointly by the city, the Kansas City Railways and various railroads at Twenty-third Street at an estimated cost of \$600,000. The structure will connect with the viaduct built to the State line by the Kansas side. Howard & Ash, Kansas City, consulting engineers.

***Bowen Motor Railways Company, Omaha, Neb.**—Organized for the purpose of constructing and operating electric railways. Capital stock, \$100,000. A. D. Bowen and Carl T. Self are interested.

New Jersey & Pennsylvania Traction Company, Trenton, N. J.—Permission has been granted to the New Jersey & Pennsylvania Traction Company to issue \$50,000 in bonds to grade its road from Gladstone to Pitney.

Cincinnati (Ohio) Traction Company.—An effort is being made to secure the consents of the property owners on Elberon Avenue between Eighth and Warsaw Streets for the extension of the car tracks to establish the Warsaw-Elberon line.

Toronto (Ont.) Suburban Railway.—It is reported that an agreement has been reached between the Toronto Suburban Railway and Guelph Radial Railway for the installation of a service between the city and the military hospital located at the old prison farm. The agreement provides that the Toronto Suburban Railway shall be allowed to operate its cars along the city line to almost in front of the Royal Hotel, opposite the Grand Trunk Railway station. In return for this privilege it will be willing to allow the Guelph Radial Railway to operate cars on the Toronto Suburban tracks to the Military Hospital.

Essex Terminal Railway, Walkerville, Ont.—It is reported that this company is constructing an electric railway from Ojibway to Amherstburg.

Boyertown & Pottstown Railway, Boyertown, Pa.—A proposal has been submitted by the Boyertown & Pottstown Railway to the Town Council to connect its system with the Oley Valley Railway to Reading. It is proposed to do this by means of a loop on several streets.

Valley Railways, Lemoyne, Pa.—The construction of a terminal on Walnut Street and the double-tracking of its Walnut Street line is being considered by the Valley Railways.

Canton & Ohio River Railways, Pittsburgh, Pa.—Plans have been completed by the Canton & Ohio River Railways for the construction of its proposed electric railway. The line will extend from Canton, Ohio, to Kingwood, W. Va. The line will be built primarily as a freight line, but passenger trains will also be operated. The total trackage of the Canton & Ohio River Railways will be about 400 miles. The line as laid out from Canton to Kingwood will cover 180 miles, the remaining 220 miles will be given over to long sidings, spurs and yards. Power plants for the Kingwood division probably will be located at Cameron and Morgantown, although the decision of this matter has not been made definite, the engineers being still employed on their calculations to determine the most advantageous sites. On the Ohio side the substations probably will be located at Minerva, Carrollton, Toronto and Martins Ferry. The total cost of construction will be about \$6,000,000. Parts of the line are expected to be in operation within six months. The

entire road is scheduled for completion within eighteen months. James D. White, Pittsburgh, secretary and treasurer. [Aug. 11, '17.]

Montreal (Que.) Tramways.—The city of Montreal has asked the Quebec Public Utilities Commission to compel the Montreal Tramways and other companies to put all their wires underground in District No. 4, Montreal.

Quebec Railway, Light, Heat & Power Company, Quebec, Que.—The extension of the line of the Quebec Railway, Light, Heat & Power Company on St. Valier Street has been completed across the Canadian Pacific Railroad and is ready for operation. The proposed extension of the Belvidere line to Bells Hill and to a junction with the St. Valier line has not yet been begun. The contract calls for its completion by Sept. 1, 1918.

***Lewisburg Railway & Power Company, Lewisburg, W. Va.**—In order to prevent the sale and dismantling of the old Lewisburg & Ronceverte Electric Railway, which had been ordered by court decree, leading business men of Lewisburg and farmers of the territory concerned have organized the Lewisburg Railway & Power Company with an authorized capital stock of \$50,000, to take over, rehabilitate and operate the line. A committee has been appointed to obtain a new charter. It is planned to extend the line from the corporate limits of Lewisburg into the heart of the town.

SHOPS AND BUILDINGS

Shore Line Electric Railway, Norwich, Conn.—A contract has been awarded to Peck McWilliams Company, Norwich, by the Shore Line Electric Railway for the construction of a new freight house. The structure will be 20 ft. x 60 ft., one story high.

Salina (Kan.) Street Railway.—A new carhouse is being constructed by the Salina Street Railway at the end of the West Walnut Street line. Heretofore the cars have stood out in the open when not in use.

Port Arthur (Ont.) Civic Railway.—This company proposes to construct a waiting room and shelter at its terminus at Port Arthur.

POWER HOUSES AND SUBSTATIONS

Pacific Gas & Electric Company, Sacramento, Cal.—It is reported that arrangements are being made by the Pacific Gas & Electric Company to discontinue the use of the old Newcastle electric power plant. Transformers are being installed at the Wise power plant in Auburn ravine below Auburn to take on the Auburn-Newcastle load. All distribution and power lines of the San Jose Railroads and the Peninsular Railway have been taken over by the Pacific Gas & Electric Company.

Connecticut Company, New Haven, Conn.—The Public Utilities Commission of Connecticut has approved the proposed method of construction of a transmission line from Station A of the Connecticut Company in New Haven to Middletown Avenue along private right of way and along and across highways in the town of North Haven.

Hattiesburg (Miss.) Traction Company.—In order to take care of the cantonment, the Hattiesburg Traction Company spent \$11,000 on the construction of a 22,000-volt line 8 miles to Camp Selby. The company also constructed a temporary annex to its plant to house six 100-kw. transformers and made various improvements to its boilers and other equipment.

Hudson Power Corporation, Albany, N. Y.—A petition has been presented by the Hudson Power Corporation to the Public Service Commission for the Second District of New York for permission to erect electric power lines between Rensselaer and Poughkeepsie, to construct a generating station in Greenport and to exercise the franchise granted by the town of Greenport. The corporation is owned in third shares by the Albany Southern Railroad, the Central Gas & Electric Company of Poughkeepsie and the Upper Hudson Company. Its plans call for the lighting and supplying of power to virtually all the cities, villages and small towns along the upper Hudson and the Catskills. The company will also supply power to the Albany Southern Railroad. The entire development, including the power station at Greenport, will cost \$1,000,000.

Manufactures and Markets

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

New England Roads Developing Interest in One-Man Cars

Demand for Railway Equipment Not Large, Although Routine Business of Considerable Volume Is Being Handled in the Supply Field

New England electric railways are deferring purchases as far as practicable at present, and little new construction is under way. The volume of traffic, however, is unusually heavy in the industrial districts, and if it were not for the high cost of operation, net earnings would be very satisfactory and would stimulate much-needed improvement work. Even the best properties are hard pressed to raise money for betterments of demonstrable economy. In the aggregate a large business of routine character is being handled in the supply field, for it is impossible to maintain safe service without substantial purchases of material. Manufacturers are feeling the effects of the war upon the labor supply, and priority considerations are naturally holding back deliveries through the diversion of material from industrial and railway orders to strictly governmental business. The passing of the Boston Elevated quarterly dividend this week reflects a situation which is more than local. The evils of jitney competition are being remedied to a considerable extent in outside cities, and the time appears ripe to acquaint the public as never before with the economic issues which the roads are facing.

INTEREST CENTERS ON ONE-MAN CARS

In the rolling stock field the New England roads are gradually developing a real interest in the one-man car. This section has been more conservative than the West and South in sensing the importance of this type of rolling stock in the present age of automobile competition and high operating costs, but prospects are improving. There is no doubt that the Sept. 22 issue of the *ELECTRIC RAILWAY JOURNAL* aroused more interest in the one-man car in New England than any previous influence, and at a meeting on Oct. 26 of the New England Street Railway Club in Boston an entire evening was profitably devoted to an excellent discussion of the subject. A report of this meeting appeared in last week's issue.

At the meeting it was announced that the Stone & Webster properties are to utilize one-man cars on a far more comprehensive scale than heretofore, although more than 300 such cars are now in service or on order. The Bay State Street Railway, also, hopes to install fifty such cars in the near future, and smaller properties like the Bangor Railway & Electric Company and the Brockton & Plymouth Street Railway have joined the list of purchasers or users. It is reported that the Concord, Maynard & Hudson is about to install such cars on its lines, and some of the smaller mid-State properties in Massachusetts are looking favorably upon these units. One manufacturer states that he is in a position to ship a number of these cars, completely equipped, from the Middle West by Feb. 1, 1918.

Other car business is rather quiet. Two large manufacturing plants are now actively at work on war orders. The Bay State company is receiving steady deliveries at the rate of one car per day on an order of 200 placed about a year ago with the Laconia company. Lumber, steel and labor supplies are considerably below normal in the car factories. Not a few managers in New England are considering the possibilities of rebuilding cars for one-man service, but little actual work has been done as yet.

Motor manufacturers are six to eight months behind on orders. The demand for car equipment is below that of a year ago, and renewal business is at present rather slow.

Asbestos-insulated wire is in great demand, makers being four to five months behind in orders. Gears and pinions are behind on deliveries, the demands of war industry being abnormal. The temporary suspension of the Massachusetts car-heating law as a measure of fuel economy until Dec. 1 has accentuated the dullness in the car heater trade. Car-body accessories in general are rather quiet.

Patching appears to be the policy in both overhead line and track maintenance at present. A little new construction is under way, notably from Boston to the new destroyer plant under erection at Squantum, for war service only, and the Malden elevated extension of the Boston company is being carried forward. On most overhead line material deliveries are characterized as fair, say from three to four weeks, but insulators require four to five months. At present there appears to be little demand for rail bending, grinding or sawing machinery. Deliveries of three to four weeks are quoted on benders, and one to two weeks on rail braces. Spikes, bolts and joints require four or five months and demand is low at present. Prices on these appurtenances have risen from 50 to 75 per cent within a year.

In general, prices have undergone little change during the past month. The opinion is current that the top has been reached in most lines, and with a better understanding by the public of the cost and service equation the outlook should be more favorable for 1918.

Electrification After the War

National City Bank Expects It Will Be an Important Aid to the Economic Development of the Country

The bulletin for November of the National City Bank, devoted to economic conditions in this country, refers to the probable much greater use of electrical energy after the war as one of the important economic factors which will help then to make good the loss of capital and labor from the war, and will enable this country to take a long step toward the conservation of its natural resources. Some of the figures showing the saving on the Chicago, Milwaukee & St. Paul Railway, already published in this paper, are given, and C. A. Goodnow, F. H. Shepard, E. H. Sniffen, Samuel Insull and Thomas A. Edison are quoted on the advantages of supplying power from a central source instead of by numerous small units. According to Mr. Edison, it will be not many years before the public will hardly know what coal is. Its use will be segregated in vast power houses, and to the ordinary individual it will become a curiosity, as all users will obtain their light, power and heat from electrical distribution stations.

In the opinion of the National City Bank the vital problem at present is not how to divide up the production of to-day for consumption to-day but how to use the output of to-day to increase the production of to-morrow. This is the purpose to which all capital accumulations are put, whether they come from individual savings, accomplished by self-denial, or from profits in business. In the development of electric power the article sees an opportunity by which the world can put into effect new industrial economies. It quotes the fact that the development of the steam engine enabled England to withstand the cost of the wars with Napoleon and speedily enjoy a more widespread prosperity than the country had ever known before, and thinks there is good reason to believe that electricity can do now for this country what steam did then for England. Continuing it says:

"There is naturally a feeling of uncertainty and apprehension as to industrial conditions after the war. The demand for war materials will fall off, the supply of labor

on the market will be greatly increased, and it is a question whether all of this labor can be promptly placed in employment. It will be the most stupendous reorganization of industry ever known, and it is going to be a great social problem to accomplish this change without confusion, loss of confidence, and a period of stagnation. It is important that plans be laid on a large scale to take up the slack, and other countries are laying them.

"In this country, ready at hand, is the task of equipping the railroads, and other industries where practicable, to operate by electric power. The undertaking would involve an enormous amount of work and of many kinds. Hydro-electric plants would require in construction a great amount of labor, cement, steel and heavy machinery. The demand for copper would take the place of the war demand for that metal, and keep the copper mines busy. The demand for electrical equipment of all kinds, including locomotives, would be very great, for the enlargement of the facilities for supplying electric power would cause electricity to be more generally adopted for all the industries. The amount of work in sight, if a general scheme of electrification was undertaken, would be sufficient to relieve the business community of its fears as to idleness and poor trade for some years to come, and would thus encourage other enterprises to go ahead.

"The danger will be in a pervasive feeling of uncertainty, causing men to wait with their own plans until they can discern the general trend, and waiting of itself slows down business. Large plans for the employment of labor which can be brought definitely forward at the critical time will serve to inspire confidence and support the whole situation.

"The strength of the proposal is in the great amount of work of a semi-public character which it is possible to have done, and which would not only tide the country over the period of industrial uncertainty, but serve to put the country's industries upon a more economical basis permanently. Any reduction in the cost of power will strengthen the country's position in the competitive situation after the war. Every saving of this character will lessen the necessity for wage reductions after the war."

Statements of this kind, coming from the National City Bank, are most significant.

Apparent Shortage in Lamps Only Temporary

Investigation Reveals That, Although Stocks of
Standard Sizes Are Larger than Normal,
Local Pressure Is Very Acute

Reports of a shortage in lamps in certain sections of the country, particularly in the New England States and the Pacific Northwest, have led to a careful investigation. It appears that there is no valid reason for this unless it is transportation difficulties, and if stocks in the hands of the trade have been exhausted, as advices state, it is only a temporary condition and will soon right itself. An inquiry at one of the larger lamp works brought out the statement that present business is so heavy that no reserve stock in standard sizes can be accumulated.

On standard sizes of lamps there is also a 25 per cent increase in the specifications of jobbers and dealers over last year. The stock of lamps on hand with this manufacturer is on the whole the largest it ever has been and deliveries are being made in from three to four weeks. In some sizes deliveries can be made immediately, in others the delays vary.

Another manufacturer reports a very large stock in all its many warehouses in the standard sizes. One of its Eastern warehouses, in fact, asked that shipments be discontinued for a time as there was no more storage room available and the street was being utilized.

As a matter of fact, the lamp factories are in a strong position considering conditions, and stocks are relatively as ample as last year. The prohibition of lead in the manufacture of either bulbs or lamps is in no way acknowledged at this plant. While the quantity of the metal in the glass is so small as to appear almost infinitesimal, the base of the lamp contains 80 per cent lead, and it was stated lamps

cannot be made without it. Owing to the war some chemicals coming from Germany were shut off completely, but with lively work on the part of American chemists a domestic product was evolved, so that the glass-bulb factories will be independent of Europe for all future time.

If there is an apparent shortage in 25, 40, 50 and 60-watt lamps, it is ascribed to the acute pressure for these sizes at the army cantonments and naval bases. In the Pacific Northwest, owing to the enlarged shipyards and the increased number of lumber camps, in which the operations are not only greatly expanded but work is being carried on continuously, the stock of lamps in the hands of the local trade has doubtless been exhausted; but the manufacturers state that there is no reason for uneasiness. The shortage is temporary only. The method of keeping up stock with jobbers and dealers is such that any serious curtailments, as in these cases, is quickly looked after and the remedy applied.

To sum up, the supply is satisfactory. The trade is advised that in placing orders requirements should be anticipated as much as possible, at least three weeks in advance. Labor conditions, raw material and freight congestions should all be considered, in justice to the manufacturer. Agents, jobbers and dealers ought to know and should see that the records of the different types of lamps are properly assorted. So far no hoarding is reported, and the factories are prepared to prevent it if such an emergency arises.

Movement to Dispense with Trade Holiday Cards

Even if not for business, certainly for patriotic reasons in conserving the supply of materials and utilizing labor to the best advantage, many economies are finding their way into commerce. One of the latest, a movement started in Chicago, is to dispense with Christmas and New Year's business greetings this year.

Ordinarily several hundreds of thousands of dollars are spent each year by business houses and manufacturers in these seasonable greetings. The Chicago firms with whom the idea originated of breaking the custom this year have decided to contribute the money that they would ordinarily spend in this manner to the Red Cross or other relief organizations where it will do real service.

The saving in labor and materials, if a sufficient number of organizations follow this plan, will be considerable, in addition to lightening the burden on the post office. In this latter case the requirements of the National Army has reduced the number of employees seriously. Any way in which the burden on this smaller force can be lessened, especially at a time when the holiday rush is on, will help the delivery of more important mail.

Market for Badges, Numbers, Buttons, Caps, Etc.

With the departure of trainmen for military service an active market for badges, numbers, buttons, uniform caps, and similar paraphernalia was looked for. Manufacturers and suppliers in the East are not noticing any indications of an increased demand or even an unusual inquiry. Government orders are large, in cases taxing the capacity of the manufacturers. Prices have not changed recently, but may, without notice, according to conditions in metals. Business placed through official channels is taken care of so far as regards the supply of raw material by governmental provision.

Notwithstanding the pressure to fill the contracts awarded by the War Industries Board, deliveries to the regular trade are not delayed beyond three weeks or a month, as against a week or ten days in normal times. In common with other lines it is believed peak prices have been reached for material. Brass, an important item in this branch of the railway supply trade, has dropped a few cents a pound, and there are hopes of it going lower. Aluminum, another almost indispensable article, is higher but steady, a situation commented upon favorably.

ROLLING STOCK

Little Rock Railway & Electric Company, Little Rock, Ark., has purchased six second-hand cars.

Butler & Grove City Railway Company, Grove City, Pa., will be in the market for one and possibly two gasoline motor cars by Jan. 15 or sooner.

TRADE NOTES

H. F. Bardwell has been appointed district manager with offices at 30 Church Street, New York, N. Y., for the Vanadium-Alloys Steel Company of Pittsburgh and Latrobe, Pa.

National Railway Appliance Company, New York, N. Y., has been appointed representative of the Valley Steel Company, East St. Louis, Ill., for the Eastern and Southern territory.

Page & Hill Company, Minneapolis, Minn., announces that J. E. Lynch of its staff is at present acting as general superintendent of stores for the American International Shipbuilding Corporation at Philadelphia, and that it has added J. D. Milburn to its staff.

Arthur E. Allen, manager of the supply department in the district office of the Westinghouse Electric & Manufacturing Company, New York, N. Y., who is a Canadian, has resigned to join the Royal Engineers. His successor is Charles E. Stephens, formerly in charge of the illumination and rectifier section at East Pittsburgh, Pa.

Page Steel & Wire Company, Monessen, Pa., and Adrian, Mich., announces a change of corporate name from that of the Page Woven Wire Fence Company. The company has opened a branch office in Pittsburgh, Pa., at 644 Union Arcade, where E. C. Sattley, general manager, will be located; but correspondence for various departments should be addressed as heretofore.

George A. Paff, formerly superintendent of the rod and wire mills at the Aliquippa works of the Jones & Laughlin Steel Company, is now general superintendent at the Monessen works of the Page Steel & Wire Company. Mr. Paff served in the former capacity eight years and previously was superintendent for five years in the rod and wire mills at the Sharon works of the American Steel & Wire Company.

General Electric Company, Schenectady, N. Y., is publishing as a supplement to the *General Electric Review* for November a "Roll of Honor," giving the names of its employees who have entered the military or naval service of the United States as reported to the editors up to the time of going to press. The list occupies twelve pages and approximates about 120 names per page. The department occupied by the employee while with the General Electric Company and the branch of the service in which he is now engaged are mentioned.

Ford, Bacon & Davis, New York, N. Y., are giving special attention at present to the appraisal of industrial and other property, especially for the purpose of war tax returns. The war profit tax section of the war revenue bill just enacted by Congress requires the determination of invested capital, fixing not only the exemption of earnings but also the actual tax. The long experience of this firm with appraisals of all kinds and its trained staff of engineers, accountants and other technical experts seem peculiarly to fit it to make appraisals of industrial and other plants to meet the provisions of war tax legislation and for the usual commercial purposes.

New York Municipal Railway Corporation, Brooklyn, N. Y., the subway title of the Brooklyn Rapid Transit Company, is equipping its steel subway cars with the "Rico" sanitary steel car strap, manufactured and furnished by the Railway Improvement Company, New York, N. Y. The work of installation is under way in the Brooklyn company's shops, and the last of 1600, the first lot ordered, have been about delivered, and were used in fitting up forty cars—forty to each car. An additional order for 20,000 was placed, and these will be installed following their delivery, which will not be before March, 1918. Altogether 500 new cars are to be equipped, and later possibly 200 more. The cost of the "Rico" white porcelain enameled glazed hanger "straps" and that of their installation will be \$125 a car, a

total of \$62,500 for the equipment. The Public Service Commission for the First District of New York originally suggested the improvement and subsequently the application of the company to that effect was approved. There is a further possibility, it is reported, that the Brooklyn Rapid Transit Company's elevated railway system may be equipped in the same manner at a later day. New York Municipal Railway Corporation will install the Johnson fare box on the stations of its subway system when the section between Fourteenth and Forty-second Streets, New York, N. Y., is completed. It has been thought the construction work on the road and stations would be finished about the first of the year; possibly before. At any rate the National Railway Appliance Company, New York, with which the order was placed, will have the boxes ready for delivery and installation whenever the company is in a position to accept them.

NEW ADVERTISING LITERATURE

Utility Fittings Company, Philadelphia, Pa.: A resale sheet dated Oct. 1, 1917, descriptive of its approved ground clamps, is being distributed.

Crouse-Hinds Company, Syracuse, N. Y.: Bulletin 1D, describing the company's new safety panel and cabinet, will be forwarded to applicants free of charge.

Titanium Bronze Company, Inc., Niagara Falls, N. Y.: Illustrated pamphlet describing the properties and uses of the company's product, aluminum bronze.

Benjamin Electric Manufacturing Company, Chicago, Ill.: General catalog No. S-2, descriptive of Benjamin-Starrett panelboard cabinets, has been published by the company.

Worthington Pump & Machinery Corporation, New York, N. Y.: Snow oil pumps are illustrated and described in bulletin No. S-112, prepared by the Worthington company for trade use.

National City Bank, New York, N. Y.: "Property Rights and Trade Rivalries," an address delivered by George E. Roberts, assistant to the bank's president, reprinted for free distribution.

Chicago Flexible Shaft Company, Chicago, Ill.: The Stewart handy worker, a device which comprises drill press, a vise, pipe vise, anvil, metal cutter and a substantial three-speed machine, is illustrated and described in a folder distributed by the company.

NEW YORK METAL MARKET PRICES

	Oct. 31	Nov. 7
Prime Lake, cents per lb.....	23 1/2	23 1/2
Electrolytic, cents per lb.....	23 1/2	23 1/2
Copper wire base, cents per lb.....	31	31
Lead, cents per lb.....	5 3/4	6 1/4
Nickel, cents per lb.....	50	50
Spelter, cents per lb.....	8	7.87 1/2
Tin, Straits, cents per lb.....	66	68
Aluminum, 98 to 99 per cent, cents per lb.....	34	35

OLD METAL PRICES—NEW YORK

	Oct. 31	Nov. 7
Heavy copper, cents per lb.....	23 1/2	22
Light copper, cents per lb.....	20 1/2	19 1/2
Red brass, cents per lb.....	18	17 1/2
Yellow brass, cents per lb.....	16	16
Lead, heavy, cents per lb.....	7	4 3/4
Zinc, cents per lb.....	6	5 3/4
Steel car axles, Chicago, per net ton.....	\$41.00	\$41.00
Old carwheels, Chicago, per gross ton.....	\$27.00	\$28.00
Steel rails (scrap), Chicago, per gross ton.....	\$35.00	\$33.00
Steel rails (relaying), Chicago, per gross ton.....	\$55.00	\$55.00
Machine shop turnings, Chicago, per net ton.....	\$15.50	\$16.00

RAILWAY MATERIALS

	Oct. 31	Nov. 7
Rubber-covered wire base, New York, cents per lb.....	34-35	34
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.....	\$5.50	\$5.50
Railroad spikes, 9/16 in., Pittsburgh, per 100 lb..	\$5.50	\$5.50
Steel bars, Pittsburgh, per 100 lb.....	\$5.00	\$5.00
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.	\$7.55	\$5.80
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.....	\$5.85	\$4.85
Galvanized barbed wire, Pittsburgh, cents per lb.....	4.85	3.95
Galvanized wire, ordinary, Pittsburgh, cents per lb.....	4.65	4.35
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.....	\$2.65	\$2.65
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.17	\$1.18
Linseed oil (boiled, 5 bbl. lots), New York, per gal.....	\$1.19	\$1.20
White lead (100 lb. keg), New York, cents per gal.....	11	11
Turpentine (bbl. lots), New York, cents per gal..	54	54