

# Electric Railway Journal

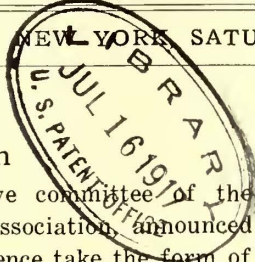
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Number 2

## A Conference Will Replace the Convention



THE decision of the executive committee of the American Electric Railway Association, announced last week, to have the fall conference take the form of an open meeting of the executive committee is undoubtedly the best solution of the existing situation. To those who can leave their work for a day of two it gives an opportunity to discuss national issues. At the same time, it permits the association to dispense with the election of officers and other business which would have to be transacted if an annual meeting were held. Obviously, it would hardly be suitable for important matters to be determined by those who could gather at a conference to last a day, or two at most. In view of these facts, we have decided that it would be appropriate for us to modify the form in which our usual "Convention Number" is published. Instead of a special number, we shall publish an enlarged regular issue somewhat similar in appearance to our maintenance issue. It will be dated Sept. 22. The special subject to be discussed in this number is how electric railway companies can best improve their service at a reduced cost. It will be a "More Service, Less Cost" issue, and we promise that for the interest of its contents it will equal or exceed any Convention Issue which we have published in previous years.

## Street Congestion Not an Ineradicable Evil

MANY persons have got into the habit of looking upon street congestion as a necessary evil of city life, but this should not be so. The fact that the large number of automobiles now in use has greatly increased this congestion during the last few years makes its prompt relief by vigorous action more important than ever before. We present this week the results of an extended study on this subject by F. W. Johnson, who describes several very practicable methods of ameliorating the conditions brought about by congestion in our city streets. In addition to these means of relief, two other reforms must be adopted. The first of these is that every occupant of the highway, the electric railways included, must so order their travel over it and stops on it as not unduly to interfere with its use by others. Much more in this direction can be done, provided strict traffic rules are passed and enforced, than most municipal officials realize. The largest cities in the country have been obliged to obtain relief in this way in their crowded avenues, but in the smaller cities much remains to be done. The second part of the program for making the

streets of the greatest use to the greatest number is to recognize the superior right on the highway of the electric car. The decision of the Pennsylvania Supreme Court on this point, quoted by Mr. Johnson, is founded on the broad principle of the convenience and accommodation of the public as a whole. Of this principle there should be greater recognition in other states.

## Employment of Women Involves No Concession

"EVEN if the staggering Russian republic can work a miracle and really get back into the war, every ounce of your country's strength will be necessary—supremely necessary—and after all is said and done, it is woman's work that will save you; just as it is saving us. The women here have been and are absolutely marvelous. Get your women interested, then instructed and generally introduced. Labor simply must co-operate, and labor must make concessions." We quote this excerpt from the letter of a correspondent in England, not only for the generous recognition of the English women's part in the war, but also because of the emphasis laid upon the implied opposition of labor to women workers which appears in the last sentence. In the United States this part of the problem of women's employment appears almost negligible. Two or three years ago, perhaps, labor might have granted a concession in admitting women to its ranks, because men might thus have been left unemployed. To-day, however, conditions are wholly changed, and jobs for every one are going begging. For labor to accept ungrudgingly the employment of women at tasks within the range of their physical ability is, therefore, by no means a concession; it is a patriotic duty, and we believe that American labor recognizes the fact. Especially is this true upon electric railways, where women conductors have been demonstrated, through British experience, to be equally as efficient as are men. For each woman conductor who fills a vacancy there is, in consequence, the saving of one man for work that can be performed only by men. To fill a vacant conductor's position with a man means in effect that some industry has been unnecessarily deprived of a man's services, and when that industry is such that it can be operated only by men the injury to the nation is just as definite as if the man had lost his life on the battlefield. Indeed, if there is any concession at all in connection with the employment of women conductors, it is not to be made by labor. Instead, it will be made by government if any men whatsoever are allowed virtually to intern themselves on the rear platforms of electric railway cars.

## A Word of Cheer to Electric Railway Men

THERE is no occasion for serious worry among electric railway men because the voice of unreason makes itself heard through the newspapers. It would, indeed, be a miracle if no strong opposition arose to an increase of fares from 5 to 6 cents. No matter how unanswerable your argument may be, there will be opposition both reasoning and unreasoning. To the reasoning and reasonable opposition you will make your argument with confidence.

The people as a whole are fair and stand for the square deal. To hold otherwise is to lack faith in the people, it is to argue against democracy itself. Democracy looks to the people for its last judgments. And this nation is unalterably committed by its position in this war to fundamental faith in the people. But while the voice of unreason will be heard, it will not control. The demagog of the press shall no more prevail in the long run than the demagog of the platform.

Thus far the applications made by the electric railways for an increase of fare have been received by the press in a spirit that is wholly satisfactory. Editorials have been generally to the effect that if the companies can prove their case, a readjustment of fares by the Public Service Commission must follow as a matter of justice and of duty, not only in the preservation of the companies from loss or even bankruptcy, but the preservation to the public of good service.

On the other hand there is the unreasoning critic, the kind well known everywhere, who opposes as an "outrage" anything that a public utility company proposes. Let us quote from an editorial of this type from one of the up-State New York papers:

The people of New York State are being skillfully doctored to meet with least resistance a proposal of public service corporations to raise their car fare to 6 cents. It is evident that the corporations are together on this plan and they are cleverly sounding out sentiment here and there and preparing, by unity of action, to inflict this outrage upon the public.

If the people of New York State submit to the introduction of the 6-cent fare as a general proposition they will submit to an infamous validation of crooked securities.

They will acquiesce in the doctrine that even if a road has been looted it shall be allowed to bleed the public in order that the plunder may be taxed out of straphangers.

They will virtually O.K. the plunder of the public through leased lines and disadvantageous contracts that benefit insiders.

(And so on in extra large type two columns wide, nearly a page deep.)

And this, mind you, before the companies had presented their case or the Public Service Commission had heard a line of testimony.

It is well worth while to reprint this as a type. But in our judgment anxiety over the ultimate effort of this sort of unreasoning, inflammatory diatribe is useless worry and time wasted. Abraham Lincoln's observation that "you cannot fool all of the people all of the time" is the basic truth that should hearten the railway man whose local paper subjects him to such an attack.

A newer conception of the function of public officials is obtaining. The function of a district attorney, for in-

stance, is not wholly to make a record of convictions but to assist the courts in doing justice and to guard the legal rights of all prisoners. The function of the public service commissioners is not limited to "protecting the people"; it is to preserve the fair relationship of both the public and the utility companies. To damage either is to harm both.

So with the press. It, too, has a public function, by reason of which it has a special status under the law. And it cannot be true to that function by assuming that the public utility company is always guilty. The outstanding phenomenon indeed in the recent history of the press is the growth in influence, power and prosperity of the responsible press. The day of the reptile press is a day that is gone. Let no one be dismayed by any other idea. "Truth is mighty and it shall prevail."

## When Does It Pay to Develop Water Power?

THE request of Secretary Franklin K. Lane that in the production of electrical energy water power be utilized as far as possible gives especial timeliness to the paper by H. St. Clair Putnam, delivered at the recent New York meeting of the A. I. E. E. While the appeal of his main argument was to the consulting engineer, he enunciated certain principles which should be understood by the railway manager or engineer who has developed or undeveloped water power available.

The problems which Mr. Putnam set for solution were these: To determine when the development of a water power will secure better results than the construction of a steam plant, and when it is better to develop the water power than to extend an existing steam plant. Without going into detail of the reasoning, his conclusions may be summarized as follows: Where a market for the power is available or can be created practically all water power should be developed beyond the minimum power available, and hence the plants require steam plants in connection with them. The development should be carried to the point where the best results can be obtained in combination with such steam plants. It is economical to develop water power farther as the operating costs of the steam plant are increased, and, in general, as the value of money decreases. The general tendency of the items entering into the operating cost of a steam plant is upward whereas that of the value of money is downward. The increase in the efficiency in steam turbines and the construction of steam plants at coal mines both operate to make it difficult to develop water power profitably, especially those with low head where the first cost is relatively high. The development of all possible water power should be encouraged both for the conservation of fuel supply and the economical advantage resulting from the use of power in industries. Hence the public should do everything to encourage power companies in this direction. Any policy under which additional burdens are imposed upon water power development is against the true interests of the public.

This summary brings the water-power situation right up to date. As we pointed out some weeks ago, there is a possible patriotic duty in the situation, also, which may dictate the use of water power even beyond the boundary of exact economics. This boundary should always be discerned clearly, however, even if it is deliberately overstepped in emergency. There is a fascination about water power which has caused many powers to be developed unprofitably. No one likes to see good power going to waste but, unfortunately, most water power is fluctuating in character and at the same time the unit investment cost involved is high compared with that in the steam plant. Again, the load factor of many loads is low, so that available power cannot be utilized effectively. In general a steam auxiliary is necessary as a source of reserve power as well as economy, and the hope for the future of water power lies in so operating it in connection with steam power as to produce an over-all maximum economic efficiency.

### Automatic Substations as Labor and Money Savers

**A**N annual saving in labor and energy cost of nearly \$1,600 in a single substation by the use of automatic control is sufficient to attract attention at any time, and particularly now when it is so difficult to make ends meet. This is the estimate of the result on an interurban line of the Milwaukee Electric Railway & Light Company. Better yet, the saving is largely produced by the liberation of two men for work on other service which cannot be done by mechanical devices. How the saving is being made is explained in detail in an article elsewhere in this issue. It is one of several which we have published by means of which the brief but promising history of the automatic substation can be traced.

The span of three years covers this history as far as the electric railway is concerned, and the progress made in this short time is surely creditable. Year before last we expressed our conviction, based upon observation of electrical apparatus and experience with it, that the technical difficulties in the way of making the automatic control operate properly could be overcome. The limitations in the way of its application were stated to be economic rather than technical. The opinions of the railways which have had occasion to consider and in some cases adopt the plan seems to have confirmed the accuracy of this view. In the substation described in this week's article, the complication of the equipment is greater than in previous automatics due to the use of two 600-volt rotaries in series to produce 1200 volts, but no insuperable difficulties were encountered, and as a practical matter the trick was turned simply enough. The electrical engineers will be pleased in following through the mazes of the circuit diagram which tells the story (to the initiated). The others will be interested in the method as a transportation matter, particularly with relation to a possible increase in the shrinking surplus.

### How the Association Should Help the Industry

**A**BULL'S-EYE shot! The letter in last week's issue from Leake Carraway, director of publicity Southern Public Utilities Company, Charlotte, N. C., certainly hit the mark when it showed the desirability of a publicity bureau for the American Electric Railway Association.

The present electric railway situation is not local; it is national. But the association, as a national organization, has not done all within its power to aid the railways. It has a duty to perform along the line of encouraging electric railway publicity and better public relations. There are many progressive companies whose publicity ideas are well developed and their public relations activities honest and sane. But there are other railways—too many, in fact—whose inertia in this regard needs to be overcome by the furnishing of not only inspiration but also concrete material from association headquarters.

At the last convention the committee on public relations proposed that a bureau on public relations be formed by the association, to have charge of the preparation and the distribution of absolutely authentic and attractively prepared information on public relations matters. The psychological time for that bureau is now. If it were in existence, how much it would mean to the industry!

As H. G. Bradlee stated in our issue of June 30, to meet successfully the present situation under war conditions and furnish satisfactory service to the public will require the combined ingenuity of all utilities. The employment of women, one-man car development, the raising of the load factor, the increasing of fares—these and other topics must be considered. The practicability of all such ideas ought to be thoroughly investigated by the association, and concrete data compiled for publicity use in the case of any railway. It is not enough for the association to stand ready to make an inquiry into any point raised by a company. It should be prepared not to get but to furnish information on the vital issues of the present situation, so that its assistance can be secured immediately when occasion arises.

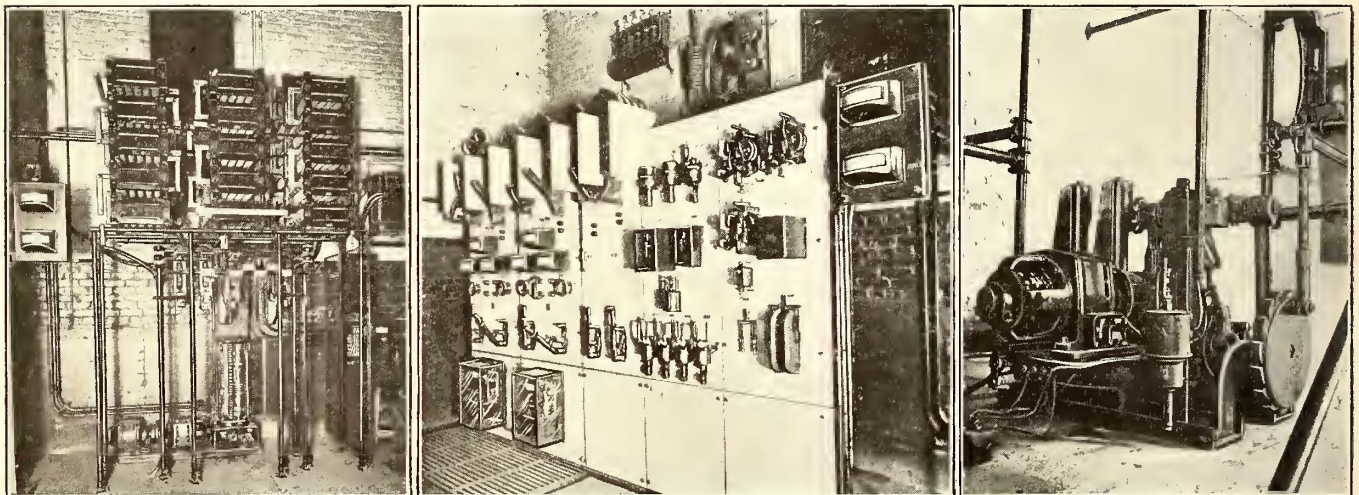
Without doubt an opportunity exists for constructive work by the association and co-operative work by the companies along such lines as above indicated. There has been too little leading by the association; too much individualism among some companies in the efforts to establish better public relations; too much of an attitude on the part of some that such work is good for the other man if he is energetic enough to do it. The association ought now to assume the initiative in regard to general publicity, so that no company will have any legitimate excuse for not taking definite steps to better its relations with the public. The association has a well developed and efficient bureau of information, as Secretary Burritt points out in a letter in this issue, but its means for popularizing this information are lacking.

# First Automatic 1200-Volt Substation

The Milwaukee Electric Railway & Light Company Has Installed Automatic Equipment in an Interurban Line Substation Which Controls Two Rotary Converters Operating in Series

ONE interurban division of The Milwaukee Electric Railway & Light Company lines connects Milwaukee and East Troy, with a branch line running from St. Martin, a mid-point on the line, to Burlington, Wis. The territory served encircles a number of beautiful lakes which attract a rather heavy week-end travel, but both Burlington and East Troy are small towns, and hence the traffic over the division is not sufficient to warrant better than two-hour service during most of the time. The Burlington car is operated on a shuttle service, connecting at St. Martin with the through Milwaukee-East Troy cars which also meet at this point. Thus three passenger cars are operated normally on the entire division. The distance from both East Troy and Burlington to St. Martin is approximately 20 miles, consequently with two-hour service there are con-

One set of these machines has been equipped with the General Electric automatic apparatus, and is now handling the load exclusively. The other set will be retained for the time being simply as a standby for use in case transformer or other trouble should make the automatic set inoperative. There is no necessity for retaining this set here and some consideration has been given to moving the two machines to a new location between present substations and operating them automatically there. This would make possible the removal of the 500,000-circ. mil.-equivalent aluminum feeder cable which now parallels the trolley over a considerable portion of the line. At present prices this feeder would much more than pay for the new station, but another consideration enters. The substation at East Troy is served by a single transmission line, and if this should fail for any



AUTOMATIC SUBSTATION—FIG. 1—MOTOR-GENERATOR SET, CONTROLLER DRUM, MAIN LINE GENERATORS AND LOAD RESISTANCE. FIG. 2—CONTROL RELAYS ON TWO SECTIONS OF SWITCHBOARD ADDED TO FORMER BOARD. FIG. 3—OIL SWITCH AND CONTROL RELAY. MANUAL SWITCH IS JUST ABOVE

siderable periods during which there is no car operating on either branch and no demand for power.

This condition gave rise to the consideration of automatic equipment in the substations supplying energy to this division, but the fact that it is a 1200-volt line introduced some complication. Three substations, located one at West Allis, 8 miles north of the St. Martin Junction, and one each at the ends of the lines at Burlington and East Troy, supply the division with power in addition to that received at the Milwaukee end of the line. Of these three, the one at East Troy was selected for the first installation of the automatic equipment since the West Allis and Burlington substations are also used for a rather extensive distribution of commercial energy in those vicinities and require attendants regardless of the railway equipment.

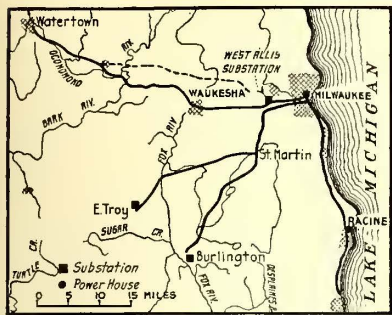
The East Troy station, built in 1910, is of brick and concrete construction, and for manual operation was equipped with four 300-kw. General Electric 25-cycle, 600-volt rotary converters, operating two in series.

reason and leave the East Troy end of the line without a source of power supply, this feeder would still make it possible to move the cars at the end of the line on the direct-current energy supplied from the West Allis and Burlington substations. With the feeder removed, however, it would not be possible to run the cars with the East Troy substation out, except that a new substation located as mentioned would possibly reduce the trolley voltage drop sufficiently so that there would still be enough power at the end of the line to move a car and gradually to bring it within the range of the next substation.

## REARRANGEMENTS MADE FOR AUTOMATIC OPERATION

Very little change in the substation arrangement for the automatic equipment was necessary. All of the hand-operated switches were left operative, so that in case of necessity the machines can be started and operated manually. The new solenoid-operated switches were simply paralleled with the old hand-operated switches,

which were moved to make room for the automatic starting contactor board seen in the photographs. Two sections of switchboard of the same type and style as the old board were added to accommodate the various control relays. The main oil switch controlling the incoming 13,200-volt high-tension line was changed from manual to automatic control and equipped with a mechanical permanent disconnect which operates in case of a heavy ground or short-circuit. A small motor-generator set completed the automatic installation. This provides the exciting current to control the polarity of the rotaries and also drive the control drum. The equipment also includes the main line contactors, the resistance grids, the bearing and resistance thermostats, the 5-kw., 13,200/220-volt transformer which supplies energy to the control equipment, etc.



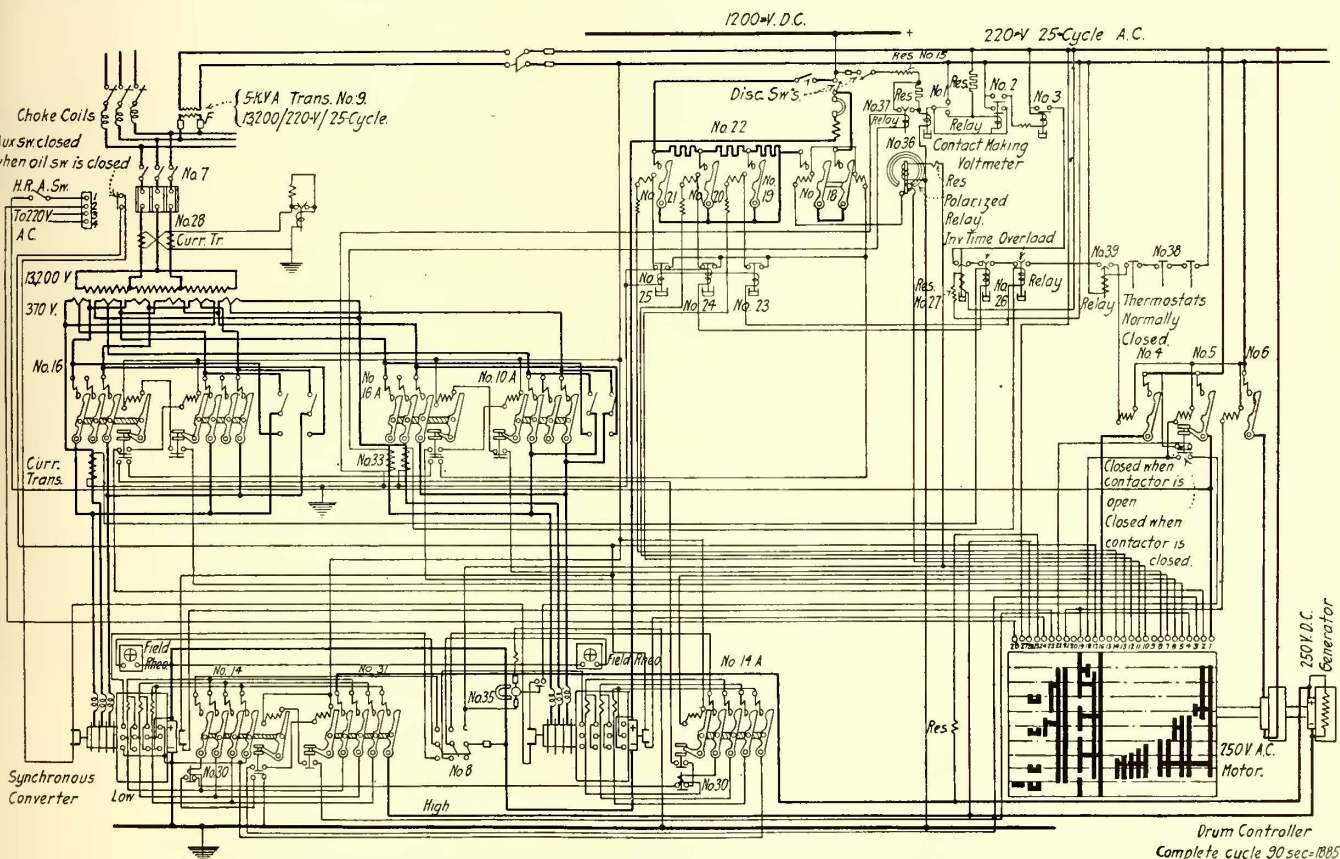
AUTOMATIC SUBSTATION. FIG. 4—MAP OF MILWAUKEE ELECTRIC RAILWAY & LIGHT COMPANY'S INTER-URBAN LINES

Although the steps in the operation of the ordinary single-machine automatic substation have already been

described in earlier issues of ELECTRIC RAILWAY JOURNAL, the sequence of operations in this two-machine automatic station will be of interest since the control involves many additional steps, although the theory and the equipment are the same except for expansion to cover the 1200-volt conditions. In general it may be said that a contact-making voltmeter cuts the machine in when the trolley voltage drops to 950. A current relay, which operates as the first step in shutting the rotary down, functions when the current drawn falls to 25 amp. A dash-pot relay, which keeps the machine on the line for a period after the moment the demand for current drops below 25 amp. in order that the ordinary passenger stop of a car will not shut down the rotary, is set in this station for five minutes and ten seconds. The time lag of the power supply behind the demand—that is, the time which elapses between the action of the contact-making voltmeter and the throwing of the converters on the line—is one minute and thirty seconds.

SEQUENCE OF OPERATIONS IN 1200-VOLT AUTOMATIC STATION

Beginning with the machines off the line, everything inside the station is dead except the small transformer which supplies energy to the control apparatus and the contact-making voltmeter which, of course, is always energized. When the voltage drops below 950, the contact-making voltmeter, marked No. 1 in Fig. 5, closes

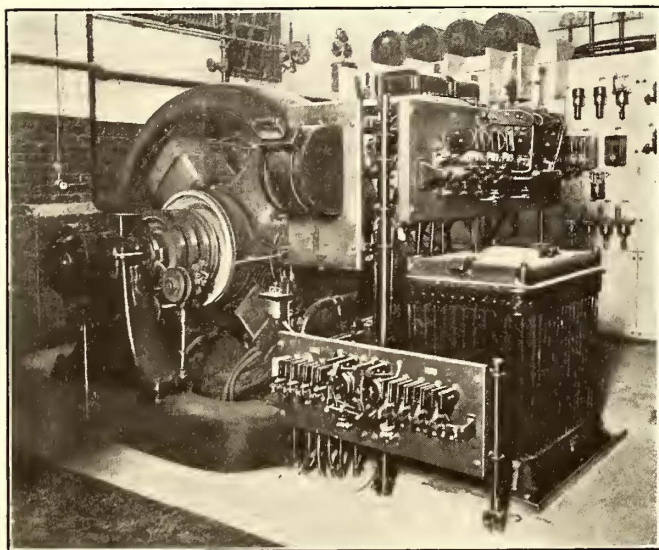


AUTOMATIC SUBSTATION FIG. 5—WIRING DIAGRAM OF 1200-VOLT AUTOMATIC CONTROL EQUIPMENT

Key to Diagram

- |   |   |  |
|---|---|--|
| 1. Contact-making voltmeter.                | 10. Triple-pole starting contactor, 500 amp.          | 22. Resistance boxes, 1.4 ohms.            |
| 2. Double-contact a.c. relay.               | 11. 300-kw., 600-volt rotary converter.               | 23, 24, 25. Instantaneous overload relays. |
| 3. Dash-potted a.c. relay.                  | 14. Four-pole a.c. contactor, 50 amp.                 | 26. Inverse time-limit overload relays.    |
| 4, 5, 6. A.c. contactor, 50 amp.            | 15. Resistance tubes.                                 | 27. A.c. low-voltage relays.               |
| 7. Oil switch.                              | 16. 500-amp. three-pole running contactor a.c.        | 28. Current transformers.                  |
| 8. Triple-pole double-throw switch, 50 amp. | 18, 19, 20, 21. 500-amp., 1200-volt, d.c. contactors. | 31. Four-pole field exciting contactor.    |
| 9. 5-kva. 13,200/220-volt transformer.      |   | 35. D.c. reverse relays.                   |

a circuit through the double-contact relay, No. 2. This in turn completes the circuit through the dash-pot relay, No. 3, which provides the time lag holding the machine on the line for five minutes after the demand for current falls below 25 amp. This third relay is called the master relay, since it really determines whether the machine shall be kept on the line or cut off. With No. 3 relay circuit closed, a circuit is completed through the low-voltage relay which cuts the machines off the line whenever the high-tension voltage drops so that on the 220-volt side of the control-apparatus transformer the voltage has fallen to 180. It also includes two overload relays, one for each machine. No. 39 relay is also connected in this same circuit and is held in the closed position by virtue of a separate circuit off the 220-volt bus, which includes the four thermostats, located on the bearings of the two machines and the two thermostats on the main resistance grids. If any of the thermostats opens the circuit, this de-energizes the No. 39 relay and



AUTOMATIC SUBSTATION—FIG. 6—STARTING AND RUNNING CONTACTOR BOARD ABOVE MACHINE, REACTANCE AND FIELD-CIRCUIT CONTACTORS AT BOTTOM OF PHOTOGRAPH

hence cuts the machines off the line. With No. 39 relay and the previously mentioned relays closed, contactor switch No. 4 is energized and closed, supplying energy to the lower half of the main controller drum. As soon as energy is supplied to the drum, the No. 19 finger completes the circuit through the No. 6 contactor. This closes and energizes the small induction motor which is connected to the controller drum through worm and gear and direct-connected to the small 250-volt direct-current exciting generator. The drum then begins to revolve, and from then on all operations of the apparatus are controlled from this point. The several operations are so timed by virtue of the construction of the drum that each step is given time to complete its function before the circuit operating the next step is completed. The No. 18 finger on the drum is the first to make contact after the drum begins to rotate. This closes a circuit through the No. 5 contactor, which in turn closes the 220-volt circuit to the top half of the drum, and also an auxiliary circuit through all the overspeed cut-outs on the rotaries, the auxiliary control on the main oil switch and the reverse-current relay.

When fingers Nos. 1 and 2 make contact on the drum, the half-voltage-tap contactor on the ground-side rotary

converter is closed. While the machine is coming up to speed, the drum continues to revolve until the No. 3 finger makes contact and closes a circuit through a contactor which puts current from the small direct-current generator having a fixed polarity through the field of the rotary. This current is supplied just long enough to determine the correct polarity of the converter, when it is disconnected and the main field switch of the machine closed, making it self-excited. This occurs at the same time the half-voltage contactor switch is thrown out and the full-voltage contactor thrown in. These last two contactors are mechanically and electrically interlocked and cannot be connected at the same time. The first machine at this point is operating at synchronous speed, and almost instantaneously with the closing of the full-voltage contactor on the first machine, the half-voltage contactor on the second machine is closed. The same process then follows through for bringing the second machine up to speed, except that its field is energized from the armature of the first machine. This is done because it makes it impossible for the second machine to polarize in the wrong direction and because it eliminates one field contactor. The field of the second machine is continuously excited from the first machine in order to limit the maximum pressure in the field coils of the second machine to 600 volts. If it operated under self-excitation the maximum voltage in the field coils would be 1200. With both machines up to synchronous speed, the last fingers on the controller close the main line contactors, throwing the machines on the line through resistance, which is then cut out by contactors in three successive steps at about one-second intervals.

When the current demand is below 25 amp. the current relay drops, short-circuiting the resistance in series with the contact-making voltmeter coil. This allows the voltmeter to take the lower position, short-circuiting No. 2 relay and allowing No. 3 relay to drop. The latter is retarded by its dash pot and does not break contact for the period of five minutes and ten seconds. When this finally opens, all relays are de-energized and the station is completely cut off back of the transformers at the main oil switch.

#### PROTECTION FOR AUTOMATIC CONTROL

The operation of the automatic substation is protected against practically any trouble which might occur. In the first place, in starting up the machines and placing them on the line, if at any step in the operation the apparatus does not function, it is impossible for the next step to occur. Bearing thermostats on both of the machines set at 80 deg. C. will cut the machines off the line whenever the bearing temperature exceeds this setting. When the bearings have cooled down below this limit, the thermostats will make contact and the machines will again come in on the line, the cycle being repeated until the trouble is corrected. Three overload relays protect the machines against gradual overload. The first one of these is set at 500 amp., which is the full-load rating, and the other two have higher settings. As each cuts out, it cuts resistance in series with the trolley circuit and thus limits the load. If an overload continues, a thermostat placed on the resistance grid and set at 60 deg. C. will cut the station out when the temperature there has exceeded this setting. A reverse-current relay on the direct-current side will shut the

station down in case of machine trouble or opening of the alternating-current line. The low-voltage relay cuts the station out in case the high-tension voltage drops seriously or is interrupted. If the low-voltage relay should not work, in this instance the reverse-current relay mounted on one of the machines, as seen in Fig. 7, would cut the station out. If there was an open circuit in the converter fields, the relays in the field circuits would open the circuit through the No. 18 contactor and the machine could not be thrown on the line, but would be cut off instead. After the machines are on the line, if the field circuit should open up in any way the machines would tend to run away and the overspeed devices would cut out the entire station. The control apparatus would then start to cut them in again, but could not get beyond the step in trouble. If the small direct-current generator should for some reason fail to excite the converter field, and the latter come up with the wrong polarity, the polarized relay would prevent the machine from being thrown onto the line. If the small generator failed and the rotary came up to speed with the right polarity, the operation would then go on and it would be thrown onto the line. In case of a dead "short" on the trolley, the overload trip onto the main oil switch would operate and would not come in again under automatic operation, because opening the oil switch from this source also opens a mechanically operated switch, Fig. 7, which can be closed only by hand. An overload relay connected in the alternating-current side of each converter is simply a check on the thermostat relay on the resistance grids. These also take care of the case where a gradual overload may not be severe enough to open the main oil switch, but too heavy to wait for the thermostatic cut-out to operate.

SAVING REALIZED FROM AUTOMATIC OPERATION

The first cars over the East Troy division leave the opposite ends of the line at Milwaukee and East Troy at 6.15 and 6.20 o'clock respectively, and a two-hourly service is maintained thereafter until 8.20 p. m. The next and last cars leave at both ends at 11 p. m., the last car arriving at East Troy at 1.05 a. m. From this time until the first car in the morning the substation would be shut down under either manual or automatic operation.

When a car leaves East Troy for Milwaukee the automatic substation remains on the line for a period of approximately forty-five minutes, or until the car has reached a point approximately 16 miles from the substation. This is under normal traffic conditions with no other cars on the line. From the time a car leaves this point until the car from Milwaukee arrives at this point, which is approximately thirty minutes, the automatic substation is off the line. The cars then lay over at the East Troy end of the line for approximately thirty minutes, during which time the automatic again cuts out. As a result there is a total of approximately seven hours during the day that the automatic substation is cut out under normal conditions on the line when it would be running under manual operation. Since the automatic substation has been in operation considerable track work has been going on on this division, and the work trains operating have kept the substation on the line a good share of the time, so that it has been impossible to get any accurate figures of the energy saving which would be made under normal

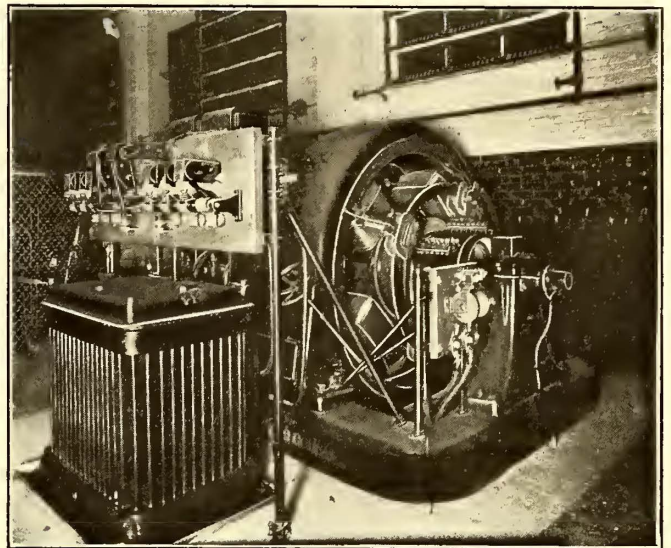
traffic conditions. However, the following estimate is considered to represent a close approximation of the savings, the principal factor being the elimination of two operators:

	Manual	Automatic
Operating labor .....	\$1,367.89	\$240.00
Supplies and expenses.....	241.26	61.56
Maintenance substation and transformer equipment .....	336.16	489.09
	\$1,945.31	\$790.65
Saving .....		\$1,154.66

Automatic substation off line seven hours a day more than the manually-operated station.  
 40 kw. assumed as no-load loss for two 300-kw. rotaries.  
 $40 \times 7 \times 365 = 102,200$  kw.-hr. yearly energy saving.  
 $102,200 \times \$0.006 = \$613.20$  saving in energy cost.  
 $\$613.20 + \$1,154.66 = \$1,767.86^*$  yearly saving.

\*This does not take into account the energy saving due to elimination of the iron and copper transformer losses which are also off the line seven hours a day additional to what they would be with manual operation. Nor does it include the energy saving in line losses during this additional seven hours of no energy flow over the high-tension line.

In the first item under "operating expenses" the \$240 charged against the automatic substation for labor is



AUTOMATIC SUBSTATION—FIG. 7—REVERSE-CURRENT RELAY AND BEARING THERMOSTAT ON SECOND MACHINE

made up from a small part of the time of a man who handles the express and baggage for the company and any line trouble occurring in the vicinity of East Troy. He is also available for any trouble which may occur in the substation. The third item covering "maintenance of the substation and transformer equipment" is higher for the automatic station than for the manual operation, since the equipment for lighting and commercial energy in this substation must be inspected and cared for by a traveling inspector, whereas under manual operation this was taken care of by the station operator but the cost is kept in a separate account.

The Boston Elevated Railway is mentioned in the annual report of Franklin Union as one of the companies having very large numbers of students at this young and vigorous industrial educational institution. The report shows that Franklin Union has completed nine seasons of instruction, and in that just closed gave instruction to 2056 different individuals at an expense of \$43,761.40. The school is supported largely by the Franklin Foundation, consisting of funds bequeathed to the city of Boston by Benjamin Franklin.

# The How and Why of Publicity

Every Publicity Effort Should Be Frank, Candid and Responsible—Chief Media Electric Railways Should Use in Present Momentous Situation

By IVY L. LEE

A FEW days ago one of the Washington newspapers published an advertisement evidently inserted by the Roumanian Commission to this country. The advertisement had no signature, and one would not have known that it was an advertisement if it had not been in display type and had not contained a lot of unnecessary verbiage which any intelligent copyreader would have cut out. It was clearly inserted because the news columns of the several days previous had failed to give as complete accounts of the reception of this Roumanian Commission as the commissioners felt was due the importance of their errand. They, therefore, worded their advertisement to read as if the newspaper itself were inserting it as a news article. The expressions, "We have learned" and "We shall not fail to advise our readers," were clearly used to give the readers such an idea.

The foregoing is a method of how *not* to do publicity. One of the fundamentals of any attempt at publicity must be to make it responsible. Any statement made to the public through the press should show clearly from whom the statement comes. If it is a statement on behalf of interested parties, the public should know clearly the source of the inspiration. If the public reaction from the article is then favorable, it redounds to the merit and the credit of the responsible party. If the public reaction is not favorable, the responsible source has at least been frank and deserves credit for its policy at least in that respect.

Some corporations are accustomed to prepare statements for the press as if the publication itself prepared the article. Of course, there may be times when it is worth while and perfectly legitimate to assist a newspaper in preparing its own matter. Anything said on behalf of a particular corporation or inspired by it, however, should in the interests of frankness and responsibility show its source.

It is also a very dangerous thing to issue articles to the press for publication when they are in the nature of comment upon the action or policy of the corporation giving out such statements. Comment should be made by the publication itself or by the public. The corporation should confine itself to telling what it has done and why it has done it.

## HOW ELECTRIC RAILWAYS SHOULD TELL THEIR STORY

These remarks are particularly pertinent at a time when electric railways of the country are likely to be telling their story of why their system of fares should be revised. Every statement put out to the public in any locality should be upon the definite responsibility of the company that is seeking to influence public opinion. The company should make it clear to the public that its purpose is to tell its own story and the whys

and wherefores of its action. The company must prove its case.

This applies not only to newspaper statements but also to every form of publicity. Many people believe that the beginning and the end of publicity is in the newspapers. But the newspaper, while still supreme, is growing relatively less important each day. This is not because of any fault with the newspaper, but simply because so many other media of publicity are being developed. Moreover, the demand upon newspaper columns is so great that it is impossible through that means to reach the whole public with every important proposition which should be brought to public attention.

Every company which seeks frequently to bring its affairs to public notice should develop a mailing list of prominent citizens in its community, to whom direct statements on important subjects should be sent. The affairs of a public utility are not always exciting, and it is frequently difficult to give them that touch of original interest which Billy Sunday gives to any subject that he tackles. But if these are subjects which should be carefully considered by thoughtful people, and if responsible statements are made to representative citizens directly, tersely and attractively, they will be read and will receive careful consideration by many.

A great many companies neglect great publicity possibilities embodied in the issuance of their annual or even monthly reports. Such reports offer excellent opportunities to add a large amount of comment and interesting operating data that is likely to be read at such a time, whereas it might be considered gratuitous on other occasions. The report of the American Telegraph & Telephone Company in this respect is one after which all public utility corporations might well model their policies.

The great possibilities in car cards and in posters placed in the windows of cars are well known but seldom developed with infinite care. Probably these are the most direct and effective means of reaching the constituencies of electric railways. Nobody can avoid reading these cards or posters, and if they are changed with sufficient frequency they can be made a constantly increasing source of valuable information and education.

Every company should issue some sort of company publication, to serve as a medium of communication to its own employees, to its patrons and to the general public. In this way the company makes itself articulate and speaks with an authoritative voice to the whole community in which it operates. These company publications can be made most effective media of communication to the press, to commercial organizations, public service commissions and public authorities gen-



erally, as well as to the public at large. Some companies, notably the Bay State Street Railway, the Wells Fargo Express Company and other corporations, both local and national in their scope, are now using such publications upon a fine plane to the great advantage of the companies themselves and the people that are reached thereby.

Public utility companies are just beginning to realize the value of the moving picture. There is a moving picture which tells the news of the day, and there is another moving picture which relates stories and jokes. But up to now the moving picture which corresponds to the advertisement department of the newspaper has not yet been highly developed, and the audience for it has not yet been cultivated. There is a field here the enormous importance of which will undoubtedly receive increasing attention.

#### ELECTRIC RAILWAYS ARE AT THE PARTING OF THE WAYS

The foregoing are the principal media of communication with the public. Of these, and all other methods of reaching the people, the electric railway industry should undertake steps to make use. The industry, as I analyze it, is at the parting of the ways. It will be able in the next year or two to put itself on a basis where it can command private capital and thus continue to operate in accordance with the progress of the art and to the satisfaction of the communities it serves. If this does not happen, municipal and government ownership of electric transportation agencies cannot but be inevitable.

The people should be made to see clearly the overwhelming advantages of the present service and the present system of ownership and operation. Unless the people are made to understand this clearly from their own point of view, they certainly will not decide the issue merely with reference to the prosperity and the convenience of corporations conducting electric railways.

The public has made up its mind apparently that it will not permit great speculative profits to continue to be made from public service properties. Such profits as will be made in this line of enterprise in the future will be based upon efficiency and ability of management. If the public can be induced to encourage private capital by permitting it to retain the reward of its initiative and enterprise, the electric railway industry can be saved.

The experience with government and municipal operation generally shows that the ultimate cost to the public of most of such operations is really greater than would be the case with private management and ownership, honestly and efficiently conducted. But that is the keynote of the whole matter and should form the basis for all public education.

This article has indicated what should be the main policy underlying the plan of publicity which electric railways should now develop, and it has also directed attention to the chief media which should be employed. But most vital of all is the feature indicated at the beginning: that every effort of this kind should be quite frankly and candidly put forth and should, above all else, have behind it the absolute responsibility of the person or company on whose behalf the work is done.

## Taxing Public Utilities

Franchise Taxes Should Be Avoided in States Where Policy of Regulation Has Been Adopted

A RECENT issue of *The Public*, "an international magazine of fundamental democracy" devoted to single tax and similar economic subjects, contains an article on "The Taxation of Public Utilities" by Morton G. Lloyd. In particularly discussing the usual inclusion of franchises with land values in single-tax campaigns, Mr. Lloyd says that if taxation is to be utilized to take for the public all the value which it gives to a utility franchise by its use of the utility, the tax must be high enough to absorb entirely the income representing this value. Otherwise it fails of its object.

But franchises, Mr. Lloyd states, like land titles, acquire value from their present or prospective ability to collect a toll from industry. If this power is definitely removed, the franchise loses value. Its taxation becomes unnecessary from the standpoint of conserving publicly created values for public use, and may even become objectionable. And the machinery for depriving franchises of value is already available, for the power to fix rates and service is the power to give values to franchise or to withhold such values.

In Mr. Lloyd's opinion, the rational attitude of the government in regulating a utility is to authorize rates for service which will provide revenue for reasonable operating expenses, depreciation and a return upon all necessary investment of capital. If there are no additional profits to be distributed, there will be no franchise value to tax. It thus rests with the regulating power to determine the existence of tolls which give franchises their value. Recognizing this, the framers of some of the state utility laws have included express stipulations that no allowance shall be made in rate-making for the value of franchises other than expenses actually incurred in securing them. Even then, however, when commission decisions are taken before courts for review, claims may be made that franchise values actually exist and will be confiscated unless recognized. Franchise taxes give color to such claims, and as under regulation they are passed on to the consumer and fail of their purpose, it would be better, Mr. Lloyd avers, to avoid them altogether in states where the policy of regulation has been adopted.

As to proper utility taxes, Mr. Lloyd suggests:

"The proper basis of taxation for utility corporations would seem to be the same as for other industries—the exemption of personal property and improvements and the imposition of a tax rate upon site values which shall absorb the economic rent. As temporary measures pending the attainment of this idea, it may be desirable to tax easements on public lands, as in Houston. Where rates are not regulated, it may be especially desirable to impose other taxes, such as one upon gross receipts or net profits, but it is best that this should not take the form of a franchise tax."

On April 12 St. Joseph, Mo., celebrated her third annual trolley day. From 6 a. m. until 11 p. m. the Federation of Women's Clubs collected fares on the cars of the St. Joseph Railway, Light, Heat & Power Company. After 11 o'clock the federation received all the money taken in above the average day's receipts. This sum amounted to \$431.80.

# Beginning the Freight Business Right

The Cleveland, Southwestern & Columbus Railway Entered Upon This Branch of Transportation in a Big Way—Rates Higher Than Those Charged by Steam Roads Justified by Quick Service—Co-operation of Merchants Made Venture Successful from the Start

FOR several years the Cleveland Chamber of Commerce had been working with the Cleveland, Southwestern & Columbus Railway in an effort to induce the company to take up a general carload and package freight business over its lines, but not until late in 1916 did this seem feasible owing to various physical limitations, and to certain ordinance provisions which hampered the hauling of freight cars through the streets of Cleveland. These obstacles were finally reduced sufficiently, however, so that E. F. Schneider, general manager, was able to see how such business might be made a profitable supplement to his passenger traffic which was showing the inroad of the automobile. The physical property was accordingly made ready on the Southern division of the road, and on Monday, Oct. 2, 1916, the new freight service was inaugurated and two carloads, 40,000 lb., of merchandise hauled on the initial day.

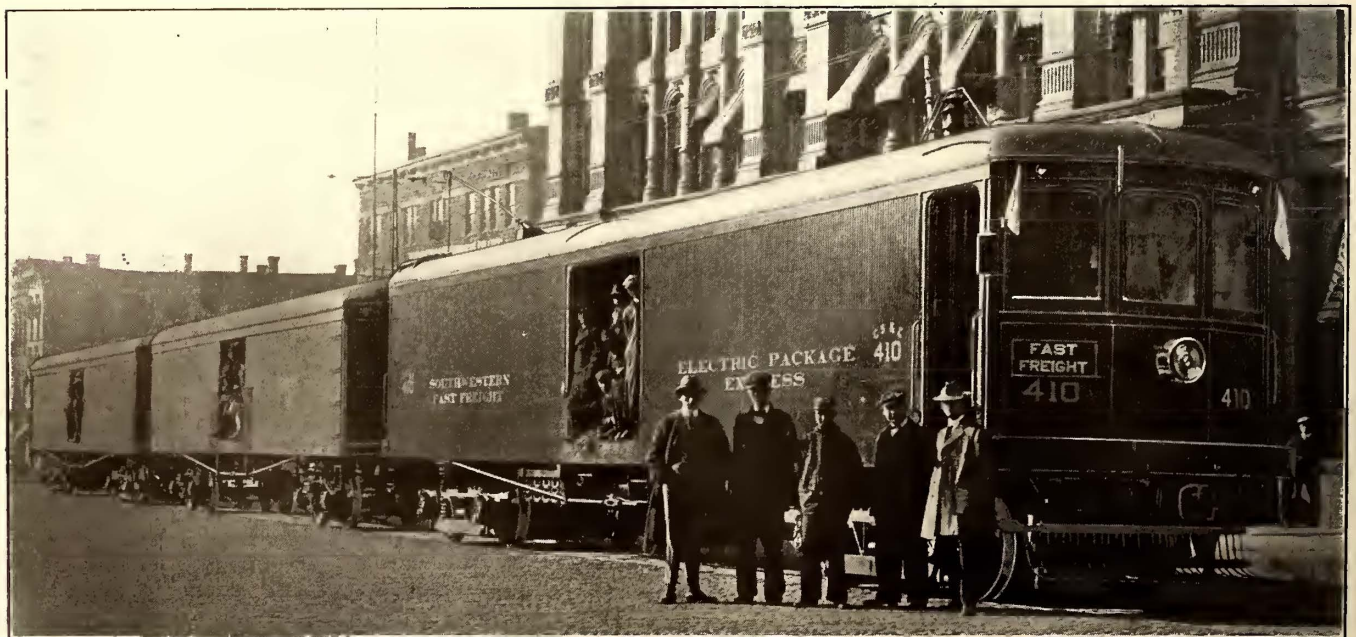
Previous to this, a committee of twenty-five members of the Chamber of Commerce, comprising the wholesale merchants and manufacturers, made a two weeks' booster tour of the lines of this company, stopping at all the principal towns, addressing the local trade boards and, in general, enlisting the interest of the smaller-town merchants and selling them the service which the electric line was able to give to the various shippers through this territory. This co-operation of the Cleveland business men started the ball rolling, after which the consistent "better service" and the constant solicitation of the traffic department of the company resulted in a 50 per cent increase monthly for the first few months. More recently Mr. Schneider has

been scouring the country for additional freight equipment—good evidence of continued growth and expectation for even greater profits ahead. With all the difficulties which usually accompany the beginning of a new service and the trouble met in getting the routine for it working smoothly, the freight claims during the first three months of this freight service amounted to 0.43 per cent of the gross.

## OVER-NIGHT DELIVERY THE SLOGAN

One of the principal features of the inauguration of freight service on the Cleveland, Southwestern & Columbus line is the fact that the tariff was made approximately 25 per cent higher than the steam railway rates. This is justified by the very fast service which the company is able to give. And it has been found that the merchants were perfectly willing to pay the premium for this prompt shipment. Any package or carload business received at any point on the line by closing time in the afternoon is delivered at its destination point when daylight arrives the following morning. Compare this with the steam road service from Cleveland to Bucyrus, the southernmost terminal of the electric line, for instance, which requires anywhere from one and one-half to four and one-half days. Similar comparisons might be made for all other towns on the electric line, and this of course is the feature which induces the Cleveland wholesalers to ship and the smaller center dealers to specify shipment via the C., S. & C. Railway.

The regular freight schedule includes two trains each way over the division every day, the principal freight



DEVELOPING FREIGHT—THREE-CAR FAST-FREIGHT TRAIN ON CLEVELAND STREET



DEVELOPING FREIGHT—ASHLAND FREIGHT HOUSE. TYPICAL OF THOSE ON LINE



DEVELOPING FREIGHT—INTERIOR VIEW OF CLEVELAND FREIGHT HOUSE

movement being at night in order to avoid having the several car trains on the Cleveland streets during the daytime when traffic is heavy. A morning train leaves Cleveland at 5 o'clock and makes local deliveries over the division to Seville, which is a junction point for a branch line running to Wooster, and then continues on to this destination. Returning, this equipment leaves Wooster at 12.01 p. m., picking up local freight all the way into Cleveland, where it arrives at 3.50 o'clock in the afternoon.

The other train out of Cleveland handles the longer-haul shipments on the line to Bucyrus. It leaves at 7 p. m. and runs through to Seville and makes the local deliveries from there on to Bucyrus. Not more than three cars can be hauled through the Cleveland streets, but four and five-car trains are operated after reaching the city limits. Under normal traffic on the way south, a car is sent off at Ashland and one at Mansfield, and the third goes on through to Bucyrus. It is due there at 2.50 a. m. and then lies over, unloading and loading for the return trip at 5.20 that afternoon, picking up the Ashland and Mansfield cars en route and arriving in Cleveland at 2.30 the following morning. The through trains between Bucyrus and Cleveland meet at West Salem and the crews exchange trains and go back so that they are home every night.

The Southwestern line tariff has been made up to include forty-nine different carload commodities, and interchange arrangements have been completed with four steam lines at eight points. Further interchange is planned later on when the agents have become thor-

oughly familiar with the local business. No l.c.l. interchange with the steam lines has as yet been attempted.

FREIGHT HAULING EQUIPMENT

Five motor freight cars, six box car trailers and a few flats and gondolas, constitute the present equipment available for handling freight on this 115-mile

**The Cleveland, Southwestern & Columbus Railway Co.**

**ROUTING ORDER**

\_\_\_\_\_ 19\_\_

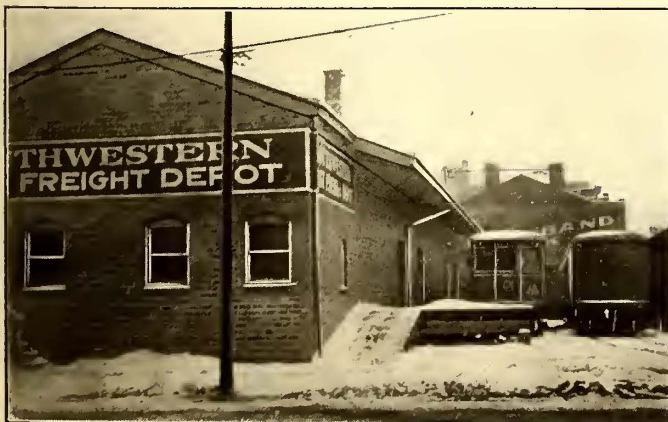
To.....

Kindly ship all goods consigned to us, **BY FREIGHT**, via  
**The Cleveland, Southwestern & Columbus Railway.**

Yours very truly,

DEVELOPING FREIGHT—ROUTING ORDER USED FOR ENCOURAGING BUSINESS

division of the railway, although other cars are under construction in the company shops at Elyria. The box cars are all 50 ft. long and built with automobile doors in the ends. They are of semi-steel construction and are built to standard M. C. B. dimensions.



DEVELOPING FREIGHT—TWO SIDES OF CLEVELAND FREIGHT HOUSE

The Cleveland Southwestern & Columbus Ry. Co.

SOLICITOR'S DAILY REPORT

Bucyrus, O., Station, Dec. 8th, 1916.

CHAS. J. LANEY, Traffic Manager,  
Cleveland, Ohio.

Dear Sir:—

The following is a report of soliciting for above date:—

Firm Called On	Person Interviewed	Remarks
Smith's Pharmacy	Mr. Smith	Explained in detail below.
Brown Bros.	Mr. Brown	Everything satisfactory.
Reed's Groc.	Mr. Reed	Explained in detail below.
Callahan Bros.	Mr. Callahan	Everything satisfactory.
C. E. Glass Groc.	Mr. Glass	Likes service, but had two fine bunches of bananas smashed and ruined.
Home Groc. Co.	Mr. Smith.	Geo. John advised these people to use our service and he is using it exclusively.

Mr. Smith has been buying goods in New York and Columbus for thirty years and does not feel that he wants to change now.

The same reason as above applies to Reed's Groc.

D. S. JOHNSTON.

DEVELOPING FREIGHT—TYPICAL SOLICITOR'S REPORT SHEET REPRODUCED IN TYPE

Some thirteen freight depots were built at Cleveland, Medinah, Seville, Wooster, Lodi, West Salem, Ashland, Mansfield, Crestline, Bucyrus, Gallion, Beroy, Berea, etc. Except for the more important ones, these freight houses are of frame construction and range in size from 18 ft. x 36 ft. at Lodi to 20 ft. x 110 ft. at Mansfield and 36 ft. x 140 ft. at Cleveland. They are all located close to the heart of the city they serve and are placed on a siding just off the main line. They all have a 6-ft. loading platform, an incline for loading stock, 5-ton Fairbanks automatic scales and standard four-wheel and two-wheel platform trucks.

The Cleveland station is located at the corner of Eagle and Ninth Streets, which is only three blocks from the corner of Euclid Avenue and Ninth Street, one of the most congested corners in Cleveland. This station, like the freight house at Mansfield, is constructed of hollow tile and brick, with an office at the front. The team way is on one side and the car tracks on the other. A single-track siding off the Ninth Street car line branches into two tracks beside the freight house and gives space for setting five cars for loading.

The Cleveland Southwestern & Columbus Railway Company

TRAFFIC DEPARTMENT  
525 GARFIELD BLDG.

Cleveland, Ohio.

Gentlemen:—

Since starting the Freight Business on the Southern Division of our road, we have maintained the Fast Schedule placed in operation October 1st, 1916, in fact not in one single instance have we failed to make delivery as advertised.

Realizing that this one feature of our new departure has appealed to your needs, we wish to take this opportunity in thanking you for your patronage.

While it is our intention to keep right on giving you the benefit of our excellent service, it is also our desire to increase our shipments, and this can only be done by asking for more of your business.

We think this is the opportune time to advise you that our capacity is unlimited and that we can accept all Classes of Freight the same as any steam road. We are governed by the same Official Classification, our cars are all 50 feet in length and equipped with end doors for the loading of long articles.

We are prepared to handle all of your shipments in an efficient manner.

Remember the QUALITY of our SERVICE demands the QUANTITY of your business.

Very respectfully yours,  
Traffic Manager.

CJL-GT

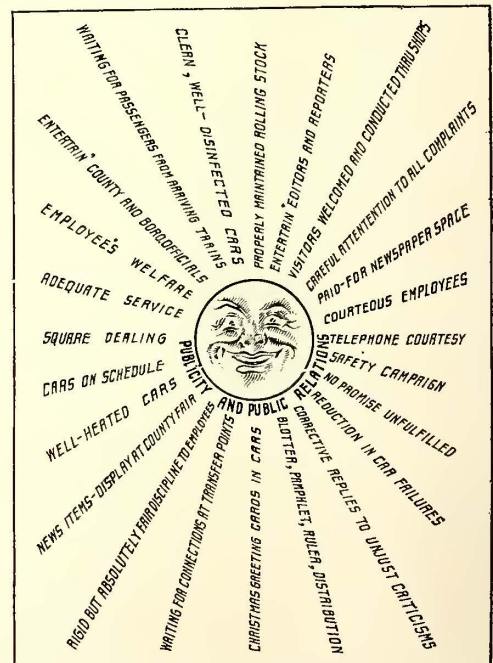
DEVELOPING FREIGHT—SAMPLE LETTER SENT OUT SOLICITING PATRONAGE

The principal effort devoted to increasing the freight traffic of the Southwestern line has been exerted through personal solicitation. Calls are made on present and prospective customers by a solicitor giving all his time to this work. A daily report sheet sent in to the traffic manager gives the names of the firms called on and just a brief remark as to the result of the inquiry and solicitation. Any complaint of the service is noted and steps are taken to correct this as soon as the notice reaches the traffic manager. A typical report sheet is reproduced herewith. By giving close personal attention to any dissatisfaction in the early days of the service, it was possible to eliminate promptly some of the deficiencies of the service and thus hold every customer once gained.

In addition to this personal solicitation, a series of letters was sent to prospective customers and present customers calling attention to the success the company has met with in maintaining its over-night service as advertised and asking for more business. Routing order blanks and stickers for pasting on packages to direct their shipment over the Southwestern line are supplied to all the shippers and consignees. A small amount of advertising was also carried in the newspapers during the early period of the service. But the principal aid in securing for the electric line a goodly share of the freight traffic in the territory served was the interest of the Cleveland wholesalers and manufacturers and the service rendered.

How to Secure Better Public Relations

An enterprising electric railway—whose intelligence in fostering better public relations is inversely proportional to its smallness in size—has devised the accom-



A GRAPHIC PROGRAM FOR BETTER PUBLIC RELATIONS

panying diagram to present its ideas of the best means of promoting better relations between railways and the public. Some of the rays, it is said, may be more effulgent than others, but all of them give some light. The diagram as a whole may well be the subject of study on the part of many an electric railway official.

# The Problem of Vehicular Interference

The Author Points Out the Loss to the General Public Through Avoidable Delays Caused by Vehicular Interference and Advocates an Effort by Electric Railways to Bring About a Better Understanding of the Principle Underlying the Public Utilities' Superior Rights

By FREDERICK W. JOHNSON

THE day would seem not far distant when an energetic effort will have to be put forth to disentangle the surface railway systems of our larger cities from the throttling effects of slow-going vehicular travel. It is perhaps no exaggeration to say that, unless a practicable solution is found for certain of the more pressing phases of the evil, some of the functions of the surface railway may pass, in part at least, to other mediums of travel more responsive to the requirements of our admittedly intensive mode of living.

One of the most pronounced characteristics of our national temperament is to be observed in a seemingly insatiable demand for speed in almost everything which enters into the conduct of our daily life. The remarkable popularity of the recent jitney invasion is a good example of the case in point. For a time many professed to believe that the strength of this movement rested upon the novelty of riding about town in an automobile. Nothing else could have been further from the fact. Approximately 50 per cent of the charm of the jitney lay in the fact that one was generally available for immediate use. About 40 per cent lay in the fact that few stops were made en route, while not to exceed 10 per cent found its root in the novelty of the situation. All of the great disadvantages of the service were lost to the popular mind in its unyielding quest for rapid transportation. One were worse than blind to shut his eyes upon so illuminating an insight into the transportation horizon of the future.

## HANDICAPS IN PROVIDING SERVICE

Of several serious handicaps with which surface railways have had to contend in their effort to meet the popular demand for rapid and uninterrupted service, none has proved so difficult of solution or so demoralizing in its influences as has the wide latitude allowed the individuals in the use of public highways. Municipal authorities have been slow to recognize the almost intolerable consequences of a too lax regulation of vehicular street traffic, and where independence of action by individuals is carried to its logical conclusion the public is placed in the position of standing in its own light. Sooner or later the privileges and conveniences of the individual must be subordinated, in some measure at least, to the rights and conveniences of the great number. Certain it is that the great army of trolley patrons will not always be content to abide the pleasure of the individual who chooses to conduct himself in his own peculiar ways, even if this does happen to obstruct the flow of the public travel. Herein, it is to be observed, lies the key to the situation, because in the final analysis it is to the people themselves that appeal must be made for the originating power and authority which they alone possess.

Under the broad hypothesis that the popular demand

is for rapid and dependable transportation, that it is both the duty and the desire of the utility to comply with this obligation, and that the chief obstacle to its fulfillment centers in the perpetual encroachment of vehicular travel upon the common right of way, it may be well to examine in some detail the various elements which enter into the problem. In addressing the subject it will here be treated purely as an operating proposition, disregarding for the moment any serious consideration of the safety factor, although the cause of the latter must appreciably be advanced by any resulting good that may accrue to the former. Many of the points cited, perhaps most of them, will instinctively suggest their own remedies without extended comment, and while not all will be found to apply to any given situation, some at least may prove helpful or suggestive. Turning first to the more common types of avoidable traffic delays, there are encountered such old stand-bys as (a) the practice of dragging cars, (b) obstructive curb deliveries, (c) horse watering troughs, (d) vehicles parked too close to the track, (e) collisions caused by drivers cutting across the path of moving cars, (f) holding the rail at intersections, (g) moving excessively heavy objects during the daytime, (h) overloading of vehicles by truckmen during bad weather, (i) push-carts so located as to divert vehicular traffic to the car tracks, and (j) bucking directional traffic.

In the aggregate these causes of delay offer sufficient material for the most energetic kind of missionary work. Many lesser evils will automatically be eliminated once encouraging progress is achieved in the solution of those of a more acute nature. Banish the long-cherished theory that the individual traveler on the highways is a law unto himself and substitute in its stead the more equitable axiom of "the greatest good to the greatest number," and much that now seems difficult of accomplishment will speedily be accepted by the public mind as being both reasonable and just.

## RESULTS OF TRAFFIC INTERRUPTIONS

The immediate results of serious traffic interruptions may be summarized briefly as public dissatisfaction with the service and press criticism, which arise from disturbed schedules, irregular spacing of cars, missed connections and congestion at transfer points and terminals. In addition, there is an effect upon receipts and an increased accident hazard due to fast operation, while not infrequently there are power overloads.

It is one of the peculiarities of the business that, following a blockade, the very cars which should be turned short of their customary destination at the earliest possible moment invariably are so well filled that it is impossible to do so without still further incurring the displeasure of patrons. Again, unless strategically located line cuts are available, it may even happen that

a goodly portion of the service of the line affected may be proceeding in the reverse direction to the demands of travel, particularly if the delay has occurred during or immediately preceding the rush-hour period. Instances are of record in almost every city where the most elaborate preparation for the handling of special events have been hopelessly disorganized because of untimely intervention of some occurrence of this nature.

There are yet other forms of avoidable traffic delays which would appear to be susceptible of successful attack. The present situation in the business world has resulted in the requisitioning of almost everything at all available in the shape of rolling stock and horseflesh. Quite naturally this has returned to active duty much that had once been relegated to the scrap heap as being unserviceable. Such a condition must inevitably bring about an abnormally high percentage of failures and breakdowns upon the public highways. Long-neglected paving defects, also, often intensify a situation already sufficiently troublesome. In particular, steam shovels and concrete mixers are a problem, instances having occurred where an entire section of a city has been deprived of transportation because of the maneuvering of such equipment into excavations that abut the rails or because it has been jammed beneath bridges with insufficient clearance or has been brought in contact with the overhead construction. Rigid regulation of the routes to be followed and of the hours during which cumbersome objects may be moved, preferably late at night, would seem to be the only practical solution of this menace to public travel.

The pernicious custom of using the car tracks as a driveway reaches its greatest height in cities where the track gage conforms to the wagon gage and where the rail is of a type that lends itself readily to the practice. Thus, the plan of using asphalt or wooden blocks for the shoulders and Belgian blocks for the space between the rails dovetails nicely with the average driver's conception of the real purposes for which car tracks were originally designed. Wooden block is the most treacherous and the most dangerous pavement that a city can lay, and for this reason it is the least to be desired upon car-tracked streets, because of the frequent blocking of the cars by fallen horses, stalled loads and skidding automobiles. On bridges, approaches and grades, where difficulty is encountered incident to drivers that follow the rails, gratifying results have attended the scheme of sanding the cartway as a means to attract vehicles from the track when there is snow or ice upon the ground.

Street excavations that abut on car tracks have long been a thorn in the side of the transportation man. At best such excavations necessarily divert all traffic to the car tracks. Therefore, wherever feasible, it would seem the thought of wisdom for city authorities to detour vehicular traffic over paralleling thoroughfare, provided such detouring will not produce undue congestion upon other car-tracked streets.

The adequate safeguarding of highway excavations at night is of sufficient importance to railway companies to warrant their checking up at close intervals upon the methods pursued by contractors. Blind approaches formed by huge piles of building material upon the highway are yet another menace that requires close scrutiny because of the danger of vehicular collisions and consequent interruption of service. Not only should the

railway itself avoid opening intersections in congested areas at times inconsistent with the best interests of the transportation department, but it should as well so place its equipment and materials as to offer the least possible obstruction to the normal flow of vehicular and pedestrian travel.

#### RIGHTS OF THE PUBLIC UTILITY ARE SUPERIOR

In general, the conflicting rights of all may be better served if a clearer and more thorough understanding be established in regard to rights of each. There is a middle ground upon which all may meet, and it would seem distinctly within the province of the railway to take the initiative in bringing about an understanding of this fact.

Without seeking to involve the chief controlling issue in an entangling maze of legal decisions, it may be permissible to quote the following excerpt from the opinion rendered from the Pennsylvania Supreme Court in 1892, not only because of its vision and clarity of thought, but also because of its peculiarly fitting application to precisely the same state of affairs a quarter of a century later. The italics are the author's:

"There is this distinction to be observed between steam railroads and street railways. In the case of the former, they have exclusive right to the use of their tracks at all times and for all purposes, except at road crossings. Street railways have not this exclusive right. Their tracks are used in common by the street cars and the traveling public. While this common use is conceded, and is unavoidable in towns and cities, the railway companies and the public have not equal rights. *Those of railway companies are superior.* Their cars have the right of way, and it is the duty of the citizens, where on foot or in vehicles, to give unobstructed passage to the cars. This results from two reasons: First, the fact that the car cannot turn out, or leave its track, and secondly, for the *convenience and accommodation of the public.* These companies have been chartered for the reasons in part, at least, that they are a public accommodation. The convenience of an individual who seeks to cross one of their tracks must give way to the convenience of the public. It would be unreasonable that a carload of passengers should be delayed by the unnecessary obstruction of the track by a passing vehicle."

A powerful incentive to action is bound up in these few lines, because through them we glimpse conditions as they should be and as they ultimately must be if the future of the street railway is to rest secure. It is idle for any community to permit a small minority of its residents thus to frustrate the demands of the whole by denying to its servant the opportunity of complying with them. But to this end there must be a real demand from the public itself for the enactment of wise legislation governing street traffic and an insistence for its rigid and impartial enforcement.

In the recent Liberty Loan campaign the Doherty organization purchased \$1,250,000 of the bonds and aided the campaign still further by financing Ruth Law's airplane trip in the Middle West to stimulate the bond sales. In addition to the above the directors of the Cities Service Company, at a meeting held in the office of Henry L. Doherty & Company on June 20, voted to create a fund of \$250,000 for the American Red Cross.

## New York Line Secures Increase

Desired Relief Granted by New York Second District Commission to Nassau County Lines of New York & North Shore Traction Company

WITH commendable promptness the Public Service Commission for the Second District of New York has granted in full the various increases in fare which the New York & North Shore Traction Company petitioned for its lines in Nassau County. The last hearing on the matter was held on June 15, and the decision was rendered on June 26. The company has applied also for a 7-cent fare in Queens Borough, New York City, under the jurisdiction of the First District Commission, and its application for relief is scheduled to be taken up by this commission on July 16.

In 1915 the company applied for permission to increase its fare from 10 cents to 15 cents between Port Washington and Mineola, but in view of certain franchise restrictions the commission decided that it did not have authority to fix a higher rate. After some time this determination was reversed (175 App. Div. 869) by the Appellate Division, Third Department, as noted in the *ELECTRIC RAILWAY JOURNAL* of Feb. 3, 1917, page 210. Accordingly, on May 23, 1917, the company applied for the authorization of a fare of 20 cents for a continuous ride between the city line (Little Neck) and Mineola, and also between Port Washington and Mineola, and 12 cents for a continuous ride between Mineola and Hicksville.

The company contended that while it was giving more service than was required by its franchise, this was necessary for the convenience of the public, and it would be a hardship if the service were decreased. The territory in Nassau County is very sparsely settled, and there has been little or no development there since the railway was built. The increased use of the automobile has caused a very substantial decrease in the earnings of the company in the last two years. Because of the small earnings, the company has not been able to keep the roadbed and equipment up to the proper standard. Moreover, it has not earned enough to enable it to set aside a proper amount for depreciation. For the years ended June 30, 1915 and 1916, the company earned \$2,111 and \$2,032 over fixed charges. No dividends were paid to stockholders during these years. For the ten months ended April 30, 1917, the deficit after paying fixed charges was \$7,093. For the eleven months ended May 31, 1917, the deficit was more than \$8,900, as compared to a net income of about \$1,500 the year before.

In its opinion the commission states that it is very apparent from the evidence that the company is failing to earn its bond interest, and from the commission's knowledge of conditions this state of affairs may continue for a considerable period. Particularly is this true if the company makes any effort to keep the property in reasonably good operating condition, and also endeavors to provide any depreciation reserve. On the assumption that the company has invested in the public service at least \$1,599,350, which is the amount represented by \$770,000 of bonds and \$829,350 of stock authorized by the First District Commission (which has jurisdiction in the matter), it will be seen that the company would have to earn at least \$79,967 to give a return of only 5 per cent on this valuation. This makes no provision for depreciation reserve and allows noth-

ing for surplus and a reserve for contingencies. The commission states, however, that the company never earned even such an amount during the last five years, the maximum being approximately \$49,500 in the year ended June 30, 1915.

The commission concludes, therefore, that the proposed increases, which are estimated to bring in approximately \$8,850 of additional revenue per annum, are not unreasonable or unjust. The commission has approved certain revised fare zones, four in number, at 5 cents each, between Mineola and Port Washington and likewise between Mineola and the city line (Little Neck). The distances will be in the first place 2.32 miles, 2.38 miles, 2.54 miles and 3.25 miles, or a total without overlaps of 9.69 miles for a continuous 20-cent ride; and in the second place 2.60 miles, 3.27 miles, 2.54 miles and 3.25 miles, or a total without overlaps of 10.16 miles for a continuous 20-cent ride. Between Mineola and Hicksville there will be two zones of 3.74 miles and 4.09 miles at 6 cents each, or a total without overlaps of 6.77 miles for a continuous 12-cent ride.

## Recruiting Car in the Wyoming Valley

The Wilkes-Barre (Pa.) Railway Recently Aided in a Successful Campaign for Army Recruits

WHEN President Wilson made his recent appeal for 70,000 recruits for the United States army, the Wilkes-Barre Railway Company immediately undertook to equip and furnish to the recruiting officers a portable recruiting station that could be used at any point on the 135 miles of railway comprising the company's system in the Wyoming Valley of eastern Pennsylvania. The equipment consists of a standard trolley car fitted up inside to serve as an office and provided with exterior



RECRUITING CAR FURNISHED BY WILKES-BARRE RAILWAY TO STIMULATE ENLISTMENTS

decorations as shown in the accompanying cut. This car was widely advertised and was regularly scheduled to reach the various towns touched by the company's lines at specified dates. Frequently music was furnished by volunteer bands, and at each point prominent representatives of the locality made patriotic speeches, the car then being thrown open to receive applications from recruits. The car was accompanied by regular army recruiting officers, who occupied it at all times and made verbal appeals for enlistments, and as a result a large number of young men have signed for the various services.

## Better Public Relations for London

Reorganization of Municipal Tramway System Provides for New Development and Publicity Section—British Technical Press Lauds “Great and Intelligent” Public Relations Work of American Companies

THE London (England) County Council, in adopting the proposal of its highways committee to include a development and publicity section in the reorganized London tramway system, has made an enlightened departure in British municipal tramway management. As stated in a preliminary notice in the “London Letter” in the *ELECTRIC RAILWAY JOURNAL* of April 7, it is planned that the existing ten sections of the London County Council Tramways shall be merged in five departments—traffic, electrical, rolling stock, permanent way and general. The traffic branch is to have a development and publicity section, the highways committee being of the opinion that more newspaper advertising and publicity work generally would be advantageous.

### WHY THE TRAFFIC BRANCH SHOULD BE REORGANIZED

From the full report of the highways committee now available, it can be seen what an important part development and publicity work is to play under the new plan of organization for the great municipal tramway system in London. In the opinion of this committee, it is vitally necessary for a most efficient staff to be furnished to deal with all traffic matters. It is felt that the organization should be sensitive to every change, actual or prospective, whether in relation to the requirements of the traveling public or to traffic conditions generally.

Under the old organization, the traffic assistant and the two district superintendents, while rendering most zealous service, were compelled under pressure of circumstances to devote too much time and attention to matters of daily routine. Through want of a staff capable of relieving them of such work, they were unable to spend sufficient time on the road or to compile and study returns of traffic with a view to its improvement. The highways committee, therefore, arrived at the conclusion that the work of the traffic branch should be reorganized in two sections: (1) A development and publicity section, to deal with matters which have not hitherto received adequate attention, and (2) an operation section.

### PROPOSED DEVELOPMENT WORK

According to the highways committee, the requirements of the public and the possibilities of the tramways undergo constant change, owing to growth and migration of population, growth and decadence of shopping and industrial centers, and other causes of alteration in the flow of passenger traffic. All such changes must be catered to and, if possible, anticipated, and it will be a primary duty of the development and publicity section to obtain the necessary data on which action should be based. Moreover, it is realized, the London tramways have to compete for traffic with other means of transit, and the development of the undertaking on successful lines must to a considerable extent depend on constant and well-directed effort to adjust the services to public needs. Such matters as through-running,

through-booking, interconnection with other undertakings, nature and adequacy of services, fares and fare zones should be dealt with in this section as matters of development.

### PUBLICITY WORK IS DEEMED IMPORTANT

The highways committee attaches equal importance to the publicity work to be undertaken in the development and publicity section. In 1913 a firm of advertising contractors offered to advertise the Council's tramways at a cost, roughly calculated, of \$115,000 a year. In the following year an advertising scheme involving the expenditure of about \$30,000 a year was submitted by another firm. These offers were not accepted. The chief officer of the tramways is now of the opinion that to advertise the service adequately would involve the expenditure of from \$75,000 to \$100,000 a year. While not wishing to prejudge the question of the amount which should properly be appropriated for publicity service, the highways committee is satisfied that, apart from other forms of publicity, greater use should be made of the press as a means of conveying to the public the advantages peculiar to the tramways service. Newspaper articles should be encouraged and suitable matter prepared; new and altered services should be advertised in the press, and attractive tramway maps and guides should be distributed.

It is felt that the preparation of time tables should also be undertaken in the development and publicity section. To enable this work to be done scientifically and with the fullest regard for the requirements of the public and the possibilities of the service, the head of this section should be furnished by the head of the operation section with all traffic data and statistical information required.

The adopted plan provides for a principal officer (directly responsible to the traffic manager) to be designated as the “development superintendent,” at a salary from \$2,500 to \$4,000 a year. He should have under him at least three responsible heads of subsections: (1) a publicity assistant (from \$1,500 to \$2,000 a year); (2) an officer in charge of matters relating to fares and independent traffic checks (from \$1,500 to \$2,000 a year), and (3) a time table assistant (from \$1,250 to \$1,500 a year).

### OPERATION SECTION IS EXPECTED TO CO-OPERATE

The other or operation section of the traffic branch, under the immediate and close supervision of the traffic manager, would be in effect the present traffic section, with its work of giving service, inquiring into complaints, etc., making special traffic checks, and preparing statistical and other information likely to assist in securing the most satisfactory results in connection with traffic operation. There should be, it is said, a smooth channel of communication of statistics and information from this section to the development and publicity section.

### HOW THE BRITISH TECHNICAL PRESS VIEWS THE CHANGE

In commenting upon the foregoing features of the reorganization, the *Electric Railway and Tramway Journal* states that hitherto British tramways have been too self-contained and too reticent as regards both their merits and their faults. Continuing, this paper says:

“In this respect we have lagged far behind the street



railways of the United States of America, where the companies which control those undertakings have for some time past paid great and intelligent attention to their relations with the public. It may be that in this country, where the majority of the tramways are owned and operated by the municipalities themselves, there has grown up a feeling that if the tramways committee and the manager satisfy the Town Council and make the undertaking pay, they have done all that can be expected from them. But we venture to think that this idea is not well-founded, and that the tramway undertaking should make the public its partner by taking it into its confidence at all times, in the same way the successful store does.

"A clever publicity man would always find ways and means of keeping his undertaking in pleasing evidence. He would talk to the people through the local newspapers, point out the pretty spots reached by the cars, apologize for any delays which might arise through storms, snow or breakdowns, let parties now and then see the power station and its wonders, invite the press to witness the night work at the sheds, and in a hundred other ways make the public feel that they are 'in it' and not headed off as nuisances and foolish grumblers.

"In London much of this sort of thing has been done and is being done by the Underground Electric Railways and the London General Omnibus Company, with excellent results for those concerns. As the London County Council Tramways are 'up against' these ably-managed undertakings, they must adopt a similar policy and try to do it better than their rivals."

### Progress of New York Fare Hearings

**In Whole State the Week Has Been Generally One of Adjournment for Hearings on Increased Fares**

As stated in last week's issue the chief topic of discussion at the first hearing on July 6 before the Public Service Commission for the Second District of New York on the application of twenty-eight electric railways for a 6-cent fare was the procedure to be followed in presenting the cases. The question was also raised, however, as to whether the commission has power to increase fares in spite of old maximum rate statutes and provisions in certain local franchises. This question was taken under consideration by the commission, and the hearing was adjourned until July 13 at Albany.

In the First District, New York City, the hearing scheduled for July 9 on the application of the Third Avenue Railway for a 2-cent transfer charge was adjourned until July 23 in order to allow the company to finish the preparation of certain operating and valuation data desired by the commission and the city. The commission announced that it hopes to take a recess during August, and the beginning of the New York Railways and Brooklyn Rapid Transit Company hearings in regard to a transfer charge was postponed until Sept. 10.

The beginning of the hearings on the applications of the Staten Island Midland Railway and the Richmond Light & Railroad Company has been adjourned until July 16. These companies, which control the surface lines on Staten Island, have asked for a 6-cent fare.

### Red Cross Cars on the Pacific Coast

Contributions to Red Cross Fund Stimulated by San Francisco-Oakland Terminal Railroad and Puget Sound Company

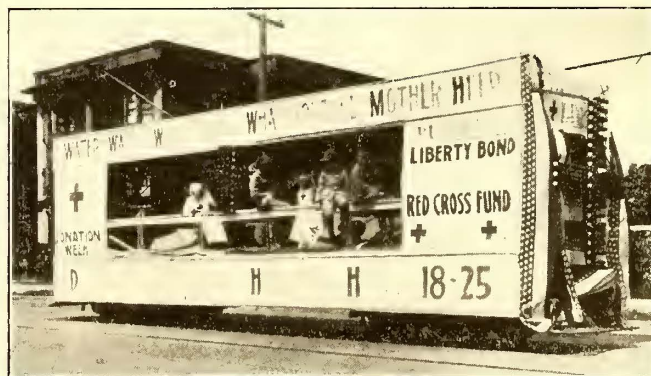
DURING the recent campaign for contributions to the national fund of the American Red Cross the San Francisco-Oakland Terminal Railroad operated in the city of Oakland a car that was especially fitted up to aid the movement. The car, which was provided with huge signs as shown in the accompanying illustration, was operated daily over the company's tracks in the



RED CROSS CAR OPERATED BY SAN FRANCISCO-OAKLAND TERMINAL RAILROAD

downtown district of Oakland, and, as was to be expected from the publicity thus given to the campaign, the results were immediate. One of Oakland's business men, after seeing the car pass his office, telephoned to Red Cross headquarters to ask how large a subscription would be accepted and, when told that there was no limit, sent in \$300. He said that he had never given serious thought to the matter of the activities of the Red Cross organization until this car attracted his attention.

In the lower of the illustrations there is reproduced a Red Cross car that was operated by the Puget Sound Traction, Light & Power Company, Seattle, Wash., over its lines in that city during the week of June 18-25, in the interest of the campaign to obtain \$300,000 in Seattle for the Red Cross. It may be interesting to



RED CROSS CAR DONATED BY PUGET SOUND TRACTION, LIGHT & POWER COMPANY

note that Seattle exceeded its apportionment of \$300,000 by more than \$200,000. The car is a work car with open sides and a cab at each end. It is 34 ft. long and 8 ft. 8 in. wide. The signs on the car were devised by the Red Cross organization without regard for the feelings of those subject to the forthcoming draft.

## COMMUNICATIONS

### Determining "Slack" in a Schedule

STONE & WEBSTER

BOSTON, MASS., July 3, 1917.

To the Editors:

The paper by C. H. Koehler on "Determining the 'Slack' in a Schedule," appearing in the *ELECTRIC RAILWAY JOURNAL* of June 16, 1917, suggests very interesting possibilities of further refinements in the making and adjusting of electric railway schedules. Far too little attention has heretofore been given to the determination of efficient speeds to fit widely varying traffic conditions during different hours of the day, resulting often in adherence to fixed schedules, too fast for heavy traffic and inefficiently slow for light traffic. Mr. Koehler's paper points out with commendable clearness and conciseness the applicability of car recording watt-hour meter records to such schedule studies.

The application is not, however, so simple as it at first appears. The paper prescribes a certain field within which efficient operations, expressed in co-ordinates of schedule speed and power consumption, should lie. If without this field, it is either inefficient or else physically impossible. This field is shown in Fig. 2 of the paper, being the area inclosed within so-called "performance" curves and extreme "equivalent-service" curves.

It should be pointed out that the curves shown apply only to a particular type of equipment with a constant loaded car weight and assume for all traffic conditions a high rate of acceleration and braking. The last assumption implies effective training of motormen in car operation, and is, even then, difficult of realization under ordinary conditions. The car meters referred to have been quite extensively used to effect economy in power consumption, and this economy is very largely brought about by increasing the prevailing rates of acceleration and braking. With meter records of motormen's performance showing frequent variations of 25 per cent or more in kilowatt-hours per car-mile for similar service conditions, aside from the differences necessarily arising from traffic fluctuations, it would seem desirable to study the possible effect of individual efficiencies upon the performance area which Mr. Koehler has developed before applying it to definite traffic and schedule problems.

It is a simple matter to produce other curves, similar to Fig. 2 in the paper, for other rates of acceleration and braking, ranging from 1.25 m.p.h.p.s. (the minimum rate specified by Mr. Koehler) up to, say, 2.5 m.p.h.p.s., the latter rate being in use on certain light-weight, one-man cars with perfect comfort and safety.

It is not likely that there should be any change in the maximum performance curve with varying rates of acceleration and braking, the limit being set by the characteristics of the particular equipment, which are, of course, independent of the efficiency of power application. On the other hand, it would seem that the curve of most efficient performance would be affected by varying rates of acceleration and braking to an extent that is worth consideration. This curve is derived from Fig. 3, which shows combined power and platform labor

costs for different schedule speeds. If acceleration is greatly increased the result is either slightly less power consumption for the same schedule speed or a slightly higher speed for the same consumption. Assuming the latter, we have the same efficiency curves in Fig. 3 as before, but they apply to slightly altered "equivalent service" curves—higher for increased acceleration. The effect would be to shift the curve of most economical performance in Fig. 2 to the right for higher rates of acceleration and to the left for lower rates, giving respectively a narrower and wider performance area. No calculations have been made to show the extent of the effect of varying acceleration rates upon the width of the performance area.

As Mr. Koehler states, the effect is small within the ranges in acceleration encountered in actual practice. But, unfortunately, it is this side of the performance area which needs most careful designation. The opposite side automatically discloses itself in practice by disorganized schedules. The side indicating maximum economy does not reveal itself in any such way, and it would be interesting to see the results of a further study of the effect (if this is real rather than only apparent) of great differences in the rate of acceleration and braking upon the location of the curve of maximum economy.

Apparently the performance area is also subject to upward and downward extension, due to variation in the factors discussed, and also to a wider range of traffic conditions, all subject of course to the capacity limitations of the equipment. The so-called area then becomes, in reality, a performance zone. It is within this zone, determined with all practical accuracy, that efficient operation, expressed in terms of speed and power consumption, must lie. As the point indicating actual operation moves from the side of the zone indicating maximum efficiency toward the opposite side, the "slack" in the schedule diminishes and economy and regularity of service decrease.

As Mr. Koehler states, the preparation of diagrams showing these zones for different types of equipment is not a very serious matter for a railway with a reasonable variety of equipment. Where car meters are in use the additional labor necessary to prepare data for the proposed schedule studies is small and the study itself should be well worth while. There should be no difficulty in determining whether or not the schedules in question show approximate approach to most economical speed under different traffic conditions even if the curve of maximum economy is not exactly located. Greater refinement of study, if justified by the volume of traffic involved, may require additional data as to number and length of stops and rates of acceleration and braking, and through these data the meter records may acquire more definite value.

Where car meters are lacking it may still be possible to make approximate schedule checks if feeders supplying equipment of uniform type and service can be suitably isolated and metered, but no such refinement of schedule adjustment can be expected in this way as from the use of individual car meters.

It is probable that the useful application of the proposed method of analysis will be limited to fairly large systems with frequent headway or high ratio of rush hour to base service. Under other circumstances the

convenience to patrons of a fixed, regular headway may be of greater advantage than the power saving from periodical, confusing schedule adjustments. Terminal layovers may, however, sometimes be employed to raise schedule speeds to the most economical point during periods of light traffic.

L. R. NASH.

## The Association's Bureau of Information

AMERICAN ELECTRIC RAILWAY ASSOCIATION.  
NEW YORK, July 12, 1917.

To the Editors:

I have read with much interest the letter of Leake Carraway, director of publicity of the Southern Public Utilities Company, which appeared in your issue of July 7 and dealt with the organization, within the American Electric Railway Association, of a bureau of publicity designed to be of use to the entire industry. I agree most heartily with Mr. Carraway's ideas, although the exact form which such an organization should take should be carefully considered. For the mere purpose of disseminating information concerning company publications, it is, of course, unnecessary.

The association has always maintained a bureau of information which is constantly being improved. Most of the member companies are making extensive use of its facilities. Occasionally, however, instances come to the attention of association officers where railway officials are apparently unaware of the facilities which the association possesses for collecting and collating information, and in consequence attempt on their own behalf the gathering of information which is at the time in possession of the association and which may be secured in a much shorter time and with less trouble both to the officers desiring it and those to whom the queries are addressed.

Among these gentlemen are undoubtedly some of those who communicated with Mr. Carraway concerning the cost of and details of publication of his company magazine. At the instance of the executive committee of the Transportation and Traffic Association a questionnaire was sent to all of the member companies some time ago covering the matter in question, and the association has on file full information. This could and would be brought up to date at the instance of any member making inquiries and would have saved both Mr. Carraway and his correspondents much trouble and time.

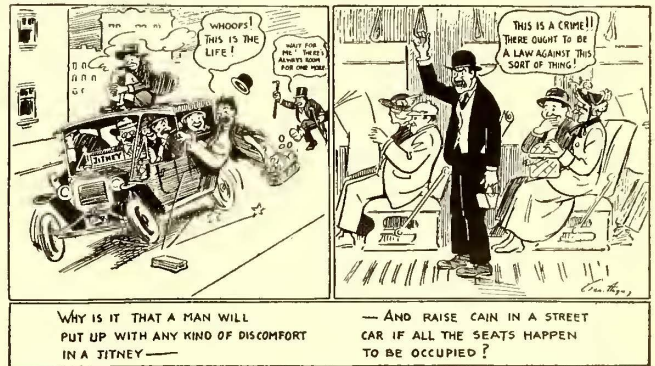
The same thing is true along almost every line of electric railway work, and a good rule for all association members in quest of information would be to write first to the association before attempting the collecting of information independently. It might also be worth while for those receiving requests for information along general lines to refer the inquiry to the association directly.

E. B. BURRITT, Secretary.

The Pacific Electric Railway, Los Angeles, Cal., is at the present time operating with 1200-volt trolley approximately 80 miles of equivalent single track, which extends from Covina Junction to San Bernardino and includes the line from San Antonio Heights to Ontario, also the Pomona Line from Lordsburg to Ganesha Junction and the San Dimas Line from Lone Hill to Quarry Canyon.

## Cartooning the Jitney

To the railways that are still confronted with jitney competition, the accompanying cartoon from *The Electrogram* of the Puget Sound Traction, Light & Power Company, Seattle, Wash., may prove suggestive. The man who has ridden in the jitneys is doubly at-

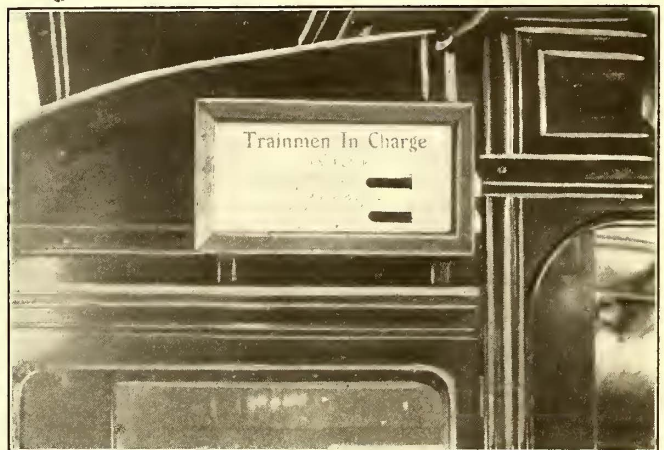


THE PSYCHOLOGICAL EFFECT OF PARALLEL CONDITIONS IN JITNEY AND STREET CAR ACCOMMODATIONS

tracted by such an illustration, for it agrees with his knowledge of the facts and it appeals to his sense of humor. It may set him to thinking about some unfair criticism that he has made about the street car service.

## Name Cards in Frame to Identify Trainmen

The illustration below shows a name card holder recently installed on the cars of the Seattle & Rainier Valley Railway, operating between Seattle and Renton, Wash. The names of the trainmen are printed on heavy card slips which are placed in the frame as



FRAME MOUNTED NEAR CAR ROOF CONTAINS NAMES OF TRAINMEN IN CHARGE

shown. None of the trainmen is known by number, as no numbers appear on their uniforms or caps. The single word "motorman" or "conductor" is worn on the front of the cap.

The public is, therefore, required to deal with the men as individuals rather than as units of a machine, and this reacts favorably both ways, as the men feel more individual responsibility and the public feels that the one individual with whom all dealings are made is a real human being and not an automaton. It is hoped that this practice will tend to promote more favorable relations between the company and the traveling public.

# EQUIPMENT and MAINTENANCE

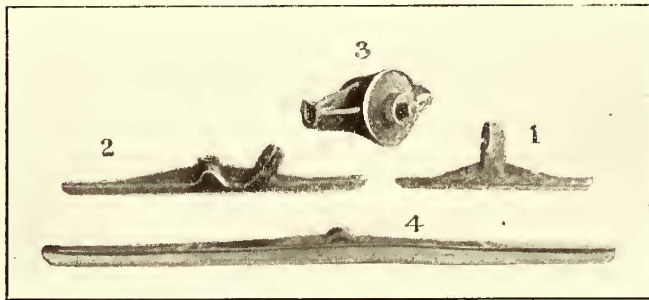
HAVE YOU A GOOD WAY  
OF DOING A JOB?  
—Pass It Along

Read in This Issue: How James Scott Has Eliminated the Need of  
Screwdrivers and Wrenches in Overhead Maintenance Work

## Overhead Kinks from Cleveland

James Scott, Superintendent of Overhead Cleveland Railway, Has Devised Numerous Ingenious Means of Overcoming Trouble and Cutting Down Overhead Maintenance Costs

Ingenuity applied in the overhead department finds many improvements possible. The following kinks from Cleveland indicate what may be accomplished in the way of economies both in material and labor as the result of long experience and close observation. James Scott, superintendent of overhead Cleveland Railway, has developed new fittings which make possible the elimination of screwdrivers, wrenches, etc., and reduce the number of tools necessary for the linemen to carry



FIGS. 1 TO 4—SPECIAL HANGER AND EARS DESIGNED AND USED BY CLEVELAND RY.

and keep in repair. Another of the ideas which has been embodied in the fittings which he has developed is that overhead fittings should be cast so as to do away with machining and thereby reduce the cost.

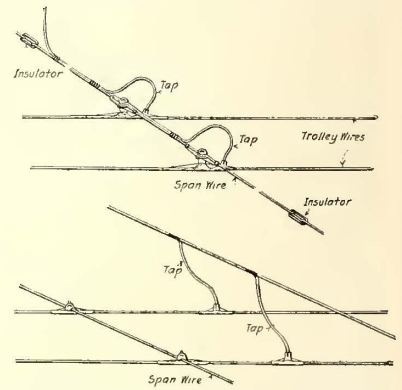
### SPECIAL FEED-IN EARS

A special feed-in ear (Figs. 1 and 2) was designed to simplify some constructional details and to eliminate the defects of the ordinary yoke type of feed-in hanger. This feed ear is designed in two types, to be used one for a straight feed-in ear and the other for a combination feed-in and hanger ear. The experience of Mr. Scott has been that the ordinary yoke-type feed-in ear is gradually eaten away by the sparking which takes place between the bolt and the shell, due to a slight loosening of the screw connection after being in service for some time. In the new ear designed to take its place the feeder connection is securely and permanently made without the use of set screws or other devices by wedging the cable into a split shank, which is bored out and then divided into four sections by sawing. These four sections are then hammered together and the cable is held securely without soldering or other fastening, al-

though solder may be used if desired. The straight feed-in ear is used at street intersections, in carhouses or at any place where it is desirable to tap the feeder cables into the trolley wire without following the span wire. This is particularly useful at street intersections where it would be impossible to follow the span wires and where the feeder can be spanned straight across the street and tapped into the trolley wire. This type of construction is illustrated in Fig. 6 and Fig. 5 shows the installation of the special combination feed-in and hanger ears.

### RECLAIMING BROKEN HANGERS

It frequently happens that a short-circuit will melt the compound out of the shell of an ordinary yoke hanger, or that the bolt will break off and render the hanger useless. Instead of throwing away the complete shell, which is usually undamaged, it is the practice in Cleveland to save the shell by putting in a new bolt fitted with a porcelain tube and holding this in place by filling the shell with ordinary cement, which makes a good insulation. One of these reclaimed hangers is shown in Fig. 3.



FIGS. 5 AND 6—ILLUSTRATING THE INSULATION OF THE TWO TYPES OF FEED-IN EARS

### EXTRA LONG EAR FOR RECLAIMING WORN TROLLEY WIRE

A special ear, which has been much used in Cleveland to prolong the life of grooved trolley wire which has become burned and weakened at the ends of the original ear, is shown in Fig. 4, and the details are given in Fig. 7. It is 24 in. long, so that it will completely span the location of the original ear. A section 6 in. long at each end of the ear is grooved in the usual way, while the central portion of the ear is cast with a groove in the side of the ear with the bottom forming the trolley wheel contact instead of the wire. Between the end and center sections there is a cut in the side to allow the trolley wire to be placed in the side groove of the center section and at the same time to be fastened into the central groove at the end section by clinching in the usual way. The grooves are cast with a 1/2-in. radius.

to take a wire 0.48 in. in diameter, or whatever size trolley wire the ear is to be used with. By this means the worn portion of the trolley wire is protected in the side groove of the ear and does not receive any further wear. The clinching of the ear at each side of this worn portion gives mechanical and electrical fastening on the unworn trolley wire at either side of the old ear location, and thus greatly strengthens and prolongs

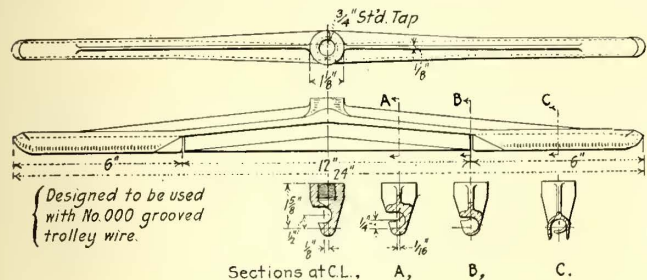


FIG. 7.—DETAILS OF EXTRA LONG EAR FOR RECLAIMING WORN TROLLEY WIRE

the life of the trolley wire at a point which would otherwise soon break.

SPECIAL STRAIGHT-LINE HANGER

A special straight-line hanger which is designed to be secured to the span wire by means of a steel wedge is shown in Fig. 8. This is made of malleable iron with the steel stud surrounded by insulating material in the usual manner. The yoke is designed so that the span wire slides into the grooves on opposite sides at the two ends. A steel wedge, 9 in. long and tapered  $\frac{1}{2}$  in. in 12 in., is driven in the slot provided for the purpose on top of the span wire. The bottom edge of

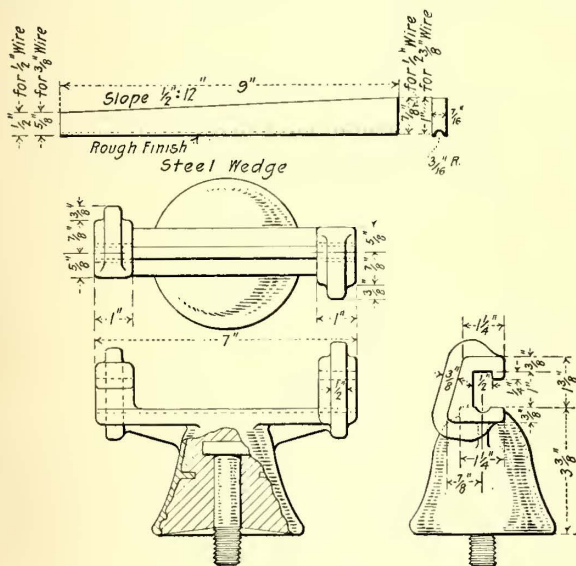


FIG. 8.—HANGER SECURED TO SPAN WIRE BY MEANS OF STEEL WEDGE

this wedge is unfinished and as it is driven in it grips the span wire firmly. A single wedge serves for both ends of each yoke.

Other kinks from the line department of the Cleveland Railway will be given in a later issue. These include a spring for installing hangers in trolley troughs, a glass-insert section insulator, a threadless pull-over yoke and hanger, an ear designed for accurate alignment and other practical devices.

Using Up Short Lengths of Copper-Leaf Brushes

BY H. E. DAVIS

Electrical Engineer New York State Railways, Syracuse, N. Y.

While the use of copper-leaf brushes is being rapidly superseded by the more modern metal-graphite brush for use on slip rings of rotary converters, there are a large number of the old-style brushes still in use. When the leaves become short, considerable saving can be made by using up the short sections in the following manner:

Two short brushes are beveled on the soldered ends,



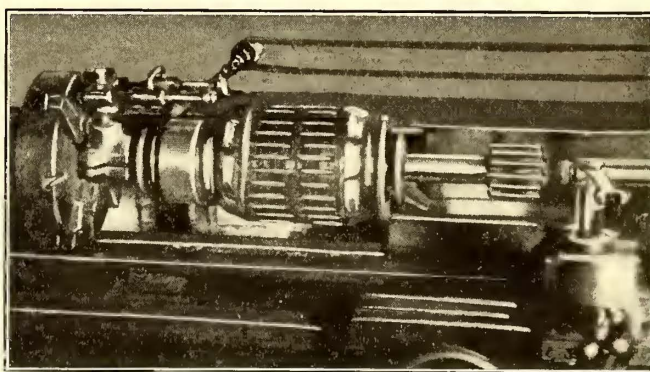
RECLAIMING SHORT LENGTHS OF COPPER-LEAF BRUSHES

riveted, and then soldered together. The composite brush may be used from both ends as shown in the left-hand illustration or it may be trimmed and soldered as shown in the right-hand one. The latter method makes a neater job, and the brush may be used after being worn by removing the damaged end at the joint and splicing on another short brush.

Commutator Slotter Mounted on Lathe Spindle

Undercutting commutators of motor armatures without removing them from the lathe after turning, is accomplished by the Wisconsin Railway, Light & Power Company, LaCrosse, Wis., by means of a special device mounted on the lathe. Any type of motor armature used by this company can be slotted with this device in a time not exceeding twenty minutes.

The device is shown in the illustration. It consists of a framework mounted on a special spindle placed in the chuck of the lathe in such a way as to bring the



SPECIAL SLOTTING DEVICE MOUNTED IN LATHE CHUCK

slotting saw always parallel with the armature axis, the armature being centered in this special spindle also. The saw-spindle bearing is cast integral with the sliding handle of the device, and as this is pushed back and forth on the two shafts supporting it, the saw travels in the slot being cut. The commutator, of course, can be rotated without rotating the framework.

Two universal joints in the saw shaft make it possible to slide the saw back and forth without changing the position of the driving pulley, except for a slight motion parallel to the pulley axis. A  $\frac{1}{4}$ -hp., 110-volt, 1700 r.p.m. a.c. motor supplies the necessary power.



TRAILER STANDING ALONE AND ATTACHED TO RUNABOUT

### Trailer Increases Efficiency of Company's Runabout

By an investment of about \$50 in the two-wheeled trailer shown in the accompanying illustration, the Elmira Water, Light & Railroad Company has greatly increased the service that can be rendered by its Ford runabout. In using this outfit the desired equipment is piled into the trailer and the runabout hauls it to the

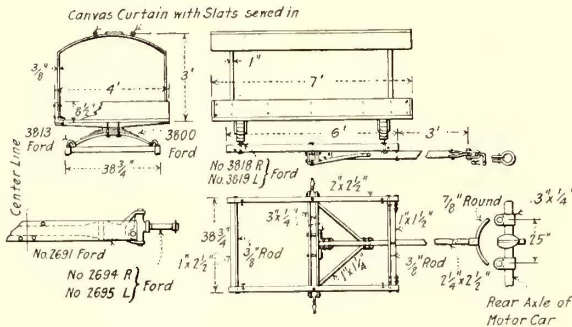
on pavement. To hold the car rigid when standing two hinged props are provided on the rear of the body. A similar prop is provided in front to hold up the tongue.

### Standard Drawing Facilitates Ordering Compromise Joint Plates

BY W. L. WHITLOCK  
Office Engineer Denver Tramway Company

As the Denver Tramway is a consolidation of several smaller properties, and as these companies, in constructing their respective systems, used rails of different weights and dimensions, it follows that numerous special compromise joint plates are required to join the rails of different sections at various points on the system.

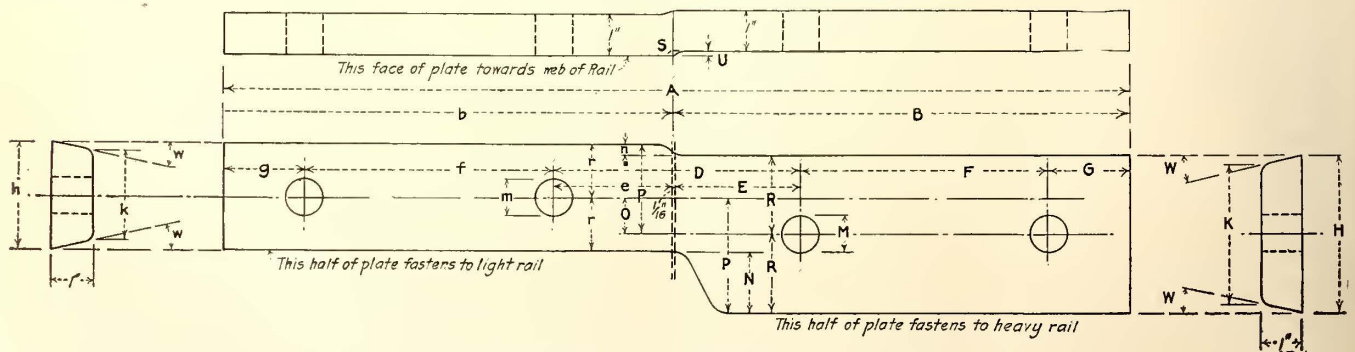
To eliminate the necessity of making up a special drawing for each combination of rails, a standard compromise joint plate drawing was made, with the various dimensions indicated by letter, as shown in the accompanying illustration. At the same time a table of dimensions to correspond with these letters was made up for all the rail-joint combinations occurring on the property. Now, when a set of plates is ordered for any location, the field man specifies the rail sections to be joined and the engineering department fills in the proper dimensions on a blue print struck off from the master tracing, on which the dimensions are left blank. This greatly simplifies the work of providing compromise joint plates, and minimizes the time required of the engineering department forces.



DETAILS OF TRAILER

scene of action, where the trailer is left and the Ford is free for other purposes. Several jobs may have to be done in the same locality, in which case the workmen can readily push the trailer from one point to another. When the work is completed the runabout comes around and hauls the trailer back again.

The construction details of the trailer are shown in the drawing herewith. It was built of the front axle and front spring of a Ford car and will carry 900 lb.



MASTER DRAWING FOR COMPROMISE JOINT PLATES

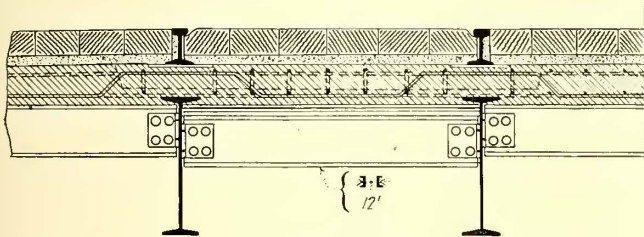
As an example of how the drawing and the table of dimensions are used, the following dimensions are for use on joints between 65-lb. and 80-lb. rails:

$A = 20$ in.	$h = 3$ in.	$F = 5$ in.
$D = 5 \frac{5}{16}$ in.	$k = 2 \frac{17}{32}$ in.	$G = 2 \frac{11}{32}$ in.
$O = 11 \frac{11}{32}$ in.	$m = 1$ in.	$H = 3 \frac{1}{4}$ in.
$U^2 = 1 \frac{1}{32}$ in.	$n = 7 \frac{7}{32}$ in.	$K = 2 \frac{13}{16}$ in.
$U^1 = 1 \frac{1}{16}$ in.	$p = 1 \frac{27}{32}$ in.	$M = 1$ in.
$b = 9 \frac{3}{8}$ in.	$r = 1 \frac{1}{2}$ in.	$N = 15 \frac{1}{32}$ in.
$e = 2 \frac{1}{2}$ in.	$w = 13$ deg.	$P = 1 \frac{31}{32}$ in.
$f = 5$ in.	$B = 10 \frac{1}{4}$ in.	$R = 1 \frac{5}{8}$ in.
$g = 2 \frac{11}{32}$ in.	$E = 2 \frac{3}{4}$ in.	$w' = 13$ deg.

### Building Track on a Concrete Bridge Floor

Cleveland Railway Uses Steel Ties Embedded in Concrete on Clark Avenue Viaduct, with Provision for Removal

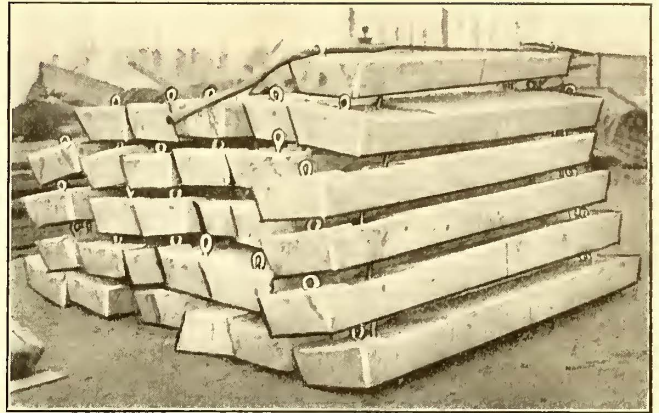
Track built with steel ties incased in concrete has been quite generally adopted for permanent highway bridge floors. This combination of all permanent materials insures long life, especially if the precaution is taken to provide a large bearing area to transmit the track loads to the concrete and to support the joints. International steel twin ties were adopted by The Cleveland (Ohio) Railway as best suited to accomplish the desired result for the Clark Avenue viaduct in Cleveland. This structure is about 1 mile in



SECTION THROUGH BRIDGE FLOOR, SHOWING CONCRETE STRINGERS

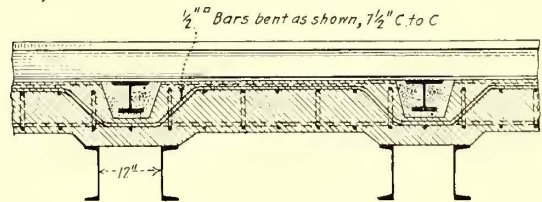
length and a double track of the Cleveland Railway passes over it. The twin ties used were of a special design consisting of two 3-in., 4-lb. channels 6 ft., 2 in. long, which serve as anchorages and tie rods for two bearing plates  $5 \frac{5}{16}$  in. x 13 in. x 4 ft. 3 in. in size. These ties were spaced at 8 ft. centers and they weighed 166 lb. each.

The bridge floor was especially designed and built to provide for this type of track construction. As shown in the accompanying cross-sections of the bridge



SHEET METAL ENCASED FORMS FOR TIE POCKETS

floor, two 9-in., 15-lb. channels placed 12 in. back to back were provided at 4 ft.  $\frac{1}{2}$ -in. intervals as transverse stringers to carry the track loads. Over these and the bridge stringers a heavily reinforced  $7 \frac{1}{2}$ -in. concrete slab floor was laid. In order to provide an anchorage for the channels, pockets were cast in the concrete. These pockets were 6 in. wide on the bottom, 10 in. wide at the top and 6 ft. 10 in. long. The forms used for this purpose are shown in the photograph reproduced above. The entire pocket was



SECTION THROUGH SLAB, SHOWING TIE TROUGH

faced with a heavy coating of asphaltum to serve as a parting in case it became necessary to remove the track and ties at any future time. Recesses  $\frac{1}{2}$  in. deep and 15 in. wide were also made in the bridge floor under both rails. These were provided so that the track could be raised to grade and about 1 in. of grout floated beneath the tie plates to furnish the permanent bearing. The recesses with the track in place are shown in the illustrations at the bottom of this page.



CLEVELAND BRIDGE TRACK CONSTRUCTION—RAIL ON TIE BEFORE APPLICATION OF FASTENING; FORCING RAIL UNDER ONE SET OF CLIPS; FORCING SECOND CLIP AGAINST RAIL BASE BEFORE DRIVING WEDGE

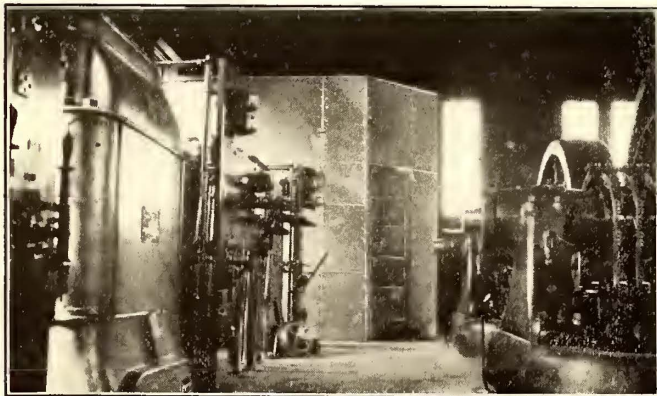
Track laying in this type of construction was a comparatively easy operation. After the ties had been laid in place and one set of clips inserted, the 100-lb. A. R. A. rail was laid and the joints secured in place by two drift pins. In this position the other set of rail clips was applied and the wedges driven into place. Four men were required to apply the clips, two to nip up the tie and two to put in the clips. After the rail base had been forced under one set of clips by driving a track chisel into the hole for the opposite clip, the latter was inserted and forced against the rail base with a hand spike. This operation was quickly done, and the track was then ready for lining and raising to the permanent surface. The method of applying the rail fastenings is shown in the accompanying illustrations. Grouting in the tie plates and riveting the Clark joints followed. The bridge wearing surface, consisting of a 2-in. sand cushion and 5-in. brick, was then laid by the paving contractor. The bridge construction, including the tie pockets was done by a contractor, and the track was laid by the railway company's track forces.

## Improving Transformer Cooling in Old Substation

BY E. H. HAGENSICK

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

The intake of the fans on the transformer air-blast cooling system in one of the substations of the Omaha & Council Bluffs Street Railway formerly had no outside connection. The fans were installed on the ground floor of the substation without inclosure, so that the



HOUSING FOR TRANSFORMER COOLING

hot air and dust in the interior of the building was circulated round and round and the cooling was naturally poor. To improve this condition without changing the setting of the fans and without any construction work on the building, a transite board partition was built in the corner of the room inclosing the fans and including two outside windows. A weatherproof housing was built outside over the windows. This housing made it possible to take in fresh air from outside and force it through the transformers, and eliminated using the same air over and over again. The expense involved was small, and while it detracts from the appearance of the substation interior, yet the cooling of the transformers and the air conditions in the substation are so much better that the scheme was worth trying.

## Indicator for Internal Temperatures of A.C. Machines

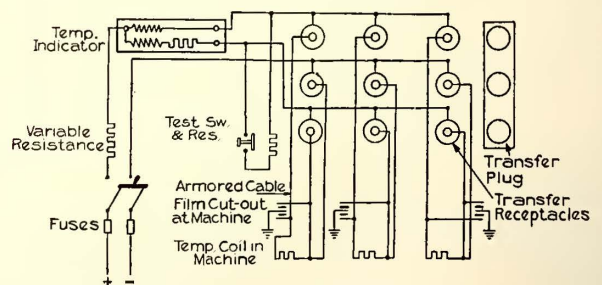
The use of temperature coils in the windings of electrical machines is now general for indicating the internal temperatures of alternators and other a.c. machines of large size. The General Electric Company has developed a temperature indicator for use in connection with such coils by means of which internal temperatures can be read directly in degrees. This indicator contains two windings, one of which is connected in series with the temperature coil and the other is in series with a coil of manganin the resistance of which is constant at all temperatures and equal in value to that of the temperature coil at a given temperature. The position of the pointer in the indicator is determined by the relation of the currents in the two windings, that through the manganin coil being constant, while that through the temperature coil varies inversely with the resistance, which in turn is determined by the temperature. The accompanying electric circuit diagram shows the scheme in outline, and a photograph of the indicator switchboard is also reproduced.



TEMPERATURE INDICATOR SWITCHBOARD

The diagram shows, in addition to the indicator and connection plugs, the following essential accessories: A rheostat of variable resistance to permit compensation for variation in the test-circuit d.c. voltage which may normally be 125 or 250; a test switch and resistor to show whether the instrument is working or not; film cutouts at the machine to protect the operator by grounding the line in case the voltage rises above 400; a transfer plug and receptacles for use in shifting the indicator to one temperature coil or another.

The temperature coils are made of copper wire wound in a thin form and pressed flat so as to be non-inductive. In the machine winding they are connected by a

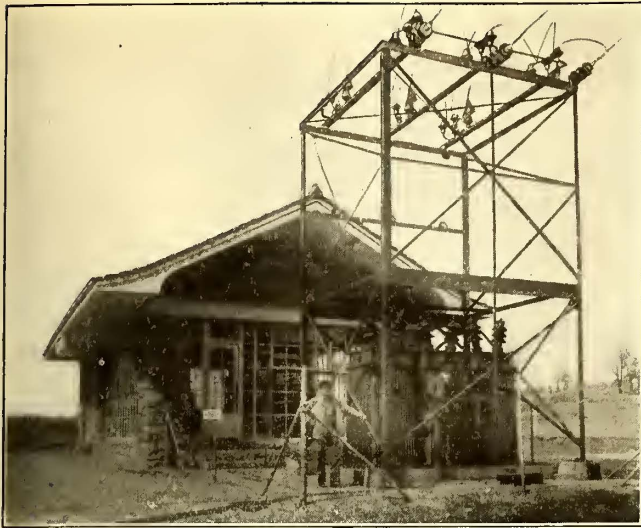


CIRCUIT DIAGRAM, SHOWING CONNECTIONS OF TEMPERATURE INDICATOR AND ACCESSORIES

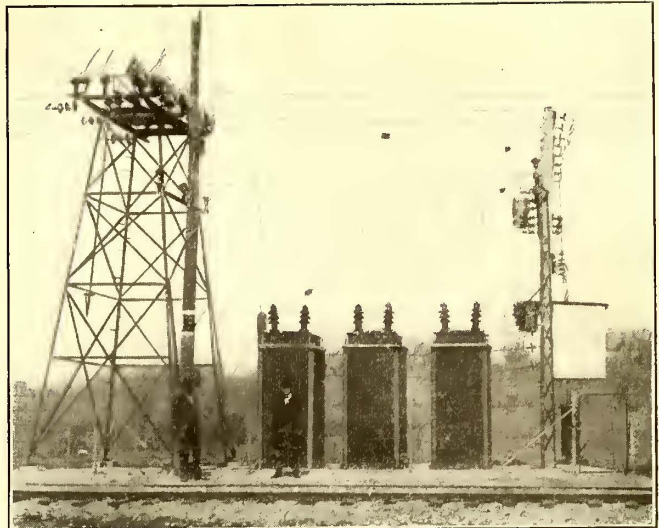
three-conductor armored cable to a combination terminal and cutout box mounted on the machine. This box carries the terminals for attaching the leads from the coils and for the extension leads to the instrument.

The Denver Tramway has replaced its five-light, 600-volt clusters in the downtown district by 110-volt, 100-watt and 200-watt nitrogen filled lamps. The economy effected by these lamps warranted the installation of a motor-generator set so individual lamps could be used.





SUBSTATION OF THE KANSAS CITY, KAW VALLEY & WESTERN RAILWAY AT MAHON, KAN.



TRANSFORMER AND SWITCHING EQUIPMENT AT MUNCIE SUBSTATION, K. C., K. V. & W. RY.

## Daylight-Type Substations Installed on Kansas Interurban

### Outdoor High-Tension and Switching Installation Makes Simple Substation Layout Possible

A type of substation buildings which is inexpensive, insures a maximum amount of light, and presents an attractive appearance from the architectural point of view has been utilized at three points by the Kansas City, Kaw Valley & Western Railway. These three substations, located at Mahon, Muncie and Leroy, Kan., are known as daylight substations from the utilization of glass for the entire exterior walls. They are characterized by their simplicity. This feature is due in large part to the installation of the transformers and high-tension apparatus and switching equipment outside of the substation building. In this outdoor equipment are included the Westinghouse single-phase, oil-insulated, self-cooled outdoor-type transformers with the various high and low-tension protective devices. The transformers are protected on the low tension side with automatic oil switches, and on the high-tension side by Burke combination horn-gap lightning arresters, choke coils and fuses. All of the switching protective apparatus is mounted on steel towers furnished by the Railway & Industrial Engineering Company.

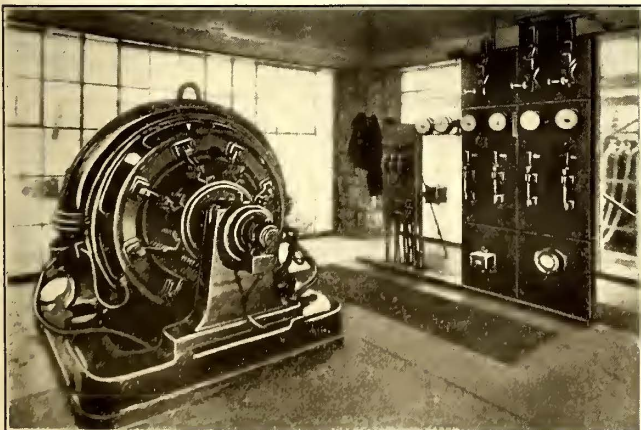
The heavy corner posts and columns of these substa-

tion buildings are built of rock quarried from the company's right-of-way. They are covered over with a low, sloping, wide-overhanging roof, producing a colonial style of building of very attractive appearance. The interior is equally attractive, due largely to the simplicity of the layout, which includes simply the machine and switchboard for machine and outgoing feeders.

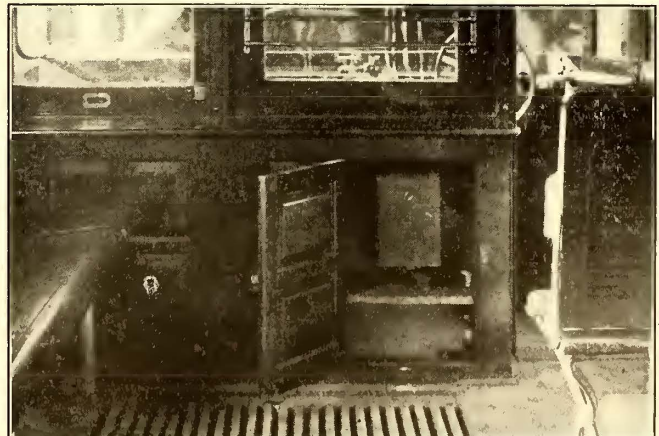
The substations at Mahon and Leroy each contain one 500-kw., six-phase, 60-cycle rotary converter. The substation located at Muncie, about 4 miles west of Kansas City, Kan., is also of the daylight type, but in this instance the three 185-kw., single-phase, air-blast transformers are installed inside the station. This substation is equipped with a 500-kw., six-phase, 60-cycle Westinghouse rotary converter.

## Air Compressor Governor Located in Front Bulkhead of Car

The accompanying illustration shows an air compressor governor located in a cabinet in the front bulkhead of a car. This is the practice on the Des Moines (Iowa) City Railway, where it was desired to remove the governor from the floor in order to facilitate the washing of the car. The cabinet is provided with a swinging door which makes the governor readily accessible for the purposes of inspection and adjustment.



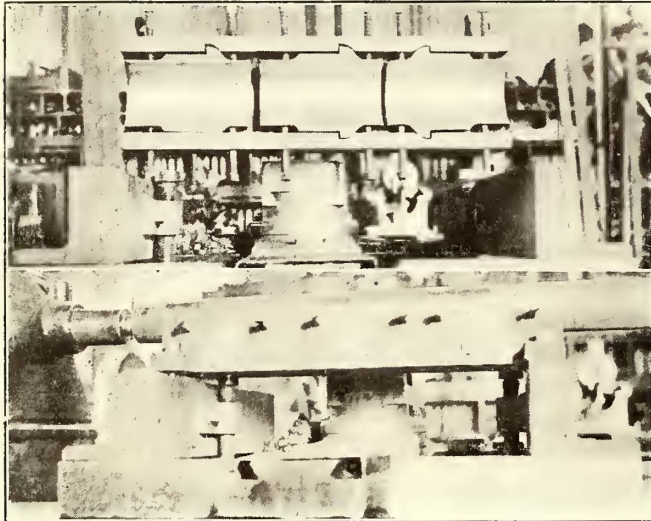
INTERIOR VIEW OF THE DAYLIGHT SUBSTATION AT MAHON, KAN.



FRONT BULKHEAD OF CAR USED FOR HOUSING AIR COMPRESSOR GOVERNOR

## Bores Three Journal Brasses at Once

The boring of three  $4\frac{1}{4}$ -in. journal brasses at once is accomplished by a device used in the shops of the Knoxville Railway & Light Company, Knoxville, Tenn. Bolted to the sliding carriage of the lathe are two heavy castings at right angles to the length of the lathe. As shown in the accompanying illustration, each of these castings holds a large flat-headed screw placed



TWO VIEWS OF BLOCK HOLDING THREE BEARING BRASSES WHICH ARE BORED SIMULTANEOUSLY

directly beneath the center line of the lathe. The brasses are held by a block which rests on these screws, which in turn are raised and lowered to adjust for different sizes of brasses. When the proper adjustment has been attained the block is bolted to the heavy castings as shown. The brasses themselves are held in the block by screws pointing slightly downward. With this device twenty-five  $4\frac{1}{4}$ -in. brasses are bored in an hour.

## More About Burning Anthracite

Apropos of the article printed in the issue of the *ELECTRIC RAILWAY JOURNAL* for June 23, page 1454, are the following notes based on an article on the same subject printed in the *Electrical Review*, London, of June 15.

Almost all anthracite coal is solid carbon, which, when it passes through the grate, burns to carbon dioxide,  $\text{CO}_2$ . If the fire is thick the gas in passing through unites with more carbon, thus forming carbon monoxide,  $\text{CO}$ , which must be burned again to  $\text{CO}_2$  by the addition of air above the fire. If the fire is thin enough air gets through the bars to burn all to  $\text{CO}_2$ . Any hydrogen present combines with the carbon in such a manner that the flame is practically within the fuel bed. As all of the heat of combustion is generated near the grate surface, it is desirable to use a better grate than with bituminous coals, and especially must the grate bars not present parts of their sides to the fire. Various methods have been adopted to prolong the life of the bars, protection by means of water and ashes being common.

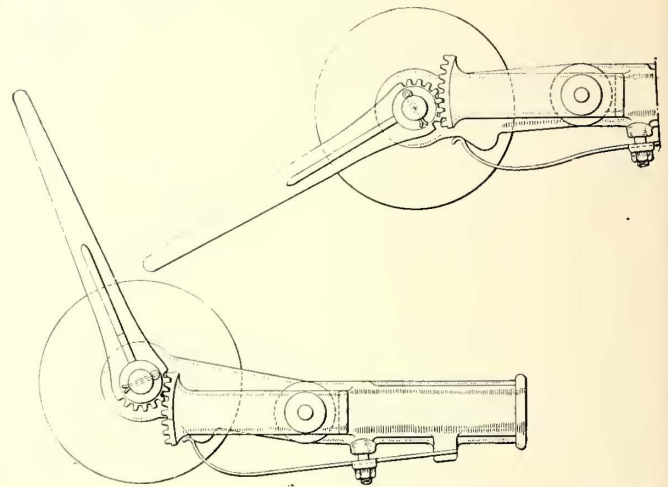
Steam is now quite generally used with anthracite to sharpen the draft. By the use of steam-blow inductors

air is forced into the ashpit and passes with the steam directly to the furnace. The steam on being decomposed therein helps to modify the intensity of the temperature of the grate surface. By these means anthracite coal may be burned at a higher rate than with natural draft, but greater care is necessary to preserve an even grate surface and to maintain an even thickness of fire.

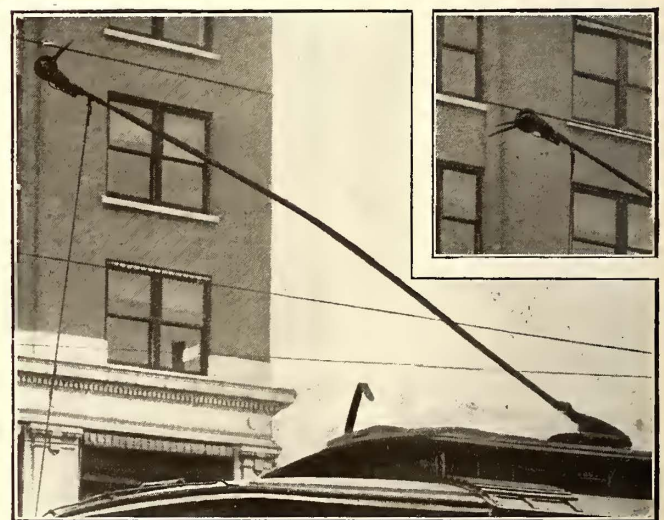
## An Improved Trolley Finder

A trolley finder, which has been tried out with good results on the Ogden, Logan & Idaho Railway, is shown in the accompanying illustrations. The object of this finder is to guide the wheel back to the wire after it has jumped off on account of having struck a hard spot or similar defect.

The finder has two horns which stand in a vertical position when the trolley wheel is off. As soon as the wheel is pressed against the wire by the spring in the trolley base the horns are forced into an approximately horizontal position. A patent on this device has been obtained by Perry B. Sawyer of the B. & S. Universal Trolley Company, Ogden, Utah.



DETAILS OF TROLLEY FINDER



VIEWS OF TROLLEY FINDER IN OFF AND RUNNING POSITIONS

It is claimed that the small movement between the trolley wheel and the harp helps to take up any irregularities in the trolley wire without causing the excessive sparking which sometimes occurs with the rigid type of harp.

# News of Electric Railways

Traffic and Transportation

Financial and Corporate

Personal Mention

Construction News

## Agreement in St. Louis

### Settlement of Differences Between United Railways and City Proposed on Valuation of \$60,000,000 for Railway and Division of Net Earnings on 50-50 Per Cent Basis

At the meeting of the representatives of the city of St. Louis, Mo., and of the United Railways on July 6 an ordinance drafted by City Counselor Daues was submitted. The measure contains sixty-four sections and embodies the principles of the so-called skeleton plan for the settlement of the differences referred to previously in the ELECTRIC RAILWAY JOURNAL.

#### TERMS OF DRAFT PRESENTED JULY 6

According to the draft presented by Mr. Daues on July 6, the value placed by the city on the property of the company was \$60,000,000. On this the company was to be permitted to earn 6 per cent. The city was to be taken in as a partner in the profits and was to share in the net earnings on the basis of 60 per cent to the city and 40 per cent to the company after 6 per cent on the valuation of \$60,000,000 had been set aside. The representatives of the company were willing to proceed at once with the negotiations of the minor details, but wanted the questions of valuation, earnings return and the division of profits to be considered later. The Mayor contended that unless the company and the city could agree on the valuation and the division of profits it would be useless to continue the negotiations. The matter was then put over until the night of July 9. The \$60,000,000 fixed by the city as the value for the property would mean a reduction of \$40,000,000 in the total capital liabilities of the company. It was said unofficially that the representatives of the company were willing to consider \$70,000,000 as the proposed valuation with an allowance of 6 per cent on this amount and then a division of the net profits on the basis of 50 per cent to the city and 50 per cent to the company.

#### TERMS AGREED UPON ON JULY 9

With matters standing as just related there were misgivings about the final outcome. At the meeting on July 9, however, agreement was reached on the questions at issue by concessions on the part of both parties to the negotiations, and as a result Counselor Daues was instructed to complete the draft of the ordinance with the revisions and submit it to the Board of Public Service so that it could go to the Aldermen on July 13. The essential points in the agreement as it stood after the conference on July 9 were:

Capital stock fixed at \$60,000,000, with interest at 6 per cent, with new capital, if there should be any authorized, at 1 per cent over the rate of interest of the new issue.

Division of surplus, after the interest has been paid, on the basis of 50 per cent to the city and 50 per cent to company.

The city to have four of the board of directors of thirteen members, with the Mayor, comptroller, president of the Board of Aldermen and director of public welfare as the four.

One member of the board of control, the operating board of the system, to be selected by the company, one by the city, the third by these two; in event of failure to agree the third to be selected by the St. Louis Court of Appeals.

Payment of the accumulated mill tax, including the portion accruing while operation of the system was under the St. Louis Transit Company, estimated at \$2,300,000, to the city upon acceptance of the new franchise, the mill and all occupational tax ordinances to be thereupon repealed.

Franchise for all lines to be uniform and for fifty years

from the date of the signing of the ordinance by the Mayor.

Purchase option on the system to the city after the first ten years, or at the expiration of any five-year period thereafter.

Fares to stand at not to exceed 5 cents for adults, 2½ cents for children from five to twelve years of age and transfers for a trip in any one general direction.

The company has nine months after the Mayor signs the bill to accept the measure.

It is expected that active work will be begun at once to bring the various classes of securities holders together with the end in view of having them agree among themselves as to the terms of the financial readjustment necessary to scale down the capitalization to the \$60,000,000 agreed upon.

The organization of two committees to represent the holders of the general mortgage 4 per cent bonds of the company is referred to elsewhere in this issue.

## Hearing on Cleveland Terminal

### Underground Terminal Suggested for the Public Square—Cost, with Approaches, Placed at \$15,000,000 to \$20,000,000

A hearing on the plan of Mayor Harry L. Davis for an underground street railway terminal at the Public Square, Cleveland, Ohio, took place before the street railway committee of the Cleveland City Council on June 28. During the discussion J. J. Stanley, president of the Cleveland Railway, told the committee that under a new franchise, other than the Tayler plan, which would produce earnings of 6 per cent or more, the company would undertake the construction of a terminal to cost \$15,000,000 or \$20,000,000, but if the city built the terminal and the company continued to operate under its present franchise, he felt that no rental should be charged for its use. He said that any rental paid would come out of the pockets of company's patrons and would not affect the stockholders in any way. He further suggested that the first subway should be in Ontario Street, instead of Superior Avenue, as suggested by the Mayor. F. F. Prentiss, chairman of the city planning commission, argued that a street railway commission should be appointed at once, as suggested by the Mayor, and that the start on improvements should be made now, since the city already has a population of almost 1,000,000.

The street railway committee of the City Council of Cleveland did not report on the ordinance of Mayor Davis establishing a street railway commission at the regular meeting on July 9. A motion to take the ordinance from the committee failed. In order to satisfy certain members of Council, Mayor Davis had already announced the names of the men he would appoint as members of the commission if the ordinance was passed. His selections were as follows: Charles A. Otis, Charles E. Adams, O. P. Van Sweringen, M. A. Bradley and Street Railway Commissioner Fielder Sanders, all men of affairs.

The public utilities committee of the Chamber of Commerce reported on July 6, in favor of the subway.

The Builders' Exchange had also approved the ordinance. Councilman Dittrick was one of the open opponents of the appointment of a commission to superintend the construction of a subway terminal. He argued that it would be preferable to have the construction work done under the management of city officials. Councilman A. J. Damm has prepared a resolution providing for the purchase of the street railway property, which he will submit to Council at a future meeting. This would provide that the question be placed before the voters at the fall election, together with the question of a bond issue for the payment of the municipal debt thus incurred.

## City Official on Transit Contracts

### Comptroller Prendergast of New York City Reviews Conditions of Contract with Brooklyn Rapid Transit Company

William A. Prendergast, comptroller of the city of New York, has contributed the leading article to the July issue of the *B. R. T. Monthly*, published by the Brooklyn Rapid Transit Company. He deals with the city's interest in the contract with the New York Municipal Railway Corporation, under which corporation the rapid-transit lines of the Brooklyn Rapid Transit Company will be operated. Mr. Prendergast says in part:

"The absolute necessity of dividing the financial burden of the extension of our transit facilities between the city and the railroad was a compelling motive in the execution of the existing contract, but it was not the only reason. Both the city and the railroad possessed certain properties susceptible of transit use, but entirely disconnected. To tie these properties together and to extend them so as to increase the opportunities for quick and convenient travel was the second and equally important reason for the making of the contract.

"For these financial and physical reasons the city and the Brooklyn Rapid Transit Company became partners. This partnership was a matter of gradual development. Men in private business come to quick decisions on important suggestions, but municipalities move slowly, especially when the question is one of relationship with a railroad corporation. There are public officials who have a cowardly reluctance to making agreements between the city and a railroad company because they prefer to pander to that element of the community which believes a railroad is always wrong. This characteristic hinders progress and comfort in travel and the handling and exchange of commodities.

"There is an utterly foolish theory that it does not matter what burden you impose upon a railroad corporation. No institution of whatever character can be burdened to excess without this burden reflecting itself in impaired service. When the city itself is forced to take on new financial obligations, it invariably finds it has to restrict itself in other directions. So with the railroad, whether it be the one we are discussing or any other—it will be forced to curtail its service in proportion to the excessive obligations it has to meet.

"This contract suggests the following relationship: The city as financial partner and supervisor, the company as financial partner and operator. The relationship is founded upon absolutely sound principles, illustrating the wisdom of municipal ownership unhampered by the futility of municipal operation. When we speak of the city investing its money, it is the collective funds of its citizenry that are meant. Consequently every citizen has an interest in this contract. It is his business to use his efforts and influence to make it a success. The failure of the enterprise would mean a greater tax rate. Its success means a lightening of the tax burden."

## Court Asked to Sustain Car Order

A writ of certiorari has been obtained from the Supreme Court for a review of an order made by the Public Service Commission of the First District of New York on Feb. 8, directing the Brooklyn (N. Y.) Rapid Transit Company to add 250 new cars to its surface railway equipment. An affidavit made by Commissioner Whitney said that in numerous hearings the fact was disclosed that on the principal lines there was excessive loading during the rush hours, and in some cases the seating capacity was exceeded by more than 100 per cent. Mr. Whitney told of a conference in his office on Dec. 18, 1916, when President Williams of the Brooklyn Rapid Transit Company admitted that more surface cars were necessary, that the company had been considering buying more, and had been deterred from doing so by the high prices due to the war. Mr. Whitney said that counsel for the company asked for more time, "so that they would have latitude to take advantage of any favorable fluctuation in market prices." In his affidavit Mr. Whitney said:

"I respectfully submit that the writ of certiorari sued out was not obtained in good faith to review the commission's determination, but solely for the purpose of delaying compliance with the order and of making improvements in the service which, in the commission's opinion, should have been accomplished long ago. The delay incident to a hearing upon the writ will, in my opinion, seriously affect the public interest, because the determination upon the hearing can hardly be made before the period fixed for providing the first installment of additional cars."

Mr. Whitney asks the Court to quash the writ. Argument was heard in the Supreme Court on July 12.

## Vancouver Strike Aftermath

### Professor Shortt to Investigate Transportation Problem of Greater Vancouver

As a result of the strike of some 1260 of the employees of the British Columbia Electric Railway, Vancouver, B. C., the whole transportation problem of Greater Vancouver is about to be investigated by Prof. Adam Shortt, one of the leading authorities on political economy in Canada.

The company has granted the men their demands for increased wages, amounting to approximately 5 cents an hour after the first six months, and has resumed operation of its city and interurban systems provisional on the whole question being investigated by a commissioner and the adoption of his recommendation by the Council of Vancouver.

The employees ceased work in Vancouver on June 13 and in Victoria on June 14 and resumed operation on the afternoon of June 21. The strike was characterized by a total absence of violence and it took the form of a three-cornered fight, in which the jitney and other factors in the transportation problem played a part.

The company offered its men a series of war bonuses amounting to \$100,000 a year and stated that it was impossible to pay any further increases, especially in view of the curtailment of its revenue by jitney competition.

The first efforts of the company took the form of educating public opinion through the newspapers toward the realization that it had made the men the largest offer circumstances would allow and that while confronted with jitney competition it would be impossible to grant the men any increases above the war bonuses that were proposed.

#### MERCHANTS MAKE SUGGESTIONS

The City Council of Vancouver, which in times past had declined to accede to the company's request for adequate regulation of the jitney traffic and showed its antagonism to the company recently in a fight for charter amendments giving itself power to enter into competition with the company in the light and power business, took no action for the first few days of the strike. The Mayor said, when the strike began, that the time was not ripe for civic intervention. The merchants of the city took action on the third day of the strike and appointed a committee to draw up a resolution, which was afterward presented to the City Council, recommending the placing of jitneys on the non-car line streets and the cancellation of all jitney licenses at the end of the year.

The company impressed upon the members of the City Council and upon the Provincial Minister of Labor, who took a part in the efforts toward a settlement, the impossibility of granting the men's demands and resuming car service while the jitney took revenue from the company. The City Council asked that proof be furnished of this statement and the company agreed to submit the whole transportation problem to an impartial expert with a view of placing it on a sound financial basis. The City Council agreed, by a resolution, to stand by whatever recommendations the commission should make.

Owing to the necessity of a quick settlement imposed upon the company by its arrangement with the City Council, it was impossible to arrive at any better settlement with the men than the basis of their revised demands to the company, and thirty-six hours after the passing of the resolution by the City Council the men resumed work on this basis.

Professor Shortt was expected to arrive in Vancouver about July 10.

## Riots in Bloomington

### Recent Injunction Ignored by Sympathizers with Strikers—Compromise Agreement Reached

Incited to riot by "Mother Jones," who had been imported to make an address in connection with the recent strike of a few employees of the Bloomington & Normal Railway & Light Company, Bloomington, Ill., sympathizers of the strikers, in violation of the court injunction referred to in the *ELECTRIC RAILWAY JOURNAL* of June 23, attacked the cars, power house and offices of the company on the evening of July 5. Rioting continued throughout the night. The police were powerless to such an extent that Mayor Jones appealed for aid and state troops were sent into the city from Chicago and Peoria early the next day.

On the afternoon of July 6, 1000 employees of the shops of the Chicago & Alton Railway, in sympathy with the strikers, marched the streets of the city to the City Hall and demanded of the city officials that the company be obliged to recognize the union and establish the closed shop. The men who participated in this demonstration threatened repeated riots if their demands were refused. Upon request of the Mayor by telephone H. E. Chubbuck, vice-president executive of the Illinois Traction System, Peoria, by which the Bloomington property is controlled, agreed to reinstate the striking carmen pending a conference on July 9.

At this conference concessions were made by both sides and a compromise agreement was reached as follows: Company recognizes union. City lines to operate on open shop. Employees free to join the union if they desire, but are not to be intimidated. Faithful employees continued in positions. Striking carmen to be reinstated. Rate of pay to be: Less than one year, \$2.35 a day; after one year, \$2.55 a day; after three years, \$2.65 a day; after five years, \$2.75 a day. These rates are to continue in effect until July 1, 1918.

The troops were released on the morning following the final agreement.

Mr. Chubbuck in a statement said:

"Our general superintendent at Bloomington, D. W. Snyder, took a stand in no way opposed to organized labor as such. The majority of his men from the beginning were opposed to being forced into the union and his position was that of supporting employees whose subsequent loyalty under adverse conditions proved the genuineness of their convictions. The entire question passed from the stage of being a matter of company policy to one of public policy. When the Mayor showed me the liability of serious disturbance to the business and civic life of the community I was glad to place myself in the hands of the business interests of Bloomington and without relinquishing the principle upon which Mr. Snyder stood, do everything possible to bring about a settlement to the best interest of the city as a whole. Another question. The country is at war and in times like these it is one's duty to do all in his power to avoid a disturbance that in any way might add to the spirit of unrest which unfortunately seems to be cropping out in various places in the country."

## Change in Seattle Elevated Plans

Oliver T. Erickson, councilman of Seattle, Wash., has abandoned his idea of a steel elevated on Washington Street from Fourth Avenue south to Railroad Avenue, and a wooden elevated railway on Railroad Avenue, Watcom Avenue and Spokane Street to the West Waterway. His new plan calls for the construction of an elevated line on Washington Street, from First Avenue south to Railroad Avenue, and on Railroad Avenue and Whatcom Avenue and Spokane Street, of wood, and the utilization of common-user rights on the surface track on Washington Street, between Fourth and First Avenues South. A. H. Dimock, city engineer, estimated the cost of the initial plan at \$862,000, aside from the damages awarded to property owners on both sides of the street named. Unofficially, it is reported, the second plan will cost much less. The building code requires steel construction on that portion of Washington Street and Railroad Avenue north of Railroad Way. Whether the plan is

to use steel for this portion or wood in violation of the building code has not been announced.

The Seattle & Rainier Valley Railway Company has a franchise on Washington Street, Seattle, from Fourth Avenue south to Railroad Avenue, over which cars have not been operated by the company for a number of years. Mr. Erickson's plan is to acquire common-user rights on this particular track, so that the city will be required to pay rental to that company for the use of tracks on Stewart Street, from Third to Fourth Avenue, on Fourth Avenue, from Stewart to Washington Street, and on Washington Street, from Fourth Avenue to Railroad Avenue. Under the terms of an agreement between the city of Seattle and the Seattle & Rainier Valley Railway, entered into a few months ago, the rental for these tracks would amount to between \$1,500 and \$2,000 a month.

## Universal Transfer Offer in Frisco

### Municipal and Private Systems Would Be, in Effect, Consolidated—Further Four-Tracking of Market Street Avoided—Private Company Cars Through Tunnel

Jesse W. Lilienthal, president of the United Railroads, San Francisco, Cal., on July 2 submitted to the Board of Supervisors of San Francisco a proposition stated as follows:

"In view of the early completion of the Twin Peaks Tunnel and the necessity of providing for immediate use of the improved facilities thus made available and realizing the great importance and benefit to the citizens of San Francisco of a unified system of transportation, we submit for your consideration a plan of operation which will obviate the necessity of duplicating transportation facilities on Market Street. We propose that the city and the company agree as follows:

"1. That the company rearrange such part of the present Parkside lines as may be necessary to furnish the best service to the Sunset district, and make connections from these lines to the tunnel tracks.

"2. That the company pay the city on a mileage basis for the use of the city's tracks through the tunnel.

"3. That there be established between the city and the company a universal exchange of transfers at all connecting points, so that a unified system of transportation may be furnished.

"4. That the city agree that no further tracks be built on Market Street and that the city will operate its cars over Market Street as at present, except for that portion of Market Street from Church Street to Van Ness Avenue forming part of the Church Street line.

"5. That should an agreement be entered into on the above basis, such agreement to be subject to cancellation by either party upon six months' notice; with the further proviso that, should the agreement be canceled by the city, then the city to reimburse the company for the cost of the reconstruction of its Parkside lines that may be agreed upon, as well as for the cost of making connections of the tunnel tracks with the existing tracks of the company."

### MERCHANTS OPPOSE FOUR TRACKS IN MARKET STREET

Great interest has been shown in this matter by the downtown merchants of the city, most of whom are opposed to the four-tracking of Market Street on the ground that such action would make that thoroughfare unsafe and unpopular. Residents of the Parkside district beyond the tunnel are also taking an active interest in improving transportation facilities there. The United Railroads' plan is received with favor by both these factions because it involves the construction of a line connecting the Parkside district with lower Market Street by through cars operating over the tracks which have already been laid on Market Street.

No final action on this proposition has as yet been taken by the city, but city officials state that the universal transfer proposal is considered as an important concession and that it is receiving careful consideration.

## Labor Editorial in Cars

The Third Avenue Railway, New York, N. Y., has reprinted and posted in its cars the editorial "Can't Keep Away," from the New York *Herald* of July 3. The *Herald* said:

"New York City, a Klondike for labor agitators, again is favored by the presence of William D. Fitzgerald, who achieved notable distinction as the organizer of the worst strike fizzle in local annals. It was last year that Mr. Fitzgerald and his attendants came to this city, bringing suffering to the men employed by the local transit companies and inconvenience to the traveling public. This declaration, emanating from the legal adviser of Mr. Fitzgerald, is interesting:

"The action of the Third Avenue Company in posting an increase in wages is a contemptible effort to influence the men against joining the organization."

"In other words, favorable treatment of its employees by a corporation which is not brought about through the black-jack methods of a strike is distinctly painful to the labor agitators, who see their vocation imperiled. There is a reasonable amount of belief that the transit employees of New York are quite satisfied with the conditions obtaining between themselves and their employers."

## \$1,500,000 Work on City Railway

### Seattle Utilities Committee Prepares Three Bills for Improvements to Municipal Railway

At the instigation of Oliver T. Erickson, chairman of the utilities committee of the Council of Seattle, Wash., three bills have been prepared by the Corporation Counsel providing for the improvement of the Seattle Municipal Railway as follows: The extension of the system at a cost in excess of \$1,500,000; the starting of proceedings to acquire the right to establish and maintain an elevated railway on Washington Street, Railroad and Whatcom Avenues, and Spokane Street; the building of a four-block line from the north end of the Ballard Bridge to the intersection of Market Street and Twentieth Avenue N. W.; the purchase of sixteen one-truck or one-man cars and four double-truck cars similar to the ones now in use on Division A. The bill for the new cars has already been introduced in the Council. The others will come before the Council at an early date.

The ordinance providing for the extension of Division A of the municipal line into Ballard proposes, at the option of the city, to pay for this extension "solely out of the earnings of the municipal street railway of the city of Seattle," although the municipal line is losing money at the rate of more than \$3,000 a month. Another ordinance would authorize and direct the Board of Public Works to prepare plans and specifications for the construction of a double-track municipal railway beginning at the north end of the bridge, across Salmon Bay Waterway at Fifteenth Avenue N. W., along Fifteenth Avenue N. W. to the intersection with Leary Avenue, on Leary Avenue to the intersection with Market Street. The Board of Works is further directed to call for bids and let a contract for the construction of this extension. A third ordinance declares the intention of the city to extend Division A over Fourth Avenue, by virtue of common user agreement with the Seattle & Rainier Valley Railway, and sets forth that this will require the purchase of additional cars. The ordinance then recites that the \$800,000 street railway bond issue has not all been spent, and that what remains of the bond issue is "more than sufficient to pay for additional equipment." A. H. Dimock, city engineer, estimates the cost of the proposed extensions at \$920,000, to which must be added such an amount as will represent court awards to property owners. These extensions will place the city in a position to compete with the Puget Sound Traction, Light & Power Company for the 24,000 persons employed in the various industrial plants in the Harbor Island District.

Councilman R. H. Thomson, not satisfied with the report of Superintendent Valentine on possible earnings of the car lines if extended into Ballard and to West Waterway, for the reason that it did not show the increased cost of operation, advised the city utilities committee that he would ask

Superintendent Valentine for a supplemental report, if Chairman Erickson did not do so. The question of whether the two disconnected city car lines could be made to pay by extensions was raised over Councilman's Erickson's bill authorizing the Board of Public Works to buy four two-truck cars similar to those now used on the city lines, and sixteen cars of the one-man type, in anticipation of these extensions. Councilman Thompson pointed out that the city has seven large cars that have never been out of the carhouse, out of a total of twelve cars bought about four years ago. Councilman Thompson questioned the advisability of building car lines until a report was submitted that would show some chance of the lines paying operating expenses.

## Strike in Toronto

The employees of the Toronto (Ont.) Railway went on strike at midnight on Tuesday, July 10. As a result there was a complete stoppage of all cars in the city on July 11, with the exception of those on the municipal lines on St. Clair, Danforth and Gerrard Streets. The civic lines could not begin to handle the crowds, however, and automobiles, vans, trucks and other vehicles choked the streets in the business district. More than 1600 trainmen are said to be involved in the strike.

Negotiations between the employees and management of the company over an increase in wages and other conditions have been in progress since April. The situation reached an acute stage during the week ended July 7, on which day at a midnight mass meeting of the men it was decided to carry an ultimatum to the company giving the management until midnight of Tuesday, June 10, to agree to the demands of the men as presented by the committee, or submit to a general strike.

Two years before the war began motormen and conductors were paid 23½, 25½, 27½ cents an hour—the first figure for the first six months, the second for the second six months, and the third for the second year and after.

In January, 1917, an advance on these figures to 26, 28 and 30 cents an hour was put in force.

The motormen and conductors now demand that they be paid 36, 38 and 40 cents an hour. The company offered 28, 30 and 32 cents an hour and a proportionate increase of 2 cents an hour over the old scale for all other employees.

R. J. Fleming, general manager of the company, states that the demands of the men would mean an increased cost of \$600,000. The proposed voluntary increase offered by the company would increase the charge for wages more than \$200,000.

## City Commission Rights Defined

The Court of Appeals at Cincinnati, Ohio, handed down a decision on July 9 to the effect that the Cincinnati Rapid Transit Commission has no authority to employ special counsel, as this would be in the nature of usurpation of the powers and functions of the City Solicitor. The office of counsel, occupied by former Mayor Speigel, is thus nullified. The same court held that the commission may employ City Engineer Frank S. Krug as engineer of the commission, but that he can receive no salary for his work other than that paid him by the city as one of its officials. Clerks, engineers and other employees may be employed by the commission without the necessity of seeking the consent of the City Council, it is held.

Judge Francis M. Hamilton dissented from the opinion, which, he said, seemed to be based on the assumption that the Rapid Transit Commission had abused its discretion and misappropriated funds under its contract. He said he did not believe it within the power of the court to substitute its judgment for that of the Rapid Transit Commission. If the court was to pass upon everything the commission did it would seem that the court itself would become largely the Rapid Transit Commission. Aside from these things he expressed the opinion that under the law the employment of counsel and engineer was clearly within the rights of the commission.

The decision was rendered in a suit brought against the commission by John C. Rogers, a taxpayer.

## Wages Advanced in Philadelphia

The co-operative committee of the Philadelphia (Pa.) Rapid Transit Company, at a meeting held on July 9, determined in company with the management that the condition of the 22 per cent fund was now such as to make possible from July 8 an advance of 2 cents an hour to all conductors and motormen so that the pay in cents per hour will then be based upon the following scale:

New Men	After One Year's Service	After Two Years' Service	After Three Years' Service	After Four Years' Service	After Five Years' Service
<i>Surface Motormen and Conductors</i>					
30	31	32	33	34	35
<i>Elevated—Subway</i>					
<i>Conductors</i>					
30	31	32	33	34	35
<i>Elevated Guards</i>					
30	31	32	33	33	33
<i>Motormen</i>					
33	34	35	36	37	38

## Power Men Out Two Hours

Several of the employees of the power house of the Kansas City (Mo.) Railways quit work Saturday evening, July 7, causing suspension of electric railway service on most lines, and interrupting illumination served from this power station. The "strike" was a result of misunderstanding. The men declared to officials that they had assumed that certain comparatively trivial matters of controversy were being disregarded. They returned to work later in the evening, and on Monday, July 9, entered a conference at the company's headquarters, with President P. J. Kealy and other officials of the company. The men requested Colonel Kealy to "come down yourself and look into our complaints," and promised to abide by his decision. Colonel Kealy promised to do so, and the men expressed themselves as satisfied.

The cessation of service on the several lines, at a busy evening hour, caused a rushing business for jitneys and taxicabs. Apparently all but the dozen jitney owners raised their prices suddenly in the emergency, some charging as much as 50 cents for service for which they formerly got only 5 cents.

## Increase in Wages in New York

Conductors and motormen in the employ of the New York (N. Y.) Railways were advised on July 3 that as a result of a conference between representatives of the brotherhood of New York Railways employees and the management of the company on June 21, and on several previous dates, the following increases in the schedule of wages to be paid platform men would be effective from July 1:

ELECTRIC LINES					
Conductors and Motormen	Old Rate	New Rate	Conductors and Motormen	Old Rate	New Rate
	10-Hour Day	10-Hour Day		10-Hour Day	10-Hour Day
First year	\$2.60	\$2.70	Ninth year	\$3.20	\$3.20
Second year	2.90	3.00	Tenth year	3.20	3.20
Third year	2.90	3.10	Eleventh year	3.30	3.30
Fourth year	2.90	3.10	Twelfth year	3.30	3.30
Fifth year	3.10	3.10	Thirteenth year	3.30	3.30
Sixth year	3.10	3.20	Fourteenth year	3.30	3.30
Seventh year	3.20	3.20	Fifteenth year	3.30	3.30
Eighth year	3.20	3.20	Sixteenth year and thereafter	3.40	3.40

STORAGE-BATTERY LINES			
Conductors and Motormen	Old Rate	New Rate	
	10-Hour Day	10-Hour Day	
First year	\$2.60	\$2.70	
Second year	2.70	2.90	
Third year to fifteenth year inclusive	2.80	3.00	
Sixteenth year and thereafter	2.80	3.20	

All conductors and motormen who were in the service of the company on Sept. 6, 1916, and have remained continuously in the employ of the company since that date, have been credited with two years' service so far as their rates of pay are concerned, commencing July 1.

It was further announced that all conductors and motormen who on June 30 were in the employ of the company and were in the employ of the company on Sept. 6, 1916, but who temporarily left the service would, commencing July 1, be entitled to their seniority in so far as their rate of pay is concerned, without regard to their temporary absence from the service.

## Toledo Conferences Resumed

Henry L. Doherty, chairman of the board of the Toledo Railways & Light Company, Toledo, Ohio, held a three-hour conference with the street railway commission in that city on July 2. Discussion of the forfeiture clause in the proposed community plan was the main feature of the conference. It was urged in its present form by Johnson Thurston, president of the commission, but Mr. Doherty declined to accept it on the ground that it would give the city the right to confiscate the property. Ralph Emery, attorney for the commission, stated that the clause could be improved in form.

Mr. Doherty was compelled to return to New York, and it was arranged for Frank R. Coates, president of the company, to present data relative to fares, paving and track building at a meeting on July 3. Mr. Thurston had insisted that the company should pave a certain distance on the outside of the tracks, but Mr. Doherty expressed a willingness to pave between the tracks only. The point was left undecided to be taken up again after data have been furnished.

At a meeting held on July 3 the Street Railway Commission of Toledo, Ohio, decided to remodel several clauses of the community plan franchise to which Henry L. Doherty objected. If Mr. Doherty approves the franchise as changed it will be printed and copies distributed among the civic organizations and the people. If it does not meet with his approval, then Mr. Doherty will be asked to return to Toledo for further conferences. In the meantime Frank R. Coates, president of the company, will meet with the commission to discuss clauses relating to rates of fares, transfers, contracts for power and other matters. Mr. Doherty informed the committee that he would accept anything that President Coates approved. When an agreement is finally reached, the franchise will be submitted to the voters.

**Increase in Wages in Allentown.**—An increase of 2 cents an hour in the wages of its motormen and conductors has been announced by the Lehigh Valley Transit Company. This is the second raise granted the men within a year.

**Engineers to Report to Special Rhode Island Commission.**—The special commission which is investigating the affairs of the Rhode Island Company, Providence, R. I., has engaged the engineering firm of Sloan, Huddle, Feustel & Freeman to report upon the various matters recently outlined by Chairman Zenas W. Bliss, as the commission's preliminary program.

**Suit Against Transit Construction in Philadelphia Dismissed.**—The taxpayers' suit instituted by Frank W. Fluck to restrain the city of Philadelphia, Pa., from proceeding with construction of the new transit high-speed lines has been dismissed by Common Pleas Court No. 4. Mr. Fluck instituted his proceedings on the ground that the \$67,100,000 transit loan election in May, 1916, was illegal.

**More Indiana Companies Surrender Franchises.**—The Fort Wayne & Northern Indiana Traction Company, the Wabash Valley Utility Company and the Decatur & Fort Wayne Railroad have filed with all municipalities affected and with the Public Service Commission of Indiana formal notice of the surrender of their franchises and of their intention to operate under indeterminate permits through the utility commission.

**Employees Granted Increase in Wages.**—Arbitrators who have had the matter under consideration for about three weeks recently granted employees of the Cleveland, Painesville & Eastern Railway, Willoughby, Ohio, an increase in wages, covering a period of three years. They will receive 31 cents an hour for the first year, 33 cents for the second year, and 35 cents for the third year. The increase amounts to about 15 per cent and the contract dates from May 1.

**Pittsfield Labor Agreement Reached.**—At a conference in Pittsfield, Mass., on July 10, C. Q. Richmond, general manager of the Berkshire Street Railway, agreed with representatives of the employees' union to sign a new wage scale. The agreement is to have a term of one year. Under its provisions platform men will receive a wage increase of about 7 per cent. Other union employees in general will re-

ceive a 7.5 per cent increase, with the exception of twenty linemen now on strike.

**Electric Railway Responsible for Portion of Cost of Grade Crossing Elimination.**—On July 3 the Ohio Supreme Court dismissed the petition of the Cincinnati Traction Company against the city of Cincinnati, involving the payment of \$61,220 alleged to be due as the company's share of the cost of eliminating the grade crossing at Ludlow Avenue and the Baltimore & Ohio Southwestern Railroad tracks in Cincinnati, on the ground that the Hamilton County Court of Appeals had no right to entertain the appeal case and that no other constitutional question is involved. If the case is carried no further the company must pay the amount claimed.

**Belt Line to Be Abandoned.**—The City Council of Dunkirk, N. Y., has voted to permit the Buffalo & Lake Erie Traction Company, Buffalo, N. Y., to abandon its belt line service in Dunkirk. This action is contingent upon the company surrendering its franchise covering all streets not used and assuming full responsibility for transporting cars of coal and other supplies over its line to the municipal electric light and water plant. The Point Gratiot line will be continued. Officials of the company say that the belt line was operated at a loss of about \$17,000 a year. The company will construct a passenger and freight terminal in Dunkirk to cost about \$20,000.

**Mayor Urges Suit to Revoke Franchises.**—Charging that the Tulsa Street Railway and the Oklahoma Traction Company, Tulsa, Okla., have failed to comply with the terms of their franchises as granted by the city of Tulsa, Mayor John H. Simmons has instructed City Attorney Meserve to bring suit for revocation of their franchises. The allegations on which the suit is to be based are that the companies have failed to provide ample equipment to care for the amount of traffic; that the companies have not maintained their roadbeds properly and that they have been negligent in caring for crossings. The Oklahoma Traction Company is building an interurban line from Tulsa to Sapulpa. It is rumored in Tulsa that a new company is being organized to consolidate and rehabilitate the properties.

**Taxes in Present Federal Bill.**—The Senate committee of finance, which has been considering the federal war revenue bill, reported its recommendations to the Senate on July 3. As reported, the bill now provides for a tax of 3 per cent on freight rates, 1 cent for each 25 cents or fraction on express rates, 5 per cent on passenger tickets except for commutation tickets for trips less than 40 miles or where the fare does not exceed 35 cents; and 5 per cent on parlor car and sleeping tickets. The bill also provides a tax of 15 per cent on the undistributed net income of corporations received during the year, subject to certain exceptions. One of these is that the company may deduct undistributed profits used for the establishment or maintenance of reserves required by law. Railway companies may also deduct expenditures for extensions, renewals or betterments, made with the approval of the Interstate Commerce Commission or of a state commission.

**Many Seattle Men Eligible for the Military.**—According to statistics compiled by the Puget Sound Traction, Light & Power Company, Seattle, Wash., 650 out of the 2300 employees in the Seattle division have registered as eligible for war service. Of the number found between the ages of twenty-one and thirty, inclusive, 338 are married and 312 single; 537 are Americans, fifty-six have taken out first papers and fifty-seven are aliens. The largest number of eligibles was found to be in the transportation department, which has 311 American citizens, twenty-five who have taken out first papers and fifteen aliens; of this number, 199 are married. Fifty-four per cent of the men are of conscription age. Company officials are completing a full census of all employees to find those who are especially fitted for other service, in the event vacancies occur, and also to ascertain whether any of the employees desire to be transferred to other departments. A similar census of company employees has been taken by the company on its Tacoma, Everett and Bellingham divisions and in the headquarters force. There are approximately 3600 employees of the Stone & Webster interest in the Puget Sound territory.

## Financial and Corporate

### Annual Reports

#### Middle West Utilities Company

The comparative combined earnings statement of the various subsidiaries of the Middle West Utilities Company, Chicago, Ill., for the fiscal years ended April 30, 1916 and 1917, follows:

	1917	1916
Gross earnings .....	\$9,620,216	\$8,091,148
Operating expenses and taxes.....	6,117,460	5,013,388
Net earnings from operation.....	\$3,502,756	\$3,077,760
Rentals on leased properties.....	205,940	191,645
	\$3,296,816	\$2,886,115
Interest paid on accruing to outside holders	1,485,756	1,485,775
Dividends and proportion of undistributed earnings to outside holders.....	294,829	206,093
Amortization of discount.....	36,557	24,641
Total earnings accruing to Middle West Utilities Company .....	\$1,479,674	\$1,315,968

The gross earnings of the subsidiary companies in the last fiscal year showed a gain of \$1,529,068 or 18.9 per cent. Of this only \$388,960 came from newly acquired properties. Owing to the increase in the cost of operation, the operating ratio was 1.63 per cent higher in the last year. Yet the net earnings from operation increased \$424,995 or 13.8 per cent. The street and interurban railways of the Middle West Utilities Company operate over 193 miles of track and provide 13.5 per cent of the aggregate gross earnings of all subsidiaries.

The total income of the Middle West Utilities Company for the year just closed was \$1,824,069 as compared with \$1,642,686 for the previous year. The balance for dividends was \$1,026,585 as compared with \$1,001,285. The various surplus accounts belonging to the company now aggregate \$3,456,976. Of this \$1,433,908 represents the holding company's portion of the surplus shown on the books of subsidiary companies.

#### Pittsburgh Railways

The consolidated income statement of the Pittsburgh (Pa.) Railways and its affiliated companies for the year ended March 31, 1917, follows:

Gross revenue from railway operation.....	\$13,648,579
Operating expenses and taxes:	
Maintenance of way and structures.....	\$1,141,119
Maintenance of equipment.....	826,687
Traffic .....	31,656
Power .....	1,552,410
Transportation .....	3,681,353
General and miscellaneous.....	1,524,523
Total .....	\$8,757,748
Taxes .....	524,484
Total .....	\$9,282,233
Income from railway operation.....	\$4,366,346
Income from auxiliary operations.....	74,268
Total operating income.....	\$4,440,614
Other income .....	172,326
Gross income .....	\$4,612,940
Deductions .....	4,250,494
Net income .....	\$362,446

According to the annual report of the Philadelphia Company, from which the foregoing statement is taken, there has been a gradual improvement in business conditions throughout the Pittsburgh district during the past year, resulting in an increased traffic on all transportation lines. The gross earnings showed an increase of \$1,081,595 or 8.8 per cent over the gross earnings reported for the preceding year of operation.

Owing to the unprecedented demands of manufacturers for all classes of labor, the company was obliged to increase the compensation paid to employees in all departments. This, with the increased cost of power and the higher prices for materials and supplies, resulted in an increase of \$1,-



201,934 or 16.4 per cent in operating expenses. The actual increase for the year on account of higher wages amounted to \$409,729.

There was expended during the year \$1,505,537 for improvements, betterments and extensions, of which \$1,233,373.32 was charged to capital account, and \$272,164 against the income account on account of extraordinary expenditures for improvements, replacements and realignments. There was also charged to the income account \$91,277 as amortization of the deferred account for the same class of work, and \$2,230 for financing expenses. The surplus as of March 31, 1917, totaled \$501,561 as compared to \$508,064 the year before.

In regard to the need of increased revenues for electric railways, the annual report of the holding company contains the following statement for the Pittsburgh Railway:

"The street railway transportation industry in almost all of the large cities of the United States has been facing for many years a gradual increase in labor and material cost without any compensating increase in the fare charged to the public, with the result that there has been no safe margin above operating expenses and interest on the cost of properties. The situation is now becoming acute on account of the recent phenomenal advance in wages and material, especially coal. Owing to these conditions, there is now a general movement on foot to obtain an increase in fares. It will be the policy of this company to make every effort to secure remuneration for the additional cost of service it renders. Unless there is an increase in fares, the company will not be able to maintain its present high standard of service."

### Republic Railway & Light Company

The combined comparative income statement of the Republic Railway & Light Company, Youngstown, Ohio, and its subsidiaries for the calendar years 1915 and 1916 follows:

	1916		1915	
	Amount	Per cent	Amount	Per cent
Gross earnings .....	\$3,987,616	100.0	\$3,121,296	100.0
Operating expenses, depreciation and taxes* .....	2,327,406	58.3	1,874,082	60.0
Net earnings .....	\$1,660,210	41.7	\$1,247,214	40.0
Other income .....	20,965	0.5	1,753	0.0
Gross income .....	\$1,681,175	42.2	\$1,248,967	40.0
Interest and subsidiary company dividends .....	827,569	20.8	688,952	22.1
Net income .....	\$ 853,606	21.4	\$560,015	17.9
Dividends on preferred stock .....	311,484	7.8	311,484	10.0
Balance .....	\$ 542,122	13.6	\$ 248,531	7.9

\*Depreciation for 1915 was not carried in operating expenses; in 1916 an amount of \$46,562 for depreciation of equipment is included.

The gross earnings of the companies during 1916 increased \$866,319 or 27.75 per cent as compared to those in 1915, while the operating expenses, depreciation and taxes increased \$453,323 or 24.19 per cent. As a result the net earnings showed a gain of \$412,995 or 33.11 per cent. The gross revenue from the electric light and power business increased 37.5 per cent, and the gross revenue from railways 22.8 per cent. The gross earnings of the company during 1917 up to the middle of March have showed a satisfactory increase, but there has been a substantial increase in the cost of materials; particularly coal, which will result in an increase of operating expenses for 1917.

As a result of a jump in other income from \$1,753 to \$20,965 during 1916, the gross income in the last year showed a gain of \$432,208 or 34.60 per cent. Interest on subsidiary company dividends increased only \$138,616 or 20.12 per cent, so that the net income represented a gain of \$293,591 or 52.42 per cent. After paying the same preferred dividend as in 1915, the balance at \$542,122 represented an increase of \$293,591.

During 1916 the sum of \$1,922,837 was expended upon improvements and betterments to the properties of the subsidiaries, including \$1,264,037 on extensions and improvements to power house and electrical equipment and \$658,800 upon extensions and improvements to the electric railway lines of the companies.

## Deposit of St. Louis Bonds Urged

### Holder of United Railways 4's of 1934 Requested to Deposit on Account of Negotiations with City

The holders of the general mortgage 4 per cent bonds of the United Railways, St. Louis, Mo., due July 1, 1934, are being asked to deposit their bonds. The chairman of the committee which is seeking the deposits is Breckenridge Jones, president of the Mississippi Valley Trust Company, St. Louis, Mo. The other members of the committee are David R. Francis, Jr., of Francis Brothers & Company, St. Louis; Allen G. Hoyt, vice-president of the National City Company, New York, and A. H. S. Post, president of the Mercantile Trust & Deposit Company, Baltimore. The formation of the committee grew indirectly out of the negotiations between a committee representing the United Railways and the officers of the city of St. Louis looking toward a settlement of the differences between them. The progress made with these negotiations has been noted previously in the ELECTRIC RAILWAY JOURNAL. The appeal of the committee to the holders of the 4 per cent bonds is as follows:

"Committees representing the city of St. Louis and United Railways are conferring and have partially agreed upon a plan of adjustment of the difficulties between the city and company.

"The proposed ordinance provides for a fixed valuation and a reduction in capitalization.

"Upon request, the undersigned owning and representing a large amount of the above bonds, believing it imperative that the holders of the general mortgage 4 per cent bonds should be in position to take prompt and concerted action for the protection of their interests, have consented to act as a committee to protect the holders of these bonds.

"It is to the advantage of the bondholders to deposit their bonds promptly with the committee, in order to participate in benefits to be gained by concerted action on the part of the large majority of the bonds.

"We urgently request holders to deposit their bonds immediately, with Jan. 1, 1918, and subsequent coupons attached, with the Mississippi Valley Trust Company, St. Louis; the Farmers' Loan & Trust Company, New York, or the Mercantile Trust & Deposit Company, Baltimore, depositaries, under an agreement dated July 9, 1917, providing for such deposits.

"The committee will promptly pay any interest which may be received by it on the deposited bonds to the holders of the certificates of deposit representing the bonds, in respect whereof such payments of interest shall be made, deducting any income tax required to be withheld.

"Copies of the deposit agreement may be obtained by application to any of the depositaries."

### ANOTHER COMMITTEE SEEKS DEPOSITS

Another committee which has been organized in the interest of the holders of the 4 per cent bonds of the company is composed of N. A. McMillan, president of the St. Louis Clearing House; Edward Mallinckrodt, M. Kotany and J. Herndon Smith. Mr. McMillan is chairman of this committee. He is reported to have said that the members of the committee of which he is chairman were surprised to learn of the committee headed by Mr. Jones and that they had not determined what steps they will take.

Mr. Jones on July 9 announced his resignation from the board of directors of the North American Company, which controls the United Railways. In announcing his resignation, Mr. Jones stated that he had served as a director of the North American Company and for a time with the United Railways, believing that thereby he could best serve the interests of the holders of all classes of securities of the United Railways. Now that the settlement of differences between the city and the railway seemed likely he had, at the request of holders of a large amount of the company's 4 per cent bonds, decided to devote his energies to the protection of those bonds. In order that he might be relieved of any possible embarrassment arising from any conflict of interests, he had resigned as a director of the North American Company. Mr. Jones has not been a director of the United Railways since last winter.

## Rhode Island Assessments Certified

The Tax Commission of Rhode Island has certified to the treasurer for collection the following assessments upon Rhode Island's Street railways:

**Rhode Island Company:** Gross earnings, this year, \$5,780,786 as against \$5,025,150 last year, a gain of \$755,635; amount of tax this year, \$57,807 against \$50,251 a year ago, an increase of \$7,556.

**Bay State Street Railway:** Gross earnings this year, \$185,771 against \$183,398 last year, a gain of \$2,372; amount of tax this year, \$1,857 against \$1,833 a year ago, an increase of \$23.

**Newport & Providence Railway:** Gross earnings this year, \$89,920 against \$83,762 last year, a gain of \$6,157; amount of tax this year, \$899 against \$837 a year ago, an increase of \$61.

**Norwich & Westerly Traction Company:** Gross earnings this year, \$34,942 against \$72,608 a year ago; amount of tax this year \$349 against \$726 a year ago, a reduction of \$376.

**Shore Line Electric Railway:** Gross earnings this year, \$50,455; amount of tax this year, \$504. New company.

The Shore Line Electric Railway is operating a line formerly run by the Norwich & Westerly Traction Company. The total for both companies for this year shows a gain of \$12,788 in gross earnings over the figures of the Norwich & Westerly Traction Company of a year ago.

## Returns for Iowa Interurbans

From the thirty-eighth report of the Iowa Board of Railroad Commissioners, just now available, it appears that the 1915 gross operating earnings of interurban electric railways in the State were \$2,923,033 as compared to \$2,682,102 in 1914. The operating expenses, however, increased from \$1,722,072 to \$1,895,925, so that the net from operation in 1915 was \$1,027,107 as compared to \$960,030 the year before. The single-track mileage increased 44.75 miles to 472.48 miles—23.02 miles for electrified track of the Centerville, Albia & Southern Railway and 17.39 miles for new track of the Waterloo, Cedar Falls & Northern Railway being the largest items. The net earnings per mile of single track dropped from \$2,244 in 1914 to \$2,173 in 1915.

**American Light & Traction Company, New York, N. Y.—**The American Light & Traction Company has declared the regular quarterly dividend of 1½ per cent on its preferred stock. On the junior issue the regular quarterly dividend of 2½ per cent in cash and a dividend at the rate of 2½ shares of common stock on every 100 shares of common outstanding also has been declared. All the dividends will be paid on Aug. 1.

**American Water Works & Electric Company, New York, N. Y.—**H. Hobart Porter, president of the American Water Works & Electric Company, has issued a statement to stockholders announcing that the plan for funding the dividends accrued to April 27, 1917, upon the first preferred stock is to become operative. Signed consents and approvals have been received from most of the stockholders and the directors have voted to go ahead with the plan. The distribution of warrants for cash and new securities provided in the plan will be made to first preferred voting trust certificate holders of record at the close of business July 20 next. The first preferred stock to be issued under the plan will be entitled to cumulative dividends from April 27, 1917.

**Brooklyn (N. Y.) City Railroad.—**A quarterly dividend of 2½ per cent has been declared by the directors of the Brooklyn City Railroad, payable on July 16 to holders of record of July 5. This compares with 2 per cent quarterly since July, 1910.

**Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company, Minneapolis, Minn.—**Howard S. Abbott, master in chancery, on June 28 offered the property of the Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company for sale, but received no bids.

**Pacific Gas & Electric Company, San Francisco, Cal.—**According to the annual report of the Pacific Gas & Elec-

tric Company for the calendar year 1916, the operations of the Sacramento Street Railway, its railway subsidiary, showed a distinct improvement in the last year. Both the passengers carried and the revenue increased approximately 10.5 per cent over 1914, as compared to a 22 per cent decrease in 1915 and 1914. This is said to indicate a waning activity on the part of the jitneys. The gross revenue in 1916 was \$442,303, while the passengers totaled 10,044,428, car miles 2,919,041 and car hours 299,873.

**Syracuse (N. Y.) Northern Electric Railway, Inc.—**Hold-ers of certificates of deposit issued by the Central City Trust Company, Syracuse, N. Y., have been notified that inasmuch as the properties of the Syracuse & South Bay Electric Railroad and the Syracuse, Watertown & St. Lawrence River Railroad have been acquired by the Syracuse Northern Electric Railway, Inc., the securities of the new company have been issued and are now ready for distribution. Holders of certificates of deposit may on and after July 16 receive the new securities.

## Dividends Declared

**Brooklyn (N. Y.) City Railroad,** quarterly, 2½ per cent.  
**Chicago (Ill.) Railways,** 8 per cent, participating certificates, Series 1.

**Connecticut Railway & Lighting Company, Bridgeport, Conn.,** quarterly, 1 per cent, common and preferred.

**Kentucky Securities Corporation, Philadelphia, Pa.,** quarterly, 1½ per cent, preferred.

**New Orleans (La.) City Railroad,** 2½ per cent, preferred; 1 per cent, common.

**Ottumwa Railway & Light Company, Ottumwa, Iowa,** quarterly, 1¾ per cent, preferred.

**Pacific Gas & Electric Company, San Francisco, Cal.,** quarterly, 1¼ per cent, common.

**Puget Sound Traction, Light & Power Company, Seattle, Wash.,** quarterly, 75 cents, preferred.

**Railway & Light Securities Company, Boston, Mass.,** 3 per cent, common and preferred.

## Electric Railway Monthly Earnings

### BERKSHIRE STREET RAILWAY, PITTSFIELD, MASS.

Period	Operating Revenues	Operating Expenses	Operating Income	Fixed Charges	Net Income
Im., May, '17	\$87,824	*\$75,825	\$11,999	\$27,557	†\$15,443
1 " " '16	84,466	*68,658	15,808	27,850	†11,809
5 " " '17	418,803	*363,378	55,425	137,925	†182,025
5 " " '16	375,308	*336,170	39,138	122,810	†128,664

### COMMONWEALTH POWER, RAILWAY & LIGHT COMPANY, GRAND RAPIDS, MICH.

Im., May, '17	\$1,512,014	\$844,989	\$667,025	\$524,189	\$142,836
1 " " '16	1,328,075	631,766	696,309	496,250	200,059
12 " " '17	17,919,035	9,381,593	8,537,442	6,088,988	2,448,454
12 " " '16	15,630,700	7,455,760	8,174,940	5,655,231	2,419,709

### CONNECTICUT COMPANY, NEW HAVEN, CONN.

Im., May, '17	\$811,350	*\$662,323	\$149,027	\$95,726	†\$75,442
1 " " '16	800,058	*528,341	271,717	98,009	†196,284
5 " " '17	3,902,262	*3,132,485	769,777	479,538	†371,930
5 " " '16	3,678,610	*2,578,535	1,100,075	489,921	†123,574

### NEW YORK & STAMFORD RAILWAY, PORT CHESTER, N. Y.

Im., May, '17	\$31,020	*\$26,516	\$4,504	\$7,982	†\$3,432
1 " " '16	33,099	*25,542	7,557	7,979	†376
5 " " '17	135,778	*137,725	†1,947	3,925	†41,647
5 " " '16	131,654	*117,839	13,815	39,920	†25,905

### NEW YORK, WESTCHESTER & BOSTON RAILWAY, NEW YORK, N. Y.

Im., May, '17	\$49,535	*\$47,077	\$2,548	\$6,346	†\$3,088
1 " " '16	48,450	*43,845	4,605	\$5,589	†348
5 " " '17	228,164	*232,312	†4,148	\$35,349	†33,894
5 " " '16	211,302	*258,931	†47,629	\$32,520	†12,330

### RHODE ISLAND COMPANY, PROVIDENCE, R. I.

Im., May, '17	\$489,768	*\$400,457	\$89,311	\$119,911	†\$30,037
1 " " '16	493,296	*354,687	138,609	118,579	†21,120
5 " " '17	2,137,706	*1,952,314	365,392	597,031	†174,733
5 " " '16	2,228,505	*1,708,459	520,046	557,623	†19,847

### WESTCHESTER STREET RAILROAD, WHITE PLAINS, N. Y.

Im., May, '17	\$21,862	*\$23,687	†\$1,825	\$2,168	†\$3,965
1 " " '16	22,964	*22,413	551	1,798	†1,219
5 " " '17	92,529	*112,117	†19,588	10,257	†29,709
5 " " '16	95,654	*104,781	†9,127	8,750	†17,751

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

## Traffic and Transportation

### Skip Stop in Buffalo

#### Thirty-Day Trial Proposed on Two of the Busiest Lines of the International Railway

Beginning on July 15 and continuing for thirty days, the International Railway, Buffalo, N. Y., will operate cars over two of its busiest lines on the skip-stop plan. All cars operating over Main Street, between Chippewa Street and the city line, will stop at every second corner, except at transfer points, and the same rule will be made effective over Elmwood Avenue, between Chippewa Street and Hertel Avenue. The skip-stop plan will not be made effective in the congested downtown business district. The company's decision to try out the skip-stop plan on its two busiest lines is the result of one of the recommendations made by the municipal traffic commission appointed by Mayor Louis P. Fuhrmann.

#### TRIAL TO BE MADE ON TWO LINES

The plan to eliminate about 50 per cent of the car stops on these two lines outside of the business district was announced in a news article in the daily papers, and was followed up by display announcements in all of the company's cars. The announcements in the cars were signed by the Buffalo Traffic Commission, and urged the co-operation of the public and trainmen to make the skip-stop plan a success.

Peter Witt, former street railway commissioner of Cleveland, Ohio, conferred in Buffalo with officials of the International Railway and members of the municipal traffic commission at the time the committee decided to recommend the trial of the skip-stop plan on two Buffalo lines. John O. Weigel, general superintendent of traffic of the International Railway; Thomas Penney, vice-president and general counsel of the company, and a member of the traffic commission, and also E. J. Dickson, vice-president of the company, attended the conference.

White bands 3 ft. wide will be painted on trolley poles at corners where the cars will stop. The cars will skip every other block, making the stops at one lot of corners on the outbound trip, and at another lot on the inbound trip.

During the first week of the trial, uniformed supervisors will be stationed at numerous corners along the line to inform the public where cars will stop, and designate what corners will be skipped.

Five other lines which operate in Main Street, between Florence Avenue and Perry Street, will also operate on the skip-stop plan while the cars are in Main Street, except that south of Chippewa Street, in the congested retail shopping district, all stops will be made.

### Service Talks for Employees

#### President Coates Sends Out Talks to Emphasize the Need of Courtesy, Common Sense, Kindness and Team Work

The problem of getting the best service from employees has been undertaken by Frank R. Coates, president of the Toledo Railways & Light Company and other properties in Toledo, Ohio, all operated by H. L. Doherty & Company. Mr. Coates has sent four talks to his men, each dealing with a different phase of the problems which present themselves daily. In the first talk, which was entitled "Courtesy," Mr. Coates said, in part:

"Be courteous. Courtesy consists of those kindly, helpful acts we render others that we like to receive ourselves. A friendly 'good morning,' a cordial 'thanks,' a cheery word or a pleasant smile from the man who comes directly in contact with the public—will do more to gain good-will and friendship than anything else."

The following is an extract from the talk on "Common Sense": "Situations often arise when a man must exercise his own common sense and let his reason tell him the right thing to do—the safe thing to do. 'The best safety device is a careful person.' Without thought and care on the part of the man behind the device, it will avail little."

The third of the series was on the subject of "Kindness." The following quotation is taken from this talk: "Kindness is an attribute that all may cultivate—it is a mark that always distinguishes the big man—no matter what his work may be. Kindly deeds to others will pay large dividends to ourselves in human happiness that no amount of money can buy. Be kind."

In the last talk Mr. Coates emphasized the necessity of team work. He said that neither absolute safety in car operation nor the good-will of patrons could be obtained without co-operation between the members of the car crew. Each of the talks was signed by Mr. Coates, to give the personal touch so essential in impressing the employee.

### Inquiry Into Gorge Wreck

#### Officials of the Railroad Testify Before the Coroner—Inquiry to Continue

Officials of the Niagara Gorge Railroad, Niagara Falls, N. Y., who were called to testify at the coroner's inquest into the fatal accident near the Whirlpool Rapids in the lower Niagara Gorge on the afternoon of July 1 placed a large part of the responsibility for the wreck upon the National Guardsmen who saw the foundations of the track slide into the river and did not flag the approaching car. Among the witnesses called were E. E. Nicklis, superintendent of the Gorge Route; William Piper, assistant superintendent; Joseph Mondia, track foreman; Louis C. Crandall, motorman of the wrecked car, passengers, and several alleged eye-witnesses.

#### HOW THE LINE WAS PROTECTED

Company officials testified that the retaining wall supporting the tracks at the brink of the lower gorge at the point which gave way was a dry wall of stones piled up with no cement binder; that the power was not shut off when the company received warning because of the fear that if this were done it might endanger other cars on the steep grades; that there is no telephone signal dispatching system along the lower gorge between Lewiston and Niagara Falls, because the roar of the rapids is too great to permit anyone to hear over a telephone, and that an inspector rushed to the scene of the wash-out on a special car, but reached the point a few minutes after the car had toppled into the river.

A track inspector testified that the line between Lewiston and Niagara Falls is inspected every morning before traffic is started over the route. Loose boulders on the cliffs above are blasted out and a careful watch is always kept on the entire route.

The motorman of the wrecked car said he received the first warning of the undermined roadbed when the track began to sag under the car. Before he realized what was happening, the car toppled over the embankment into the river.

The inquest was adjourned until July 12 when additional witnesses were called.

There is still some doubt as to the total number of passengers on board the wrecked car. Estimates vary, but municipal authorities of Niagara Falls believe there are about fifteen passengers still missing in addition to the ten who were killed and one who died later in a hospital. At least three persons are known to be missing.

At a special meeting of the board of directors of the company on July 3, Burt L. Jones, vice-president and general manager, reviewed the wreck and in a lengthy prepared statement given to the daily newspapers said that the National Guardsmen who saw the roadbed slip into the gorge "should certainly have flagged the car in order to avoid the catastrophe." Mr. Jones also denied the statement of four witnesses, who said they warned the company twenty minutes in advance of the wreck that the track had given away.

## Pension System for Duluth

The Duluth (Minn.) Street Railway recently established a pension system for its employees. The management of the plan is placed in the hands of a pension board composed of one official and two employees who will be appointed by the president of the company. No part of the pension payments is to be contributed by the employees. Whenever it shall be found that the basis of pension payment creates demands in excess of the company's revenue available for pensions a new basis ratably reducing existing and future payments shall be established by the pension board, with the approval of the president.

Any employee of the company, male or female, may be declared eligible for a pension. Granting of pensions is based upon the number of years of continuous service in the company's employ, the average amount of salary or wages received during the last ten years of service and the character and quality of service rendered. Sixty-five and seventy years are the ages specified at which employees may be pensioned, providing their annual income has not averaged more than \$2,500 during the preceding ten years. Any employee receiving that amount or less who has become permanently disabled or disqualified for service by accident or sickness may at the discretion of the pension board be retired from service for a given period of time and granted a monthly pension. The amount of such pensions shall be determined by the pension board. It shall be in lieu of the regular pension and will not be granted if the employee is receiving compensation under the State law. All payments will be made monthly. A retired employee receiving a pension is permitted also to engage in certain other occupations.

In addition to the pension system the company recently secured group insurance for its entire force. All employees who have been in the service of the company for a year or longer are insured in the sum equal to their annual wage or an amount not less than \$1,000. The company is also paying a war bonus of 5 per cent of the monthly wage during the period of the war to men who have been employed for one year and 10 per cent of their wage to men in the service less than one year. The "war bonus" will not be considered in determining the average salary to fix the amount of pensions.

**Near-Side Stop Adopted in Rochester.**—The Rochester lines of the New York State Railways have just put the near-side stop into operation on the entire system. Barring a few complaints, the plan has met general approval.

**Accident on Brooklyn Elevated.**—Several persons were injured on July 7 when one car of a three-car train on the Broadway line of the Brooklyn (N. Y.) Rapid Transit Company leaped the rails and plunged off the elevated railroad into the street at Broadway and Myrtle Avenue.

**Briefs Filed in Kansas City Fare Case.**—Briefs have been filed in the "Maywood" case of the Kansas City (Mo.) Railways, involving suburban fares. The case will be argued in Jefferson City on July 12. No further testimony will be received. The issues involved were stated briefly in the *ELECTRIC RAILWAY JOURNAL* for June 23, page 1163.

**Souvenir Swatter in Beaver Valley.**—The Beaver Valley Traction Company, New Brighton, Pa., is issuing a fly swatter as a "Safety Always" souvenir to the householders along its lines. The message carried on one side is "Beaver Valley Traction Company, Do as We Do—Think of Safety Always." On the other side the legend reads "Safety Always, Save Lives, Swat Flies."

**Fare Zone Added to Bangor Suburban Zone.**—The Bangor Railway & Electric Company, Bangor, Maine, has increased the fare on its Old Town division. This branch is 14.73 miles in length. Previous to the increase the company received a 15-cent fare. It has now added another fare limit, making the fare 20 cents instead of 15 cents for the entire distance. The increase became effective on June 19.

**State License for Jitneys in Texas.**—Jitneys operating in cities of Texas will be required to pay the State license fee of \$20 a year, as provided for commercial vehicles under the new State highway law, according to a ruling of the State attorney general's department. Notice has been given by city authorities in most cities to the effect that jitneys must cease operation after July 15 unless the State license is secured.

**Six-for-a-Quarter Fares Withdrawn.**—On July 1 the Kentucky Traction & Terminal Company, Lexington, Ky., discontinued the sale of six metal checks, good for city fares, at 25 cents. The announcement was made on the day before the new rule went into effect. Checks sold before the new rule went into effect will be honored until they are exhausted. In connection with the announcement the company explained that costs of every character have increased to the point where it is no longer possible to operate at the reduced fare.

**Pacific Electric Adopts Courtesy Code.**—The Pacific Electric Railway, Los Angeles, Cal., has perceived the value of a standard courtesy code for trainmen such as has been in use for some time on the Brooklyn (N. Y.) Rapid Transit System and which was described in the *ELECTRIC RAILWAY JOURNAL* for March 24, page 544. Lessons in courtesy, based on the B. R. T. code, are being published in the *Pacific Electric Magazine* and every effort is being made to impress upon the employees of the company the need of politeness in their dealings with patrons.

**Springfield Jitneys Take 20 Per Cent of Business.**—The Springfield (Mass.) Street Railway recently made a study of the extent of jitney competition in that city. It reported that the jitneys carried on one day 25,379 passengers and took in \$1,271.95 in revenue. The railway company on that day carried 110,711 passengers. Nearly 40,000 of this number included patrons who offered transfers in payment of fares and children who rode on half-fare tickets. It is said that jitney earnings in that city average about 25 per cent of the revenue realized by the electric railway.

**Two Ohio Towns Seek Reduction in Fare.**—The villages of Lockland and Wyoming have filed suits in the Common Pleas Court at Cincinnati against the Ohio Traction Company to secure a reduction in fare. The franchises granted the company contain the stipulation that in the event the fare between Cincinnati and Carthage is ever reduced, the villages are to have the same rate. Through the "loop" lease, the company has agreed to grant a 5-cent fare to the city limits which gives the people of Carthage the lower fare. The suits are based on this condition.

**Car Men Submit Jitney Ordinance.**—The employees of the Bay State Street Railway in Brockton, Mass., recently submitted to the Board of Aldermen an ordinance drawn up to effect more stringent regulation of jitney buses in that city. Among the requirements set forth in the ordinance was a \$500 bond per passenger up to the number the vehicle is authorized to carry, and business is to be conducted along fixed routes and at regular rates. No action was taken by the board. A hearing will be held on July 16 which the public and the Common Council are invited to attend.

**One-Man Cars Successful in Everett.**—The Everett Railway, Light & Water Company, Everett, Wash., has found the automatic one-man cars which it has operated for several months on the Riverside-Bayside line in Everett so satisfactory that orders have been placed for twelve more cars of the same type to be delivered next fall. When these cars are received the company will increase its service, tentative plans for which provide for the rerouting of the lines. Application has been made to the City Council for permission to make necessary track changes for the new service.

**Boston "L" Issues Safety Bulletin.**—A small folder containing short talks on safety is being issued by the Boston (Mass.) Elevated Railway for the use of all employees in the train service. The first two issues deal with the subjects "Carelessness" and "Courtesy" respectively. The company is anxious to make the accident record for 1917 the best in its history, and no doubt these bulletins, furnishing regular reminders to the train men, will be very helpful. The safety messages are prepared by H. A. Pasho, superintendent of rapid transit lines, and Edward Dana, manager of surface transportation.

**Atlantic City Suburban Fare Reduced.**—The Atlantic City & Shore Railway, Atlantic City, N. J., has announced that for the benefit of those who commute daily from mainland towns to the shore sixty-trip tickets will hereafter be sold for \$3 for the 5-mile ride. The company's concession is contrary to the decision rendered by the New Jersey Public Utility Commission two years ago at the close of a fight

for a 10-cent fare. In this decision the commission held that the company could not afford to carry passengers across 5 miles of no-stop territory for a nickel. The new rule applies also to the Atlantic & Suburban Railway, which is under control of the Shore Line management.

**Skip-Stop and Fare Problems in Richmond.**—*Public Service News*, published by the Virginia Railway & Power Company, Richmond, Va., in its issue for July 5 has answered eighteen questions about the skip stop drawn from the experience of the United Railways & Electric Company, Baltimore, in operating under that plan. The company also makes an appeal to its readers for their support, using as its text that part of the President's proclamation of April 15 which dealt with the railroads. The company says that its patrons can help it to perform its functions properly, and render a more adequate service by (1) urging the Council to give the skip-stop plan a ninety days' trial, and (2) by supporting the company's plea for a straight 5-cent fare.

**More Skip Stops in Detroit.**—The Detroit (Mich.) United Railway placed the skip-stop plan in service on its Hamilton line on July 8. The City Council of Detroit and the Village Council of Highland Park united in giving permission for the operation of skip stops on the Hamilton line. The Detroit resolution provided for skip stops in both directions between Grand River Avenue and the northerly city limits. The Highland Park resolution authorized skip-stop operation through the village. This applies to the line operating over Oakman Boulevard. When the Hamilton service is extended to the Six Mile Road, it will also be under the skip-stop plan. On July 1 the skip stop was installed by the company on its Fort line. This method of operation has been in use on the company's Woodward and Jefferson lines for several months.

**Election Results on Jitney Ordinances.**—On June 4 the city of Portland, Ore., held its municipal election, an important feature of the election program being the matter of jitney regulation. The results of that election were reviewed on page 1070 of the *ELECTRIC RAILWAY JOURNAL* for June 9. It was stated that the ordinance requiring a \$2,500 jitney bond was carried by 32,000 to 16,000; that the franchises calling for satisfactory regulation were also carried by heavy vote and that the commissioner who has stood for unregulated jitney service for the last two years was defeated in his run for mayor. The official count on all of these initiative ordinances and charter amendments have been completed by the city auditor, A. L. Barbur. The results are as follows: Jitney bonds—yes, 31,545; no, 15,518; jitney-free streets—yes, 15,466; no, 30,787; Carver electric railway franchise—yes, 26,438; no, 18,585; jitney franchise No. 1—yes, 26,438; no, 18,585; jitney franchise No. 2—yes, 26,223; no, 18,445; jitney franchise No. 3—yes, 25,939; no, 18,335; jitney franchise to Linnton—yes, 28,864; no, 15,502.

**168,202,150 Revenue Passengers in New York City in April.**—Electric railways operated in New York City during the month of April carried a total of 168,202,150 revenue passengers. This, according to a report issued by the Public Service Commission for the First District of New York, was an increase of 4,460,997 over the figures for April, 1916. The total revenue from passenger transportation for the month was \$8,333,081, against \$8,082,199 for April, 1916, showing an increase of \$250,882. The total operating revenue amounted to \$8,769,919, against \$8,479,693 in the corresponding period of 1916. Of the total number of passengers carried in April the Hudson & Manhattan Railroad shows 6,016,343; the Interborough Rapid Transit Company, subway division, 37,826,100, and the elevated division, 29,734,529. The Brooklyn Rapid Transit Company in all its connections carried 48,800,019 passengers, and the Manhattan surface roads 32,122,337, of which the New York Railways carried 20,576,771. The number of transfers collected by all companies in April was 28,437,926, which shows a decrease of 938,397 from the corresponding month in 1916. The total of taxes paid by the electric railways for the month amounted to \$609,610, against \$545,894 for April, 1916. The foregoing figures are exclusive of four small companies, the combined passenger fare collections of which average about \$5,000 a month.

## Personal Mention

C. N. Hebner has been appointed secretary and treasurer of the Alton & Jacksonville Railway, Alton, Ill., to succeed C. A. Caldwell.

H. J. Millett has been appointed roadmaster for the United Traction Company at Troy, N. Y., succeeding C. A. Smith, resigned.

D. Hudson has been elected vice-president of the Fort Scott Gas & Electric Company, Fort Scott, Kan., to succeed E. C. Gates.

Van Horn Ely, Philadelphia, has been elected president of the Jersey Central Traction Company, Keyport, N. J., to succeed W. W. Laird.

J. J. Schweitzer has been appointed superintendent of shops of the Cincinnati (Ohio) Traction Company to succeed J. H. Elliott.

W. W. Prater has been appointed roadmaster of the Clinton, Davenport & Muscatine Railway, Davenport, Iowa, to succeed J. Wideman.

A. Coffman has been appointed claim agent of the Roanoke Railway & Electric Company, Roanoke, Va., succeeding C. B. Short.

F. A. Hurlbut has been appointed chief engineer of the East St. Louis & Suburban Railway, East St. Louis, Ill., to succeed P. S. Tuncil.

C. F. Conn has been appointed secretary of the J. G. White Engineering Corporation, New York, N. Y., to succeed A. N. Connett, Jr.

H. F. Barraclough has been appointed purchasing agent of the Salt Lake & Ogden Railway, Salt Lake City, Utah, to succeed F. D. Brown.

A. O. S. Havens has been appointed secretary of the Trenton, Lakewood & Seacoast Railway, Lakewood, N. J., to succeed Archibald D. Davis.

Benjamin R. Duff has been appointed claim agent of the New York & North Shore Traction Company, Roslyn, N. Y., to succeed George F. Orthel.

H. A. Laxon has been elected president and general manager of the Uncanoonuc Incline Railway & Development Company, Manchester, N. H.

W. H. Whatley has accepted the position of master mechanic for the Macon Railway & Light Company, Macon, Ga., succeeding E. G. Daniels.

W. J. Musser has been appointed secretary of the Southern Illinois Light & Power Company, with office at St. Louis, Mo., succeeding Mary McCord.

Gus A. Kohler has been appointed secretary of the Springfield Terminal Railway & Power Company, Springfield, Ohio, to succeed J. F. McGrew.

M. Kerwin has been appointed manager of Kent House Park at Montmorency Falls for the Quebec Railway, Light & Power Company, Quebec, Que.

Elmer Schoggan has been appointed claim agent of the Little Rock Railway & Electric Company, Little Rock, Ark., to succeed the late A. B. Chichester.

John O. Motto has been appointed general freight and passenger agent of the Winona Interurban Railway, Warsaw, Ind., in place of W. D. Stansifer.

W. T. Stewart, heretofore vice-president of the Gulfport & Mississippi Coast Traction Company, Gulfport, Miss., has been elected president of the company.

H. H. Bechtel has been appointed secretary of the Twin State Gas & Electric Company, Brattleboro division, Brattleboro, Vt., to succeed G. L. Halstead.

J. S. Rice has been appointed chief dispatcher for the Salem & Penns Grove Traction Company, Penns Grove, N. J., to succeed Thomas B. Ackarman.

C. A. Farrest has been made treasurer for the Brattleboro division of the Twin State Gas & Electric Company, Brattleboro, Vt., to succeed A. D. Foster.

A. R. Evans has been elected president of the Fox & Illinois Union Railway, Aurora, Ill., to succeed H. H. Evans, who becomes vice-president of the company.

S. G. McMeen of Columbus, Ohio, has been elected vice-president of the Chattanooga Railway & Light Company, Chattanooga, Tenn., to succeed M. S. Hopkins.

George McIntosh has been appointed chief engineer of power stations for the Ohio Electric Railway & Power Company, Pomeroy, Ohio, to succeed Daniel Rizer.

J. B. Harnish, heretofore vice-president of the Lancaster & York Furnace Street Railway with office in New Danville, Pa., has been elected president to succeed Paul Heine.

J. W. Brannon, heretofore chief engineer of power stations for the St. Francois County Railroad, Farmington, Mo., has been made superintendent to succeed Richard Doyle.

T. H. Purdom has been elected vice-president of the London & Lake Erie Railway & Transportation Company, London, Ont., to succeed George B. Woods, who became president of the company.

R. J. Pike, formerly secretary to R. P. Stevens, president of the Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, has been made purchasing agent of the company to succeed C. O. Bailey.

A. J. Boardman, division superintendent of the Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind., has received a commission as captain in the Ordnance Officers' Reserve Corps.

F. W. Bacon, vice-president of the Kentucky Traction & Terminal Company, Lexington, Ky., has succeeded E. Mendenhall as vice-president of the Ohio River Electric Railway & Power Company, Pomeroy, Ohio.

W. E. Parker has been promoted to the position of master mechanic for the New Bedford & Onset Street Railway. Mr. Parker entered the company's service ten years ago as a mechanic, in which capacity he has served continuously since that time.

W. C. Callaghan, acting manager of the Shore Line Electric Railway, Norwich, Conn., for the last year, has returned to the staff of The J. G. White Management Corporation, New York, N. Y., as their contract in connection with the operation of the Shore Line property expired on June 30.

J. H. Brown, traffic manager of the San Francisco-Oakland Terminal Railways, Oakland, Cal., has resigned to assume charge of the Monta Vista Rancho, which consists of 2000 acres of olive orchard in Shasta County. Mr. Brown will be succeeded by G. E. Sheldon, his former chief clerk on the San Francisco-Oakland lines.

W. B. Miser, formerly with the Illinois Traction System at Jacksonville, Ill., has been appointed manager of the Drumright Light & Power Company, at Drumright, Okla., one of the new properties recently acquired by H. M. Bylesby & Company. The Drumright Light & Power Company will be included as part of the enlarged Oklahoma Gas & Electric Company.

Homer Ruhl, heretofore general freight and passenger agent of the Fort Wayne & Decatur Traction Company, Fort Wayne, Ind., has been appointed auditor, effective July 1, to succeed P. C. Reinking, who resigned to accept a position with the Fort Wayne Corrugated Paper Company. Mr. Ruhl will be succeeded by Adrian Baker.

Walter A. Scott has been appointed superintendent of the Exeter, Hampton & Amesbury Street Railway, Exeter, N. H., with headquarters at Hampton. Mr. Scott has been employed by that company since 1903. He began as a conductor and later served as starter at Hampton Beach. He was promoted to the position of assistant treasurer of the company in 1914 to fill the vacancy caused by the death of Edward P. Weeks.

Warren I. Lee, Brooklyn, N. Y., former first deputy comptroller of New York State, has been appointed by the Public Service Commission for the First District of New York as assistant counsel to the commission. Mr. Lee's assignment will be under Leroy T. Harkness, chief of rapid transit, in connection with claims of subway contractors against the city. Several such claims have recently been filed against the city for large amounts.

L. E. Myers, president of the L. E. Myers Company, Chicago, Ill., and president of several public service corporations including the Bessemer Railway & Light Company, Bessemer, Mich., will report at Washington, D. C., on July 15 to assist Herbert C. Hoover in the work of supervision of federal food control. The definite work which Mr. Myers will do has not been assigned, but it is reported that he will take charge of the bureau of special investigation.

W. C. Klein, who has recently been appointed master mechanic of the Easton (Pa.) Transit Company, entered electric railway work in the shops of the Metropolitan Street Railway, New York, N. Y., under Thomas Mellen in 1901. In 1903 he resigned from the Metropolitan Street Railway to become a general inspector with the Albany & Hudson Railroad. He continued with that company for several years and then engaged in shop work with the General Electric Company for two years. In 1908 he returned to New York with the New York Railways, the successor to the Metropolitan Street Railway, and served for four years as shop foreman and draughtsman under William McIver, H. H. Adams and J. S. Doyle. In 1912 and 1913 Mr. Klein was connected with the Federal Storage Battery Company. From 1913 to 1916 he was with the Brooklyn (N. Y.) Rapid Transit System as draughtsman and general inspector.

E. C. Deal has resigned as vice-president and general manager of the public utility properties until recently controlled by W. N. Coler & Company, New York, N. Y., to become manager of the Trinidad Electric Transmission, Railway & Gas Company, Trinidad, Col. Mr. Deal gained his early experience with the Georgia Electric Light Company, which he served in various capacities from 1894 to 1898. He then entered the employ of Stone & Webster, Boston, Mass., but left them in 1904 to go with the Gas & Electric Company of Bergen County, New Jersey, as chief engineer in charge of the company's properties in more than forty municipalities in northern New Jersey. When that company



E. C. DEAL

was absorbed by the Public Service Corporation of New Jersey Mr. Deal became superintendent of the latter company's electric properties in central New Jersey. He severed his connection with the Public Service Corporation in 1908 to go with the firm of W. N. Coler & Company as manager and engineer of public service properties owned by them. Following the acquisition of the property of the Augusta Railway & Electric Company and the Augusta-Aiken Railway & Electric Company by a syndicate in which J. G. White & Company, Inc., New York, were interested, Mr. Deal resigned from Coler & Company to become general manager of the Augusta-Aiken Railway & Electric Corporation, the successor company in Augusta. This was in April, 1911. In April, 1913, he was elected vice-president of the company in addition to general manager, and was also made vice-president and general manager of the Georgia-Carolina Power Company, owned by the same interests. Mr. Deal resigned from these companies on March 1, 1914, to become connected again with W. N. Coler & Company as vice-president and general manager of the public utility properties owned and operated by them, and located in different sections of the country. Mr. Deal is past fourth vice-president of the National Electric Light Association, and past-president of the Southeastern section of the National Electric Light Association. The Trinidad Electric Transmission, Railway & Gas Company, with which Mr. Deal has now become connected, is the successor to the Southern Colorado Power Company. It controls the city railway system in Trinidad and a system of interurban electric railways extending from that city and operates about 200 miles of transmission lines in southern Colorado and northern New Mexico.

## Construction News

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

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

### FRANCHISES

**Santa Ana, Cal.**—The Pacific Electric Railway has asked the Board of Supervisors for a fifty-year franchise to construct an electric railway from Santa Ana to Tustin. The line will leave the Santa Ana-Huntington Beach line at a point between Chestnut and McFadden Streets and will enter Tustin by way of Sixth Street.

**Columbus, Ind.**—The Indianapolis, Columbus & Southern Traction Company, as owner, and the Interstate Public Service Company, as lessee, have surrendered their inter-urban railway franchise to the city of Columbus and will apply to the Public Service Commission of Indiana for an indeterminate permit under which to operate.

**Detroit, Mich.**—The Detroit United Railway has received permission from the City Council to build two new street car lines in the west end of the city. One of the new routes will be a continuation of the Junction Avenue line and will run north on Epworth Boulevard to Dailey Avenue, Dailey and Highfield Avenues to Grand River Avenue, connecting with the line on that street. The other route is an extension out Linwood Avenue to the Joy Road. It is likely that this line will be connected with the Trumbull line. It is expected that work will be started on these extensions in a very short time. The extension of the Hamilton line to the Six Mile Road through Highland Park village is nearly completed, and it is expected that service over this extension will be begun within a month. The company is also extending the tracks on West Warren Avenue. Construction work to permit a general re-routing of cars in the center of the city is nearly completed.

**Brooklyn, N. Y.**—The Brooklyn Rapid Transit Company has asked the Board of Estimate and Public Service Commission for permission to abandon the Long Island Traction Company franchise for a line over the Springfield Road to Hollis Avenue, thence along that avenue into the old village of Jamaica, with a terminus at Twombly Place and Beaver Street.

**Dayton, Ohio.**—The Peoples Railway has asked the County Commissioners for permission to extend its tracks on North Main Street outside the city corporation line. The petition states that a loop will be built at the end of the extension.

**Youngstown, Ohio.**—The Mahoning & Shenango Railway & Light Company has notified the City Council of Youngstown that it will accept the franchise granting it the right to extend the Mahoning Avenue line to Perkins Corners. This franchise has twice been refused by the company within the past few months. If the franchise is granted, work on the extension will be begun immediately.

### TRACK AND ROADWAY

**Little Rock Railway & Electric Company, Little Rock, Ark.**—The tentative plans of the Little Rock Railway & Electric Company to extend its lines to the cantonment site of the Twelfth National Army north of Fort Logan H. Roots have been abandoned, owing to the inability of the company to secure steel rails. The transportation of troops to and from the camp will be cared for by the Iron Mountain Railroad.

**Darwin, Cal.**—A communication from the Darwin Development Company states that construction on the proposed electric railway along the south shore of Owens Lake, to connect with the Southern Pacific Company at Olancha, has been postponed indefinitely, owing to the high cost of materials. [April 21, '17.]

**Fresno (Cal.) Interurban Railway.**—This company reports that within a few months it expects to construct a 6-mile line to Centerville and Kings River head gates.

**Pacific Gas & Electric Company, Sacramento, Cal.**—This company is double-tracking its line on H Street, from Nineteenth Street to McKinley Park.

**Georgia Railway & Power Company, Atlanta, Ga.**—This company will construct a 3-mile extension to the army cantonment at Silver Lake.

**Alton & Eastern Electric Railway, Alton, Ill.**—A contract has been awarded by the Alton & Eastern Electric Railway to Mulvill Brothers, Alton, for the construction of a line from Alton to the State Hospital. L. C. Haynes, East St. Louis, president. [April 10, '15.]

**East St. Louis & Suburban Railroad, East St. Louis, Ill.**—This company is reconstructing its tracks on Missouri Avenue between Collinsville Avenue and Third Street.

**Galesburg Railway, Lighting & Power Company, Galesburg, Ill.**—This company is securing the necessary right-of-way for an extension to Knoxville. The company is also ready to install rails on its North Seminary Avenue line.

**Galesburg & Kewanee Electric Railway, Kewanee, Ill.**—This company expects to lay new rails over that portion of its right-of-way which is to be paved this summer. New tracks are being laid by the company on Commercial Street from Park Street to the city limits.

**Springfield (Ill.) Consolidated Railway.**—This company has received permission from the Public Utilities Commission of Illinois to extend its transmission line over the tracks of the Chicago, Peoria & St. Louis Railroad in Sangamon Avenue to Eleventh Street.

**Indianapolis Traction & Terminal Company, Indianapolis, Ind.**—This company will construct an extension on Brookside Avenue from Eighteenth Street to Olney Avenue.

**Muscatine, Burlington & Southern Railway, Muscatine, Iowa.**—Tentative plans for the electrification of the Muscatine, Burlington & Southern Railway were outlined at a recent meeting of the officers and directors of the road. Plans were also made for the complete rehabilitation of the road at an expense of approximately \$200,000, exclusive of the electrification. The road is more than 50 miles long.

**Washington, Baltimore & Annapolis Electric Railway, Baltimore, Md.**—This company has awarded a contract to H. S. Kerbaugh, Inc., Baltimore, for the construction of tracks in connection with the new army cantonment at Annapolis Junction.

**Detroit (Mich.) United Railway.**—This company has completed a new bridge over the Clinton River at Macomb Street, Mt. Clemens, and the Shore Line cars are now operating from Detroit to Mt. Clemens over the bridge.

**Duluth (Minn.) Street Railway.**—Work has been begun by the Duluth Street Railway double-tracking its East End car line from the Northern Pacific Railroad crossing to Robertson Avenue, Superior. Work will be begun about Aug. 1 on the construction of an extension from Duluth to New Duluth, and it is expected that the line will be built and in operation by Dec. 31.

**Helena Light & Railway Company, Helena, Mont.**—This company is working on a program of extensive improvements for its suburban lines, which it is hoped to complete before the State Fair opens on Sept. 24. The company is laying 110 lb. rails on Helena Avenue from North Main Street to the Northern Pacific Railroad station. New ties are to be placed under the 70 lb. rails on the Lower Broadwater line, North Park Avenue, between Lawrence and Placer. The upper Broadwater line is also to be overhauled by putting in new ties and 70 lb. rails on Harrison Avenue. Later the line from Harrison Avenue and Knight Street to Broadwater will be improved by removing the old ties and taking out some of the kinks in the tracks.

**Claremont Railway & Lighting Company, Claremont, N. H.**—This company reports that it will reconstruct its entire track in Claremont, material for which has been purchased.

**City Electric Company, Albuquerque, N. Mex.**—This company is installing a new electric feed system on its University line.

**New York Municipal Railway, Brooklyn, N. Y.**—Bids were opened by the Public Service Commission for the First District of New York on July 5 for the construction

of Route No. 49, Section 3, the Culver Rapid Transit Railroad in Brooklyn, from a point near Avenue X to Sheepshead Bay Road. The lowest bidder was Oscar Daniels & Company, New York, at \$84,600.

**Long Island Railroad, New York, N. Y.**—This company has ordered from the General Railway Signal Company an electro-mechanical interlocking machine with sixteen electrical levers and seven mechanical levers, to be installed at Manhattan Beach Junction.

**Cincinnati (Ohio) Traction Company.**—The street railway committee of the City Council has decided to recommend the extension of the Warsaw Avenue line of the Cincinnati Traction Company to Covedale; the Sixth Street line over the Hopple Street viaduct, and the McMickin-Main line to Dixmyth Avenue. Consideration of other extensions was postponed at a recent meeting because of the absence of representatives of the company.

**Columbus, Delaware & Marion Electric Company, Columbus, Ohio.**—Improvements to the amount of \$500,000 will soon be made by the Columbus, Delaware & Marion Electric Company which recently took over the Columbus, Delaware & Marion Railway. The plan of capitalization of the new company was noted last week.

**Springfield (Ohio) Railway.**—Work has been begun by the Springfield Railway on the construction of an extension from the North Limestone Street lines over Chestnut Avenue, Mason Street, Sherman Avenue and Olive Street, and it is expected that the line will be completed in about two months.

**Mahoning & Shenango Railway & Light Company, Youngstown, Ohio.**—Work has been begun by the Mahoning & Shenango Railway & Light Company on its 3-mile line covering the eastern section of the city and to Buhl Farm.

**Oklahoma Union Railway, Tulsa, Okla.**—A contract has been awarded by the Oklahoma Union Railway to the Topeka Bridge & Iron Company, Topeka, Kan., for the construction of all bridges to be built on its line between Tulsa and Sapulpa. Four bridges and one viaduct were included in the contract. All bridges will be of the monolithic arch type and will be constructed of reinforced concrete.

**London (Ont.) Street Railway.**—It is reported that the London Street Railway has agreed to construct a second track on Richmond Street if the city would widen the street about 3 or 4 ft.

**Bloomsburg, Millville & Northern Railway, Bloomsburg, Pa.**—William P. Zehner, secretary of the Bloomsburg, Millville & Northern Railway, reports that the company has decided not to construct its proposed line at this time and will sell the right-of-way.

**Philadelphia, Pa.**—Sealed proposals will be received by the Department of City Transit, Philadelphia, William S. Twining, director, until July 24 for concrete track floor, cast iron floor drains and reinforced concrete slab footwalks from Callowhill Street to Indiana Street, about 15,630 linear feet, and from Indiana Street to Dyre Street, about 15,000 linear feet.

**Rhode Island Company, Providence, R. I.**—Plans have been completed by the Rhode Island Company for testing all rail bonds on the 400 miles of track in Providence. The work is to be done under the direction of Prof. Albert S. Richey of Worcester Polytechnic Institute, and will be begun at once.

**Regina (Sask.) Municipal Railway.**—The City Commissioners of Regina have under consideration the construction of an additional half mile of track on Pasqua Street, in order to convert the red and blue lines into a belt line. It is estimated that the cost of the line would be about \$12,000. The construction of second track on Elphinstone Street to the exhibition grounds is also under consideration by the company.

**Northern Texas Traction Company, Fort Worth, Tex.**—The City Commission of Dallas has ordered the Northern Texas Traction Company to lay 103-lb. rails on wood or concrete ties with a solid concrete sub-base on Jefferson Street from Lancaster to Polk Avenues, 2 miles, preparatory to the repaving of this street.

**\*Freeport, Tex.**—It is reported that surveys are being made by the Freeport Sulphur Company for an electric railway from Freeport to Houston, about 100 miles. W. A. Randle, engineer in charge.

**Houston (Tex.) Electric Company.**—Plans are being considered by the Houston Electric Company for the construction of an extension of the Brunner Street car line to the proposed camp site at the city limits of Houston.

**San Antonio (Tex.) Traction Company.**—Announcement has been made by W. B. Tuttle, vice-president of the San Antonio Traction Company, that work will be begun on the proposed line to Camp Kelly, the aviation post, as soon as the City Commission grants permission for the transfer of the franchises of the San Antonio Traction Company and the San Antonio Gas & Electric Company to a new corporation to be known as the San Antonio Electric Company.

**Tacoma, Wash.**—Bids have been asked by the City of Tacoma for the construction of 10,000 ft. of track in the extension of its line to the Todd shipyards. The work will involve the construction of a ½-mile viaduct over the yards of the Chicago, Milwaukee & St. Paul Railway and a 600-ft. trestle over Hylebos Creek waterway. The estimated total cost is \$180,000.

**Wisconsin Interurban System, Madison, Wis.**—The Wisconsin Railroad Commission has granted the Wisconsin Interurban System permission to issue \$600,000 in bonds, the proceeds of which will be used to pay indebtedness incurred in building street railway in Portage and Madison and the remainder to be used for construction purposes. The company is building an electric railway between Madison and Portage and Madison and Janesville, Wis. J. E. Jones of Madison is president. [Nov. 11, '16.]

## SHOPS AND BUILDINGS

**Moncton Tramways, Electric & Gas Company, Ltd., Moncton, N. B.**—This company has completed a new machine shop, containing motor-driven lathes, drill presses and grinders.

**Johnstown (Pa.) Traction Company.**—Work will be begun at once by this company on the construction of a temporary carhouse in Coopersdale for the purpose of keeping a number of cars in the lower section of the city while the Walnut Street bridge is being erected.

**Philadelphia, Pa.**—Bids opened for the construction of ten stations on the Frankford Elevated line by Director Twining of the Department of City Transit on July 10 were so far above the estimates upon which the department had based its appropriations for the cost of the work that the bids were discarded. Hence new estimates will have to be made and bids readvertised. There were but two bidders for the construction of the ten buildings, and the higher of these bids was \$550,000 and the lower \$510,000. Bids for the electrical and plumbing installations were well within the department's estimates but were invalidated by the necessity of drawing up entirely new specifications.

## POWER HOUSES AND SUBSTATIONS

**Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.**—This company has awarded a contract to the Engineering Company, Fort Wayne, for the steel extension to be built to its power house.

**United Railways & Electric Company, Baltimore, Md.**—Bids have been asked by the United Railways & Electric Company for stokers for its Pratt Street power house.

**International Railway, Buffalo, N. Y.**—The City Council of Niagara Falls has granted the International Railway permission to place overhead transmission cables along Twenty-fourth Street to its new substation.

**Tacoma Railway & Power Company, Tacoma, Wash.**—A portable substation, including complete equipment, will be installed immediately by the Tacoma Railway & Power Company to increase the power service on the company's line to American Lake. The station will be mounted on a flat car.

**Waupaca Electric Service & Railway Company, Waupaca, Wis.**—This company is making improvements to its electric power system in Waupaca. A new 225-hp. electric generator will soon be installed and placed in operation. The system will also be changed to 60 cycle.



# Manufactures and Markets

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

## One-Man Cars Increasingly Popular

Car Orders in General During First Half of 1917 Show Slight Decline as Compared with 1916, but Better than in 1915—Manufacturers Hopeful

Conditions change so rapidly these days that estimates of the future need frequent revision. This is especially true in the electric railway field and particularly in its car-designing and manufacturing divisions. Once each year the ELECTRIC RAILWAY JOURNAL, in its first issue of January, presents authoritative statistics of the number and types of cars and locomotives ordered during the previous year. The records shown for the business of 1916 were of particular interest because of the generally unsettled state of affairs in the transportation and manufacturing industry. It had been difficult during the year to gage the trend of business and it was interesting as well as reassuring to find that the electric railways had ordered 1200 more cars in 1916 than they did in 1915. Yet the total of 3942 cars for 1916 was small in comparison with the totals of earlier years.

### ESTIMATES FOR 1917 LARGE

Based on the information available at the beginning of this year, a survey of the opinions of men in important positions in the electric railway car-manufacturing and car-operating divisions of the industry confirmed a view frequently expressed in conversation—that car orders for the first half of 1917 would considerably exceed those for either half of 1916. But now that the first half of 1917 has been completed and the records are available, it is found that the estimates have not been met.

The manufacturer is interested to learn just how many cars have been ordered; first, because the status of the car-building business very clearly reflects the status of the electric railway industry, and second, because the figures for the first half of the year will afford a little firmer foundation on which to base calculations for the second half of this year—a year which is displaying much complexity for all manufacturers.

### CARS ORDERED FIRST HALF OF 1917

Here are the figures showing a comparison of the cars ordered for the first six months of this year and for the same periods in 1915 and 1916. These figures include the cars ordered by electric railway companies in the United States and Canada:

	First Six Months	Full Year
1915 .....	1,273	2,782
1916 .....	2,224	3,942
1917 .....	1,943	....

It is noted that the deficiency for the first half of 1917 is 281 cars as compared with the same period for 1916. No doubt a later and more extended census of just what cars are being built in company shops will serve to increase the total number of cars, but the statement may safely be made that 12 per cent fewer cars were ordered from manufacturers and company shops during the first half of 1917 than were ordered during the first half of 1916.

The largest car order placed this year was that of the Interborough Rapid Transit Company for 377 steel motor cars and 140 steel trail cars for the dual subway system. The total amount of this order, including motor and control equipment and brakes, was reported as \$4,390,000. Had it not been for this order the total number of cars ordered by the Eastern roads since Jan. 1 would have been the small figure of 437.

Other orders of size in the Eastern states were 100 cars for the Public Service Railway, 100 Peter Witt type cars for the International Railway Company of Buffalo, 107 double-truck city and interurban cars for Hodenpyl, Hardy

& Company, and the Stone & Webster order for 159 one-man safety cars. The latter two orders, however, were for distribution to properties in the Central, Southern and Pacific Coast states.

In the Middle states the number of cars ordered as compared with 1916 was proportionately less than in the East, and it should also be noted that of the 580 cars ordered by the roads in the Middle states since Jan. 1, fully 250 were freight cars.

The quota of cars ordered for Western properties was largely filled by the Stone & Webster one-man safety-car order earlier mentioned. In Canada the records show that but fourteen cars were ordered in addition to the fifty motors and fifty trail cars for the Montreal Tramways.

The figures for the first half of 1917 and 1916 presented by geographical divisions, also are informative:

	ROLLING STOCK PURCHASES			Number of Companies Placing Orders, for First Half of	
	First Six Months 1916	First Six Months 1917	Increase or Decrease	1916	1917
Eastern states .....	1,257	954	-303	44	21
Middle states .....	805	580	-225	41	31
Western states .....	49	145	+96	5	10
Southern states .....	88	150	+62	14	16
Canada .....	25	114	+89	3	4
Totals .....	2,224	1,943	-281	107	82

These figures show that notwithstanding the business activities of the industrial centers, the roads in the Eastern and Middle states as a group have not been able to buy cars this year, even to the number purchased last year, and that the bulk of the orders have come from the big city properties.

### THE FASHIONS ARE CHANGING

In reviewing the orders placed so far this year there is noted a substantial increase in the number of light safety one-man cars. While not a great many cars have been ordered for city properties in the Central and Western states, yet it is apparent that lightness and safety have at last been fully recognized by small as well as large roads. The Stone & Webster properties have been the largest buyers so far of the small, light, safety units. The single order for 159 of these cars, which will be of the Birney standardized design, will be distributed among properties located in Atlantic, Pacific and Gulf states. The Illinois Traction System also ordered about fifty of these "little fellows" of its Bosenbury type, and practically all of the properties in the Mississippi Valley which ordered cars have adopted some type of light, safety one-man unit.

A notable increase in the number of freight cars ordered is apparent in reviewing the rolling-stock statistics for the first half of the year. This, of course, is to be expected because of the general demand for freight service in all parts of the country. The largest order for standard M. C. B. freight cars was placed by the Illinois Traction System for 200 M. C. B. type cars, about half of which are for coal traffic.

### THE SALES ACTIVITIES

From the first of January until the middle of April, after war had been declared, the rate at which cars were being ordered was in excess of that for several years previous. Since then rolling-stock news has been comparatively meager, so it now seems safe to say that, all other factors considered, the declaration of war and its shroud of doubt were the reasons for the number of car orders placed falling below the well-considered estimates made at the start of this year. In other words, the industry began to order cars in a fairly active way, notwithstanding the especially high prices, and continued to do this until the declaration of war upset financial plans. Had the business continued

as it was running for the first three months of the year, it is fair to state that the number of cars placed during 1917 would have exceeded the record for several years past.

Part of the present inactivity, of course, is chargeable to summer, a season of slackness in car ordering, even in normal years. Most of the car builders in the electric railway field have accumulated such stocks of raw materials that they are safe in promising to deliver cars as soon as a railway can obtain the electrical equipment, and they are hopeful that more revenue from the properties will shortly evidence itself in inquiries for more cars.

## Car Manufacturers Join Forces

### Prominent Companies Form Association for Mutual Benefit of Members and Railways

The Railway Car Manufacturers' Association, whose organization has recently been completed, consists of sixteen car builders. Together they have a capacity for building more than 250,000 cars per annum, a capacity much in excess of the business done during recent years. The purposes of the association are co-operative and educational. Specifically they are: In all lawful ways and by all lawful methods to promote the interests of the car-building industry and to procure, to the fullest possible extent, economical results beneficial to its members and to the purchasers of their products; to foster and promote a spirit of co-operation between its members with respect to safety and welfare work; to afford a means and method for ready interchange of views concerning matters affecting the car-building industry, the interests of the individuals and concerns engaged therein and of the purchasers of their products and of allied industries, and for a full discussion of all such matters; to secure and preserve equitable conditions in the workshops of its members, with a view to the improvement of shop conditions and the proper protection of the interests of both employer and employee; to co-operate with railroads and other consumers of the products of the members of this association and with allied industries, for the purpose of bringing about a standardization of designs and specifications, and a uniformity of methods of inspection and purchasing.

The association, of which Dr. W. F. M. Goss is president, has recently opened offices at 61 Broadway, New York City. Dr. Goss is well known in the fields of steam railroading, mechanical engineering and education, to each of which he has made many notable contributions. He became identified with Purdue University in 1879 and, as dean of engineering and director of the engineering laboratories, co-operated with the steam railroads in making tests of locomotives and parts of railroad equipment. In 1907 he went to the University of Illinois as dean of the engineering schools, and while there was instrumental in establishing the department of railway electrical engineering. In 1915 he was engaged as chief engineer by the Chicago Association of Commerce to prepare a report on smoke abatement and railway terminal electrification in Chicago. He has served as president of the A. S. M. E. and has held important offices in many technical societies.

The manufacturers which are members of the association are as follows: American Car & Foundry Company, Barney & Smith Car Company, Bettendorf Company, J. G. Brill Company, Haskell & Barker Car Company, Harlan & Hollingsworth Corporation, Keith Car & Manufacturing Company, Laconia Car Company, Mount Vernon Car Company, Osgood-Bradley Car Company, Pressed Steel Car Company, Pullman Company, Ralston Steel Car Company, St. Louis Car Company, and Standard Steel Car Company.

Copper production for the month of June has been estimated at 200,000,000 lb. This is the largest amount produced since December, 1916, when the same amount was refined. The lowest yield for any month of the first half of 1917 was for March, when only 150,000,000 lb. were refined. Delays in the delivery of equipment have made it impossible to increase the refining capacity to 225,000,000 lb. monthly as was planned. Inefficiency of labor, strikes, etc., have been important factors preventing the refineries from getting the best that was in their existing capacity.

## Why the Detroit United Railway Delays Track Work

### Statements Show Patrons the Rail Delivery Situation as It Now Confronts the Electric Railway— Government Needs Must Be Met First

Someone in Detroit who was unacquainted with the present industrial situation publicly stated that this road could secure track steel, yet held off doing so. The frankness of the following answer is commended. The letters quoted will also interest intending purchasers of like material and possibly will find sympathetic readers among other manufacturers.

#### DELIVERIES YET TO BE MADE ON ORDERS ENTERED IN JANUARY, 1916

The company's statement of delivery conditions follows:

"We have not received a single pound of the 5000 tons of T-rail ordered by us in January, 1916, for use on our inter-urban lines. The deep girder rail used in paved streets is, however, even more difficult to get. This rail is used only by street railways in paved streets. The aggregate quantity used throughout the country is, of course, small compared with the enormous tonnage of steel manufactured for other purposes. In consequence, the mills are unwilling to interrupt their larger business for the purpose of manufacturing a comparatively small tonnage of this type of rail. They have yet to fill our order for this rail placed in April, 1916, and, of course, have not filled orders which were placed at later dates.

"We quote from a letter received from one of the mills, which was written to us in reply to urgent pleadings that rail be delivered to us: 'The mill situation is getting worse and is likely to be deplorable before midsummer. The demands of the United States government take about two days a week, and this week they are taking all the time. When government orders require two days out of every six, and all the days every third week, there is not much chance to catch up or keep up with orders. While I and our people want to do all we can for you, the demands of the United States government are imperative and are likely to upset everything.'

"Apparently there is a great scarcity of steel. The United States Steel Corporation reports unfilled orders of 11,383,287 tons as of June 30, and that orders for millions of tons of new business are being refused. We have scheduled for completion this year many replacements and new jobs that require the deep girder rail. Our endeavor, of course, is to carry on our work in connection with the city's work, to the end that the public may be least inconvenienced. However impatient we may all be, all of the work cannot be accomplished at one time. It must be carried on in an orderly manner.

"Since the foregoing was received the steel mill sent a second letter reading as follows:

"We quote as follows: 350 tons of rail section 114-480, in lengths of 30 ft. and 33 ft., as standard, price \$79.20 per gross ton f.o.b. mill with freight prepaid to Detroit, Mich., we to have privilege of shipping not to exceed 10 per cent of second-quality rail at a reduction in price of \$2 per ton. The above quotation is made for immediate acceptance and under the following stipulation, viz.: This quotation is subject to the acts, demands or requests of the United States government and is made with the express understanding that shipment will be from the first convenient rolling during 1918. Both buyers and sellers reserve the privilege of cancellation of this order in case the sellers shall notify the buyers prior to July 1, 1918, that they will be unable to make shipment during the remainder of 1918.

"Regarding this stipulation it is necessary for us to make it in all future contracts as the requirements of the United States government may be such as to prevent the rolling of any girder rails beyond those already contracted for, for shipment this and next year, and may interfere with the shipment of existing orders. It may be that you will want us to enter the order on the basis as above outlined in order to obtain such preference in rolling as we may be able to give, based upon the natural priority which will be accorded in the chronological order of the dates of contracts placed. If this is satisfactory please wire us immediately."

## Exports Board Appointed

The exports board consisting of five members from various United States departments whose duties will be to control the exports question under the general instructions of the administration, has been named. E. N. Hurley, former chairman of the Federal Trade Commission, will head the board as the representative of the Department of Commerce. Dr. Alonzo E. Taylor will represent the Department of Agriculture, John B. White the food administrator, and Vance McCormick, chairman of the Democratic National Committee, the Department of State. E. E. Pratt, chief of the Bureau of Foreign and Domestic Commerce, will act as secretary to the board and the council.

## NEW YORK METAL MARKET PRICES

	July 5	July 12
Prime Lake, cents per lb.	31 3/4	30 3/4
Electrolytic, cents per lb.	31 3/4	30 3/4
Copper wire base, cents per lb.	36	36
Lead, cents per lb.	11 3/8	11 1/8
Nickel, cents per lb.	50	50
Spelter, cents per lb.	9 1/4	9 1/8
Tin, Straits, cents per lb.	62	63
Aluminum, 98 to 99 per cent, cents per lb.	59	58

## OLD METAL PRICES

	July 5	July 12
Heavy copper, cents per lb.	28	27
Light copper, cents per lb.	25	24 1/2
Red brass, cents per lb.	20	20
Yellow brass, cents per lb.	18	18
Lead, heavy, cents per lb.	8 3/4	9 1/4
Zinc, cents per lb.	7 1/4	7
Steel car axles, Chicago, per net ton.	\$50.00	\$50.00
Old car wheels, Chicago, per gross ton.	\$39.00	\$38.00
Steel rails (scrap), Chicago, per gross ton.	\$49.50	\$48.00
Steel rails (relaying), Chicago, per gross ton.	\$59.50	\$59.50
Machine shop turnings, Chicago, per net ton.	\$19.50	\$20.00

## CURRENT PRICES FOR MATERIALS

	July 5	July 12
Rubber-covered wire base, New York, cents per lb.	36 1/2	36 1/2
No. 0000 feeder cable (bare), New York, cents per lb.	36 1/2	36 1/2
No. 0000 feeder cable stranded, New York, cents per lb.	33 3/4	33 3/4
No. 6 copper wire (insulated), New York, cents per lb.	33	33
No. 6 copper wire (bare), New York, cents per lb.	36	36
Rails, heavy, Bessemer Pittsburgh.	\$38.00	\$38.00
Rails, heavy, O. H., Pittsburgh, per gross ton.	\$40.00	\$40.00
Wire nails, Pittsburgh, per 100 lb.	\$4.00	\$4.00
Railroad spikes, 9/16 in., Pittsburgh, per 100 lb.	\$5.00	\$5.00
Steel bars, Pittsburgh, per 100 lb.	\$4.50	\$5.00
Sheet iron, black (24 gage), Pittsburgh, per 100 lb.	\$8.40	\$8.35
Sheet iron, galvanized (24 gage), Pittsburgh, per 100 lb.	\$9.55	\$9.55
I-beams over 15 in., Pittsburgh, cents per lb.	10	10
Galvanized barbed wire, Pittsburgh, cents per lb.	\$4.85	\$4.85
Galvanized wire, ordinary, Pittsburgh, cents per lb.	\$4.65	\$4.65
Cement (carload lots), New York, per bbl.	\$2.22	\$2.22
Cement (carload lots), Chicago, per bbl.	\$2.31	\$2.31
Cement (carload lots), Seattle, per bbl.	\$2.60	\$2.60
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.16	\$1.13
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.17	\$1.14
White lead (100 lb. keg), New York, cents per lb.	12 3/4	12 3/4
Turpentine (bbl. lots), New York, cents per gal.	42 1/2	41 1/2

## ROLLING STOCK

City of Tacoma, Wash., is in the market for four motor cars, six trail cars and one freight locomotive.

Philadelphia (Pa.) Rapid Transit Company is reported to be in the market for forty city cars.

St. Petersburg & Gulf Railway, St. Petersburg, Fla., is reported to have placed an order for six city cars with The J. G. Brill Company.

Toronto (Can.) Suburban Street Railway has purchased three semi-convertible pay-as-you-enter cars from the Tuscaloosa (Ala.) Street Railway. It has also purchased an express car and a snowplow.

London (Ont.) Street Railway has ordered five single-truck single-end pay-as-you-enter cars. These cars will cost about \$6,500 each, as compared to \$4,500 each paid for similar cars in 1913.

Columbus (Ga.) Railroad on June 16 placed in service on its lines a one-man pay-as-you-enter safety car similar to the eight single-truck safety cars recently ordered by the company from the American Car Company.

Eastern Wisconsin Electric Company, Oshkosh, Wis., has agreed to buy ten new city cars, two interurban cars, a

snowplow and other equipment provided the city will grant the elimination of certain unproductive track. The company proposes to spend about \$250,000.

Washington, Baltimore & Annapolis Electric Railroad, Baltimore, Md., is reported to have placed an order for eight motor cars and to be in the market for 100 day coaches for handling troop movements in and out of the government's camp at Annapolis Junction, Md.

Public Utilities Company, Evansville, Ind., has specified the following details for ten vestibled pay-within cars being built for it by the St. Louis Car Company:

Number	10	Designation signs	Ill. E. S. S.
Builder	St. Louis Car	Door mechanism	mechanism
Type	Pay-within	Hand-operated	
Seating capacity	40	Fenders	Ry. Co.'s design
Weight (total)	36,840	Gongs	12-in. bronze pneumatic
Truck centers, length	19 ft. 0 in.	Hand brakes	Ackley
Over bumpers	41 ft. 4 in.	Hand straps	Rico sanitary
Over vestibules	40 ft. 4 in.	Heaters	Peter Smith, No. P-12
Over posts	8 ft. 2 in.	Headlights	Crouse-Hinds
Floor to ceiling	7 ft. 6 in.	Journal boxes	St. Louis Car
Sill to trolley base	8 ft. 5 1/2 in.	Lightning arresters	West.
Body	Steel sides with wooden superstructure	Motors	West. 532-B
Interior trim	Honduras mahogany	Paint	Murphy ABC
Headlining	3/16-in. Agasote	Register	International R-5
Roof	Turtle deck	Sand box	With Reliance
Underframe	Steel	Sash fixtures	OME Edwards
Air brakes	Westinghouse	Seats	Hale & Kilburn
Axles	St. Louis Car	Seating material	Rattan
Bumpers	Rico anti-climbers	Springs	Pittsburgh steel spring
Car trimmings	Bronze, St. Louis Car	Step treads	Mason
Cables	St. Louis Car	Trucks	St. Louis Car 106-A
Conduits	St. Louis Car		max. traction
Control	Westinghouse K-36 J.	Ventilators	Automatic
Couplers	St. Louis Car	Wheels	33 driver, 21 in. pony, cast-iron
Curtain fixtures	Forsyth No. 88	Special devices	Faraday buzzers
Curtain material	Pantasote No. 77		

United Railways & Electric Company, Baltimore, Md., noted in the June 2 issue as ordering eighty semi-convertible double-truck pay-as-you-enter cars from The J. G. Brill Company, has specified the following details for this equipment.

Number of cars ordered	80	Door mechanism	Manual
Date of order	May 16	Fare boxes	Johnson
Date of delivery	Oct. 1	Wheelguards	HB. Automatic
Builder	J. G. Brill	Gears and pinions	GE grade M
Type	Semi-convertible	Hand brakes	Ackley adjustable
Seating capacity	52	Heaters	Peter Smith electric
Weight (total)	44,000 lb.	Headlights	Dayton Mfg. Co.
Bolster centers	21 ft. 6 in.	Journal boxes	Brill
Over bumpers	46 ft. 7 in.	Lightning arresters,	
Over vestibule	44 ft. 11 in.	GE aluminum cells	
Width over all	8 ft. 4 1/2 in.	Motors	4 GE-200-I,
Rail to trolley base	11 ft. 9 in.	Paint	outside hung
Body	Semi-steel	Registers	International R-7
Interior trim	Natural Cherry	Sanders	Brill
Headlining	Agasote	Sash fixtures	Brill
Roof	Monitor	Seats	Brill
Air brakes	Westinghouse	Seating material	Cane
Axles	Carnegie—heat treated	Springs	Brill
Bumpers	Brill	Step treads	Universal Safety
Car trimmings	Brill	Trolley catchers	None
Conduits	Ry. standard	Trolley base	U. S. No. 6
Control type	K-35-U-2	Trolley wheels or shoes,	
Couplers	Brill	Kalamazoo No. 5	
Curtain fixtures	Curtain Supply & National Lock Washer	Trucks	Brill 27 GE-1
Curtain material	Pantasote	Ventilators	Hinged
Designation signs,	Hunter (4 per car)	Wheels	33 in. cast iron

## TRADE NOTES

J. P. Moore of the railway sales department of the Westinghouse Electric & Manufacturing Company, has been transferred to the Cleveland, Ohio, sales office.

Gordon M. Campbell, manufacturing engineer General Electric Company, West Lynn, Mass., has joined the Kerr Turbine Company, Wellsville, N. Y., as works manager.

Bridgeport (Conn.) Brass Company announces the removal of its New York office to suite 2236, Woolworth Building, 233 Broadway, where larger quarters have been secured.

T. A. Wharton has been appointed by the Barrett Company, New York City, as representative of the railway sales department for the Cincinnati branch, with headquarters at 527 Carr Street, Cincinnati.

Driver-Harris Company, Harrison, N. J., announces that all departments will be shut down for one week beginning June 30. This action was taken to provide for necessary repairs in equipment and to give employees an opportunity to recuperate after a long, hard drive. During the week

the plant is shut down a skeleton organization only will be maintained.

A. A. Gray and C. L. Benjamin have formed a company to act as advertising counsel to manufacturers of electrical, mechanical, chemical and other products, with offices at 608 South Dearborn Street, Chicago. Mr. Benjamin was for nine years advertising manager of the Cutler-Hammer Company, Milwaukee, Wis., and Mr. Gray is widely known as the former managing editor of the *Electrical Review and Western Electrician*.

Safety Car Devices Company, St. Louis, Mo., announces the following recent sales of its safety car brake equipments with complete safety control features: Northern Pennsylvania Traction Company, Meadville, Pa., six sets of equipments, Pittsburgh County Railway, McAlester, Okla., six; Puget Sound International Railway & Power Company, twelve; Columbus (Ga.) Railroad, eight; Tulsa (Okla.) Street Railway, six; Cedar Rapids & Marion Street Railway, Cedar Rapids, Iowa, twenty; the Mason City & Clear Lake Railroad, Mason City, Iowa, seven, and fourteen sets for two Stone & Webster properties.

Combustion Engineering Company, New York, N. Y., in line with the President's proclamation relative to the patriotic duty of all power plant operators to conserve fuel, has assigned one of its efficiency engineers to travel throughout the country until further notice and interview chief engineers and owners of such plants, with a view to reducing the fuel costs by increasing efficiency in every way possible, not only in so far as the stoker is concerned, but in helpful suggestions for minor improvements and changes which a great many plants can perfect with but small expense and trouble when such matters are brought to their attention. It has been estimated that \$600,000,000 is the annual fuel loss through inefficiency in power plants in the United States, and it is the purpose of this corporation to give its full measure of co-operation to accomplishing results in cutting down this enormous waste.

## NEW ADVERTISING LITERATURE

Wagner Electric Manufacturing Company, St. Louis, Mo.: A book, "Motor Installations," illustrating Wagner motors in different industries.

Greenfield Tap & Die Corporation, Greenfield, Mass.: A booklet describing the "Acorn" die. Contains tables of sizes and prices of dies and holders.

Western Fire Appliance Works, Chicago, Ill.: Folder of its Zeleny thermometer system for indicating changes of temperature in grain in storage.

Reynolds Electric Company, Chicago, Ill.: A booklet, describes and gives table and prices of its color hoods and flashers, also illustrations of electrical displays.

Link Belt Company, Chicago, Ill.: A booklet, "The Ideal Drive for Textile Machinery," descriptive and illustrative of the Link Belt silent chain drive.

National X-Ray Reflector Company, New York, N. Y.: Catalog No. 20 on the use of X-ray reflectors for show windows, floodlighting, industrial and other direct lighting.

Holophane Glass Company, New York, N. Y.: A booklet showing the use of Holophane units with type C lamps. Charts and data for designing installations are given.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.: Catalog 3A, supplement 1. Describes an improved form of recording-demand watt-hour meter.

National Metal Molding Company, Pittsburgh, Pa., Bulletin No. 201 on this company's "Flexsteel" products, including armored cable, lamp, cord and flexible metallic conduit couplings and fittings.

Richardson Scale Company, Passaic, N. J.: Bulletin No. 101, descriptive of the construction, operation and advantages of this company's automatic coal scale and also its automatic liquid scale.

Arthur Power-Saving Recorder Company, New Haven, Conn.: Illustrated bulletin on reducing coal, power and maintenance bills, discussing methods of car operation to minimize energy consumption.

Reliance Electric & Engineering Company, Cleveland, Ohio: Bulletin 2014 describing the different mechanical and electrical details of this company's type T heavy-duty "Reliance" motors for direct current.

H. M. Byllesby & Company, Chicago, Ill.: A booklet, "Back of the Investment," containing information about the Northern States Power Company and its properties in 1916. This edition is larger and more attractively designed than the first edition, contains many new photographs and in all respects brings the data up to date.

## New Publications

Municipal Ownership Fails in U. S. A.—By James B. Wootan. H. I. Gonden, People's Gas Building, Chicago, Ill. Thirty-two pages. Paper, 25 cents.

This booklet contains a list of more than 200 municipal ownership failures—economic failures in all cases and physical also in many cases. Politics, it is said, has been the inevitable cause of the failures, with the taxpayers making up the losses from operation.

The Railroad Problem. By Edward Hungerford. A. C. McClurg & Company, Chicago, Ill. 261 pages. Cloth, \$1.50.

The book is a careful study of the physical and financial plight that has overtaken the railroads, and the cause thereof, written by a man who has been in the inside looking out and on the outside looking in. Greatly to the advantage of the book is the fact that Mr. Hungerford has applied to it in goodly measure much of the charm of presentation that has won for him such a host of readers for his magazine articles, some of which form the basis of chapters in the present volume. Mr. Hungerford does not attempt to make out a case for anybody, but he does run pretty well the gamut of the industry from the road itself through organized and unorganized labor. Perhaps the chapter of most interest to men in the electric railway industry is the one on "The Opportunity of the Railroad." For a beginning in this he takes the possibility of the application of electricity as motive power in the operation of the railroad. The opinion of the author is that electrification and general development of terminals have proceeded far too slowly. The book is dedicated to Samuel O. Dunn, editor of the *Railway Age Gazette*.

Electric Traction: A Treatise on the Application of Electric Power to Tramways and Railways. By A. T. Dover, lecturer on electric traction at the Battersea Polytechnic, London, England. New York, The Macmillan Company. 667 pages. 518 illustrations. Price \$5.50.

In this book Mr. Dover has compiled a vast amount of information on the principles and present practice of electric railway engineering. As the name of the book indicates, it is quite technical in character, presumably having been the outgrowth of a comprehensive course of lectures. In fact, the general style and arrangement is about what one would expect in a course of advanced lectures on the subject. The author has had students as well as engineers in mind in writing this book, for he gives many examples such as one expects to find in text-books, and appends a number of examination questions drawn from several sources. He has produced a work which all who have to do with rolling stock and power distribution on electric railways can read with profit, even though much of the equipment described is of British manufacture. Obviously the fundamental principles which he takes up are of universal application.

The contents of the book can be roughly separated into two general parts, which, however, are appropriately interwoven. One consists of the theoretical discussion, with some mathematics, of the principles of car movement, motor operation, control, etc. The other is descriptive matter. Several varieties of alternating-current as well as direct-current equipment are covered in both ways, that is theoretical and practical. One of the most valuable features in the whole treatment is the author's practice of commenting upon essential points, in the endeavor to bring out the logical reasons for the use of certain practices where such reasons exist.