

# Electric Railway Journal

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## Union Leaders Should Prevent Sympathetic Strikes

**T**HIS is no time for radical action on the part of either capital or labor. We believe that both employers and employees are in general endeavoring to avoid conflict. Here and there, however, trouble arises, and then one of the most important questions is—what attitude should fellow employers or labor men take?

Recently in Kansas City, as a result of a general sympathetic strike order following a disagreement between a number of laundry drivers and their employers, the union employees of the Kansas City Railways took a strike vote, which was unanimously opposed to suspension of service. After the strike was called, however, the men were ordered out by "business agents" and the local president under threat of physical interference. The men obeyed in spite of their August, 1917, agreement with the company to arbitrate all grievances. Eventually the sympathetic strike fizzled out, but the occurrence demands warning to union leaders.

Electric railways are public servants; they must perform their duty at all times. When public thought has advanced so far that serious consideration has been given to the problem of preventing strikes among railway employees, union leaders ought to realize that the public will not tolerate any interruption of service because of disputes in other fields. Furthermore, the breaking of arbitration agreements will only do great injury to the contractual reliability of union bodies.

Labor leaders, therefore, should keep a firm hand on disorders of this sort. Merely to urge employees to keep their agreements is not enough. If local bodies refuse to follow the arbitration policy proclaimed by the Amalgamated Association, their charters should be cancelled. The association should punish swiftly and surely all breaches of faith.

## High Time for the Automatic Substation

**W**HEN Milton wrote "He also serves who only stands and waits," he must have foreseen the railway substation attendant. "Attendant" he is rightly named, for standing and waiting is his main job. Since Satan always finds some mischief for idle hands to do, those substation attendants who do not improve each shining hour in the study of electricity, Harold Bell Wright or the uplift of the potato have ample time to brood over their lot in life. They have little more to do than manipulate switches in accordance with the vacillations of the voltmeter. To be sure, this is important work, but it hardly calls for heavy remuneration. At best the cost of substation attendance is an ap-

preciable item, even on city roads; but in these times the burden is heavier than many a railway can bear. Regardless of that fact, substation operators have not hesitated to demand wages in proportion to the increased cost of living or even in inverse proportion to the scarcity of electrical workers. When the railways have been unable to comply, the substation men have gone on strike and greatly embarrassed the service.

However, it is axiomatic that every evil finds a cure. Happily this is already true of the substation. Several years ago automatically operated equipment for railway substations was introduced with much diffidence. Today, it has become a matter of course. The pioneers, particularly, have reason to congratulate themselves on their foresight, for they are saving copper as well as labor. When we consider the necessarily diffusive character of railway management, it is a matter of wonder that this particular kind of dependence upon human fallibility was not abolished long ago. No other public utility is so handicapped by the excess of wage over material costs; yet the electric railway has lagged lamentably behind its possibilities in the development and use of substitutes for human labor.

## The Time Has Come to Resume Committee Activities

**T**HERE has been a great deal of favorable comment upon the action of the American Electric Railway Association in deciding to hold a convention this year even though the exhibits be omitted. The recent annual meeting of the Central Electric Railway Association demonstrated the value of the active continuation of association work, even to the extent of holding conventions. The still more recent annual meeting of the American Railway Engineering Association is another case in point. The latter association did not curtail its committee activities. As a result, progress has been continued and some valuable reports were presented.

The committee work of the American Electric Railway Association and its allied associations has been held in abeyance for a year as the result of the unsettled conditions caused by the entry of the country into the war. There was some adverse comment at the time it was decided to postpone all committee work. This thought was based on the sincere belief of many that there is no time like the present for active committees to accomplish great results, particularly along maintenance engineering and operating lines. The concerted action of committees should be directed toward the collection of data and the dissemination of information for the solution of the many new problems in economical maintenance created by war conditions.

We are inclined to the belief that the Engineering Association could accomplish a great work for the industry if its important technical committees were instructed to disregard assigned subjects to whatever extent might be necessary and devote their time to the study and preparation of reports dealing with such subjects as power station operation in war time, maintenance of equipment under war conditions, war-time track maintenance methods, etc.

### Complaints of Poor Service Have Very Great Potential Value

THE newspaper offices in many cities, during the past winter months, have been flooded with complaints of the poor service being furnished by the electric railways of the country. This has been due, first, to the terrific operating conditions which have obtained and, second, to the unexpected demands which have been caused by the expansion of war activities. Many of the complaints are unjust but not a few have a legitimate basis. But whether the complaints are just or unjust, electric railway managers should study these criticisms because they can be utilized.

Let us consider first the complaints which are based on misapprehension. Every reasonable complaint of this kind gives an opportunity for explanation. The public knows, as a matter of personal experience, how severe the past winter has been. It would seem that if in some way this personal experience could be connected up with the difficulty of operating an electric railway a telling argument could be advanced. Not only were operating conditions severe but it was impossible to secure labor and material for proper maintenance. People generally ought to appreciate this fact also if it is suitably emphasized in publicity campaigns, because it has a counterpart in their own domestic arrangements. In this connection it does no harm to acknowledge that railway service is not perfect, and probably would not be even if conditions were much more favorable. However, the management can explain that it is trying to give good service and must be judged by intention as well as performance. Again, the public believes many things about electric railway operation which are not true. These beliefs become apparent only through complaints, and in answering these an excellent chance is given to dispel popular illusions.

But, after all, the greatest value of complaints is in pointing out the real weakness in the service. Ultimately it is the patron who must be the judge of quality of service, which cannot be tested by arbitrary standards set up by the interested parties, the electric railway managers. After all possible and permissible explanations have been made, the fact still remains that people will ride either because they want to or because they must, or both. The more people that we can get to ride because they want to, the more substantial will be the transportation business.

In the past it has often been necessary to invite complaints in order to draw out the public point of view. This has not been necessary on most roads during the past few months. Now that the weather is better complaints are less numerous and there is an opportunity to digest them along the lines suggested.

### Getting Together on the Lightning Arrester Problem

THE changing seasonal conditions in this country give variety, if not relief, to the troubles of the master mechanic and superintendent of power. The snow and sleet of winter are never safely past before the lightning troubles of spring and summer arrive. Surely if there is any place in the maintenance of the equipment of a railway where "a stitch in time saves nine" it is in connection with the lightning protection problem. Of course, no arrester yet built can take care of a direct stroke-to-line case of trouble. It is singularly fortunate from a protection standpoint, however, that such strokes constitute only a small percentage of the so-called lightning troubles. At the present stage of the art good protection from the majority of such troubles can be secured at a very reasonable cost.

But to secure good protection much co-operative work is necessary. The equipment must be suited to the service; it must be properly installed, and last, but most emphatically not least, it must be carefully maintained. Good arresters will fail when improperly applied or installed, and run-down-at-the-heel protective equipment is bound to give protection of a similar character. In application, in installation and in maintenance methods the wide experience of protective equipment manufacturers should be of much value to the railway operating officials, and the best results will be secured only when the experience of the manufacturer is correlated with the work of the operator. Above all things the operator must not forget about the maintenance part of the work. It is always important that protective equipment receive a general overhauling before the advent of the heavy thunderstorm season, and this year the scarcity of shop labor considerably augments the importance of such overhauling and of continued care in arrester maintenance.

Inasmuch as good protection in the overhead systems lessens the hazards to car propulsion equipment and good car protection lessens lightning troubles in the substation, it is immediately apparent that there must also be active co-operation between the shop and power departments. Each department must do its share. Carelessness on the part of one endangers the equipment and reduces the efficiency of the work of the other. With a given amount of protective equipment best results will always be secured when this equipment is installed and maintained according to a plan, and this plan should be based on the correlated action of the two departments concerned.

That the results of carefully worked out and executed protection plans are worth while a number of articles printed in the *ELECTRIC RAILWAY JOURNAL* within the last few years bear witness. Some of these reports have shown that fully 90 per cent of the motor and other apparatus troubles due to lightning can be averted by proper protection. On many railroads the saving resulting from such trouble elimination would more than pay the annual charges on the protecting system in normal times. Under the present conditions of high repair material costs and a very limited labor supply a well-planned scheme of protective equipment installation and maintenance should return worth-while results.

## Justice to Railways Is Removed Another Step

IN THE twinkling of an eye New York has been turned back to the Stone Age of regulation. Instead of influential bodies, exercising in a broad-minded way the delegated paramount rate-making power of the State and dispensing even-handed justice to electric railways as well as the public, the First and Second District Commissions have become worthless boards, powerless to control local railways except with the permission of the municipalities.

This is not an overdrawn picture. The change described may be the necessary outcome of the decision of the Court of Appeals in the Rochester fare case, mentioned on another page. That such a result is certain will undoubtedly be denied by the Public Service Commission for the First District, whose reasoning the court followed. Nevertheless, we have only to take the comments made by a representative of this commission to point out the bearing of the decision in the great number of cases where fares are stipulated in franchise grants.

The finding of the court seems to be based on two fundamentals. The first is that it is impossible to find a word in the public service commission law which discloses the legislative intent to deal with a matter of rates fixed by agreement with local authorities. The second is that, while it is unnecessary and therefore improper to decide at this time what the limits of legislative power are in this connection, the consent of local authorities required by the New York Constitution for railway installation recognizes the cities as *pro tanto* independent of legislative control, and a franchise grant, once accepted, becomes a contract which neither the State nor its agencies can alter.

Hence, according to W. L. Ransom, counsel for the commissioners, it becomes the settled rule that, to increase a franchise rate, the consent of the municipality is necessary before the ordinary regulative power of the commission can be made effective. But what ordinary power would the commission possess in such a case, unless the city waived its right to stipulate the terms of modification? It is a ten-to-one shot that no city would do that. Mr. Ransom himself seems to appreciate how the city would feel, for in an interview he talks about the maintenance of a uniform, low fare being one of the most important benefits secured by a city in granting a franchise, and about the seriousness of depriving a city of the right to protect itself, by imposing suitable conditions and safeguards, upon any modification of fare.

In other words, if a railway is on the road to receivership because of a fixed 5-cent fare, as many are, let it beg the city for relief! When the dickering is over, what will the commission have to say about it? If the board has no power over the original franchise provisions, on account of the constitutional right of the city to contract, it certainly has none over the modified grant.

So hurrah for the good old days of bargaining in New York State! Mr. Ransom says that the decision of the Court of Appeals is in accordance with a common-sense concept of justice and a sound municipal policy. He is wrong. The decision is based on a narrow-minded

legalism. As far as sound municipal policy is concerned, the court naturally took no account of such a question, for its opinion relates entirely to the legal interpretation of constitutional and statutory phrases. To follow Mr. Ransom's example, however, and interpret the decision from the point of view of policy, we can only say that it opens the way to the worst sort of municipal policy—that which postulates community prosperity upon utility oppression.

The State and its utilities are now left in a quandary, from which both in their common interest should endeavor to extricate themselves. What can they do? From the first reports of the decision it seems that an appeal to the United States Supreme Court for a different interpretation can be made, or legislative action and a popular vote for a constitutional change can be invoked to secure amendments to the law, or the cities individually can act to provide relief. Something must be done, for the railways cannot operate below cost. They need relief, and they need it now.

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## Make It Easy for the Short-Haul Rider to Use Your Cars

AN OLD and very important fact of railroad history is emphasized in a report recently made on the methods and practices of the Boston Elevated Railway Company. "One of the most valuable assets of any street railway system," it says "is the short-haul rider. In fact, it has enabled many of the railways in this country to maintain a flat rate of fare, and to carry many a long-haul rider at a loss."

This report points out that when the Boston company abandoned some of its surface lines in the business district and went below the street into subways it paved the way for improved service but at the same time "it lost much that it may never in all probability be compensated for." By this is meant the short-haul rider—the cream of the traction business.

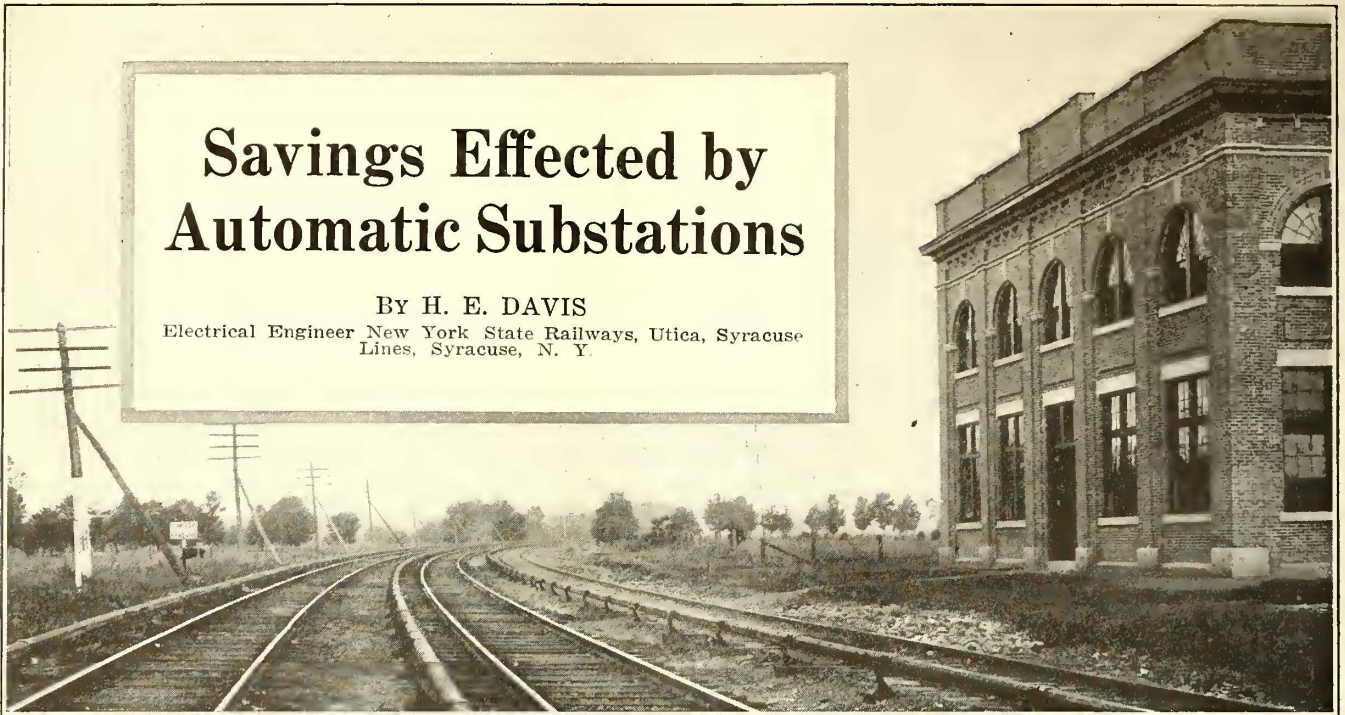
This truth must be faced in every city where the clamor arises for rapid transit. The arrangement of streets in Boston—like that of London—undoubtedly called for relief which could only be had by placing a large number of cars underground in the congested territory. However, the subway habit grew beyond bounds and the story is best told in the figures which show for twenty years a tremendous increase in permanent investment accompanied by only a slight increase in gross earnings.

People who have to ride long distances like to cover the ground rapidly, and for this reason the demand for elevated and subway lines grows. It must always be kept in mind, however, that neither a subway nor an elevated structure is as accessible as a surface line, and the person who wishes to go a few blocks is more readily attracted by the car into which he can step without difficulty. The same point holds good with reference to rerouting of cars or extension of lines. Lack of proper judgment in changes of service may easily result in loss of patronage of short-haul riders. The dividends are not in the straps, although a railway man was quoted to that effect some years ago. The dividends—if there are any—may be found rather in the number of short-haul riders using the cars.

# Savings Effected by Automatic Substations

By H. E. DAVIS

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TYPICAL VIEW OF ONEIDA LINE OF NEW YORK STATE RAILWAYS

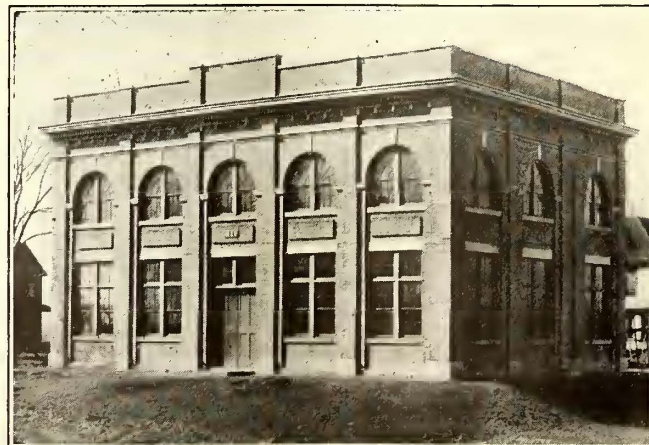
THE New York State Railways, Utica-Syracuse lines, has purchased automatic control for its Manlius Center substation on the Oneida line, a third-rail system operating over the electrified division of the West Shore Railroad between the Utica and Syracuse city lines. This division is 44 miles in length, of which 30.5 miles are double-tracked, 8.8 miles are laid with three tracks and 4.7 miles have four tracks. The running rails are 80 lb., bonded with No. 0000 compressed terminal bonds. The third-rail is 70 lb., with 500,000-circ. mil ribbon bonds soldered to the head of the rail, and is of sufficient area to carry the current without additional feeders.

There are four substations, located 10.75 miles apart and having capacities as shown in Fig. 1. Clark Mills substation (No. 1) is 6.2 miles from the Utica city line, and Manlius Center substation (No. 4) is 6.1 miles from the city line of Syracuse. Vernon substation (No. 2) and Canastota substation (No. 3) are the intermediate substations. The original capacity of the substations was 600 kw., each containing two 300-kw. units. In 1916 one unit was transferred from Manlius Center substation to Vernon substation to take care of the additional load at the latter point. It was possible to remove one of the units from Manlius Center as the Syracuse lines help feed this section. Also the automatic feature was taken into consideration as the current-limiting resistance of the automatic substation will

allow three-car trains to pass this station without overloading the machine.

The service required of the substations on this line is very favorable to the use of automatic control. The headway permits the shutting down of the converters a considerable part of the time, thus making a distinct saving in the light-load losses. This is especially true of Manlius Center substation, for many of the trains pass at this point, the headway between local and limited trains is less in this section, and the substation is located considerably nearer one of the substations in Syracuse than the distance between substations on the Oneida lines. The busbar voltage at Syracuse is 650, whereas on the Oneida line it is 620. This allows the Syracuse lines to feed considerable power to the Oneida line through a connection at the junction of these lines.

Probably the most interesting feature of this installation is that, of the four substations on the Oneida line, three of which were considered as automatic substation possibilities, the net saving effected by making one of



EXTERIOR OF MANLIUS CENTER SUBSTATION WHICH IS BEING MADE AUTOMATIC

them automatic is greater than by operating two or three automatically. This is true with conditions as they now exist, but a change in the hours of labor, wage rate of substation operators, schedule, capacity of the substations, transmission line voltage or a combination of these might make automatic operation of more than one substation more economical. The substation operating force works in two shifts. There are eight substation

operators, one chief operator and one shift operator, the latter devoting only part of his time to the Oneida lines and the remainder to the Syracuse lines.

Power is supplied from the Adirondack Electric Power Corporation's 6000-kw. steam turbine plant at Utica. It is transmitted at 60,000 volts. The trans-

under Plan C, by five men. The reason for this is that under Plan A the chief operator can look after Manlius Center substation without neglecting his regular duties. If two substations were made automatic, as under Plan B, the services of an extra man would be required. Under Plan C the same man who was retained to take

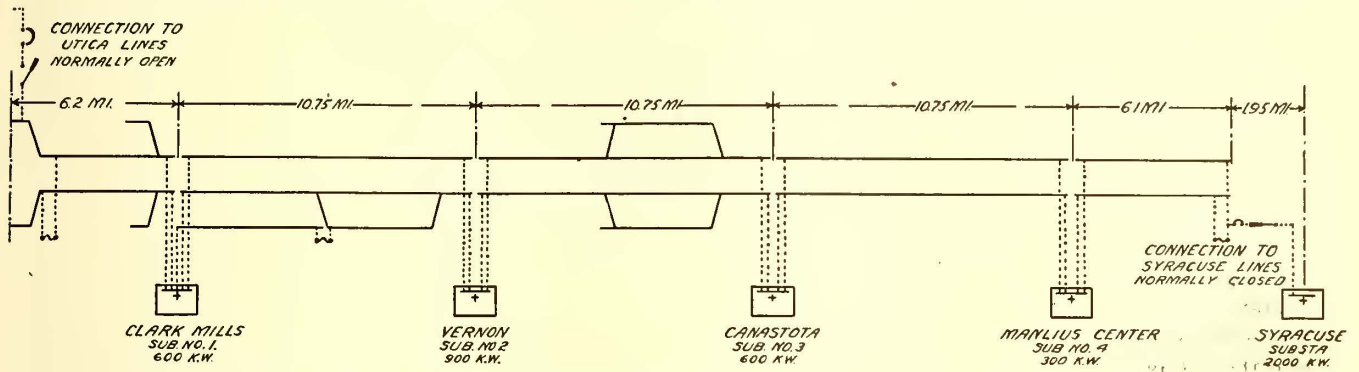


FIG. 1—LOCATION OF SUBSTATIONS AND THIRD-RAIL LAYOUT ON THE ONEIDA LINE, NEW YORK STATE RAILWAYS

formers are Y-connected on the high-tension side, and the neutral is grounded. This connection has proved very satisfactory, as in case of a ground on the high-tension line the affected leg is cut out and the transformers operate open delta, using two wires and the ground.

The car equipment consists of sixteen 40-ton passenger cars equipped with four GE-72 (75 hp.) motors with type M control, two 38-ton passenger cars equipped with four GE-201 (60 hp.) motors and two 45-ton express cars equipped with GE-73 motors. Cars are operated singly and in two, three and four-car trains. Trains of three cars are operated over the entire length of the road and four-car trains are operated only in the vicinity of Vernon substation. Trains of more than two cars are operated with one motor car used as a trailer. The starting current is approximately 325 amp. per motor car, and is practically the same for trains of three motor cars and one trailer. The average headway is thirty minutes in each direction, but this varies throughout the length of the road on account of the local and limited service. This is shown by the train sheet reproduced in Fig 2 on page 694.

In considering the economics of automatic control equipment as applied to the existing substations of this line the five items of importance were the saving in labor, the saving in light load losses, the transmission line voltage, the number of units in each station and the reliability of automatic equipment. Three possible plans were considered:

Plan A	Substation No. 4	One 300-kw. unit automatic
Plan B	Substations Nos. 3 & 4	Three 300-kw. units automatic
Plan C	Substations Nos. 2, 3 & 4	Six 300-kw. units automatic

Substation No. 1 was not considered for automatic operation as power is purchased at this point, and it was considered necessary to have a man continuously on duty in charge of transmission lines and other details.

It will be noted that the number of operators released is not proportional to the number of substations made automatic. Under Plan A, the operating force is reduced by two men; under Plan B, by three men, and

care of substations No. 3 and No. 4 of Plan B with the help of the chief operator could take care of substations Nos. 2, 3 and 4 of Plan C.

PLAN A

Cost of automatic control equipment, one 800-kw. unit installed	\$4,000
Cost of building changes (bars for windows, etc.)	300
<b>Total cost</b>	<b>\$4,300</b>
Labor, two men	\$1,800
Light load losses	400
Coal for heating	150
<b>Gross annual saving</b>	<b>\$2,350</b>
Repairs to automatic equipment	\$100
Fixed charges at 15 per cent.	645
<b>Total additional annual expense</b>	<b>\$745</b>
<b>Net annual saving</b>	<b>\$1,605</b>

PLAN B

Cost of automatic control equipment, three 300-kw. units installed	\$12,000
Cost of building changes (bars for windows, etc.)	600
<b>Total cost</b>	<b>\$12,600</b>
Labor, three men	\$2,700
Light load losses	735
Coal for heating	300
<b>Gross annual saving</b>	<b>\$3,735</b>
Repairs to automatic equipment	\$250
Fixed charges at 15 per cent.	1,890
Additional line loss	500
<b>Total additional annual expense</b>	<b>\$2,640</b>
<b>Net annual saving</b>	<b>\$1,095</b>

PLAN C

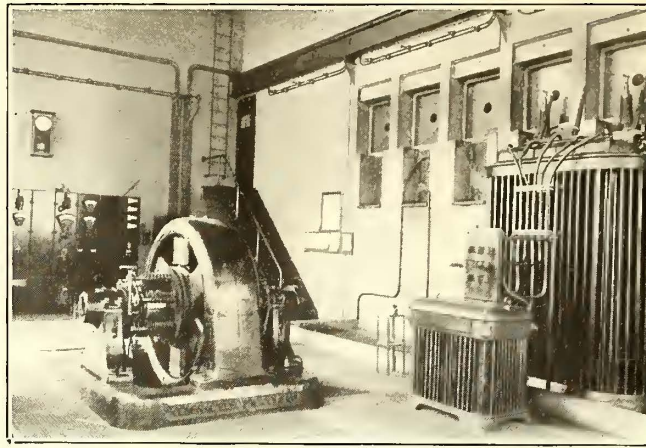
Cost of automatic control equipment, six 300-kw. units installed	\$24,000
Cost of building changes (bars for windows, etc.)	900
<b>Total cost</b>	<b>\$24,900</b>
Labor, five men	\$4,500
Light load losses	1,135
Coal for heating	450
<b>Gross annual saving</b>	<b>\$6,085</b>
Repairs to automatic equipment	\$450
Fixed charges at 15 per cent.	3,735
Additional line loss	500
<b>Total additional annual expense</b>	<b>\$4,685</b>
<b>Net annual saving</b>	<b>\$1,400</b>

SUMMARY

	Total Cost	Net Annual Saving
Plan A	\$4,300	\$1,605
Plan B	12,600	1,095
Plan C	24,900	1,400

The coal saved in heating the substations does not include all the coal used, as some heat would be required with automatic operation for the men who would have to work in the stations part of the time. Electric heaters would probably be substituted for coal, but the net saving would be as given. The light load losses vary with the location of the substations. This can be seen from the train sheet. The time that substation No. 4 would be shut down with automatic operation can be found also from the voltage chart, Fig. 4. This is a voltage record taken with substation No. 4 shut down. The light load losses for the additional units in substations Nos. 2 and 3 are, of course, less than those of the first unit, as more than one machine are operated for only a small part of the day.

The item of additional line loss under Plans B and C requires some explanation. As given in the description of the system, the transmission line is now operated at 60,000 volts with Y-connected transformers. In case one leg is grounded, the affected leg is cut out by the



INTERIOR OF MANLIUS SUBSTATION, NEAR SYRACUSE, N. Y., SELECTED FOR AUTOMATIC OPERATION

operators. To do this automatically would require additional apparatus. Another and better solution would be to operate the line at 34,000 volts with transformers connected in delta. This would increase the line losses by \$500 annually, as given under Plans B and C. This is unnecessary under Plan A, as the voltage is not seriously affected with Manlius Center shut down. It should be understood, however, that there are other conditions

which were considered. The 60,000-volt insulators have been in use since 1907 and develop considerable trouble during the lightning season. Removing the grounds from the system and operating at the reduced voltage would be of considerable advantage. However, the change is not now contemplated and the entire line loss is charged up to the change to automatic substations. However, if this item were replaced by the fixed charges for additional automatic equipment it would not materially affect the result.

After determining that it is more economical to operate under Plan A than under Plans B or C, it is

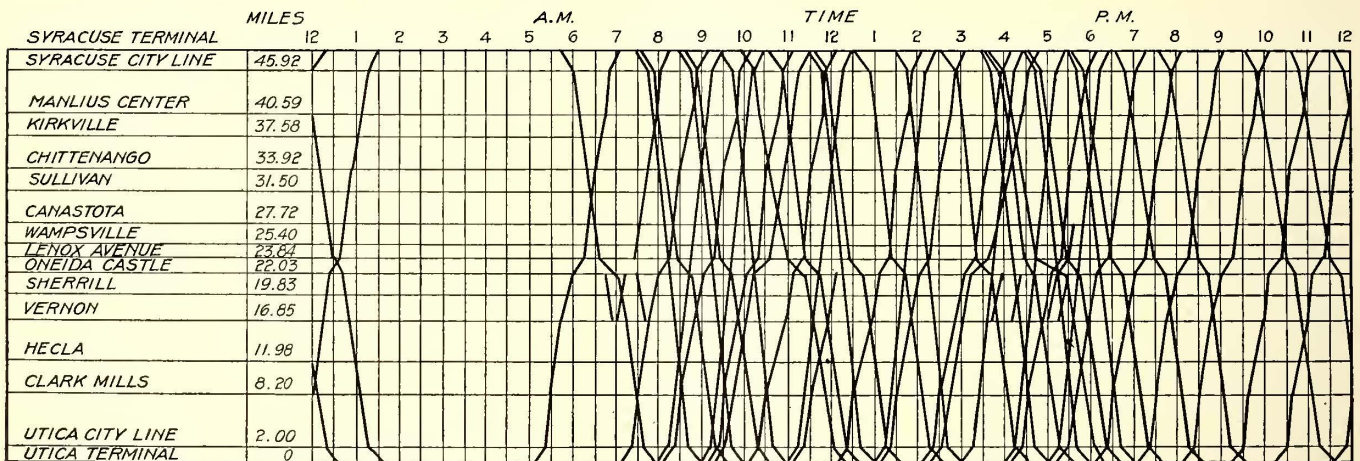


FIG. 2—TRAIN SHEET, UTICA TO SYRACUSE, NEW YORK STATE RAILWAYS

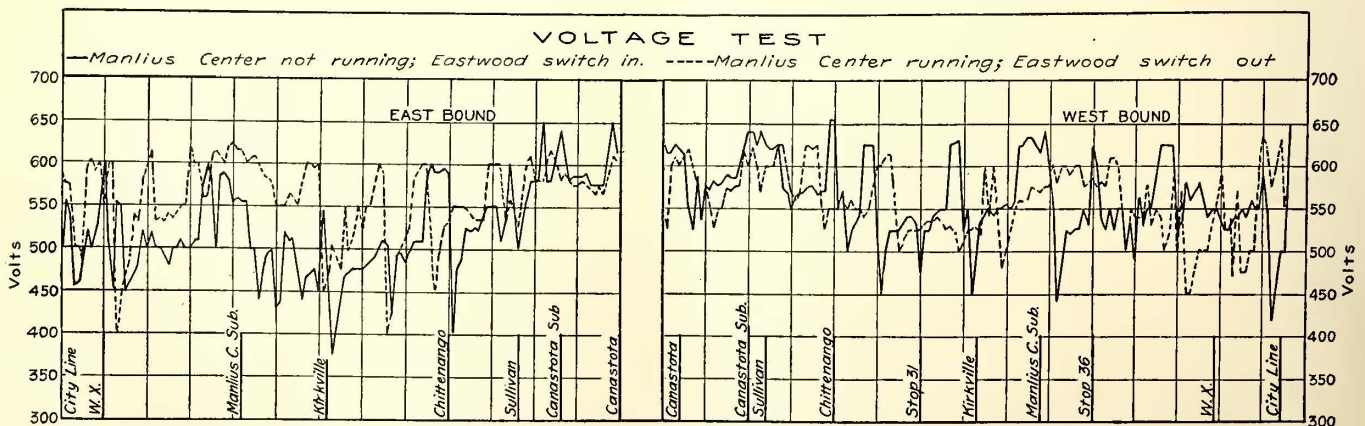


FIG. 3—RESULTS OF VOLTAGE TESTS ON ONEIDA LINE, NEW YORK STATE RAILWAYS

necessary to consider the reliability of automatic equipment for Plan A only. Considering this equipment in itself to be as reliable as the single converter and transformer unit, and that it adds to the reliability of the station as a whole due to the limitation of the load through the use of current-limiting resistances, it is still necessary to consider that this station might be shut down due to the failure of automatic equipment or to the converter itself.

Fig. 3 shows the voltage with Manlius Center running and Eastwood switch open, and vice versa, the Eastwood switch being the connection between the Syra-

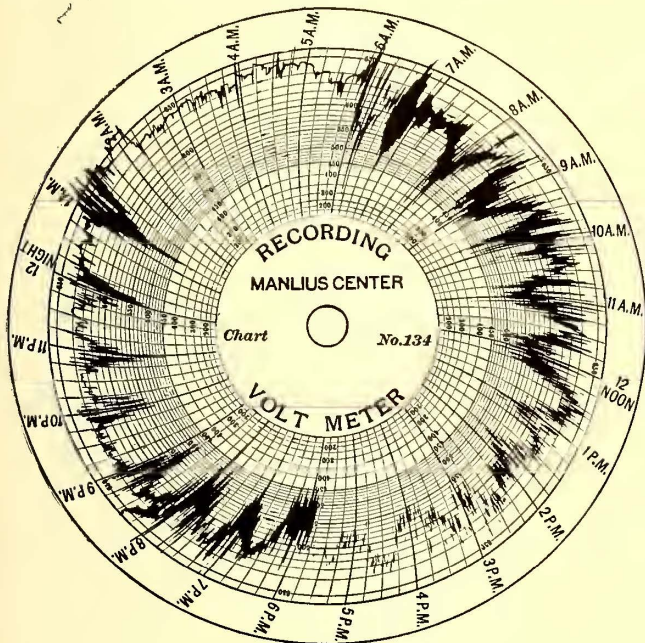


FIG. 4. VOLTAGE CHART, MANLIUS CENTER SUBSTATION IDLE

cuse lines and the Oneida lines. Previous to 1915 this switch was normally left open. The graphs in the figure show that the average voltage is not greatly reduced with Manlius Center shut down. The loss of time to trains is approximately two minutes.

The shutting down of substation No. 2 or No. 3 would delay trains considerably. If this were a new proposition, it would permit ready solution. The distance between substations could be reduced so that an interruption to one station would not seriously cripple service. On account of the reduced cost of automatic substation buildings and the fact that, due to load-limiting resistances, the shifting center of load could be taken care of by practically the same substation capacity as is now installed, the proposition of making all but one substation automatic could be financially attractive.

The March issue of *The Annals* of the American Academy of Political and Social Science discusses "War Adjustments in Railroad Regulation." The contributors are authorities in the railroad world, public life and academic circles. The articles cover various phases of the steam railroad situation, such as the trial of railroad regulation, war pressure for adequate service, present effects of war control, plans for adjustment after the war and the continuing problems of public policy.

## Up-to-the Minute Information on Class-T Locomotives

An Amplification of the Statements Regarding New York Central Locomotives, Made by E. B. Katté at Recent New York Railroad Club Meeting

AT THE LAST electrical night of the New York Railroad Club, papers were presented on late locomotive design. In speaking of the last electric passenger locomotives received by the New York Central Railroad, E. B. Katté, chief engineer of electric traction, referred to some minor modifications and improvements made from the earlier Class-T locomotives purchased by this road, but no details were given. These changes were of a most trivial nature, consisting chiefly of small mechanical alterations made to provide better construction, to standardize parts and to give increased safety to the operators. They had no bearing on the performance of the locomotive in service.

The following list of some of the more important changes will give an idea as to their nature:

- Ventilating louvres changed slightly and baffle plates added to keep out snow and rain.
- Blower and its motor assembled on one base.
- Magnetic screen under main motors constructed with more sections to make handling easier.
- Sand-box seams welded to make box moisture-proof.
- Sanding pipes arranged with straight runs.
- Better method provided for lubricating center pin.
- Movable section provided in hand rail at center of cab for easier access.
- Better support and armor provided for motor leads.
- More convenient clasps and handles for doors provided.
- Rubber stops placed on sliding windows.
- Tool box arranged with fuse compartment to make fuses more accessible and prevent them from rattling around.
- Contact-shoe paddle holders provided with felt to prevent rattling.

The data for power consumption, maintenance cost and the average mileage obtained per locomotive detention as given by Mr. Katté in his remarks at the Railroad Club and published in the *ELECTRIC RAILWAY JOURNAL* of March 23 show the excellent results being obtained from this class of locomotives. These figures were for the year 1917 and the costs were somewhat higher than previous records, due to the advance in the prices of labor and materials.

A performance test with one of these locomotives was made on March 24. Four trips arranged to represent the most severe service requirements were made between the Grand Central Terminal and Harmon, with one stop at Yonkers. This service consisted of hauling a thirteen-car train weighing 1022 tons for three trips and a fourteen-car train of 1100 tons on the fourth trip from Harmon to Grand Central with a thirty-minute layover at the end of each of the runs. A maximum average schedule speed of 62 m.p.h. was made.

By means of an exploring coil installed in one of the motor windings, readings were obtained to indicate the temperature of the motors, and other readings of temperature were made at the end of the runs with thermometers. The maximum temperature rise in the motors with forced ventilation was well within the specification limits, which is 75 deg. C. measured by thermometer and 100 deg. C. measured with an exploring coil. Considering the severe character of the service, the results obtained were very gratifying.

# Fare Increases Blocked in New York

Highest State Court Rules that Commission Law Does Not Provide for Regulation of Rates Fixed in Franchises—Moreover, Constitutional Consent Requirement Makes Grants Unalterable Except with Municipal Permission

THE control of public service commissions over electric railway rates has been sadly reduced in New York. Under a decision just rendered by the leading court of the State, the Court of Appeals, the power of the commissions to grant higher fares to deserving railways is in general restricted to those cases where the rates are not fixed in franchises.

In interpreting the existing New York law, the court finds that the public service commission act does not disclose any intent to provide for the regulation of franchise rates, although it permits the revision of rates fixed by old statutes. Moreover, although it is said to be unnecessary and therefore improper to decide now the limits of legislative power over franchise rates, the court states that such rates fixed in accordance with the constitutional requirement of municipal consent for electric railway operation are not subject to legislative alteration.

## DECISION IS OF WIDE IMPORTANCE

This decision of the Court of Appeals was handed down on April 5 in the case of *Quinby vs. the City of Rochester*. The case arose through the denial by lower courts of a writ of prohibition to prevent the Public Service Commission for the Second District from exercising jurisdiction over the petition of the New York State Railways for a 6-cent fare.

It will be recalled that the Second District Commission last autumn, as noted in the *ELECTRIC RAILWAY JOURNAL* of Nov. 24, 1917, ruled in the *Huntington Railroad* case that it had power to increase franchise rates, in accordance with a preceding decision of the New York Appellate Division for the Third Department. Last January, however, the First District or New York City Commission (E. R. J. Jan. 19) took a diametrically opposed stand in the *New York & North Shore Traction Company* case.

It was expected that the latter case might be appealed, but the Rochester case was speedily carried to the Court of Appeals on the legal questions involved, and parties interested in the North Shore decision were allowed to intervene therein. Consequently the parties heard in the Rochester case included the city of Rochester, the New York State Railways, the Second District Commission, the city of New York, the New York Railways and the First District Commission.

The Court of Appeals decided that the Second District Commission is without jurisdiction in the Rochester case, and that an absolute writ of prohibition should be awarded. The decision was written by Judge Pound, with Judges Cuddeback, Cardozo and Andrews concurring. Judge Crane concurred in the opinion in so far as it stated that the Legislature has not in this instance given to the commissions the power of regulation, but he thought that the reserve police power of the Legislature had not been contracted away. Chief Justice Hiscock and Judge Collin dissented.

The decision of the court, in unrevised form, has been available for consultation, but the finding has not been released for full publication. Consequently the *ELECTRIC RAILWAY JOURNAL* is not able to present a detailed abstract this week. An idea of the contents of the decision, however, can be secured from summaries given out for newspaper publication and from comments by counsel of the First District Commission.

## COMMISSIONS HAVE NO JURISDICTION OVER FRANCHISE RATES

According to published quotations, the three basic points covered by the decision seem to be as follows:

### 1. *Statutory Rates*

"The purpose of the Legislature was to prescribe for the regulation of statutory fares by a board which may be expected to pass equitably upon conflicting claims with the single purpose of the common good, even where a maximum rate had been fixed by the Legislature.

"Rates so fixed by special statute are still subject to regulation by the public service commission. The jurisdiction of that body over such rates is not to be reduced by implication. The legislature merely fixed the rate *pro tempore*."

### 2. *Constitutional Barrier*

"The consent of the local authorities being obtained, what jurisdiction has the Legislature conferred upon the public service commission to regulate rates by increasing the rate agreed upon?

"It has been held invariably and in a legion of cases that the power to establish rates is not essential to the consent of local authorities and will not be implied, and that the Legislature is at all times supreme in the matter. In all such cases, however, the question was one of unrestricted legislative power, policy and discretion over a city or town where the local authorities were held to be mere instrumentalities through which the State exercised its sovereign power. The paramount power of the Legislature over the subject of fares was upheld in the absence of a constitutional limitation.

"But the consent of the local authorities required by our Constitution recognizes our municipalities as *pro tanto* independent of legislative control, exercising some fragment of power, otherwise legislative in character, which has been thus irrevocably transferred by the fundamental law from the Legislature to the locality.

"The grant by the municipality of authority to use the streets is not a mere privilege or gratuity. Once accepted, it becomes a contract which neither the State nor its agencies can impair.

### 3. *No Power Granted to Commission*

"It is, however, unnecessary and, therefore, improper to decide at this time what the limits of legislative power are in this connection. In the absence of clear



and definite language we should not unnecessarily hold that the Legislature has intended to delegate any of its powers in the matter, whatever its powers may be. It is impossible to find a word in the statutes which discloses the legislative intent to deal with the matter of rates fixed by agreement with the local authorities."

#### HOW COUNSEL INTERPRETS THE DECISION

W. L. Ransom, counsel for the First District Commission, interprets the decision as follows:

"The Court of Appeals has definitely sustained the view of this commission that where a rate of fare has been fixed by the terms of franchise agreement between an electric railway corporation and the city, the commissions do not possess power, in the absence of the city's consent to such a modification of the franchise contract, to advance the fare above the franchise maximum. The court has likewise held that the authorities of a municipality may validly, under the Constitution of the State, require an electric railway to agree to maintain a stipulated rate of fare, as a condition of granting the city's consent to the construction of the railway along public streets, and the court has ruled that the grant by the municipality, once accepted, becomes a contract which neither the State nor its agencies can impair.

"The court has even gone farther than this commission and has ruled that as to electric railway franchises antedating the constitutional amendment of 1875, and other franchise contracts not entered into in pursuance of the constitutional provision and so under its protection, the commission has not been vested by the Legislature with power to advance the rates fixed in such franchises, although the court makes it clear that as to franchises outside the constitutional protection, the Legislature could confer such power on the commission if it saw fit.

"It thus becomes the settled rule that power to advance electric railway fares, directly or indirectly, above a figure fixed in a franchise, does not repose in this commission alone, and those who seek to accomplish, directly or indirectly, such a variance from the franchise terms must seek consent or modification from the municipality with which they made their solemn contract, rather than from the commission. To increase a franchise rate above the franchise figure, the consent of the municipality is necessary before the ordinary regulative power of the commission can be made effective."

#### DECISION AGREES WITH SOUND CITY POLICY

In commenting further upon the meaning of the finding, Mr. Ransom says:

"The decision is in accord with a common-sense concept of justice and a sound municipal policy. It only means that the city, which granted the franchise, is left with power to protect its citizens, in imposing terms and conditions of modification. The maintenance of a uniform, low rate of fare is one of the most important benefits secured by the city in granting a franchise. The First District Commission has felt as a matter of law and policy, and the Court of Appeals now agrees as a matter of law, that the company may not take away this important consideration as to fare, without the city's having the right, power and opportunity to re-

quire other concessions, perhaps of equivalent benefit to the public, as a condition of consenting to an increase in fare, even temporarily.

"No one will question that the surface railways of New York ought to be empowered to charge more than 5 cents, if that rate of fare is found to be inadequate. But there is a serious question whether, in order to bring this about, the Constitution and the law should be so construed as by judicial decision to deprive the city of New York of power to protect itself and its people, through imposing suitable conditions and safeguards, upon any modification of the rate provisions of the franchise contracts."

#### The Situation is Grave

IN THE matter of the Court of Appeals decision, Joseph K. Choate, chairman of the committee on increased revenues of the New York Electric Railway Association, has issued a statement in part as follows:

"The decision of the Court of Appeals is a matter of as grave concern to the United States government and to the communities themselves as it is to the electric railways. It means, unless the condition thus produced is immediately corrected, that the transportation utilities of the State cannot render that assistance to the nation's war program which recent pronouncements of President Wilson, Secretary McAdoo and Comptroller Williams declares to be urgent and necessary.

"It means that these utilities will no longer be able to furnish to the public the kind and extent of service needed to further the growth and prosperity of the communities in which they operate, for properly to provide for the convenience and comfort of their patrons.

"It means decided interference with the plans of the national government, under which the war finance corporation was to provide means to enable railways to secure the absolutely necessary new capital for refunding maturing obligations, since the co-operation of the states and communities in securing to the borrowing companies a rate of return which would give stability to the securities pledged with the war finance corporation was a fundamental of the plan.

"The need of relief is as imminent and pressing as ever. The Court of Appeals decision simply means that the theory of regulation as applied in New York State has broken down in an emergency, and that some other method must be adopted to meet conditions which threaten to hamper the usefulness of transportation utilities at a time when their increased efficiency is vital to the nation and to the public."

#### Fare Cases Are Held Up

THE foregoing decision of the Court of Appeals will not, of course, help the progress of the fare relief movement in New York State. The Second District Commission has already granted higher rates in about ten cases, and at least three authorizations are now nullified because of franchise provisions. Hearings have been almost completed in six other cases, some of which involve franchises. Several other companies have petitioned for relief from fixed rates. In many cases, therefore, the Second District Commission now finds itself

# Prepare Your Commission Cases Thoroughly\*

Regulating Bodies Must Have Carefully Prepared Exhibits and Full Statements of Facts—  
The Function of Public Service Commissions Is to Check,  
Not Originate, Utility Data

By HAROLD L. GEISSE

Secretary Wisconsin Railroad Commission, Madison, Wis.

ONE of the most frequent criticisms of the Wisconsin Railroad Commission, perhaps the most frequent one, is that of delay in rendering decisions. The commission itself is ready to admit that it is often unable to dispose of matters with that dispatch which would best subserve the interests of the public and the utilities. The delay in a large percentage of cases is due to inability to arrive at a conclusion as to the merits of the controversy from the evidence introduced. If a better understanding of the method of preparing and presenting a case could be given, a much greater volume of business could be handled in a much reduced time.

In a great majority of cases after the hearing and upon review of the transcript of testimony, the commission is obliged to resort to an inquiry into the books of the company and a statistical analysis of the operating performance for some years back or lengthy service investigations to secure the facts upon which to determine whether or not the relief sought is justified. Moreover, in a fair percentage of the cases the record of the hear-

ing is incumbered with a mass of irrelevant testimony, inexpert opinions and even vituperation, to which the commission has been obliged to sit patiently and listen.

One of the recurring incidents in the holding of hearings is the attempt to influence the judgment of the commission by the introduction of prejudicial matter. The tendency of attorneys to avail themselves of any advantage in this method does not fail to appear in the trial of cases before the commission. It is a method to be deplored, totally ineffective and unworthy of notice by opposing counsel.

The commission is not a court of law. It is an administrative body concerned in accounts, in operating statistics, in unit costs, in prices of materials and supplies, in coal costs, in values of property, in measurements and surveys, in traffic counts and in the opinions of experts.

One cannot attempt to outline a procedure for each

\*Abstract of address delivered before Wisconsin Electrical Association at Milwaukee on March 27.

(Concluded from page 697)

powerless to grant the needed aid, unless the cities give their consent.

The First District Commission has not granted any higher fare, for in the first case decided, that of the New York & North Shore Traction Company, it announced its lack of power to give the relief proved necessary. Two applications are now before it for a higher unit fare, in the case of the Staten Island Midland Railway and the Richmond Light & Railroad Company. Hearings for these were scheduled to begin on April 8, but at that time Mr. Ransom read into the record a statement that hearings should not be initiated at all, even if the applications were not withdrawn by the companies, until the city consented to franchise modifications.

Hearings on the application of the Third Avenue Railway and other systems in New York City for a 2-cent transfer charge were to have been continued the next day, but Mr. Ransom stated his views in regard to the transfer cases as follows:

"It would seem that the ruling of the Court of Appeals stands in the way of granting an additional charge for transfers between different lines of a single company, such as, for example, the New York Railways, for that would be to sanction a charge of 7 cents where the company has apparently agreed with the city not to charge more than 5 cents. The ruling would seem likewise to deter the prosecution of any application by a surface railway system, to obtain an extra charge for transfers on a system basis, as a means of obtaining an increase in fare.

"To be concrete—as to the various operating com-

panies of the Third Avenue Railway system, I do not now believe that, in the absence of the city's acquiescence or suitable modification of the contract on agreed terms, a charge for transfers could be granted the Third Avenue system, on the basis of a 'lump' valuation of the system property and a 'lump' statement of the system earnings and expenditures.

"As to certain points where transfers are exchanged between different companies of the Third Avenue system, and where the obligation for such exchange does not arise from common use of tracks or similar necessity, I am not now sure that, upon a proper showing as to the properties and financial operations of the individual companies concerned, a new joint rate might not be established by order of the commission, as to such points, and an additional charge for transfers at such points approved, if the facts warranted it. Upon that question I would prefer to withhold opinion until the question has been more fully considered and argued."

Mr. Ransom suggested that the companies be allowed to study the Court of Appeals decision for two weeks and then present oral argument as to any relief which in their opinion the commission might still grant. He also suggested that each company be directed to file a detailed statement showing each transfer point to which the pending application is deemed to relate, and the precise way in which the present exchange of transfers at that point is deemed to have arisen—*i. e.*, through a trackage agreement, an order establishing a joint rate and through route at the point of intersection, voluntary action of the railway or otherwise. Accordingly the commission set April 17 for the submission of data and April 22 for the oral argument.

kind of case that may come before the commission. A service case will differ much in its method of presentation from a rate case. To illustrate how plain and matter-of-fact a case may be made, however, take in its simplest form a typical rate case.

The elemental question with which the commission is concerned in a rate case is the determination of the value of the property used and useful in the service of the public. In determining the ultimate fair value, the physical value of the tangible property, the amount of going value and the necessary working capital must all be considered.

The opportunity to affect the judgment of the commission commences with the engineering appraisal of the physical value. The engineers of the commission have returned their report upon the physical value, and copies have been submitted to both sides. It is possible that the engineers have overlooked some element of the property, have failed to allow for construction mishaps which increased the expenditures or have allowed too liberal a value for the land or other elements. On any of these points the commission would be glad to have enlightening testimony. Possibly a contention would be in point at this juncture that the amount allowed for engineering and superintendence during construction is excessive or inadequate, and the testimony of experts or persons who are familiar with the history of the plant during the period of its construction would be of material assistance.

With the testimony on the physical valuation concluded, the amount to be allowed for going value and working capital are proper subjects for consideration. The various theories of computing going value as discussed in text-books, prior decisions and monographs of experts furnish a fertile field of inquiry for persons preparing to present a case before a commission. Similarly the amount of working capital necessary to conduct any particular business is sufficiently vague and uncertain to give the litigants opportunity to present very helpful testimony.

#### ANALYSIS OF OPERATING COSTS IS NECESSARY

After the inquiry into the value of the property, an analysis of the operating expenses becomes necessary to determine that no improper charges are being included and whether or not the property is being fairly economically managed. If the case arises through a public attack on the rates charged, the representatives of the public will probably be able to present little testimony of any considerable assistance. Frequently testimony is introduced showing that the rates charged are in excess of those charged by other plants similarly situated in communities of approximately the same size. Such testimony is usually of little significance, because of the factors that make the amount of the investment and the operating costs vary in different communities.

If, on the other hand, the case arises through an application for authority to increase rates, the company should be able to present a thorough analysis of its operating costs and earnings. Prepared with sufficient care, such a statement can be of material assistance to the commission. Data relative to the degree of saturation, showing the kilowatt-hour sales and the gross earnings per capita, can frequently be shown with consider-

able effect. An interesting disclosure of the tendency of the business in general can be made by drafting lines showing the course of the gross revenue, the net earnings, the operating expenses, the kilowatt-hours sold, the car-miles run and other elements or activities of the business.

If it is desired to show the comparative course of the figures for such items, they may be reduced to their logarithmic equivalents and the lines drawn from the data thus produced. A system of logarithms being a system of ratios, the relation of the lines to one another may thus be made to appear very graphically. Run through a series of years, a chart of this character would show definitely the proportionate increase or decrease of the earnings or expenses. Many modifications of charts of this character may be designed to assist the commission in its studies of the facts presented. In placing these data in evidence an officer of the company should be prepared to explain them in detail, answering any questions relating thereto that may be propounded either by the commission or by representatives of the public.

Similar data should be provided for presentation in any service case, the object being held constantly in mind to cut down the amount of inquiry that the commission must make independently after the hearing before decision can be rendered. With the figures carefully compiled and explained at the hearing, only such investigation would be required as would satisfy the commission of the fairness with which they had been compiled, their completeness and the safety with which conclusions might be drawn from them.

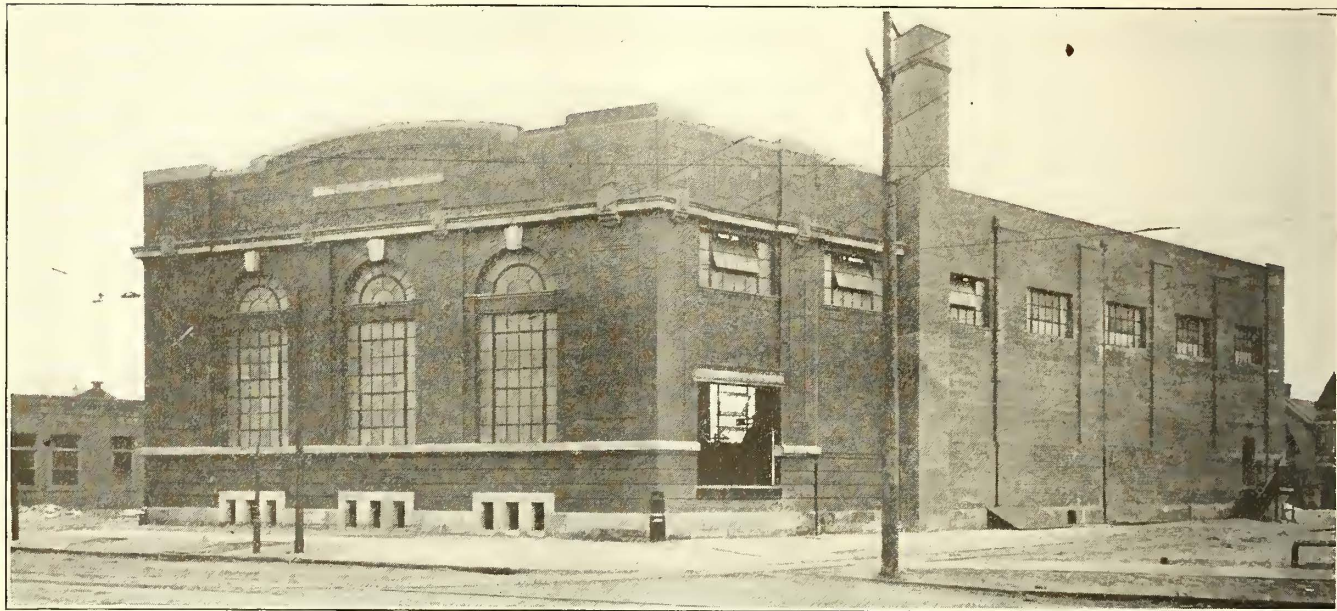
#### COMPANY SHOULD PREPARE ITS OWN CASE

It is true that the commission has a more or less complete mechanism for the ascertainment of the facts. This is necessary in order that the evidence introduced in a case may be tested out by subsequent independent investigation, and that accounting and engineering assistance may be rendered to utilities and municipalities operating utilities. It is taking an advantage of the commission, however, for a utility to presume that the possession of a staff of engineers, accountants and investigators makes the commission an available agency for the investigation of the utility's affairs when the utility feels itself in need of higher rates or relief from service requirements. The utility, having full access to its own books, should prepare itself, before seeking relief, to draw its own conclusions as to its needs and the reasons therefor, and be in a position to convince the commission of the fairness of its cause.

A somewhat different situation exists when the public invokes the jurisdiction of the commission in securing relief from high rates or inadequate service. Then the complainant has not the machinery at hand to conduct its own inquiry, but is obliged to depend to a greater or less degree on the inquiries made by the commission after the fundamentals of its case are presented at the initial hearing. Even here, however, the person in charge of the case, be he city attorney or private counselor, should have a sufficiently well-prepared outline to present clearly the issues he wishes to draw and the grounds for the public belief that the relief asked for is justifiable.

# Designing and Operating the Substation for Maximum Efficiency

The Cedar Avenue Substation of the Cleveland (Ohio) Railway Was Furnished With a Large Number of Units to Permit the Operating Capacity to Be Varied to Meet Load Demands



LATEST POWER SUBSTATION OF THE CLEVELAND (OHIO) RAILWAY

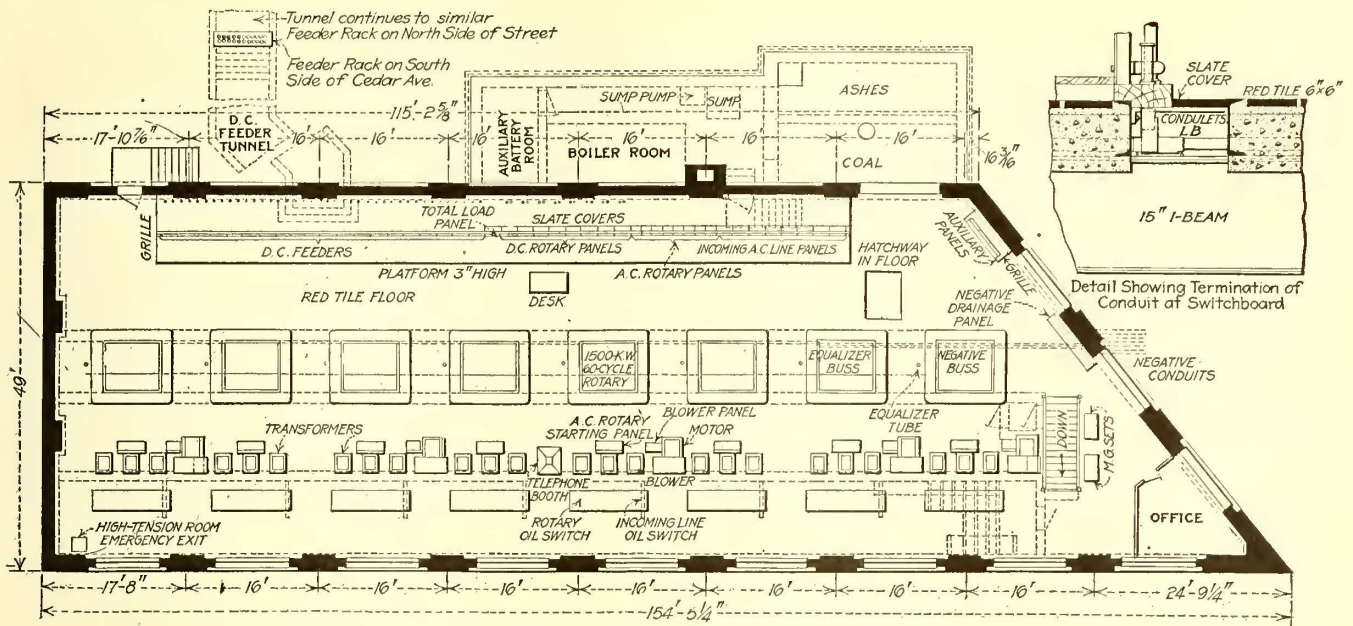
THE Cleveland Railway has recently added to its distribution equipment an eight-rotary substation on Cedar Avenue. This substation is located at one of the principal distribution points in the city, and in view of its large capacity and its importance the question will arise at once as to why so large a number of converter units were installed rather than a small number of larger capacity units. L. P. Crecelius, superintendent of power of the company, the designer of the substation, answers this question by stating his belief that much better economy could be secured in this substation by putting in a large number of small units (1500-kw. capacity) and cutting them in and out to follow the load line as closely as possible.

The governing idea in the layout of equipment in this station has been to simplify the construction and standardize apparatus, eliminating everything not necessary to safe operation. In standardization the substation is an integral part of the whole distribution system, the idea being to have all the substations so planned that a relief operator can step into any one of them and feel perfectly at home without special instruction. In other words, all operations are identical in all of the company's substations. This makes it possible, in "breaking in" new men, to start them in the smaller stations with lower pay and to work them up through larger stations. Thus in the course of promotion all that a man has to learn as he is transferred from one substation to another is the special feeder section layout.

The eight 1500-kw. units in the Cedar Avenue substation are 60-cycle, 514-r.p.m. Westinghouse machines, with characteristics practically identical with those installed several years ago at Windermere substation. These machines were described in an article on "Electric Power in Cleveland" printed in the issue of the *ELECTRIC RAILWAY JOURNAL* for April 5, 1913. At that time the design of the rotaries was considered quite novel. With this article was a map showing the power distribution system of the railway, a steam power station being indicated on the map at the site now occupied by the substation.

With the new installation the company now has twenty rotaries of 1500-kw. capacity each and two 1000-kw. machines. The controlling apparatus used with all of this is General Electric manufacture. The transformers are air-cooled Westinghouse 550-kva., 11,000/410-volt single-phase units installed without the shells. The oil switches, meters, switchboard equipment, etc., are for the most part of the standard types which have heretofore been used by the Cleveland Railway.

In the selection of eight 1500-kw. units the idea of following the load requirements closely by cutting in and out the machines, as mentioned above, was one of the principal considerations. Another was the fact that if four 3000-kw. units had been used instead of eight 1500-kw. units, 25 per cent of the total station capacity would have been lost if one machine had gone out of commission. Thus a serious overload might



GENERAL PLAN OF CEDAR AVENUE SUBSTATION, CLEVELAND RAILWAY

have been imposed upon the other three machines. A load of only 1500 kw., however, spread over seven other units would overload each unit very slightly.

The efficiency of the 1500-kw. unit is practically as high as that of the 3000-kw. unit, and the cost of two 1500-kw. machines is not much if any higher than that of one 3000-kw. machine. The slightly larger building required for eight of the smaller rotaries was not a factor for consideration in this case, as the length of building was practically controlled by the number of feeder panels necessary. The form of the particular lot used, also, was such that the building, built to fit the lot, gave a trapezoidal shape in which the longest side was used for the line of rotary converters.

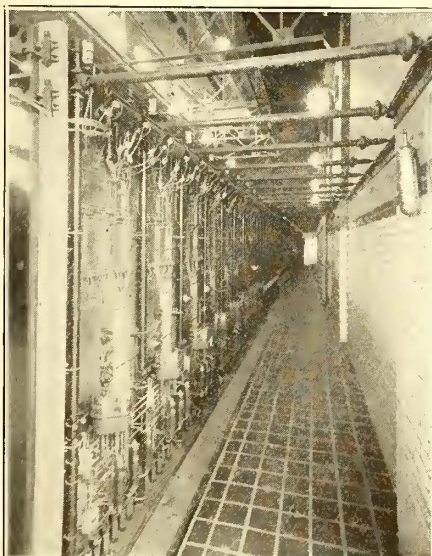
The station is designed at present to take care of the full requirements of the territory over which it was intended to distribute from this point. It is laid out simply to take care of the increase in traffic which may occur within the area served, for a certain period

ahead, and not for any which develops outside of this area. When more power capacity is needed additional stations will be put in. At present one of the rotaries really serves as a "spare."

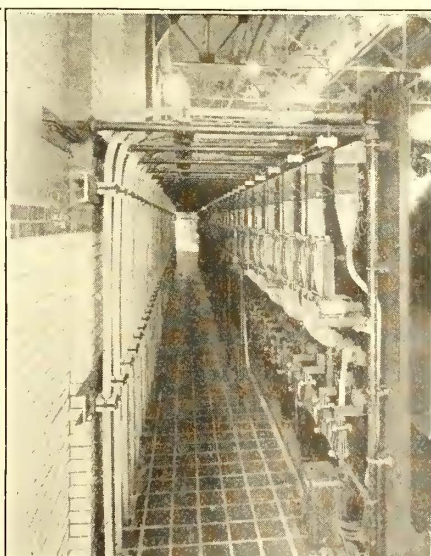
BUILDING DESIGNED TO INSURE DRY INTERIOR

The substation building itself is set on a concrete foundation, both the basement floor and the main floor also being of concrete. The latter, however, is covered with a tile finish. The roof is of concrete supported on steel girders. Pressed brick is used for the front wall and the building is ornamented with cut stone trimmings throughout. The interior and side walls are of shale brick laid in cement mortar.

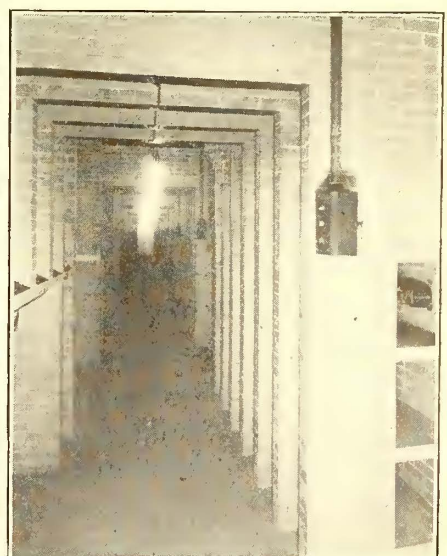
In connection with the design of the monitor sash, which like all other sash and doors are of steel, special provision was made to prevent leakage which might cause deterioration of machine insulation. In ordinary construction water is apt to drive into the building



Rear of Alternating-Current Section of Main Control Board



Rear of Direct-Current Section of Main Control Board



Busbar and Disconnect Switch Compartments With Lamp Indicators

VIEWS IN THE CONTROL SECTION OF CEDAR AVENUE SUBSTATION

during a storm through the cracks which are produced by the warping of sash. A certain amount of condensation also forms due to the difference of temperature inside and outside the monitor glass. This causes a dripping inside the station. In the present case to avoid this condition the concrete has been extended out from the girder and the copper flashing extended from the roof outside, up against the monitor wall, in under the steel sash and down inside the monitor wall, being bent up to form an interior gutter. The interior gutter can be distinguished at the base of the monitor walls in the accompanying cross-section. At certain intervals small copper outlets, 1 in. in diameter, are provided to drain the gutter, which takes care of all dripping from the monitor roof and sash.

#### SOME RAPID CONSTRUCTION WORK

After the substation building was completed and turned over to the electrical department all of the electrical apparatus, including rotaries, switchboards, etc., was put in by this department in a period of five weeks. It was possible to do this partly because a sample bus structure had been made up complete before the building was erected, and from this sample high-tension bus unit all cable pieces had been formed and stamped ready to put in place for the remaining units. The transfer of all



ALTERNATING-CURRENT ENDS OF THE ROTARY CONVERTERS AND ROWS OF CONTROL APPARATUS

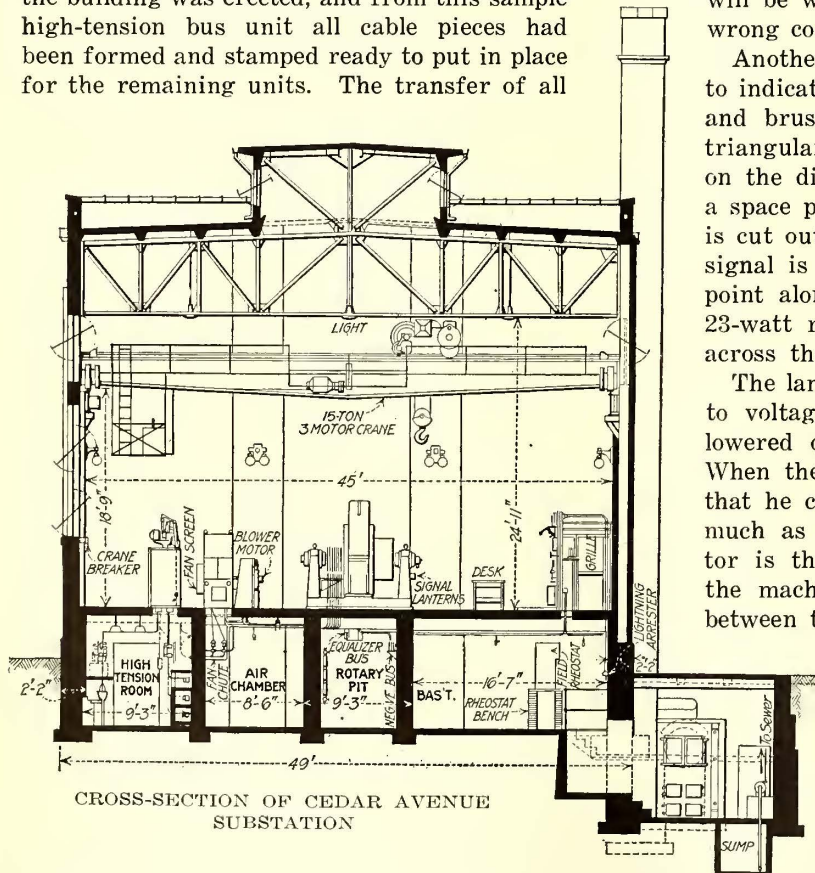
the men when they run downstairs from the switchboard to throw out a set of disconnect switches. If they forget which unit they intended to cut out they will be warned by the red right indicator in case the wrong compartment is opened up.

Another valuable indicator is one used on each rotary to indicate when it is up to speed, with voltage normal and brushes down. Attached to each machine is a triangular-shaped aluminum box bolted to the pedestal on the direct-current side. On either side of this, in a space provided for the purpose, the machine number is cut out and a ground glass is inserted inside. The signal is in view of the operator or helper from any point along the switchboard. Inside the box are two 23-watt ruby lamps, each in series with a resistance across the 600-volt terminals of the rotary converter.

The lamps are so wired that when the machine is up to voltage and the direct-current brushes have been lowered onto the commutator the lamps are lighted. When the operator sees the number in red he knows that he can throw in his main circuit breaker. Inasmuch as putting the brushes down on the commutator is the last step in the operation of starting up the machine, the light signals form a perfect check between the operator and the helper.

Still another valuable signal is one used in making certain that the operator gets the telephone signal when there is a call. It is always possible that on account of the noise of the rotaries the telephone bell may not be heard. A large lamp has, therefore, been placed on top of the telephone booth and a light signal in the base of the desk lamp on the operator's desk also. An ordinary drop relay on the telephone circuit closes a 110-volt battery circuit through the bell and the lamps located on the booth and on the operator's desk. An office is later to be placed in the oblique corner of the substation for the use of the chief operator. This will be equipped with a telephone and a direct connection with the load dispatcher.

The plan followed by the Cleveland Railway in starting up rotaries is about as follows, the machines being always started up from the alternating-current side: The operator first throws in the oil switch and inserts



CROSS-SECTION OF CEDAR AVENUE SUBSTATION

feeders from the generating plant to the substation, and the testing out of lines and rotaries took but six hours.

#### SIGNALS OF VARIOUS KINDS A FEATURE

One interesting safety feature in the Cedar Avenue substation is an equipment of red and green switchboard lights in the basement along the aisle in front of the oil-switch and bus-structure compartments. These give either a red or green indication depending upon whether or not the bus compartment or switch is alive. The indicators have been provided as a protection to

the potential plug for the voltmeter, turning the face of this instrument so that the helper can see it and bring up his field in the right direction. A check meter and a differential meter are both noted, these being duplicate in their functions and serving as a check against meter failure. The helper cuts in the machine by closing the field switch, equalizer and alternating-current starting switch, lowering the brushes last. When he does this the signal lanterns are cut into circuit as previously explained.

When the operator sees the lights he knows that the machine is up to speed and ready to go on the line. He then equalizes the voltage and for this purpose turns the voltmeter around so that he can see it while a second man checks on the correct potential. The machine is then brought up 10 or 15 volts above bus voltage and the machine is thrown on the direct-current line. The over-voltage prevents any reverse current flow into the machines which might act to operate the reverse-current relay on the direct-current side should the machine voltage be equal to or very slightly below the bus voltage.

#### INSURING RELIABILITY IN SWITCHING AND DISTRIBUTING THE SUBSTATION ENERGY

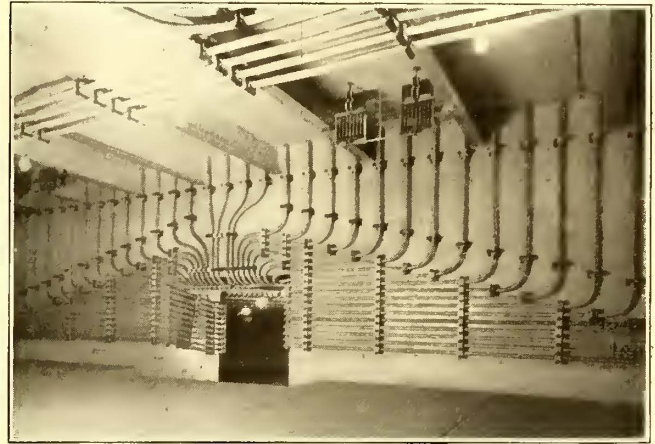
The bus construction in the substation is arranged to care for the incoming line, oil switch, etc., for each unit, grouping them together, and separating them from the compartments provided for the adjacent machines.

The incoming cables are No. 0000, grounded-neutral, 11,000-volt, 60-cycle, alternating-current feeders. Disconnect switches are installed in the alternating-current buses between adjacent groups so that an interchange can be cut onto any line, or any line can be killed. Under ordinary operating all incoming lines are paralleled. No protection against surges is provided from group to group, but the inverse-power relay on each line prevents the feeding back of energy into any short-circuit from the bus.

Protection is afforded the incoming alternating-current lines by inverse-power relays. These are essentially three single-phase watt-meters having each a rotating disk which tends to rotate against stops when the current is in the right direction. When any re-

versal of current takes place the disk rotates in the opposite direction and closes contact through a relay which opens the alternating-current oil switch. This gives protection to the cables between the substation and the lines of the generating company, a better protection than would be provided by the ordinary overload relay. The latter, in case of a short-circuit, would allow a very heavy current to build up before the overload relays would operate. The reverse power relay operates instantaneously with the reversal of power.

The outgoing feeder cables leave the substation through a tunnel extending underneath the street to terminal poles on both sides. The cables are extended



MOUNTING OF FEEDER CABLES IN SUBSTATION BASEMENT AND SUBWAY

up through iron pipes from the tunnel to the overhead line. For this purpose 1,000,000-circ. mil rubber-covered cable is used and a fiber duct is placed inside the pipe. The magnetic induction in the iron pipe serves as a choke coil and in five years' experience with this type of connection with the overhead line the company has not lost a single meter.

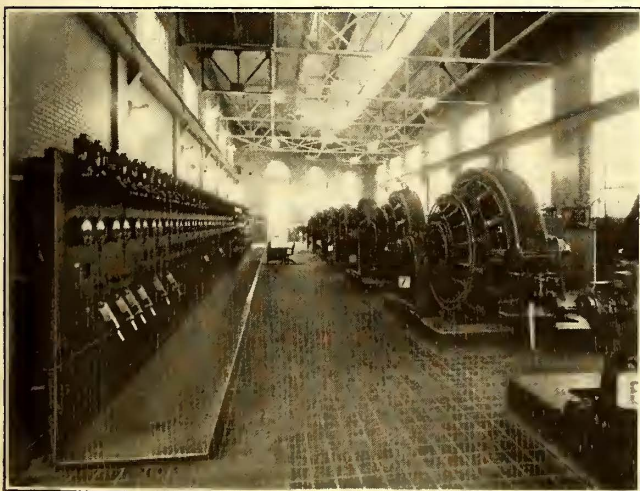
On the overhead a General Electric lightning arrester is installed in each feeder before it enters the iron pipe. Across each rotary terminal an aluminum cell arrester is connected also. Finally, between each bus and the ground is a multi-gap arrester, two being provided for each bus.

#### UNUSUALLY COMPLETE METERING EQUIPMENT WAS PROVIDED

The alternating-current line panels are equipped with plugs for cutting in test meters (potential and current) in order to make it convenient to check the board meters against the standard. This is necessary because the company is buying power and consequently requires that the meters be tested frequently.

A Thomson watt-hour meter is placed on the direct-current side of each rotary and, inasmuch as the machines are put on or taken off the line to follow the load curve very closely and thus keep the rotaries loaded to full capacity so that they are operating at best efficiency, the meters are also thus kept loaded at practically full capacity and good meter efficiency is obtained. In other words, the machine and its meter are either on the line and carrying a good load or they are off the line entirely.

A special switchboard was provided in the substation



DIRECT-CURRENT ENDS OF ROTARY CONVERTERS AND FRONT OF MAIN CONTROL SWITCHBOARD

for measuring the return currents in a negative drainage system installed to drain the underground structures of other utility companies. A direct line was run from the nearest manhole of each utility company to connect with the switchboard. Here the circuit passes through a meter and is connected through a switch to the main negative bus. The size of the cable used depends upon the nature of the utility company's structure.

After the station was put into commission and tests had been made, in the neighborhood, of the drop between the utility company's structures and the railway company's track, a suitable resistance was calculated and a resistor was installed in the manhole. The circuit was calculated so that the utility company's system could be drained a sufficient amount to prevent deterioration and to keep that system negative to the railway company's structure, or at as low a

negative potential as necessary. This plan makes it possible to determine the condition on each drain system at any time, the meters being labelled so as to indicate the name of the company whose structure is being protected.

A test is also provided on the semi-insulated return circuits which extend out to the several parts of the track system from the substation. It sometimes happens that the track department in doing construction work cuts these drain feeders and neglects to connect them up again so that there is no way of indicating whether the feeder is functioning or not. By installing a single ammeter with a selective switch, which will connect this meter with the shunt in the circuit of any of the return feeders, it has been made possible to test out periodically to see that all of the feeders are actually connected and doing the work for which they were installed.

The substation which has been described in this article replaces the old Cedar Avenue power house which was probably the largest non-condensing direct-current plant in the country. This plant was operated non-

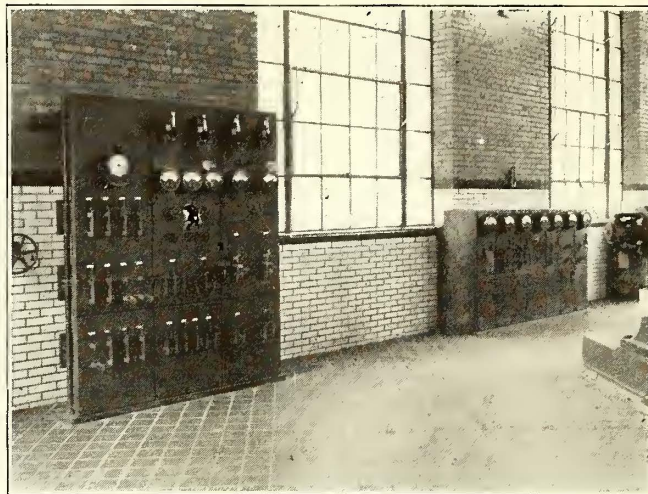
condensing because the exhaust steam was sold to a salt company adjacent at a price which made it very difficult for the central station companies in Cleveland to compete with the railway company's old power house on cost per kilowatt-hour output. When the question of the rehabilitation of the plant came up the railway company discussed with the central station companies

the question of a rate for power which if possible should be better than the cost of producing it in the old station rehabilitated to modern form in many essentials. Readers of the *ELECTRIC RAILWAY JOURNAL* will remember the extended investigations of the subject before the conclusion to purchase the power from the Cleveland Illuminating Company was reached. The situation was clearly outlined in an article appearing in the Jan. 6, 1917, issue of this paper, page 49. It was only by agreeing to set aside a certain amount each year to

amortize the investment in the plant that the conclusion to abandon the old plant was reached.

In the testimony presented at the hearings the reproduction value of the Cedar Avenue power house was placed at \$1,265,565, and this, less the salvage of machinery and equipment estimated at \$115,565, was to be placed in a suspense account and paid off at the rate of \$20,000 a month. According to estimates which were presented by the engineers at the hearing on this matter, the cost of energy under the contract with the Illuminating Company will be less than 6 mills per kilowatt-hour. The cost of energy production in the old plant was said to have been about 1 cent per kilowatt-hour.

As stated at the outset, Mr. Crecelius is a firm believer in the necessity for close watching of the apparatus in service to insure that no more will be in use than is necessary. To this end he has the operators keep graphical logs of the load and the capacity of machines in operation. Thus they are impelled to operate their stations at high efficiency.



SPECIAL SWITCHBOARDS IN CEDAR AVENUE SUBSTATION—AT RIGHT AMMETER BOARD FOR USE IN MEASURING DRAINAGE TABLES. AT LEFT HOUSE-SERVICE BOARD

## An Old Fable Modernized By THOMAS DREIER

**I** WAS THINKING the other day about big business institutions that attempt to influence public opinion by paying money to editors and newspaper men, instead of coming out frankly in the open and telling their story to the public over their own signature, either in advertisements or direct-by-mail printed matter.

Business men who indulge in that foolish pastime

should read that famous old fable which tells about a man, torn by the bite of a savage dog, who threw a piece of bread dipped in his blood to the offender, saying that he had heard it was a remedy for the wound.

"Then," said Æsop, "don't do this before many dogs, lest they devour us alive when they know that such is the reward of biting us."



# Why the Automatic Substation Saves Materials and Labor

The Author Analyzes the Advantages and Disadvantages of Automatic Substations and Mentions Some of the Details of a Type of Equipment Which Has Recently Been Developed

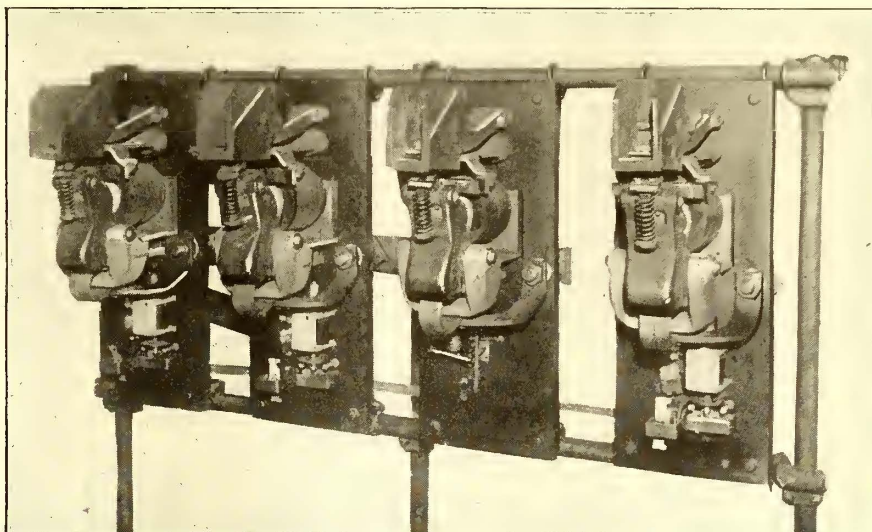
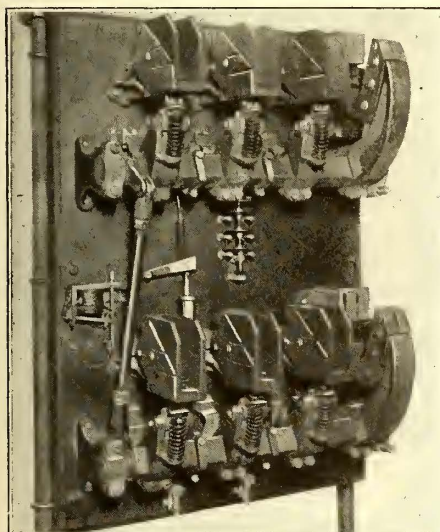
BY CHARLES F. LLOYD

Manager Substation Section Power Department, Westinghouse Electric & Manufacturing Company

THE automatic railway substation may be defined as one in which the functions of starting and putting the machines on the line, when there is a demand for power, and later shutting them down when the demand for power is not in evidence, are performed automatically. All of the switching operations are carried out in the proper sequence without the assistance of an operator. Obviously the converting apparatus must be protected from every conceivable

with the present shortage in labor and general labor unrest the reduction in necessary labor in the substations is a feature to which full consideration must be given even though it may be difficult to assign a monetary value to it.

Reduction in energy consumption, especially on inter-urban lines, will amount to a considerable item due to the elimination of no-load losses. The automatic switching shuts down the substation when power is



STARTING PANEL FOR AUTOMATIC SUBSTATIONS, AND DIRECT-CURRENT CONTRACTOR PANEL FORMING PART OF AUTOMATIC CONTROL

abnormal condition, even though such conditions may be expected to arise only infrequently.

Upon first thought automatic control seems to afford only a means of reducing labor charges, but it has been demonstrated that there are many other and important advantages to be derived from its use.

In general the principal advantages to be derived from the use of automatic substations are reduction in operating labor charges, reduction in labor difficulties, saving of energy, saving in feeder copper and reduction in the stray current from the railway return.

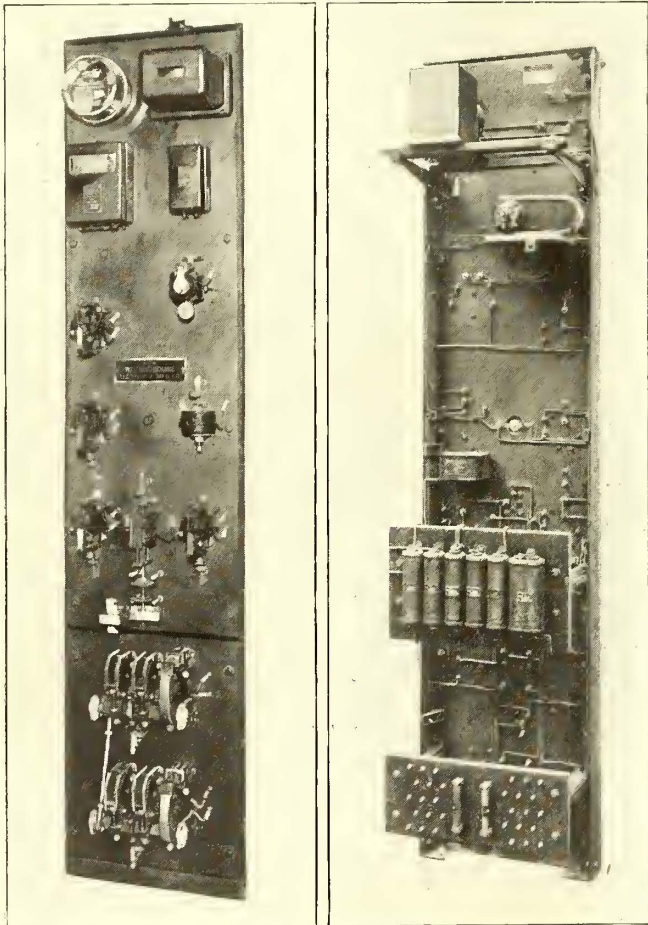
In the matter of labor the saving becomes important especially where three operating shifts are required under manual operation and where a number of substations are made automatic. In estimating the saving, however, error should not be made through the assumption that all operators can be eliminated. The automatic switching equipment as well as the other substation apparatus must be well maintained. Furthermore,

not required, thereby eliminating these losses which constitute a large proportion of the total in synchronous converter outfits.

Feeder copper can usually be reduced, or voltage conditions improved, by the use of automatic control. This follows from the possibility of relocating substations or increasing their number, or both, as no consideration need be given to expense for operators. There are no doubt many locations to-day where sufficient copper could be taken down practically to pay for the automatic switching equipment. Not only can copper be saved over head but the return circuit is improved due to the reduced length of return circuits and the reduction in return voltage drops.

The features which have been enumerated are in the credit column of the balance sheet. Necessarily there are some items which must appear on the debit side. The first of these is the cost of the automatic switching equipment. Interest, depreciation or obsolescence,

and maintenance must be figured. In making old substations automatic practically all of the switching equipment must be discarded. Another item is the substation buildings required in excess of those used for non-automatic equipments. These constitute an additional capital charge, and interest, depreciation, maintenance, etc., must be allowed. It is true, however, that substation buildings for automatic equipment can be built very cheaply, as no provision need be made for the comfort of the operator. It is necessary only to provide a building that will protect the equipment from the weather, provide suitable ventilation and be large enough to give suitable clearances around the apparatus.



FRONT AND REAR VIEWS OF AUTOMATIC SUBSTATION RELAY PANEL

Obviously even if we grant that the statements already made are correct as to the value of attendantless substations, the validity of these arguments must be based upon the reliability of the automatic switching apparatus. The switching must be done by the use of apparatus which has proved its reliability in actual service.

With this idea in mind the Westinghouse Electric & Manufacturing Company has developed an equipment which is illustrated in the accompanying photographs. The apparatus shown is that required to control a self-starting synchronous converter outfit having one feeder only. The illustrations show all of the equipment with the exception of the bank of direct-current resistance grids controlled by the main direct-current contactor panel. It is understood, of course, that an electrically-operated alternating-current circuit

breaker forms a part of the equipment, to eliminate transformer losses when the substation is inactive.

Where more than one feeder is required, feeder panels are supplied with suitable contactors similar to those shown and with a suitable resistance bank.

Two of the illustrations show the relay panel, front and rear views respectively, which carries the greater part of the relays for insuring proper operation of the switching contactors. The starting panel illustrated is similar to the familiar starting panel for hand-operated outfits. A direct-current contactor panel replaces the usual direct-current panel used in switching non-automatically.

The same scheme of switching is used regardless of the capacity of the converting apparatus, it being only necessary to change the main current-carrying contactors to correspond to the different ratings.

The operating features of this equipment can be briefly summarized as follows: In the first place it duplicates in every way the manual operation of substation apparatus, and each switching operation is a direct function of the electrical condition of the converting apparatus at that particular moment. Further, each switching operation is dependant upon the proper functioning of the preceding operations. At no time is any switching operation dependant upon any mechanical time element or mechanical sequence of operation.

The time elements used with the various relays are especially designed to be unaffected by wide variations in temperature, none of them being of the oil dashpot type. Most of the magnet switches and relays which are used have demonstrated their quality in steel-mill control work, where they have given evidence of ruggedness and reliability.

As stated earlier the matter of protection even under very unusual conditions is a prime consideration in this type of equipment. In the present design, should trouble develop between the high tension of the transformers and the direct-current limiting resistance, alternating-current overload relays will trip the alternating-current high-tension breaker. To provide against the occurrence of low voltage a relay is installed to prevent the substation from starting should the alternating-current voltage be too low or should it drop below a predetermined value. Under the control of this relay the low-voltage coil on the alternating-current circuit breaker will shut down the substation.

To protect the station against direct-current overloads various sections of current-limiting resistance are inserted in the machine circuit by suitable contactors when the load exceeds the setting of the overload trip on the contactors. These contactors close, cutting out the resistance when the currents fall below their settings. Protection against overheat is provided through thermostats placed in the machine bearings and in each resistance section. These operate to trip the alternating-current circuit breaker. If for any possible reason the converter and the direct-current line should be of opposite polarity the direct-current line contactor will not close due to the action of a suitable relay. If current is still demanded from the substation it will immediately restart. Similarly the equipment is protected against reverse current by means of a reverse-current relay. Finally protection against over-speed is furnished through the usual speed-limit device.

# Automatic Substation of New Type on Ohio Electric

Details Are Given of a New Type of Equipment in Which Contactor Switches Controlled by Relays Are Employed to Start and Stop Rotary Converters in Attendantless Substations

By R. J. WENSLEY

Switchboard Engineering Division, Westinghouse Electric & Manufacturing Company

THE Ohio Electric Railway has recently installed in its 500-kw. substation at Columbus Grove, Ohio, an automatic control of a type developed by the Westinghouse Electric & Manufacturing Company. This is shown in Fig. 1. The single unit in this substation is fed through transformers from a 33,000-volt transmission system. The switchboard is of the usual type having three panels, one for the alternating-current starting switch, one for the main direct-current switch and circuit breaker, and one for two outgoing feeders. The automatic equipment was installed without disturbing the existing board, all connections being paralleled with the old equipment.

A simplified schematic diagram of connections is given in Fig. 2, showing the control connections with only enough of the main circuits to provide a clear understanding of the sequence of operations. The alternating-current control circuit is fed from a transformer connected to the high-tension line ahead of the circuit breaker.

The contacts of the contact-making voltmeter 1 which governs the starting of the station, close when the trolley voltage falls below the point at which the station is to be started. In practice this will usually be at from 60 to 80 per cent of the normal trolley potential. The contacts of 1 complete a circuit through the operating coil of potential relay 2. This is an induction-type voltage relay which will not close its contacts unless the alternating potential is sufficiently high to insure the starting of the converter and the satisfactory operation of the various switches.

Contacts of 2 complete a circuit through timing relay 27 and in turn through the operating coil of master relay switch 3. This switch energizes the operating bus *auxiliary A*, from which all the various switch operating circuits are supplied. When this bus is energized three switches are closed at once: (a) The closing coil of the circuit breaker; (b) the field switch 5 which connects the shunt field across the converter brushes; and (c) the relay switch 4, which in turn closes starting switch 6, thereby applying starting potential to the converter slip rings. Interlock contacts operated by 6 connect the field and armature circuits of polarized motor relay 7, to the trolley and to the converter brushes respectively. These circuits are not shown on the diagram.

The polarized motor consists of a small shunt motor with a permanent magnetic field circuit on which is added a shunt coil energized from the trolley during the starting operation. The permanent magnet provides

against the contingency of the station having to start when the trolley is not energized. The armature is connected across the converter commutator brushes during starting. When the converter is first connected across the starting taps, this applies an alternating potential across the relay armature which causes it to oscillate only. As the converter approaches synchronism, the frequency decreases until when it locks into step, a unidirectional potential is applied across the relay armature causing it to revolve in a clockwise di-

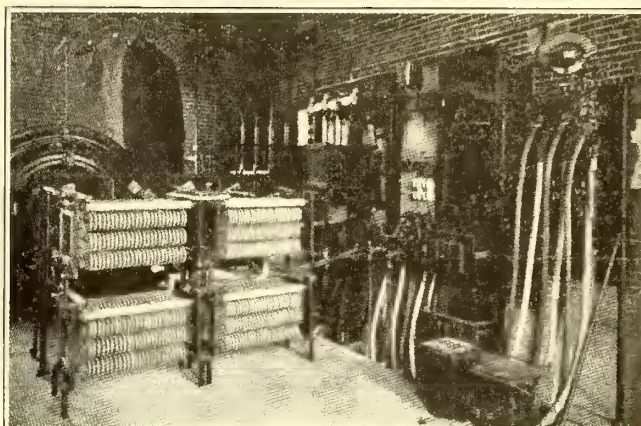


FIG. 1—AUTOMATIC SUBSTATION OF OHIO ELECTRIC RAILWAY, COLUMBUS GROVE, OHIO

rection, if the polarity is correct. A reducing gear is built into the motor frame which drives a revolving brush inside the molded contact block below the relay base. This revolving brush and its four contacts are shown as 7 in Fig. 2. Assuming that the polarity is incorrect, the brush will pass contact *A*, thereby closing relay 8 which will lock itself closed through its own contacts. The brush will next pass contact *D*, thus closing a circuit from the negative converter brush (which is permanently grounded) through one of the contacts of 8, through the coils of relays 9 and 32, and thence to the positive converter brush. Relay 9 is provided with a holding contact which connects its coil directly across the converter, thus causing it to remain in after the brush has passed point *D* of 7.

The contacts of 9 cause field switch 5 to open and field switch 10 to close. Switch 10 connects the shunt field across the converter brushes in the reverse direction, which causes the converter potential to die away nearly to zero. This causes 7 to slow down and stop somewhere near *C*; it also allows the armature of 9 to be released, which in turn causes the field switches 5 and 10 to

resume their original positions. This will normally cause the converter to slip a pole and build up in the reverse direction.

If the converter fails to reverse its polarity, the polarized motor will start again in the same direction, causing the field to be reversed again and will continue to do so until correct polarity is obtained or field reversal limiting relay 32 operates. Relay 32 guards against the times when, for some reason, the converter refuses to be reversed by the field. It is a step-by-step device, which after a predetermined number of trials will open the starting switch and allow the converter to drop out of step. After a few seconds it will allow the starting switch to close again and possibly catch the converter in such a manner as to bring it up in the correct direction. This sequence of operations closely imitates

effected. On the other hand, the transfer cannot be made until the converter is definitely locked into step and with the right polarity. While the description of the operation takes a relatively long time, the actual operation is carried out in a very brief interval. With a 300-kw., 25-cycle, 750-r.p.m. converter, starting on 28 per cent taps, the first direct-current line switch was closed ten seconds after the starting impulse was received; except that when field reversal was necessary, an additional four seconds was required. A 500-kw., 500-r.p.m. machine took four seconds longer. When commutating-pole machines are used an additional time of approximately five seconds is required to allow the brushes to be lowered.

The interlock on running switch 11 completes a circuit through the contacts of safety relay 31 to the closing coil of the main direct-current line switch 12. The coil of 31 is connected across the contacts of 12 and is calibrated to operate at 750 volts. As the normally negative converter brush is grounded, there will be a potential of 1200 volts across the coil of 31, if by any accident the converter should reach this stage of the operation with inverted polarity. If 31 operates it will open the circuit-breaker of 12, while at the same time tripping the circuit breaker and causing the station to start over again.

Switch 12 connects the converter to the line through the current-limiting resistance, thus preventing the sudden surge frequently caused in manually-operated substations when the switch is first closed. Switches 14, 15 and 16 are then successively closed through current-limit relays which prevent the short-circuiting of the resistance if the load exceeds their setting. These relays also serve as overload

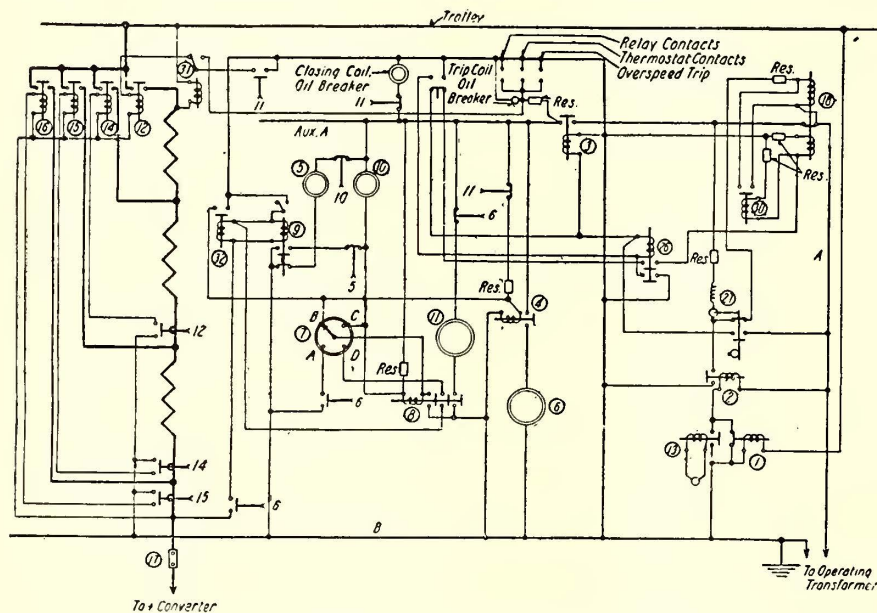


FIG. 2—SIMPLIFIED CONNECTION DIAGRAM FOR AUTOMATIC SUBSTATION

All switches are shown for de-energized condition of switch operating coils: 1—contact-making voltmeter. 2—Low voltage relay. 3—Alternating-current shunt relay. 4—Alternating-current shunt relay. 5—Shunt field switch. 6—Starting switch. 7—Polarized motor relay. 8—Alternating current shunt relay. 9—Field reversing relay. 10—Shunt field reversing switch. 11—Running switch. 12—Line switch. 13—Holding relay. 14, 15 and 16—Line resistance switches. 17—Ammeter shunt. 18—Reset relay. 26—Alternating-current shunt relay. 27—Torque-motor operated time delay relay. 30—Resetting lockout relay. 31—Over-voltage safety relay. 32—Field reversal-limiting relay.

the method used in the ordinary hand-operated station for securing correct polarity, except that it is much more likely to secure the desired result at the first trial because the field reversal is obtained at exactly the proper time in every case, which is not true when the human element is introduced.

The contact on 9 short-circuits the coil of 8 and causes it to open when the field is first reversed. As the converter builds up in the right direction, relay 7 begins to revolve in a clockwise direction. As that brush passes *D*, no circuit is set up because 8 is open. In passing *A*, 8 is again closed. When the brush reaches *B* the coil of 4 is short-circuited, thus causing starting switch 6 to be opened. A circuit through an interlock on 6 and through the main contacts of 8 closes running switch 11, thus applying full running potential to the converter rings.

It will be seen that with this system it is not necessary to wait even a short time after reaching synchronism before the transfer to running potential is

1; in case of overload or short-circuit on the direct-current system.

As soon as 12 is closed and the converter is supplying current to the line, the load relay 13 operates. This relay closes its contacts at approximately 15 per cent of the normal station load or any other value that may be found necessary on the individual application. The contacts of 13 are in parallel with those of 1 and serve to keep the station in operation as long as the demand justifies.

The motor-operated time relay 27 holds the station on the line during periods of coasting or when the cars are stopped to receive or discharge passengers. It can be set for any period (from three to eighteen minutes) that may be found desirable after installation. This relay will open switch 3 if no demand in excess of the setting of 13 is made on the station within the time setting.

Thermostats are provided over the current-limiting resistance grids to cut the station out of service if an overload or short-circuit continues sufficiently long to

overheat them. The station will continue to come back into service indefinitely after overheating of the grids if the demand is present.

Thermostats are also provided for the bearings but after these once operate the station is cut out of service until inspected. The bearing thermostat consists of a copper bulb inserted in the bearing and located so that one side of the bulb is in contact with the bearing metal. The bulb is connected to an external metallic bellows and is filled with a volatile fluid which vaporizes at the maximum desirable bearing temperature, thus expanding the bellows and operating a contact that disconnects the converter from the line. After the bearing has cooled, all that is necessary to reset the thermostat is to press down on the contact rod, thus opening the contacts and restoring the device to its original condition.

An auxiliary switch on the circuit breaker, together with relay 26, resetting relay 18, and repeating lock-out device 30 is arranged to cause one or more attempts to start after the station has been tripped by the alternating-current overload relays. This is to take care of restarting after a plain overload of sufficient magnitude to affect the alternating-current relays or a short-circuit due to a flashover or some other self-clearing source of trouble. If the tripping still persists, relay 18 is electrically locked open by 30, which is a step-by-step device capable of being set to perform from one to four operations.

An extra device can be connected to 18 that will signal the dispatcher over the telephone line that the station has been locked out due to trouble. This will also indicate the number of the station when there are more than one on the line. When this scheme of control is to be applied to converters having interpoles, which this one has not, it is necessary to provide a brush lifting and lowering device. This is arranged with limit switches and interlocks so that the converter cannot be connected to the starting taps unless the brushes are lifted, nor can the direct-current line switch be closed until the brushes are fully lowered. The brushes are arranged to raise immediately after the station is shut down, if the alternating current service has not been interrupted. If the shut down is caused by failure of the source of supply, then the brushes will be raised when the supply is restored. The lowering operation occurs when the low-tension running contactor closes, taking place in the sequence of operations between the closing of this switch and the closing of the direct-current line switch 12.

### Public Utility Situation Improving

The public utility situation, according to the *Chicago Tribune*, is gradually turning for the better. A compilation of the annual report of ninety-three of the principal corporations for the year ended Dec. 31, shows aggregate net earnings of \$207,761,420 as compared with \$192,761,420 for the previous year. The improvement in the aggregate, according to this paper, is largely due to the fact that state and municipal boards having the power of rate regulation have adopted a new policy toward the utilities and recognized the fact that the welfare of the nation at war depends in a large measure on the good credit and operating efficiency of public utilities.

### Safety Reminder Used at Columbus

THE Columbus Railway, Light & Power Company has been very active in campaigns to reduce accidents. Some of this work was described by H. W. Clapp, general superintendent, in the issue of the *ELECTRIC RAILWAY JOURNAL* for Sept. 8, 1917, page 395.

### Accident Prevention Record

#### YEAR 1917

In the four principal classes of accidents occurring in connection with operation of street cars, our record for the year 1917, as compared with 1916, is as follows:

1. Boarding moving cars . . . . . 26.5\* decrease.
2. Leaving moving cars . . . . . 50.3\* decrease.
3. Collisions—cars and wagons . . . . . 3.5\* decrease.
4. Collisions—cars and automobiles 47.0\* increase.

There were 36\* more automobiles in operation on the streets on December 31, 1917, than on the same date of 1916.

To the untiring efforts of conductors and motormen and the co-operation of car riders, may be ascribed the remarkable results obtained in the first two classes of accidents. Collisions between cars and automobiles have increased rapidly. Our records show the increase is due to the carelessness of automobile drivers. The accidents can be reduced in number if drivers will cease taking reckless chances and use more judgment in handling their machines.

The Columbus Railway, Power & Light Company

ACCIDENT POSTER RECENTLY ISSUED BY C. RY., L. & P. COMPANY, COLUMBUS, OHIO

One of the latest features in the safety movement was the printing of a large poster giving the results of an analysis of accident reduction, or the reverse, for the year 1917. The poster, which tells its own story, is reproduced herewith.

### Car With Raised Motors for Service in Flooded Streets

The Brooklyn (N. Y.) Rapid Transit System has added navigation to its already broad field of transportation service. This comes in the nature of a car with the motor built above the floor and which is used to operate through flooded streets.

At one point in particular in Brooklyn, the houses along both sides of the street are built at a much higher elevation than the street and whenever there is a heavy rain or a melt from a heavy fall of snow, the drainage is so inadequate that the street becomes a veritable canal. As the result of melting snow such a flood recently reached a maximum depth of 3 ft. and the deep-sea transport car known as the "Canarsie Ferry" was pressed into service, carrying passengers across the deep to safety on the dry land on either side of the young flood.

Before the "Canarsie Ferry" was built for ocean voyages this line has several times been compelled to discontinue operation for periods of twenty to thirty-six hours.

## Six-Cent Fare Turned Down

### Rhode Island House Votes in Favor of Adopting Zone System Recommended by Special Investigators

A ZONE system of fares for the Rhode Island Company, Providence, R. I., system was adopted by the House on April 10 by a vote of 49 to 43. Action by the Senate has not yet been taken. The present situation is, therefore, that the General Assembly has half repudiated the report of a committee of legislators favoring a 6-cent fare. This constitutes an overruling of previous action, when the House blocked the installation of a zone system recommended by special investigators.

#### ACTION TAKEN BY HOUSE

The vote taken by the House was on a bill reading in part as follows:

"The Public Utilities Commission is hereby directed to order the Rhode Island Company to make such modifications in its system of fares and transfers as the special investigating commission has so determined and certified [in its zone system recommendations]. Such modifications shall be subject to change from time to time by the Public Utilities Commission whenever in its opinion the public interest shall so demand and the affairs of the Rhode Island Company shall warrant.

"New schedules shall become effective on or before May 1, 1918, upon at least five days' notice to the Public Utilities Commission and the public, provided that the Public Utilities Commission may, for cause shown by the Rhode Island Company, extend the date upon which such new schedules shall become effective.

"The schedules of rates of fare and transfer regulations herein ratified and confirmed shall continue in force during the remainder of the war with the Imperial German Government and for a further period of one year after a treaty of peace shall have been signed by the warring nations, unless sooner abrogated or changed by the Public Utilities Commission in accordance with law."

It will be recalled that the Rhode Island Legislature in January, 1917, passed a bill providing for the appointment of a special investigating commission to inquire into the advisability of granting financial relief to the Rhode Island Company. This commission reported in March, 1918, in favor of the adoption of a zone system of fares, as described in the *ELECTRIC RAILWAY JOURNAL* of March 23. The Legislature, however, blocked this method of relief by passing a special bill ordering the Public Service Commission not to put the recommendation into effect, as the previous bill had provided, and appointing a special committee of legislators to look into the affairs of the company and to consider the report of the special commission.

#### LEGISLATIVE COMMITTEE WANTED HIGHER UNIT FARE

This committee of legislators held numerous meetings and finally reported back to the Legislature, on April 3, in favor of a 6-cent fare. Tickets were provided at the rate of eighteen for \$1. It was proposed that the increase should go into operation on May 1, and continue until one year after the signing of a treaty of peace.

The committee stated that if further temporary relief were needed, it could be obtained by a reduction of the franchise tax and the paving charges paid to the city of Providence.

#### SPECIAL COMMISSION DID ITS DUTY

In discussing the recommendations of the special investigating commission, the legislative committee said in its report that the former body fully met its duty of determining whether or not the company was securing a fair return on the property used in the public service. While there might be a difference of opinion in regard to the value as fixed by experts of the commission and also as to the means recommended for securing increased revenue, there could be no question that the commission had rendered a valuable service to the State by the comprehensive work shown in the report. The legislators believed that the information would be most pertinent and helpful in the consideration of the question of revising the fares to conform with a fair return. In their opinion, however, such a question must give way for the present to one more pressing—the problem of finding funds sufficient to enable the system to keep in operation.

The legislators noted that according to the report of the investigating commission the rentals, interest, taxes and operating expenses of the company exceeded its income by \$512,849 for the calendar year, 1917. The comptroller of the company stated to them that during January and February of 1918 the company had run behind \$182,000, and one of the trustees said that a fair estimate of the deficit during 1918 would be from \$700,000 to \$750,000. Public utilities throughout the country, the committee said, are facing similar problems, and public authorities are granting relief in the form of increased rates. It was believed, therefore, that a similar attitude on the part of the authorities of Rhode Island was warranted by the conditions.

#### WHY A SIX-CENT FARE WAS FAVORED

The legislative committee tried to learn what additional revenue would result from the operation of a zone system or a 6-cent fare, but it found that in each case this was largely a matter of opinion. The estimate of increased revenue obtainable from the 6-cent fare ranged from \$440,000 to \$500,000; and from the proposed zone system, from \$400,000 to \$550,000.

In recommending a 6-cent fare instead of a zone system to supersede the present 5-cent rate, the legislators stated their reasons as follows:

1. The increase to 6 cents has been the mode of relief granted during the last few months in most of the places where fares have been increased.
2. It does not appear that the zone system as proposed by the special investigating commission has been applied to any other community, at least not to any of the size of Providence and its suburbs.
3. The 6-cent fare is simpler in operation and easier to carry into effect as a measure of temporary relief and it will not result in a disturbance of community life or of property and rental values.
4. The increased fare is required because of war conditions and constitutes a burden that should be shared by all patrons.

# Business Men Can Help Win the War

**Patriotic Addresses at Convention of United States Chamber of Commerce Urge Co-operation in War-Financing, Transportation, Shipbuilding and Maximum Production—  
Utilities Must Be Preserved and Expanded**

**F**OUR questions of supreme importance to the nation as a whole and to the American business world formed the nucleus around which the sixth annual convention of the Chamber of Commerce of the United States, held on April 9-12 in Chicago, Ill., centered. These were government organization in relation to business in war, transportation, war financing and ship building. It was said that business men can do much to assure a speedy victory, a solution of the labor problem, and the preservation and the expansion of utilities and other essential industries. During the entire convention, which was well attended, patriotic enthusiasm was so expressed as to leave no doubt of the unselfish and devoted loyalty of business.

## MAXIMUM PRODUCTION MUST BE ASSURED

The meetings began informally on Tuesday afternoon with the presentation of several committee reports. In one of these the committee on industrial relations set forth the progress that is being made toward a plan for assuring maximum production. The committee pointed out that the difficulties of obtaining war materials have been increased by questions of wages, hours and conditions of labor, transportation for workers, and housing, each of them of the highest importance to the maintenance of vital production. The constructive plans suggested by the committee include agreements that there shall be no cessation of production, that these agreements shall be supported and enforced by executive authority, that there shall be control of causes leading to unrest, and that there shall be provision for conclusive arbitral decisions regarding differences that arise in spite of preventive measures.

The formal sessions began Wednesday morning with an address of welcome by Lucius Teter, president of the Chicago Association of Commerce. After reports of the board of directors and the National Council, the Chamber's activities in relation to government organization, shipping and finance were described in brief addresses by Waddill Catchings, Edward A. Filene and Wallace D. Simmons, chairmen of the respective war committees. A ringing challenge to American business men that they bestir themselves to speed the structure of ships was the keynote of Mr. Filene's remarks. He emphasized the responsibility that rests upon the community and the individual business man, and said:

## HELP SPEED THE BUILDING OF SHIPS

"First, we can see to it that our local business organizations in every community where ships or ship parts are being turned out shall make it their first business to organize themselves into an effective aid to shipbuilding. Second, we can help organize the community behind the shipbuilding in as definite a manner as we can organize the business forces back of shipbuilding."

At the Wednesday afternoon session R. Goodwyn Rhett, president of the National Chamber of Commerce, gave his presidential address. He developed the idea

that the great growth of this country and of its resources has been due in large part to the energy, the enterprise and the genius of the American business men, and that further development depends on the continued idealism of business men. In Mr. Rhett's opinion the Chamber of Commerce has a wonderful mission in putting a soul into business.

Mr. Rhett also made a plea for co-operation. He explained that under the original interpretation of the Sherman Law, two manufacturers engaged in the same line of work feared to act in unison, although actual consolidations were not forbidden. This led to the organization of trusts. The decisions in the Standard Oil and American Tobacco cases reversed this idea, and undoubtedly were of great help to business. Manufacturers now may co-operate and should do so, for the benefit of not only themselves, but also the public. The war is teaching this country the necessity of co-operation and stronger fellowship among all classes.

On Wednesday evening the auditorium was filled to capacity for addresses by Josephus Daniels, Secretary of the Navy, and Franklin K. Lane, Secretary of the Interior. Secretary Daniels devoted the major portion of his speech to a recital of the achievements of the American Navy in convoying troops to France and in patrolling the seas in conjunction with the fleets of the Allies. He said that ships are vitally necessary in winning the war and urged business men to give up skilled mechanics so that the ship-building program can be carried through without delay. Secretary Lane, in a very patriotic speech, outlined a scheme of caring for the returning armies of the United States when the war is over. He said that the government could let each man have 40 acres of irrigated land in Colorado, house and stock, payment being made in labor by constructing the works which would make this possible.

## ADDRESSES OF INTEREST TO ELECTRIC RAILWAYS

Four sessions were held simultaneously on Thursday, the first devoted to government organization in relation to business in war, the second to finance, the third to railroads and highway transportation, and the fourth to shipping. Among the addresses of special interest to electric railway men were ones by Thomas N. McCarter, president Public Service Corporation of New Jersey, Newark, N. J.; Alba B. Johnson, president Baldwin Locomotive Works; Roy D. Chapin, president Hudson Motor Car Company and chairman highway transportation committee of the Council of National Defense; Charles A. Eaton, head of national service department of Emergency Fleet Corporation; Francis H. Sisson, vice-president Guaranty Trust Company, New York, and P. H. Gadsden, president Charleston Consolidated Railway and Lighting Company, Charleston, S. C. Mr. Gadsden's paper was presented in his absence. This and the address by Mr. McCarter are abstracted on following pages.

Mr. Johnson discussed the problem of motive power under the United States Railroad Administration. He first described briefly the development of the steam locomotive. Standardization in its designs has been an ideal much talked of, but never realized, because standardization implies the crystallization of present practice as the practice of the future. Many attempts have been made to fix standards for particular railroads and groups of roads, but in every instance these have given way to the urgency of keeping pace with other roads. Those most rigidly adhering to their standards have lagged behind their competitors. Railroad men are now convinced that the most advantageous field of standardization is with the details rather than the complete locomotive or car as a unit. The result in standardization attained by the Railway Master Mechanics' Association and the Master Carbuilders' Association may be said to have been as great as it was humanly possible to achieve under the diversity of management, the diversity of ideas and the necessity of constantly keeping abreast of the march of improvements.

#### MOTIVE POWER IS NOW INADEQUATE

The participation of the United States in the World War, Mr. Johnson said, has brought about new conditions, as all the railroads are now subject to a unity of management and of control in their purchases. Under the instructions of the Director General a committee comprising eleven railway officials, collaborating with representatives of the three principal locomotive builders, have now agreed upon twelve standard specifications for the essential elements of locomotives, leaving a certain freedom in regard to accessories. These standards, however, are only proposed, and there are good arguments against any effort for their general adoption at this time.

Mr. Johnson then discussed railway electrification, for which he saw an extensive future, although the introduction of the electric locomotive must be gradual because of the cost of installation. The motive power of the country is admittedly inadequate for the service demanded under the present war conditions. Railroads have been unable since 1907, because of low earnings, to enlarge greatly their facilities. Adequate provision of motive power, like adequate provision of other rolling stock and other facilities, can only be assured when Congress places upon the functionary charged with the duty of regulating rates, the definite responsibility of making such rates as will yield earnings sufficient for thorough maintenance, adequate improvements and the attraction of necessary capital.

#### SERVICE IS MORE IMPORTANT THAN RATES

Mr. Sisson said in part: "The scepter in the railroad world has passed out of the hands of the railroads' executives and the bankers who financed them. The American people control the situation through their political representatives, and they will determine the whole course of the future. They will suffer or prosper, in accordance with the wisdom shown.

"No class of people will exercise so powerful an influence in reaching this decision as the shippers. The rates at which service is rendered are incidental to having service prompt and adequate. To serve their own ends in the future, shippers must take a con-

structive attitude toward the transportation question."

Mr. Chapin said that the resolution recently passed by the Council of National Defense approved the widest possible use of the motor truck as a transportation agency. He requested the State Councils of Defense and other state authorities to take all necessary steps to facilitate such transportation. A special plea was made for co-operation with the "Return Loads Bureau," by which motor trucks used over freight transportation routes would have loads in both directions. The Connecticut State Council of Defense, in co-operation with the National Committee, has established fourteen such bureaus in different cities in that State. They are listed in the telephone book, and no charge is made for their service. Similar action was urged on Chambers of Commerce elsewhere. Mr. Chapin spoke about the difficulty experienced by trucks last winter with the snow on country roads and said that several states made a record in clearing off this snow so that there might be no interruption in the army schedule of truck movements.

Mr. Eaton discussed the subject of "Patriotic Labor." In speaking of shipbuilding he said that the management in these enterprises had undergone a nervous strain without parallel. On one side they have had the government demanding, in the name of the people, results, and on the other they have been confronted with the most difficult and dangerous labor conditions. It is a physical impossibility to build ships with all equipment, and the equipment demand for anything approaching an adequate supply of ships could not have been filled, under war conditions, in less time than it has taken to bring the shipping interests to their present point.

According to Mr. Eaton the working men in the shipyards are paid more money than ever was received by this class of labor for similar work before, although this itself has constituted a danger and an embarrassment. The only solution is to have an agreement enacted into law so that the National Administration shall have capital and labor pledged to complete service and sacrifice until the war is won. This will eliminate profiteering of capital and profiteering of labor.

#### RESOLUTION FOR AID TO ELECTRIC RAILWAYS

Questions submitted by members of the Chamber of Commerce for consideration at the convention included a resolution by the American Electric Railway Association asking for rate relief. The resolution, which was to be voted upon Friday morning, is as follows:

*Whereas* the maintenance of the country's public utilities in the highest possible state of efficiency is essential not only to the war program of the United States but also to the nation's business and industrial interests; and

*Whereas* such efficiency depends upon the preservation of the credit of the companies providing public utility service; and

*Whereas* the increase of costs and the unusually onerous conditions of operation brought about by the war seriously threaten the ability of the public utilities to continue the furnishing of the necessary services they perform; and

*Whereas* the protection of the credit of public utilities is very largely in the hands of regulatory commissions and other public authorities, rather than in the utilities themselves: Now, therefore, be it

*Resolved*, That the Chamber of Commerce of the United States of America recommends to state and local authorities that they recognize the unusual and onerous conditions with which public utilities are contending, and that in the interest of the nation, of business and of the public they give prompt and sympathetic hearing to the petitions of such utilities for assistance and relief.



## Immediate Relief Is a Prime National Necessity

Capacity of Utilities for Service Must Be Greatly Increased—Public Sense of Justice Toward Companies Must Be Developed

BY THOMAS N. MCCARTER

President Public Service Corporation of New Jersey, Newark, N. J.

IT HAS REQUIRED the conditions that have been brought about by the war to demonstrate to the nation that the public utilities of the country are national in their scope. The fact that they operate in relatively small units is an unimportant incident. Their ability as a whole to perform their chief function—that of providing adequate service—is of vital consequence to the comfort and economic welfare of the nation. If this great industry, viewed as a whole—however it may operate—be unable to perform its proper functions by reason of political or economic oppression or otherwise, a paralysis will spread over the business life of the country in fully as fatal a manner as would result from the collapse of the railroad industry.

### UTILITIES MUST BE PRESERVED AND SPEEDED UP

If this country is ultimately to take its place in the forefront of the Allies and be the final decisive factor in the termination of the world war, as we all believe, not only must the integrity of the utility industry of this country be preserved, but its activities must be speeded up to a point never hitherto attained. Its capacity for service must be greatly increased, and the capital necessary to accomplish this result must be provided. The gas companies, as well as the by-product coke companies of the country, must be placed in a position where they can produce all the trinitrotoluol that the government requires for its high explosives. The power companies must keep pace with the extraordinary demands being made upon them to furnish power in large quantities to the shipyards, to the aeroplane factories and to the innumerable industries engaged exclusively in the manufacture either of war products or of materials which ultimately become a part of war products.

The electric railways, in addition to the performance of their usual every-day service, must be enabled to extend their lines to the war camps, the shipyards, the aeroplane factories, the shell-filling plants and all other similar government enterprises, and to equip the new lines, as well as their existing lines, with sufficient cars, copper, power and crews to transport daily the multitudes of workers, running in the aggregate into many hundreds of thousands, suddenly superimposed in many localities upon an already existing over-congested business.

That the solidity and integrity of this great enterprise is essential to the successful carrying on of the war, by the government, has been distinctly recognized by the administration. It was made the subject of vigorous comment by the Comptroller of the Currency in his last annual report. More recently, it has been the subject matter of correspondence between the Secretary of the Treasury and the President, which has been made public and in which both of these distinguished officials take pronounced ground to the above effect.

Like those of every other industry in the country,

utility costs over pre-war conditions have enormously increased. It is susceptible of proof that their labor and material costs have increased by an average of 70 per cent. What is the truth in the experience of every individual and of every industry is true of them, in many instances in more accentuated form.

Unlike the ordinary private industry, however, they have not been able to "pass the buck" of increased costs to the consumer. The rates of charges of these companies have remained fixed, being, like those of the railroads, subject to regulation, differing only from the railroads in this respect: that the railroads have been primarily controlled on this question by one national power, the Interstate Commerce Commission, whereas the utilities are, for the most part, governed by their respective state commissions and in many cases by municipal authorities as well. The Interstate Commerce Commission, being located at Washington, may be expected to absorb quickly the spirit of the national necessity in the premises; but its control of the situation has been much impaired by the taking over of the railroads by the government.

The President, the Secretary of the Treasury and the Comptroller of the Currency, by their published statements above referred to, have done much to bring home to the various state regulatory bodies the necessity for prompt action to avert impending disaster. It is difficult, however, to overcome the deep-seated prejudices of the public, which are too often reflected in the decisions of state and local commissions.

### PUBLIC SPIRIT OF FAIRNESS NEEDS DEVELOPMENT

There is now a country-wide movement under way by the utilities for increased revenue. In many cases the state commissions are facing the issue courageously and granting the necessary increases. If wide-spread disaster is to be averted, however, a public spirit of fairness and justice to these companies must be developed that will quickly manifest itself in the decisions of the commissions. The public must realize that in the economics of this business, as in every other business, two and two make four and not two or three, and it must be willing to pay as fair a price for 1000 cu. ft. of gas, a kilowatt-hour of electricity or a ride upon an electric car, as it freely pays for a pound of butter or a new pair of shoes. There is nothing peculiar about the utility business that excepts it from the inexorable laws of trade.

In the development of such a public spirit I can think of no influence which can be so effective as that radiating from the great body of business men composing the United States Chamber of Commerce. The opportunity of assisting the rightful solution of this problem is a patriotic service and one of tangible assistance in the prosecution of the war.

The government has lent its aid to this problem in another substantial manner. It has passed the war finance corporation act, which will undoubtedly afford many of these companies, either directly or indirectly, a channel of finance that would not have existed if the act had not been passed. Congress, fearful lest further inflation might ensue as a result of such legislation, has provided in the act more rigid requirements as to percentages of collateral and the like than I think were

necessary or desirable under existing conditions, but we must do the best we can with the tools at our command.

The one great and controlling factor is this: the revenues of these companies must be increased to an extent that will provide net earnings sufficient to enable them to finance their maturities and to attract the new capital it may be necessary for them to obtain to meet war needs—whether that money is to be advanced by individuals, by banking corporations or by the government itself. No financial agency, individual, corporate or governmental, can be expected to make improvident loans or investments.

#### CLOSER CO-OPERATION WITH PUBLIC IN FUTURE

When the proper time arrives and we have opportunity for the deliberate consideration of such problems, I look forward to the working out of a plan that will involve closer co-operation in the future between the public and these companies in their dealings each with the other. It will be a plan that will retain the manifest advantages of the private operation of these enterprises, subject of course to public supervision; a plan that will insure a fair return to capital already invested; a plan that will offer to the public, more or less generally, an opportunity from time to time to invest in these enterprises the capital needed for their development upon an assured basis of an adequate return; a plan that will provide an absolutely safe investment for the masses in suitable allotments.

Such a thought is not Utopian. It is practical of accomplishment and should result in the minimizing of the everlasting friction that hitherto has existed between the public and these companies. It should insure for the future the proper development and the logical expansion of their facilities to meet the reasonable requirements of the public.

## Helping To Win the War

### Shipbuilding Has Increased Railway Problems— Communities Should Aid in Distributing Traffic More Evenly

By P. H. GADSDEN

President Charleston Consolidated Railway & Lighting Company, Charleston, S. C.

**W**HAT can local business organizations or enterprises do to help provide adequate transportation facilities for shipbuilding employees? The most important thing—that which will bring the best returns—is to foster a feeling of co-operation toward the local electric railway. This includes a willingness to be put to inconvenience—less frequent service if need be—and a realization that the management is desirous of doing its best in the face of many problems.

To get electric railway service up to the highest standard obtainable in normal times may be practically impossible in the present emergency. It may be questioned whether the necessary man-power, if it were possible to pay wages high enough to attract men from other lines, could, in the interests of the government, be diverted from present or prospective occupations.

Perhaps the partial solution of this problem lies in the employment of women as conductors. There are arguments against adopting this plan, but the benefits

may outweigh the objections. The practice has become quite general in England and France, and in some instances in this country. As a whole, it seems to be working fairly well.

#### SHIPBUILDING HAS INCREASED RAILWAY PROBLEMS

Obviously, the problems are vastly increased when there is added to the pre-war demand upon the electric railway the duty of transporting thousands of newcomers to and from the shipyards, in rush hours, practically all of them going in one direction at one time. This creates a condition which calls for the patriotic assistance and forbearance of every loyal member of the community. Without transportation facilities the shipbuilding plants cannot be kept going, as their character makes it necessary that most of them be situated in localities which do not permit employees to live within convenient walking distance from their work.

The electric railways are confronted with the need of providing extra equipment which will be used only an hour or two daily and extra employees whose services are required for the shipyard trips only. Some companies may be able without aid to provide the necessary men and facilities to transport these men, but most of them—and I think all of them—will require government assistance.

It may not be necessary, in order to transport shipbuilding employees to and from the plants, for the companies to resort to such extreme measures as using the equipment and the men that are required in regular schedules. If such a move becomes necessary, however, it is only urging the performance of a patriotic duty to ask that everybody co-operate, even at the cost of slight personal inconvenience.

#### PUBLIC CAN HELP TO DISTRIBUTE TRAFFIC

Communities can aid the electric railways by helping to bring about a more even distribution of traffic and consequent improvement of service. As the industrial plants must have more men than ever and from present indications it would be impossible for the railways to carry them all practically at one time, it would seem that the problem would have to be solved by some readjustment of the working hours, so that the men would not all start and stop work at the same time. This can be accomplished by a staggering of hours of employment in factories and large department stores. It would be helpful if the women whose duties do not require them to travel during the rush hours would shop earlier in the day.

Further relief that can be obtained without serious inconvenience to anyone can be had through the adoption of the skip-stop. This plan has been investigated by the War Board, and bulletins have been issued recommending it to all electric railways. This system has been in effect in Cleveland for a long time, and it has recently been put into operation on all lines of the Public Service Railway and in Toledo, Detroit, Cincinnati, Buffalo, Denver, Kansas City and Baltimore. It has also been recommended for early adoption in Washington, D. C. Immense saving can be made in coal if communities will co-operate with the companies to permit this plan and others just as desirable to be put into effect.

My recommendations may be set forth in the following order:

1. Communities should deal with the street-car problem with a spirit of co-operation and helpfulness. This includes consideration of an increase in the price of the commodity which the company produces, namely, transportation.

2. Electric railways which are not provided with equipment and other facilities to handle properly present and prospective traffic should make every effort to secure such equipment and facilities as far as practicable at the earliest possible date.

3. Electric railways should put into effect everything that can be done to bring about improved efficiency and the conservation of material and man-power.

4. The attention of the officials of industrial and governmental plants should be attracted to the necessity of full co-operation by staggering the hours of employees, so that the same number of cars and men can be used for several trips, instead of only one.

5. Attention of members of department stores and other commercial establishments should be called to this matter in the hope that they will adopt such means as may be most efficient in their efforts to induce their patrons to co-operate in the movement to secure a more even distribution of traffic by advocating that women do their shopping in the morning and early hours of the afternoon. The newspapers of the State should join in the movement in order that the greatest publicity might be attained.

6. The hearty co-operation of the authorities in the various municipalities in the State should be given to the movement, and Boards of Trade and Chambers of Commerce should give their assistance.

7. The skip-stop method of operation should be adopted.

8. The communities should forego during the period of the war new pavements or repavements and other improvements which would require expenditures by electric railways.

### Keeping in Touch with the Boys at the Front

EMPLOYEES of the General Electric Company in the Chicago district have perfected an organization for the welfare of the men in this district who have gone into the service. The work is under the direction of a committee consisting of a chairman, a secretary, a treasurer and the heads of departments. A "service news letter" is sent to all men in service twice a month. Tobacco, candy and magazines are sent out at frequent intervals, and the women employees have prepared more than 200 knitted articles for the comfort of the soldiers. The funds for this work are obtained by monthly contributions pledged by the employees of the district. The company has seventy-five men in the service from this district.

During the year 1917 the Arkansas Valley Railway, Light & Power Company, operating more than 35 miles of railway lines in the vicinity of Pueblo, Col., gained 1095 hp. of lighting business and 3957 hp. of power business, making a total gain for the year of 9 per cent of the total load served at the beginning of the year. It is reported that prospects for new business during 1918 are excellent.

## AMERICAN ASSOCIATION NEWS

### War Board Holds Busy Session

AT THE MEETING of the American Electric Railway War Board held at Washington on April 5 all of the members were present, and in addition J. K. Choate, E. C. Faber, W. V. Hill, E. B. Burritt and H. C. Clark.

Chairman T. N. McCarter reported that as a result of a letter from Clarence Renshaw, of the Fuel Administration, to the New Jersey Fuel Administrator, arrangements had been made to inaugurate the skip-stop plan on one division of the Public Service Railway on April 1 and on the remaining divisions on May 1. Mr. McCarter also explained the plan of the current meeting of the Chamber of Commerce of the United States and of his own address prepared for that meeting. (An abstract of the address appears elsewhere in this issue.) He reported progress in the work of the advisory committee appointed as a result of a conference of utility men held at the Engineers' Club on March 22.

The War Board discussed the purchase by the government of equipment to be loaned to the electric railway lines. Mr. Budd suggested that the matter of the handling of government passenger business by electric lines be taken up with the Director General of Railroads for adjustment.

Mr. Gadsden made a progress report on the activities of the joint committee of public utilities. Arrangements have been made to push the work actively early in April, the state and regional committee organization being now complete. Mr. Gadsden had asked for a meeting of the advisory committee at an early date.

A large part of the War Board meeting was taken up with a discussion of the War Finance Corporation, the shortage in platform labor, the relation of the electric railways to transportation by motor trucks, and House Bill HR-10265, which authorizes the Secretary of Labor to acquire local transportation lines which may be necessary in war preparations. On the second topic the hope was expressed that arrangements can be made to secure the loan of men from shipyards served by electric railways to do platform work in rush hours.

The statement was made that the War Board will move its headquarters about July 1 to the new District National Bank Building on G Street. The board adjourned to meet again on May 3.

### The Largest Section Organized in the Smallest State

IN ACCORDANCE with the program announced in earlier issues of the ELECTRIC RAILWAY JOURNAL, on April 9 the employees of the Rhode Island Company, Providence, R. I., organized Company Section No. 12 of the American Association. The number of charter members was just 200, the largest number of charter members in the sections formed to date.

A number of visitors from out of town were present to explain to the men the possibilities of company section work as demonstrated elsewhere. E. B. Burritt, New York City, told of the way in which the associa-

tion is trying to help the government and presented a framed charter to the section. H. C. Clark, New York City, showed how the section work acts to develop latent talent in the members. H. H. Norris, *ELECTRIC RAILWAY JOURNAL*, emphasized the importance of high ideals of transportation service, particularly in war times. Martin Schreiber, Newark, N. J., chairman of the committee on company sections, used as the basis of his talk the "Company Section Hand," of which the thumb represents loyalty, and the fingers enthusiasm, efficiency, team work and public relations (see *ELECTRIC RAILWAY JOURNAL*, May 26, 1917, page 961). Cyrus Ching, Boston, Mass., spoke along patriotic lines and urged his hearers to make the most of their opportunities for service. Theodore Francis Green, secretary and director of the Rhode Island Company, related his experiences at the Rhode Island meeting of the Connecticut Company section held last month, the most important lesson being that through the company section the employees of the company become acquainted in a way otherwise impracticable.

The closing and principal address of the evening was by Charles C. Pierce, Boston, Mass., who pictured vividly the present condition of the electric railway and analyzed the situation for the purpose of pointing out the reasons for the present difficulties. He said that while fares in the pre-electrification days were much higher than at present, when horse railways were electrified the railway managers voluntarily adopted the 5-cent fare because they felt assured of ability to give the required short-haul service at a profit for this figure. Natural development, however, has partly robbed the electric railway of this business so that it is very illogical to try to meet present requirements under ancient specifications. After showing how the uniform 5-cent fare had acted to improve living conditions by building up the suburbs, Mr. Pierce said that theoretically at least the zone system is the best solution of the fare problem and this country may ultimately come to it in practice.

The organization meeting was presided over by Charles E. Redfern, claim agent of the company. The election of officers and directors resulted as follows: President, Mr. Redfern; first vice-president, A. L. Campbell; second vice-president, F. L. Caswell; secretary, E. J. Cooney; treasurer, G. A. Worrall, assistant secretary, C. R. Ballou; company representative, A. E. Potter; directors, W. D. Wright, R. R. Anderson, A. V. Gardner, A. E. Paddock, H. W. Sanborn and W. C. Slade. Mr. Cooney was appointed chairman of the program committee and he selected the following to assist him: J. A. Lockhart, G. B. Merchant, J. A. Hackett and B. T. Raymond.

### Traction Company Completes Transmission Line

A 33,000-volt transmission line from Fort Smith, Ark., to serve Alma and other communities has been completed and these towns will now receive electrical energy from the Fort Smith Light & Traction Company. With the completion of the line now under construction from Alma to Ozark, the Fort Smith Company, which also operates approximately 33 miles of electric railways, will meet all the electrical requirements for a

distance of 45 miles west and south of Fort Smith. The railway receipts of this company for January and February are reported to have been 22 per cent greater than for the same months of last year. General business conditions in the city are exceptionally good, due to the many new industries now in operation.

## LETTER TO THE EDITOR

### Calibration of Switchboard Watt-Hour Meters

BROOKLYN RAPID TRANSIT COMPANY

BROOKLYN, N. Y., April 10, 1918.

To the Editors:

In my article "The Testing Organization of Electric Railways," which appeared in the March 16 issue of the *ELECTRIC RAILWAY JOURNAL*, I stated under the caption "Calibration of Ammeter and Other Shunts," page 515, that where mercury-type watt-hour meters are used, and charges between one company and another are based on the meter registration, the resistances of the watt-hour meter shunts ought to be measured *in situ*. Quite obviously the argument was one applying to shunt-type watt-hour meters, whether mercury meters or meters of any other form, and that the article put it otherwise must be ascribed to the lack of use of precise language.

The argument itself is open to criticism. Accuracy of measurement of energy output of direct-current circuits of very large power is difficult to insure because whatever kind of watt-hour meter is used, whether of the series type or the shunt type, the ultimate foundation for accuracy of calibration must rest on some measurement of a shunt resistance, and such measurement should be made on the shunt *in situ*. This, although somewhat difficult, is undoubtedly capable of accomplishment with high accuracy. The point I wish to make clear is that a shunt-type watt-hour meter does not suffer under any disadvantage in this respect compared with a series type. Either reliance is to be placed on the accuracy of the manufacturer's calibration of both types having been maintained, or the accuracy of the completed installation has to be established in terms of working standards. To do this latter involves ultimately a measurement of resistance of some fairly large shunt, because no measurement of thousands of amperes is practical except as it produces potential drop across some known resistance.

It is true that shunt-type watt-hour meters, while having the advantage of ease of calibration as low-current instruments apart from their shunts, yet have the offsetting disadvantage of necessitating the alignment of measurements so made to obtain assurance that the resistance of the shunt watt-hour meter and its leads has the nominal ohmic resistance called for. Otherwise accuracy of registration is not assured even though the meter may have been given correct adjustment by the easy means of low-current calibration, and the watt-hour-meter shunt may be known to have its nominal resistance. This point, however, was in nowise touched upon in the article.

HARTLEY LEH. SMITH,  
Chief of Testing Bureau.

# Progress of the Headway Recorder

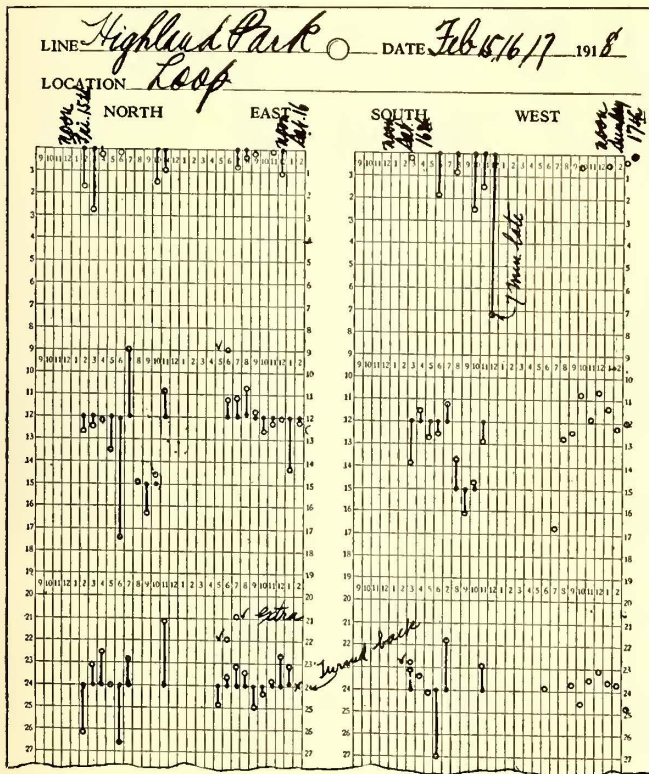
## Accuracy in Recording Car Movements Enables Operator to Determine Weak Spots in Service and Checks Up Car Crews

THE rapid progress of the one-man car, especially in towns with single-track service, has given a still wider usefulness to the headway recorder of the Nachod Signal Company, Louisville, Ky. Considerable experience with this recorder has led to improvements which have made it possible to produce a clock mechanism that will run with high accuracy to drive a fast-moving record sheet through a wide range of temperature and weather conditions. This adjustment to provide for large changes in temperature is cared for by a compensated balance wheel. A micrometer screw adjust-

too long at a point and running at high speed to get on schedule again, which not only invites accidents, but wears out both rolling stock and track, and wastes power; a motorman running ahead of schedule, an act sometimes dangerous and one that irritates regular patrons; and a car crew "dragging" the car at peak load in order to obtain more fares than usual; but turning in only the usual amount.

The recorder is also valuable: In enforcing a slow order, by making a graphic record of the time consumed between the two points; for presenting definite evidence showing car delays at a railroad crossing; in cultivating the good-will of the public, by making an absolutely incontrovertible record showing the regularity of the service; in enabling the work of a careful motorman to count, and, in general, improving the morale of the crews; finally, for general schedule studies, as traffic counts, waiting at meeting points, etc.

The instrument is inclosed in a cast-iron box at-



HEADWAY RECORD					
LINE _____		DATE _____			
LOCATION _____					
NUM. NO.	DUE AT RECORDER	ARRIVED AT RECORDER	MINUTES LATE	MINUTES EARLY	REMARKS (FROM MOTORMAN'S REPORT)
Friday Feb. 15 P.M.					
	4:36	4:30		6	
	6:12	6:17	5		
	11:24	11:21		3	
	11:48	11:52	4		
Sat. Feb. 16 P.M.					
	5:48	5:45	3		
	12:36	12:39	3	P.M.	
	1:48	1:51	3		
	4:36	4:31		5	
	6:24	6:27	3		
	12:00	12:07	7	A.M. Sun. 17	
Sunday Feb. 17 A.M.					
	12:36	12:40	4		

AT LEFT, PART OF HEADWAY RECORDER RECORD WITH COMMENTS; AT RIGHT, INTERPRETATION IN FIGURES

ment on the regulator also permits regulation to a nicety in the shortest time. A stop works prevents over-winding and breaking of the spring; while the use of a zig-zag feed prolongs the useful life of the ribbon since its whole width becomes available.

The Nachod automatic headway recorder gives a daily history of car movements at a given point, enabling the operator to find the weak spots in his service, whether they are due to causes within or without his control. Accuracy in making time points is indispensable to a high standard of service; and the recorder gives its results with an accuracy not possible by human means, and without any favoritism. Like any other checking device, the full value of the headway recorder can be obtained only by enthusiastic follow-up and intelligent analyses.

The recorder will show such operations as: A motorman reversing his car without proceeding all the way to the end of a single-track line; car crews lying over

tached to the pole at a point where the record is to be taken, at which point a Nachod trolley contactor is placed on the trolley wire and connected to the recorder.

Every car passing under this contactor prints a mark on a moving paper record showing the exact time of its passage. The record sheet is about 8 in. x 17 in. in size, the ruling divided into halves for movements both ways for one day, thirty hours being ruled. The time of any mark is given by its position both in the vertical hour ruling and in the horizontal minute ruling, the chart forming virtually a clock dial of unusual kind. If, for instance, the schedule is every fifteen minutes, the cars on time will make a straight line across the record, at the hour, fifteen, thirty and forty-five minute line; and any marks scattered away from this line show the irregularities of the schedule in a most graphic manner. On the back of the record is a form for noting these irregularities and the reason

## New-Type Cars for Melbourne Suburban Electrification

Equipment Includes 400 Four-Motor Cars and 400 Trailers—Will Operate in Two to Six-Car Trains Over 300-Mile System

**A**N ABSTRACT of a report by Charles Merz, consulting engineer, to the Victorian Railway Commission on the electrification of the suburban steam railways of Melbourne, was published in the Oct. 3, 1908, issue of the *ELECTRIC RAILWAY JOURNAL*. Mr. Merz at that time recommended the direct-current system for the conversion of some 300 miles of track. The later development of the high-tension direct-current system and the single-phase system called for further investigation, and according to an article appearing in the Dec. 7, 1912, issue of the *JOURNAL* estimates showed that the direct-current system would be less expensive both in first cost and in operation.

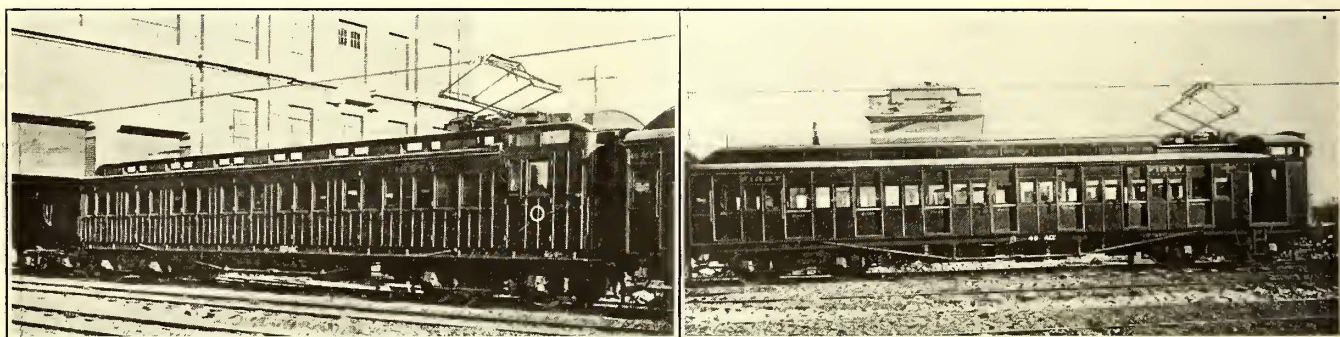
The Feb. 8, 1913, issue of the *JOURNAL* announced the award of the contract for this electrification to the

station is located at Newport, from which point current will be transmitted to substations located at various points on the line and delivered to the overhead contact system at 1500 volts.

The accompanying photographs\* show the new cars which have been designed to operate in conjunction with this electrification. They are equipped with roller pantograph collectors and will be operated in trains of from two to six cars, an equal proportion of motor coaches and trailers.

All trains on the system wherever possible will follow a regular schedule throughout the day and rush-hour traffic will be provided for by increasing the lengths of the trains, though it is not proposed to have trains of more than six coaches to begin with. The schedule speed including stops will be 21 m.p.h.

The suburban traffic amounted to 70,000,000 passengers in 1908, and when the contract for the system was awarded it was estimated that the lines would carry 150,000,000 passengers by 1917. For this reason all parts of the electrification scheme were designed to be capable of extension.



SWING DOOR AND SLIDING DOOR TYPES OF CARS FOR MELBOURNE SUBURBAN ELECTRIFICATION

General Electric Company. This contract specified that the work should be carried out on a 1500-volt direct-current system. The contract comprised 400 motor-car equipments, consisting of four motors each, 800 control equipments, 400 of which were for trail cars, and 400 air-compressor equipments. This was said at the time to be the largest single order ever placed for electric railway apparatus.

The mileage of the suburban steam lines included in this scheme was made up of 150 route-miles or 289 track-miles of running road and 34 miles of sidings. The electrification has now been in progress for some years and is nearing completion. The main generating

The 1600 motors for the 400 motor coaches are of the GE-237 type provided with commutating poles and rated at 140 hp. each at 725 volts. They will be operated two in series on 1500 volts. These motors are self-ventilating by centrifugal fans cast integral with the pinion-end armature-core head.

The motors are arranged for tap-field control and are geared so as to have a running speed of 52 m.p.h. over a level track on express runs. The control equipments are of the Sprague-General Electric Type M form with relay automatic control.

\*Reproduced with permission of C. F. Dewey, Victoria Railways, Sydney, N. S. W.

(Concluded from page 717)

therefor. The scale is very open or fast moving, a minute requiring  $\frac{1}{4}$  in. on the chart. The record is given in a compact form convenient for filing, obviating a large amount of clerical work. The recorder does not identify the particular car that made the record, but this information is obtained from the run number, or predetermined succession of cars.

Within the cast-iron box is a switchboard and the recorder itself, which is removable as a unit. The latter consists of a record-bearing drum, driven by a Seth Thomas clock movement, jeweled and compensated for temperature. The drum is revolved once an hour and is fed axially  $\frac{1}{10}$  in. per revolution. The printing

bar, operated by a magnet armature, prints the mark through an endless band of typewriter ribbon feeding on the backward stroke. Two pairs of magnets are used, one for each direction of car movement. A perforation in the blank record slips over a locating pin on the drum, while the edges of the record are further aligned by shrouded ends of the drum. The attention required is winding the clock daily, putting on a new record and removing the old. To expedite this, the case is provided with a door switch to throw on a light when the door is open.

The contactor, through which the printing magnet received current as the car passes it, is easily installed and requires no maintenance.

# News of the Electric Railways

TRAFFIC AND TRANSPORTATION

FINANCIAL AND CORPORATE · PERSONAL MENTION · CONSTRUCTION NEWS

## Service-at-Cost Proposal

Minneapolis Street Railway President Urges Settlement of Franchise Matter Up Since 1915

Horace Lowry, president of the Minneapolis (Minn.) Street Railway, has addressed a communication to the street railway matters and extensions committee of the City Council, indicating that the company desires the early conclusion of a cost-of-service franchise agreement.

Under date of June 8, 1915, the company addressed a letter to the City Council stating that the Minneapolis Street Railway desired to enter into negotiations with the city of Minneapolis with regard to the extension of its franchise. It was hoped that the outcome of such negotiations would result in an agreement with the city which would put the company on a firm enough financial footing to attract the additional capital required for its development.

Since the sending of the letter the committee took up the matters mentioned and proceeded with negotiations preliminary to an agreement of this kind. This work has been done slowly and carefully in order that there could be the most free discussion of all points, but during the last year events unforeseen when the original negotiations were entered into have developed and changed the aspect of things by creating an emergency which calls for speedy action. On this point the company says:

### HIGHER FARES PREDICTED

"Because of the constantly increasing cost of essential materials and supplies and the constant decrease in our earnings during the last nine months, our ability to continue the standard of service set up in the past and to pay our employees reasonable wages will depend upon our entering into a cost-of-service agreement with the city. We realize that your committee is entirely familiar with this general situation in our business, but desire to submit the attached communication from John Skelton Williams, Comptroller of the Currency, to the Congress of the United States, to show the national necessity for maintaining our local public services at maximum efficiency and to indicate that the new conditions confronting electric railway companies and other public utility companies are entirely beyond the control of the management of such companies.

"The Minneapolis Street Railway has no desire to create any undue alarm, but wishes to direct your attention to the gravity of this situation. Whether

a cost-of-service agreement should now be considered or whether for the present the service should be curtailed which is least needed and which could, therefore, be modified with the least inconvenience to the traveling public is a question which the company believes is now of utmost importance to the city. Six other cities in the United States of similar size have met this situation by increasing their rates of fare. Forty-four smaller cities have done likewise, and sixty-one other cities have negotiations under way with the same purpose in view.

"We ask that your committee give this company the earliest possible opportunity to discuss the matter with you, and we believe that such discussion should be carried on with free and unprejudiced minds on the part of all concerned and that the program arising out of such discussion should be tested only by the question as to whether it is for the benefit of the average citizen."

Mr. Lowry's letter was considered by the committee at a special meeting. A tentative draft of a cost-of-service franchise is ready for the consideration of the committee. It was prepared by Stiles P. Jones and City Attorney C. D. Gould. The question of fair valuation, however, still is to be determined in the face of reports from several engineers and minority and majority committees of the Central Franchise League. The valuations so fixed vary from \$15,000,000 to \$26,000,000.

## Municipal Railway Extension

Oliver T. Erickson, a member of the City Council of Seattle, Wash., has announced that he is having prepared for submission to the Council a bill authorizing the issuance of utility bonds and the adoption of a plan and system for the extension of the present municipal railway on Avalon Way, Thirty-fifth Avenue Southwest and Admiral Way, and other streets in West Seattle. In connection with this, a bill will be prepared providing for the issuance of utility bonds for an extension of the proposed elevated railway on Washington Street, from First Avenue South to Fourth Avenue South, and for condemnation proceedings for the right to proceed with such construction.

The plans above announced indicate that the Council will not act favorably on the application of the Puget Sound Traction, Light & Power Company for a grant on Avalon Way. That company recently advised the Council of Defense that work would begin on the line as soon as the City Council granted a franchise.

## President's Labor Appeal

In Approving Appointments to National War Labor Board President Outlines Methods to Be Observed

President Wilson on April 8 approved the appointments that had been made to the National War Labor Board by the Secretary of Labor in accordance with the recommendations contained in the report of the War Labor Conference Board dated March 29. The members of the board are William Howard Taft and Frank P. Walsh, representatives of the general public of the United States; Loyall A. Osborne, L. F. Loree, W. H. Van Dervoort, C. E. Michael and B. L. Worden, representatives of the employers of the United States; and Frank J. Hayes, William L. Hutcheson, William H. Johnston, Victor A. Olander and T. A. Rickert, representatives of the employees of the United States.

### START OF THE LABOR PROGRAM

In January the Secretary of Labor, upon the nomination of the president of the American Federation of Labor and the president of the National Industrial Conference Board, appointed a war labor conference board for the purpose of devising for the period of the war a method of labor adjustment which would be acceptable to employers and employees. This board made a report recommending the creation for the period of the war of a National War Labor Board with the same number of members as the War Labor Conference Board, to adjust labor disputes in the manner specified, and in accordance with certain conditions set forth in the report, referred to at length in the ELECTRIC RAILWAY JOURNAL for April 6, page 673.

### PROCLAMATION BY THE PRESIDENT

The President has now made proclamation of the following for the information and guidance of all concerned:

"The powers, functions, and duties of the National War Labor Board shall be: To settle by mediation and conciliation controversies arising between employers and workers in fields of production necessary for the effective conduct of the war, or in other fields of national activity, delays and obstructions in which might, in the opinion of the National Board, affect detrimentally such production; to provide, by direct appointment, or otherwise, for committees or boards to sit in various parts of the country where controversies arise and secure settlement by local mediation and conciliation, and to summon the parties to controversies for hearing and action by the National

## Long Strike on Interurban Railway Ended

First the Trainmen, Then the Engineers, of Kansas Road Go Out—Union Charter Revoked

The Joplin & Pittsburg Railway, operating in Southeastern Kansas and southwestern Missouri, was shut down by a strike of its employees from Feb. 12 to March 21, when the men returned to work under former conditions. W. D. Mahon, president of the Amalgamated Association of Street & Electric Railway Employees, was able to show the men that they had made a mistake. The local union had been suspended from the national body because of its action in breaking its contract with the railway company, but it was reinstated following the course it took in instructing the members to return to work. The engineers, who struck after the trainmen went out, returned at the same time as the trainmen. Service in full has now been restored. The strike in its various ramifications was so unusual that a brief review of some of the outstanding features of the disturbance would seem to be of general interest.

### REVIEW OF STRIKE

The company made a three-year contract with its trainmen in the fall of 1917, granting increased wages amounting to about 35 per cent. While the company dealt with the Amalgamated Association, it had an explicit understanding that the property was to be operated on the "open shop" basis. At that time the officers of the company talked over the situation confronting the company very frankly with the representatives of the union, and the men co-operated with the company shortly afterward in securing an increase in fare to 2 cents a mile. This increase helped to take care of the increase in wages and of other extra expenses.

*(Concluded from page 719)*

Board in event of failure to secure settlement by mediation and conciliation.

"The principles to be observed and the methods to be followed by the National Board in exercising such powers and functions and performing such duties shall be those specified in the said report of the War Labor Conference Board dated March 29, 1918.

"The National Board shall refuse to take cognizance of a controversy between employer and workers in any field of industrial or other activity where there is by agreement or federal law a means of settlement which has not been invoked.

"I urge upon all employers and employees within the United States the necessity of utilizing the means and methods thus provided for the adjustment of all industrial disputes, and request that during the pendency of mediation or arbitration through the said means and methods, there shall be no discontinuance of industrial operations which would result in curtailment of the production of war necessities."

On Feb. 12 the men voted to strike because of the company's refusal to grant a further increase in wages. The company had explained to the men that the contract fixed the wages for three years, and that the increase demanded would provide a larger wage schedule than the revenues of the company could stand. In support of its position with respect to its financial inability the company presented figures as to revenues provided by the State Utilities Commission. But the men went out and operation of the line was suspended.

Officers of the Amalgamated Association immediately went to Pittsburg. They pointed out that the men were violating their contract. The men, however, refused to heed the advice of the national union. That body thereupon suspended the charter of the local union. The company therefore had to seek employees from other sources. Under the agreement made with the amalgamated, the company was at liberty to employ such men as it could secure, the new employees to be at liberty to organize a local to be recognized and chartered by the Amalgamated Association.

In pursuance of this program the company on March 2 started its cars with new men. When the first car from Joplin to Pittsburg reached Pittsburg, the power plants and substation men went out, claiming that they as union men could not supply power for the operation of cars by non-union men. Incidentally it should be mentioned that the engineers had been kept at work on full pay from Feb. 12 so that the power would be available the moment the company was prepared to resume operation.

Officials of the railway company remonstrated with these men and on March 4 the engineers were all laid off. Since it was apparent the cars could not be operated until the engineers had shown willingness to supply power, there was no necessity for having the engineers around.

### FIRST THE TRAINMEN, THEN THE ENGINEERS

On March 11 the trainmen of the local union at Pittsburg voted to recede from their position and return to work under the conditions of their original contract. They were willing to abide by the instructions of the amalgamated. But they could not work unless there was power. On March 12, the day on which the trainmen were to return to work, the engineers, who now were in the position of having the original grounds for their "strike" removed automatically, made demands for increased wages and for payment for the time they had been idle since March 4. The demand for more pay would have been sufficient to prevent the company

from re-employing them, but the demand for pay while the men were idle could not be considered.

The engineers pointed out that watchmen were necessary at the power plant and contended that because of their priority they should have been retained to guard the plant while the stations were idle. In other words, these men refused to perform the duties for which they were employed, but they demanded that they be paid the salaries scheduled for such duties while performing minor duties for which other men were available who were willing to do the work for which the engineers were hired.

### COMPANY USES PUBLICITY

The railway company promptly took the public into its confidence, making clear the exact conditions under which the men quit work and those under which they were willing to resume work. The public was well aware, therefore, that the men violated a contract and that the engineers made illogical demands in their proposals with reference to returning to work.

## War Attitudes Stated

Indiana Commission Indicates Conditions That Will Govern Its Consideration of War Appeals

The general attitude of the Public Service Commission of Indiana with respect to granting relief to public service corporations affected for the time being by the extraordinary conditions imposed upon them by the war has been set forth by the commission in the case of the Greencastle Local Phoenix Telephone Company. In its ruling the commission said:

### COMPANIES MUST DO THEIR BIT

"These are war times and the commission has time and again emphasized the proposition that it would not guarantee normal dividends to utilities during the period of the war. The utility must bear its share of the war's burdens, just as every other person and institution must bear its share. Even if it were necessary for the officers of the company to forego a portion of the usual salaries which they are receiving in order to pay a portion of the increased costs of operation, this would be a much more equitable solution of the problem than an increase in the rates.

"The commission is not unheeding of the fact that much has been said recently as to the necessity of carrying our public utilities through the war period. The commission is keenly alive to the point thus emphasized by Secretary McAdoo, and has laid down the fundamental proposition that it will grant a full measure of relief whenever necessary to prevent injury to the business or interests of utilities. But certainly the statements above quoted are not to be interpreted as meaning that state and local authorities should, during the period of the war, guarantee to utilities the full or excessive profits of peace times.



"In several cases before the commission it has developed that utilities have built large and valuable properties out of earnings and that the profits in the years preceding the war were in excess of what would have been considered reasonable profits under the regulatory system. Now when war conditions have arisen and the large profits of the past have decreased, the utility will feel that it has just grounds for asking increased revenue. The commission, of course, cannot concur in such a conclusion."

## One Commission Proposed

Measure That Would Consolidate Two  
New York Regulating Bodies  
Passed by Senate

Senator Thompson's bill consolidating the two public service commissions of New York and generally revising the public service commission law was passed by the Senate on April 5 with just the required twenty votes.

It is the opinion of William L. Ransom, chief counsel of the commission for the first district, that the new bill would cause the city actually to "lose contact with and control over its public utility matters." Mr. Ransom says further:

"The Thompson bill ought to be entitled 'A measure to abolish the powers of the commissions, but leave all the offices in existence for salary purposes.' It is not too much to say that the act would place all complainants at a hopeless disadvantage and weaken the power of the commission to compel a corporation to do anything against its will."

### NO ECONOMY IN CONSOLIDATION

After analysis of the bill, the members of the commission with jurisdiction in New York City fail to find that the proposed organization would cost the State less than the present plan. Because of the insertion of a clause creating three additional commissioners to take care of transit matters, bringing the total number now at work, the argument for economy is not substantiated, it is thought.

None of the political reporters at the Capitol have so far cared to hazard a guess as to the possible fate of the measure when it comes up in the House.

## New Wage Scale in Spokane

A new wage scale has been put into effect by the Spokane & Inland Empire Railroad, Spokane, Wash. It fixes a maximum wage of 38 cents an hour after six years' service and provides a graduated wage scale for the period up to that time. A man commences at 31 cents an hour, is increased 1 cent an hour for the second six months, and after that 1 cent an hour for each year of service up to the time his sixth year commences, when he receives the maximum wage.

## Wage Question in New York City

Employees Referred by Public Service Commission to the City  
Administration for Relief

A committee of the Brotherhood of New York Railways Company Employees' Association called upon Oscar S. Straus, chairman of the Public Service Commission for the First District of New York, on April 9 and made an urgent plea for commission aid in behalf of an advance in wage to meet the increased cost of living occasioned by war conditions. T. M. Fazakerley, president of the brotherhood, speaking for the organization, said in part:

"On Sept. 3, 1916, the employees of the New York Railways entered into an agreement with the company, which embodied a scale of wages and working conditions for a period of two years. When the contracts were signed the wage scale was satisfactory to all, but our rates of pay have not increased with the cost of the necessities of life, although the railway has from time to time granted to the employees 'War Bonuses' to help us meet these conditions. We have lived up to our agreement with the company, but when the time comes for the signing of new contracts, unless some material increases over the present rates are granted, we shall consider ourselves free to seek more remunerative employment elsewhere.

"It must be apparent to you that the men are entitled to a living wage for the support of themselves and families. We feel that you should know the facts from our standpoint. We recognize that the company cannot give us more money unless its income is increased. We see no immediate prospect of any decrease in the cost of materials."

Chairman Straus told the committee that he was in accord with the efforts of the men to obtain an increase in wages commensurate with the advance in living expenses, but explained to them the limited jurisdiction of the commission over matters involving the wages of men employed by utility companies. In respect of an advance in fare to the New York Railways, the chairman set forth in detail the recent decision of the Court of Appeals in the Rochester fare case, holding that the commission has been correct in its view that, without the city's consent, the commission could not undertake to raise a rate of fare above the 5-cent maximum fixed by the company's franchise agreement with the city. On this question the chairman said:

"This commission some two months ago took this position in the North Shore Traction case, where, after a hearing, it was found that the railroad, by the facts presented, was entitled to an increase in fare, but the commission, under its view of the law, as now upheld by the highest court, felt that its power was limited by the 5-cent maximum fixed in the franchise.

"If you feel that the company which

employs you is not receiving from its rate of fare a sufficient return to be able to pay you adequate wages, the only remedy open to you, in view of this recent decision of the highest court of the State, is to invoke the aid of the city authorities, with a view of obtaining their consent to an amendment of the franchise limitations. Without such an amendment by the city, the hands of the commission are tied, and rightfully so, because if any change in a solemn franchise is to be made, it ought in simple justice to be made by the parties to the original agreement, to wit, by the city of New York and the railroad company, before any other governmental agency can step in and vary the terms of the agreement which these two parties made."

Mr. Straus urged the men to bear in mind they were quasi-public servants and that they owed the public the duty of maintaining the surface railroad facilities of the city intact and serving the public without break or interruption. He said:

"The public in turn should recognize that it owes you men a duty also, and if necessary should be willing to approve a slightly higher fare for your company to make possible the payment to you of the prevailing and adequate rate of wage so that you may receive a fair return for your labor. To this end you may be assured of my earnest sympathy and support."

The committee thanked Chairman Straus for the commission's friendly interest, and announced its intention of taking the matter of a franchise modification up with Mayor Hylan and the Board of Estimate & Apportionment.

On April 11 Governor Whitman also advised the men to seek conferences with the officials in their home cities, with the end in view of changing the existing franchise agreements.

## Wage Increase in St. Joseph

The trainmen in the employ of the St. Joseph Railway, Light, Heat & Power Company, St. Joseph, Mo., and the management have agreed to a wage increase of 2 cents an hour for the men. The original request was for an advance of 5 cents an hour. An increase the first six months is one feature of the new scale. New men will receive 27 cents an hour and after six months an increase of 1 cent an hour. After the first year, the men will be increased yearly as before. During the fourth year the men will receive the maximum, 32 cents an hour. The extra men will also receive an increase of \$5 a month. Their wages in the future will be a minimum of \$60 a month. In November, 1917, wages were increased 2 cents an hour and in March, 1917, they were increased 2 cents an hour.

## Chicago Traction Discussion

Considerable Headway Seems to Have Been Made at the Council Meetings on April 4 and 5

Having agreed upon the physical program for Chicago traction improvements a sub-committee of the local transportation committee of the City Council held meetings on April 4 and 5 to discuss other features of the proposed ordinance. These included length of franchise term, the question of a transfer charge, the matter of rate of return on old and new securities, the qualifications and authority of the proposed board of control, and the details of amortization.

It was tentatively agreed that the board would consist of three members with six-year terms to be appointed by the Mayor subject to approval of the Council. Mr. Busby contended that when the Traction & Subway Commission recommended a guarantee of 6 per cent on outstanding securities, this was intended only as a reasonable minimum. Even though the commission report allowed a possible return up to 8 per cent, the figures show that this would average about 6.2 per cent during the franchise period, whereas the average rate for the surface lines during the last ten years has been nearer to 7 per cent.

It developed that the commission's estimate of receipts was below the actual figures for last year. The companies pointed to this as evidence that the commission's figures were conservative.

Owing to the expected absence of several members of the committee for several weeks an adjournment was taken until their return.

### Increase in Wages in Duluth

The Duluth-Superior Traction Company, Duluth Minn., recently announced salary increases to all conductors and motormen effective April 1. The old and revised schedules in cents per hour are as follows:

	New Scale	Old Scale
First year.....	32	29
Second year.....	33	31
Third year.....	34	32
Fourth year.....	35	33
Fifth year.....	36	34
Sixth year.....	37	35

The guaranteed minimums for men reporting on the extra list remain unchanged.

Herbert Warren, vice-president and general manager of the company, made a statement in part as follows:

"In increasing the wages of our motormen and conductors at this time, the company hopes to show its disposition to recognize existing conditions affecting the cost of living and the demand for man power resulting from the war. This increase is made voluntarily, notwithstanding the fact that the rate of fare is fixed at 5 cents and all operating expenses of the company are increasing heavily in every department and will undoubtedly continue to do so."

# News Notes

**M. O. Proposal Defeated.**—The proposition to bond the city of Tacoma, Wash., for \$5,200,000 to provide funds for the purchase of the railway property of the Tacoma Railway & Power Company was defeated in the city primaries on April 2.

**Increase in Wages in Chichasha.**—The Chickasha (Okla.) Street Railway has increased the pay of its men from 20 cents an hour for the first year, 22½ cents an hour the second year and 29 cents the third year to 25 cents for the first year and 30 cents the second year.

**Waco Strike Over.**—The strike of motormen and conductors in the employ of the Texas Electric Railway in Waco has been ended. The men demanded recognition of the union and an increase in wages. Both demands were rejected by the company and the strike resulted. New employees were soon secured, however, and traffic was restored without the company negotiating with or giving recognition to the newly created union.

**License for Motormen Rejected.**—The City Council of St. Paul, Minn., has voted down an ordinance proposed by Commissioner O. E. Keller to provide for licensing of motormen by a committee composed of the commissioner of public utilities, the street car inspector and the city electrical inspector. One commissioner said if there was to be any examination of motormen it should be by experts instead of city officials.

**M. O. Bills Dead.**—A committee has reported to the New York Senate advising either to have a special committee appointed to investigate and report on municipal ownership at the next session of the Legislature or leave the matter in abeyance until another year. It is probable an investigating committee will be chosen. Under the circumstances, pending municipal ownership bills are regarded as dead as far as this session is concerned.

**Cleveland Subway Ordinance Legal.**—The Supreme Court of Ohio has rendered a decision to the effect that the ordinance providing for the appointment of a rapid transit commission and the construction of a subway in Cleveland is legal. The commission will at once ask for a bond issue of \$100,000 to provide funds for preliminary investigations and engineering work. The members of the commission are Charles A. Otis, M. A. Bradley, C. E. Adams, Street Railway Commissioner Fielder Sanders and Finance Director Neal.

**Increase in Wages in Louisville.**—In response to a request of the employees of the Louisville (Ky.) Railway for an

increase in wages, the board of directors, through Samuel Riddle, superintendent of transportation, has announced that the wages of all employees will be increased 3 cents an hour. The rate of pay under the new schedule will be as follows: for first year, 27 cents an hour; second year, 28 cents; third year, 29 cents; fourth year, 30 cents; fifth year and thereafter, 31 cents. The increase went into effect on April 1.

**Mr. Taylor Opposes Philadelphia League.**—In connection with the hearings before the Public Service Commission of Pennsylvania in regard to the final adoption of the rapid-transit lease between the Philadelphia Rapid Transit Company and the city, A. Merritt Taylor, formerly director of the Department of City Transit, filed on March 27 a brief of objections. Mr. Taylor not only criticised in detail various provisions of the league but also stated that the present time was not a proper one for the consummation of a long-term contract.

**Bridge Tolls Decision Favors Company.**—The Appellate Division of the Supreme Court of New York has affirmed the Supreme Court's decision in favor of the Brooklyn (N. Y.) Union Elevated Railroad and the New York Consolidated Railroad (Brooklyn Rapid Transit System) in the suit brought against them by the city of New York. The city sued the corporations for tolls over the Williamsburg Bridge from Aug. 4, 1913, to May 1, 1914. The decision holds that a new contract made in March, 1913, supersedes the previous agreement of 1907.

**Wage Increase in Atlanta.**—The Georgia Railway & Power Company, Atlanta, Ga., increased the wages of its trainmen 3 cents an hour on April 1. This increase will amount to about \$85,000 for the year and is in addition to an increase of 1 cent an hour which became effective on Jan. 1, 1917, and to a second increase of an additional 2 cents an hour which became effective on Nov. 1, 1917. The scale of wages per hour under the increase in effect on April 1 is as follows: first year, 25 cents; second year, 27 cents; third year, 29 cents; fourth year, 30 cents; fifth year, 31 cents; sixth year and thereafter, 32 cents.

**Relief Proposed for New York Contractors.**—In order to insure the prompt completion of important subway lines in New York threatened by the inability of certain contractors to carry out their agreements, there has been introduced in the Legislature on behalf of the Public Service Commission for the First District a measure which may have the result of providing such relief as is necessary. The contractors contend that the increasing cost of labor and materials and delays in the delivery of materials have brought the majority of them to the verge of bankruptcy. The contractors prepared a bill to meet the situation, and introduced the measure in the Legislature,

but the commission did not approve this because of its mandatory character.

**Railway Wins Paving Case.**—In the suit of the City of New York against the New York Railways to recover \$2,161 for pavement repairs on Lexington Avenue, the Appellate Division of the Supreme Court has directed a verdict for the defendant. The case involved the question of the duty of the railway to maintain pavement after temporary restoration following subway construction. In this instance, at the completion of the subway work, the contractors restored the pavement, but at the end of six months it had settled so that repairs became necessary. The city notified the company to repair the pavement in the railway area. The company refused to comply, contending that the contractors were responsible for the restoration of the pavement to its original condition. The decision is regarded as particularly significant in New York, since the paving along the lines on Lexington and Seventh Avenues is affected by the subway construction in progress in those thoroughfares.

### Programs of Meetings

#### Foreign Trade Convention

The fifth convention of the National Foreign Trade Council will be held at the Gibson Hotel, Cincinnati, Ohio, on April 18, 19 and 20. The theme is "The Part of Foreign Trade in Winning the War." Those who desire to receive invitations to attend the convention at Cincinnati are requested to send their names and addresses to O. K. Davis, secretary National Foreign Trade Council, 1 Hanover Square, New York City.

#### American Institute of Electrical Engineers

It has been decided to hold an annual convention of the American Institute of Electrical Engineers in Atlantic City, N. J., on June 26, 27 and 28, 1918. Among the papers likely to be presented are the following:

"Split-Conductor Cables—Balanced Protection," by W. H. Cole; "Overhead Cables," by E. B. Meyer; "Wood-Stick Insulators," by H. H. Cochrane; "The Applications of Theory and Practice of Transmission Systems," by G. I. Gilchrist; "America's Power Supply," by C. P. Steinmetz; "Education," by D. C. Jackson and M. W. Alexander; "Charged Condensers," by V. Karapetoff; "Method of Symmetrical Coordinates Applied to the Solution of Poly-phase Network," by C. L. Fortescue; "Flux Distribution in Alternators Under Sustained Short-Circuit Conditions and Different Loads," by N. S. Diamant.

The meeting will open at 10.30 a. m. on June 26, with an address by the president. An informal reception will be held at the Marlborough-Blenheim Hotel at 8.30 the same evening.

# Financial and Corporate

### Costs Mounted

#### Commonwealth Company Shows How Expenses Climbed During January and February

Unprecedented storms and extreme cold weather in January and the early part of February caused such damage and extraordinary expenses that the board of directors of the Commonwealth Power, Railway & Light Company, Grand Rapids, Mich., has deemed it advisable to explain the operations for these two months. The statement follows:

"These conditions and the critical shortage and the very poor quality of coal, brought an unusual burden to the company in numerous ways. There were many days when it was impossible because of the snow to operate inter-urban cars, and when operation in towns was very seriously interfered with. The increased cost of the removal of such vast quantities of snow was very heavy, as was also the increased cost of car repairs, due to the great strain on the equipment, attendant upon operation in such extreme winter weather.

"Added to this was the acute coal shortage, curtailing the operation of the company's properties to a great extent, and necessitating the cutting off of electric power to customers on many occasions. Also the quantity of the coal received was most unsatisfactory and entailed a heavy additional expense. Because of the shortage of gas coal, the gas plants were forced to make a much larger amount of water gas than usual, necessitating the use of a much greater quantity of gas oil at greatly increased prices.

"As an indication of the increased cost of operating the properties because of the weather and coal shortage in January and February, 1918, over corresponding months of 1917, the following statement of such increased costs is appended:

	January	February
Coal for electric plants	\$51,000	\$28,000
Coal for steam heating	43,000	14,000
Gas coal and oil	91,000	84,000
Snow removal	53,000	15,000
Car repairs	22,000	42,000
	\$260,000	\$183,000

### Dividend Policy Outlined

The report of the Standard Gas & Electric Company, Chicago, Ill., contains the following reference to the dividend policy of the company:

"The uncertainty of the times makes it increasingly difficult to forecast dividend distributions. It is unlikely that the conditions produced by the war will permit any increase in the preferred stock rate during the current year over the 6 per cent now being

paid. Construction requirements have been reduced to a minimum in accordance with the general request of the government to conserve materials and money for war purposes. It is impossible, however, to cut off construction entirely. Should it become impossible to finance necessary improvements and extensions, your company may find itself compelled to apply its earnings to such purposes, even to the extent of reducing its dividends.

"At this time, however, it seems improbable that resort will have to be made to an emergency measure of this nature. Practically all of your subsidiaries are in a position to finance their respective requirements in any but the most extraordinary times. Even in such times they will not necessarily have to rely exclusively upon your company for funds if the service to be rendered by the anticipated War Finance Corporation is correctly interpreted. In this connection it is again emphasized that the rapidly growing gross earnings of the subsidiaries are much less due to war conditions than are the abnormally high operating costs, and that materially increased net earnings must follow the return of normal times. This would quickly be reflected in your company's collectible income and correspondingly increased dividend rates."

### C. D. & T. Reorganization Planned

Owners of bonds of the Cincinnati, Dayton & Toledo Traction Company, deposited under an agreement of Jan. 12, 1916, have been notified by the bondholders' committee that the property has been purchased by it and that a plan of reorganization has been adopted. A company with a capital stock of \$1,250,000, all common, is to be formed to take over the property. As a matter of fact, the Cincinnati & Dayton Traction Company has been organized for this purpose, as already stated in the *ELECTRIC RAILWAY JOURNAL*, and the Public Utilities Commission has authorized the reorganization.

The company will issue \$250,000 of 5 per cent ten-year bonds on the line between Spring Grove and College Hill, with a branch to Mount Healthy; \$500,000 of bonds on the Lindenwald power house and \$250,000 on the equity in the Hamilton city lines.

All of the stock and bonds go to the committee as part payment for the property, but will be held to insure the completion of the plan, which contemplates the exchange of all the above bonds and all of the \$2,300,000 of underlying bonds for like amounts of an issue of \$4,500,000 of first and refunding consolidated mortgage 5 per cent twenty year bonds on the entire property.

## Rapid Transit Deficits

Commissioner Whitney Shows Total of \$6,000,000 for City and Company—  
Each Passenger Cost 6½ Each

A report concerning the deficits in operation from the new lines of the dual rapid transit system in New York has recently been made public by Commissioner Travis H. Whitney of the Public Service Commission for the First District. It was known at the time of the signing of the rapid transit contracts in 1913 that there would be such deficits from operation on some of the new lines, particularly in the outlying suburban districts, for several years after operation over them had begun. Some of these lines were built in districts relatively small as to their population, but giving promise of great population increases in the near future, at which time the deficits will probably be entirely wiped out or greatly reduced.

Under the contracts with the Brooklyn Rapid Transit Company and its subsidiaries, provision was made that with the beginning of operation of the first of the new city owned lines, the earnings should be pooled and deficits in operation shared by the city and company. The first operation under the dual contracts by the Brooklyn Rapid Transit Company began on Aug. 4, 1913, at which time the Center Street loop was placed in operation. Since then the total city and company deficits have amounted to about \$6,000,000. It is shown that the total cost, including operating expenses and fixed charges, is equal to about a 6½ cents for hauling each 5-cent fare passenger. Commissioner Whitney points out that the deficits are in excess of original estimates and that this is largely due to war conditions. He noted also that some consideration must be given to reducing the amount of the city's deficit.

Under the city's contract with the Interborough Rapid Transit Company, a somewhat different arrangement was made by which the consideration of deficits became necessary upon the placing in operation of certain of the new lines. Such of the new Interborough lines as have already been placed in operation, Commissioner Whitney finds, have showed a deficit of about \$1,250,000, or an amount only about \$100,000, less than the total gross revenues. He indicates, however, that as soon as the principal branches of the Interborough line are placed in operation, including the tunnel to Brooklyn, the revenues of the first subway will be pooled in the earnings and take care of the charges on the lines which are not yet fully developed.

## Toronto Railway Outlook Better

Sir William Mackenzie, president of the Toronto (Ont.) Railway, recently made a statement in regard to the report that he had been disposing of his holdings in the company. He is reported by the Canadian *Financial Post* to have said that he has not been sell-

ing recently. His present holdings are 2182 shares. He has been head of the company for twenty-seven years. With respect to the franchise situation, he is reported to have said that during the last five years there never was a chance for getting together with the city, but that things were changing. The recent reduction in the dividend was necessary in order to secure the renewal of the short-term notes which the company had been compelled to float.

## Tramways in Japan

The report of the Imperial Government Railways of Japan for the year ended March 31, 1916, contains a section devoted to tramway lines in Japan proper. The results of the working of these for the year under review are shown in the following table:

	STATISTICS OF JAPANESE TRAMWAYS FOR 1916					Total
	Electric Tramways	Steam Engine Tramways	Gas Motor Tramways	Horse Tramways	Rikisha Tramways	
Number of tramways..	64	22	4	34	14	136
Mileage open .....	667.66	211.65	60.56	244.18	70.40	1,255.05
Mileage under construction .....	232.62	38.34	2.07	12.36	3.23	289.02
Capital (yen) .....	264,106,120	5,864,244	1,290,000	2,841,990	909,500	274,511,854
Cost of construction (yen) .....	277,017,116	5,370,111	1,022,361	2,119,858	849,197	287,377,643
Locomotives .....	5	147	79	...	...	226
Carriages .....	3,849	182	88	427	128	4,684
Wagons .....	251	301	132	577	518	1,779
Passengers carried .....	624,890,286	6,428,420	2,822,032	4,064,980	277,449	638,488,167
Passenger earnings (yen) .....	24,882,962	605,908	225,271	379,178	26,509	26,119,828
Goods hauled (tons) .....	468,158	271,051	79,576	134,181	368,569	1,311,584
Freight earnings (yen) .....	334,926	137,065	53,163	127,960	148,676	801,790
Total revenue (yen) .....	38,666,330	767,889	297,908	581,894	344,277	40,668,298
Total expenses (yen) .....	25,377,798	500,311	210,254	510,341	298,951	26,897,655
Profit (yen) .....	13,288,532	267,578	87,654	71,553	45,326	13,760,643
Employees .....	14,538	796	351	841	520	17,056

Note: Yen=\$0.4985.

## War Finance Bill Signed

President Wilson on April 6 signed the War Finance Corporation bill, creating a government corporation with a capital of \$500,000,000 and authority to issue \$3,000,000,000 of bonds, designed for the aid of industries engaged in work essential to the carrying on of the war.

It is reported from Washington that when the directors of the corporation are appointed they will find a huge pile of applications for money on their desks. Applications already made are said to vary from \$5,000,000 to \$60,000,000. Applications cover all character of public utilities claimed by the applicants to be war necessities.

The terms of this measure have been referred to previously in the *ELECTRIC RAILWAY JOURNAL*.

## Navy Runs Railroad

The Navy Department has taken over the Cape May, Delaware Bay & Sewell's Point Railroad, Cape May, N. J., including the local line from the Reading Railroad station to the beach. It has bought the equipment outright out of \$175,000 recently appropriated by Congress. The men of the naval reserve are at work putting the road in order for the operation of cars. Service over the line was discontinued following appointment of a receiver two years ago.

# Financial News Notes

**Income Interest Declared.**—The directors of the Chicago (Ill.) Railways have declared the 4 per cent interest on the \$2,500,000 of adjustment income bonds for the year ended Jan. 31, 1918, payable on May 1.

**Billings Line Being Removed.**—The system of the Billings (Mont.) Traction Company is being torn up and the rails removed from the streets by the company. The rails are being stored in the company's carhouse on Division

Street. No cars have been operated by the company since last fall.

**Bondholders Cannot Recover from Directors.**—The United States Supreme Court has upheld the California decree denying the right of the bondholders of the Ocean Shore Railroad, San Francisco, Cal., to recover from the directors of the company, which had been declared insolvent.

**Action on Dividend Put Over.**—Action on the dividend on the common stock of the Philadelphia Company, Pittsburgh, Pa., due at this time, has been deferred until April 27, when a special meeting of the directors will be held to consider the dividend. The company controls the Pittsburgh Railways.

**Extension of Lease Payment.**—The United Power & Transportation Company, Philadelphia, Pa., has granted the Trenton & Mercer County Traction Corporation, Trenton, N. J., lessee, a further extension until July 1 for the payment of the rental due on Jan. 1, 1918, on account of the Trenton street railway properties.

**Directorate Increased.**—The Northern States Power Company, Chicago, Ill., has increased its directorate from fifteen to seventeen members. B. W. Lynch and M. A. Morrison of H. M. Fyllesby & Company have been elected to the board. H. C. Cummins has been elected a director in the place of W. R. Thompson, who resigned.

**Dividend Passed at Trinidad.**—The Trinidad (Port-of-Spain) Electric Company has omitted the quarterly dividend ordinarily payable on April 10. The dividend was resumed in July, 1917, after having been suspended in 1915. Since the resumption of the dividend the government has imposed a war contribution tax which the company has been compelled to pay, amounting to \$20,018. This is a charge against the company, the imposition of which the directors were unable to anticipate. They consider the tax most inequitable and "are pressing the matter with all diligence."

**Stockholders Notified of B. R. T. Dividend Action.**—Formal notice has been sent to the stockholders of the Brooklyn (N. Y.) Rapid Transit Company of the resolution adopted by the board of directors on Feb. 28, approving the recommendation of the executive committee that action upon the quarterly dividend, regularly payable on April 1, be postponed until a subsequent meeting of the board. While the company's net profits justify the declaration of the usual dividend, the committee believed it advisable to withhold action pending negotiations relative to the \$57,735,000 secured gold notes maturing on July 1.

**Sold Under Foreclosure.**—The property of the St. Joseph Valley Railway, Elkhart, Ind., has been sold at receiver's sale for \$390,000 to Benjamin Harris & Company, Chicago, Ill. The plan is to dismantle the road as soon as the Superior Court ratifies the sale. The sale was made by J. H. State, an attorney, representing Herbert E. Bucklen, the receiver, a son of the late Herbert E. Bucklen, Elkhart, whose ambition was to build an electric railway to connect Toledo and Chicago. The Indiana Public Service Commission concurred in the Superior Court's order of sale when it was shown that the property had always been a losing proposition. The road is 9 miles long.

**Seattle's Municipal Ownership Losses.**—Seattle's two municipal car lines, Division A and the Lake Burien line, were operated during the month of February, at a loss of \$2,509, including interest and common user charges and excluding depreciation. Division A, extending to the north city limits through

Ballard, earned \$476 more than the actual cost of operation, not including \$295 for common user on Fourth Avenue, which will be included in the March report for February operation, and interest. In February 153,289 people were carried on the Ballard line, and the revenues were \$7,159, with operating expenses at \$6,683. On the Lake Burien line, 27,276 passengers were carried, with revenues of \$1,639 and expenditures of \$2,236, a loss of \$596, with no interest to consider.

**Another Road Suspends.**—A. L. Abington, general manager of the Fort Scott Gas & Electric Company, Fort Scott, Kan., controlled and operated by the Light & Development Company, St. Louis, Mo., reports that operation of the 7-mile railway of the Fort Scott company has been permanently discontinued. The company recently made a plea for relief from municipal restrictions which it considered unduly burdensome, and conferences were arranged through the local Chamber of Commerce looking toward the company receiving some measure of help. It would seem from the decision to discontinue operation that the company was unable to secure terms which it deemed essential to insure the successful operation of the railway. Proceedings in connection with the matter were referred to in the ELECTRIC RAILWAY JOURNAL for March 9, 1918, page 476.

**Reorganization Cost Allowances.**—The City Commission of Dallas, Tex., has finally disposed of the application of the Dallas Railway—the consolidated railway lines under the Strickland-Hobson franchise—to add the cost of reorganization of the companies to the property valuation to be used as a basis in calculating returns from operation and the fares based thereon. An addition of \$100,000 was allowed by the commission, such increase in value to date from Nov. 21, 1917, the date on which the service-at-cost franchise became effective. A like addition has been allowed for the Dallas Power & Light Company, also a Strickland-Hobson property. This is a cut of \$100,000 from the amount originally asked by the companies. The items rejected consist of the postcard pre-election vote, hire of bands, halls, speakers, etc., for

promoting the interests of the companies during the franchise campaign.

**Holder's Asked to Deposit United Railways 4's.**—The committee formed in the interest of the holders of the first general mortgage 4 per cent gold bonds of the United Railways, St. Louis, Mo., due 1934, consisting of N. A. McMillan, president of the St. Louis Union Bank, chairman; Edwin G. Merrill, president of the Union Trust Company, New York, and Edward Malinckrodt, J. Herndon Smith, and M. Kotany, St. Louis, has decided that conditions facing the company render it necessary to ask holders to deposit their bonds immediately in order that steps may be taken to safeguard their interests. The advertisement calling for deposits directs attention to the adoption by the Board of Aldermen of St. Louis of the settlement ordinance calling for a material reduction in the present outstanding securities of the company. Holders of bonds of the St. Louis Transit Company have been requested to deposit their bonds with a committee of which Edwin M. Bulkeley, of Spencer Trask & Company, New York, is chairman.

**Bonds of Southern New York Company Offered.**—P. W. Brooks & Company, New York, N. Y., are offering at 96 and interest to net about 6½ per cent \$950,000 of Southern New York Power & Railway Corporation first mortgage 6 per cent ten-year gold bonds. The Southern New York Power & Railway Corporation is the successor to the Otsego & Herkimer Railroad. It operates an interurban line between the cities of Oneonta and Mohawk, connecting with Cooperstown and passing through Richfield Springs, a total of 68½ miles of track, with trackage rights to Utica and Herkimer. It also owns and operates five hydroelectric or steam power stations and more than 70 miles of high-tension transmission lines. The authorized capital of the company consists of \$774,900 of common stock, \$1,000,000 of 7 per cent cumulative preferred stock and \$5,000,000 of first mortgage 6 per cent ten-year bonds. Of these amounts the following are issued: all of the common stock, \$500,000 of the 7 per cent preferred stock and \$950,000 of first mortgage bonds.

## Electric Railway Monthly Earnings

HUDSON & MANHATTAN RAILROAD, NEW YORK, N. Y.						TAMPA (FLA.) ELECTRIC COMPANY					
Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income	Period	Operating Revenue	Operating Expenses	Operating Income	Fixed Charges	Net Income
1m., Feb., '18	\$538,938	*\$279,650	\$259,288	\$217,152	\$42,136	1m., Jan., '18	\$86,449	*\$52,210	\$34,239	\$5,083	\$29,156
1m., Feb., '17	497,800	*231,327	266,437	216,203	50,270	1m., Jan., '17	92,314	*47,579	44,735	4,255	40,480
2m., Feb., '18	1,114,865	*571,458	543,407	434,684	108,723	12m., Jan., '18	995,445	*568,169	427,276	56,948	370,328
2m., Feb., '17	1,039,095	*465,660	573,435	432,434	141,001	12m., Jan., '17	972,695	*531,457	441,238	52,372	388,866
PORTLAND RAILWAY, LIGHT & POWER COMPANY, PORTLAND, ORE.						CLEVELAND, PAINESVILLE & EASTERN RAILROAD, CLEVELAND, OHIO					
1m., Jan., '18	\$589,787	*††\$344,825	\$244,962	\$178,895	\$66,067	1m., Jan., '18	\$40,772	*\$27,973	\$12,799	\$11,321	\$1,478
1m., Jan., '17	490,231	*260,189	230,042	182,338	47,704	1m., Jan., '17	36,436	*22,134	14,302	11,436	2,866
12m., Jan., '18	6,123,067	*3,661,231	2,461,836	2,148,609	313,227	LAKE SHORE ELECTRIC RAILWAY, CLEVELAND, OHIO					
12m., Jan., '17	5,518,352	*3,040,711	2,477,641	2,178,833	298,808	1m., Jan., '18	\$141,554	*\$115,307	\$26,247	\$36,125	\$9,878
REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO						1m., Jan., '17	129,505	*94,926	33,579	34,374	†795
1m., Jan., '18	\$484,586	*\$350,410	\$134,176	\$88,903	\$55,621	REPUBLIC RAILWAY & LIGHT COMPANY, YOUNGSTOWN, OHIO					
1m., Jan., '17	379,782	*257,105	122,677	78,725	\$44,796	1m., Feb., '18	\$460,246	*\$332,815	\$127,431	\$99,864	\$36,644
12m., Jan., '18	4,994,719	*3,434,488	1,560,231	1,014,605	†622,33	1m., Feb., '17	357,645	*251,644	106,001	78,685	\$28,301
12m., Jan., '17	4,049,083	*2,399,050	1,650,033	842,037	†829,550	12m., Feb., '18	5,097,320	*3,515,660	1,581,660	1,035,783	†630,679
*Includes taxes. † Deficit. †† Includes non-operating income. ††† \$17,560 includes for depreciation.						12m., Feb., '17	4,096,270	*2,467,554	1,628,716	856,382	†792,108

# Traffic and Transportation

## Queue Loading in Detroit

Opportunity for Others to Emulate Detroit and Reform Manners Notoriously Bad as Regards Car Etiquette

Some queue loading is done at present on the lines of the Detroit (Mich.) United Railway, but the company is making a vigorous plea for more of it as a time saver. People bow to the rights of others, it seems, nearly everywhere except on a street car. There the race to board is to the strong. The hog asserts himself. The man who knows that he would get a bat over the head if he tried "rough house" tactics at a ball game, a theater or other public place feels sure of immunity if he indulges his atavistic self when boarding a car.

### RAILWAY STARTS CAMPAIGN

The company in Detroit recently called the attention of its patrons to the matter in *Electric Railway Service* for March 29. It said in part:

"When you go to purchase a ticket at the theater and you find other people already there you don't rush to the window and shove the other people away in order that you may be served first.

"Of course you don't. If you tried it the chances are more than equal some one would bat you over the head. What you do is to take your position in line. If you are fifth you stand fifth in the row; if you are number 100 you know there are ninety and nine to be served before. You keep your place and you move up with the row although you may be uncertain whether seats will be left or you will get a pasteboard calling for standing room only.

"When you go to Navin Field, see Hughey Jennings eat grass and view Ty Cobb slide into first you don't tear your coat into shreds nor elbow the next fellow out of the way in order to beat him inside the ball grounds.

"Of course you don't. You go through the turnstile in an orderly manner and in your turn. If you tried the other plan—oh, well you wouldn't because you know blamed well something unpleasant would happen to you.

### PLEA FOR ORDERLINESS

"Why can't there be the same orderly, sane and pleasant manner of boarding a street car when there are a number of people all desirous of traveling at the same time?

"Just because you may happen to be a husky chap is no valid reason why your strength should give you the right of way into the car. Nor should your weakness be permitted to force you to the rear.

"The proper way for people to enter a street car is in order of their arrival at the car stop. To accomplish this the

thing is to line up one behind the other. This is what is known as queue formation.

"A nice thing in theory but something that will not work out in practice you say?

"Oh, but you are wrong—very much wrong—if you think it cannot be done.

"Queue loading of cars is quite common in other countries. It is the absolute law of many municipalities in Great Britain.

"And queue loading is done right here in Detroit. But not enough of it is being done here, for which we are sorry. More of it is certain to be done in Dynamic Detroit for which we are very, very glad.

"We claim for the queue formation of passengers awaiting to board cars that it has many advantages over the common method. These advantages accrue to the company and to our customers—chiefly to our customers. The chief advantage of queue loading is the saving of time in each car getting its quota, hence permitting the car to leave so much the sooner and go on its way distributing our customers at their respective streets. This helps us and it helps the car rider.

"Not only is there the saving of time, which is mighty important in these days of hurry and hustle, but queue formation does away with disputes and dangers; it protects the weaker from the onslaughts of the more vigorously constituted people."

Accompanying the article were two pictures—one showing queue loading on Woodward Avenue opposite the Ford motor plant; the other showing improper loading of cars during the rush hour out Chene Street.

## Trenton-Princeton Fare Hearing

A hearing was held on April 9 before the Board of Public Utility Commissioners of New Jersey in the matter of the New Jersey & Pennsylvania Traction Company's application to increase its fares from 5 cents to 6 cents in each of the four zones between Trenton and Princeton. The company contends that the present 5-cent fares are unjust, unreasonable and insufficient to enable it to provide the service demanded by the public and to maintain the integrity of its securities.

In addition to wanting to boost the 5-cent fare to 6 cents in each of the four zones of the company, permission is asked to withdraw the block tickets, which are sold at the rate of twelve for \$1, each ticket being good for a ride between Lawrenceville and Trenton or Lawrenceville and Princeton. It is claimed that the privilege extended to passengers by the sale of these tickets has been abused.

## Raise After Four Years

South Carolina Commission Sanctions Increase in Fare From Twenty-five Cents to Forty Cents

The Railroad Commission of South Carolina has recently authorized the Augusta-Aiken Railway, controlled by the Augusta-Aiken Railway & Electric Company, Augusta, Ga., to establish a fare of 40 cents from Augusta to Aiken, the fare for each zone to be 5 cents. The former rate between the cities was 25 cents.

### A FOUR-YEAR FIGHT

The question of an increase in passenger fare over the railway has been under consideration by the commission for the last four years. The company asked for a 50-cent rate from Aiken to Augusta and for a system of zones which would guarantee to the company not less than 2 cents a mile for each mile traveled. The commission refused this petition. The company then appealed to the courts. After hearing before one of the circuit judges, it was ordered that the South Carolina Commission had erred and that the railway should have been granted an increase of rates. The circuit judge expressed the opinion that the amount prayed for in the petition was reasonable. The court directed the commission to reopen this case and expressed its opinion that at this rehearing the Augusta-Aiken Railway should be granted the increased rate. From this decision an appeal was taken to the Supreme Court of the State. There the matter was pending when the commission entered its present order.

### COMMISSION NOW SEES NEED

John G. Richards, chairman of the Railroad Commission, in his letter to W. C. Callaghan, general manager of the Augusta-Aiken Railway, allowing the company to establish the 40-cent rate, said:

"The commission realizes that on account of the changed conditions brought about by the war, the increased cost of material, the increased wage scale, in fact, the increase in the cost of everything necessary in the proper operation of a railroad, the company is entitled to some increase in its passenger fare. However, the commission, as much as it regrets to disagree with a member of the courts of the State, feels that a 100 per cent increase over the rate now in operation is neither reasonable nor just, nor do the necessities of the case demand such a sweeping increase. Therefore, to meet the demands of the Circuit Court at least in part, and to give to the Augusta-Aiken Railway a rate which the South Carolina Commission feels is just and reasonable under present conditions, the commission submitted to you the rate as set forth in the letter which we have received from you. The commission is pleased that your company has seen proper to accept a rate of 40 cents from Aiken to Augusta and a 5-cent rate for each of the eight zones which are herein set out. By so doing, the whole question

can be settled, and the litigation pending in the Supreme Court stopped."

The order of the commission directing that the rate for passenger fare shall be 40 cents from Aiken to Augusta, with 5 cents as the charge for each zone, is to remain in force for ninety days. The commission, however, reserves to itself the right, after that period, and after investigation, to rearrange the zones so as to meet the demands of the travel that develops during this period.

## Cleveland and Columbus

### Train Operation, Skip Stops and Faster Schedules Work to Advantage of Former City

Councilman Lamneck and Samuel G. McMeen, president of the Columbus Railway, Power & Light Company, Columbus, Ohio, both addressed the Kiwanis Club in that city on the evening of March 27. Following the addresses the resolution of the public activities committee of the club urging the Council to allow the company's request for an increase from eight tickets for 25 cents to six tickets for 25 cents was referred back to the committee for discussion at a future meeting.

On the following day the company in an advertisement, signed by President McMeen, replied to statements made by Mr. Lamneck. In this statement many comparisons were made between Cleveland and Columbus. Later in replying to the question of why it costs 1.566 cents per ride to operate the Columbus road and only 1.38 cents to operate the Cleveland road, the Columbus company said:

#### THE DIFFERENCES EXPLAINED

"1. The density of population in Cleveland is 12,000 per square mile and in Columbus it is 8000. This increases the number of rides possible in any one hour or on any one trip, and the greater the number of riders in a given time on a given unit of operation, the lower the cost per ride. The density of the population is the measure of the opportunity of doing a street railway business and the greater the opportunity the less the cost per unit of service. This opportunity is 50 per cent greater in Cleveland than in Columbus.

"2. A very large number of cars in Cleveland are operated in trains of two cars, manned by three men. In Columbus four men are necessary for each two cars. This materially affects the cost of producing each ride.

"3. The Cleveland cars ran nearly a mile an hour faster; skip stops were the rule in Cleveland all of last year and were not in Columbus. This resulted in 177 miles a day of eighteen hours for each car in Cleveland, as against 163 miles a day in Columbus. This affects the cost of producing each ride.

"4. More modern equipment has its effect in lessening the cost of producing the service in Cleveland as compared with Columbus."

## Another Case Involving Franchise Obligations

### Cities in Washington Make Plea in Behalf of Franchise Integrity in Case Brought to Require Commission to Fix Reasonable Fare

The Supreme Court of Washington, at Olympia on March 29 took under advisement the mandamus suit of the Tacoma Railway & Power Company against the Public Service Commission, to compel the commission to set aside the Tacoma franchise obligations, and fix a reasonable fare other than 5 cents, if found necessary. Eight judges heard the arguments.

#### THE ATTORNEY GENERAL'S ATTITUDE

Attorney General Tanner, who was statutory legal representative for Commissioners Spinning and Lewis, at the opening of the case announced his inability to act in that capacity, because the two commissioners had refused to sign and verify the answer he had made outlining his position, and wished to strike from his answer several points which he regarded as highly important. Attorney-General Tanner asked the right to appear as counsel for the people of the State and bring in the arguments which he had presented. This permission was granted, and he was joined in preparation of the case by City Attorney Harmon of Tacoma.

In opening the company's case, Attorney James B. Howe declared that the company was not asking for a specific judgment, but for a ruling by the Supreme Court. He stated that the company desired the Supreme Court to pass on the questions presented, so that the company may know whether or not the Public Service Commission has the power to set aside franchise provisions and to grant a fare of more than 5 cents. Mr. Howe asserted the company found that after it had paid its operating expenses and taxes, there was not enough left to pay the nominal depreciation on the property or to keep the properties up. He declared that the commission had power to require adequate service, and that this implied power to take away the franchise provisions or other conditions that hindered the company from obeying the commission's orders. He further declared that the present high wages offered to men in other lines of work made it impossible to keep men and that the company's receipts would not permit of further wage advances.

Scott Z. Henderson, who appeared for Chairman Blaine, asserted that Commissioner Blaine had not taken sides with the company but that he believed the commission had full power to act. He urged the court to order Commissioners Spinning and Lewis to do their duty.

Attorney General Tanner contended that the company had taken the wrong legal method of obtaining redress. He asserted that mandamus proceedings could not lie in this case. Mr. Tanner planned an attack upon the company's course in asking for a writ of mandamus to direct the Public Service Com-

mission how to proceed in a case it had not yet passed upon. The latter case was the complaint of the Tacoma Commercial Club against inadequate service furnished in Tacoma as a whole. It was filed with the commission, but not formally considered. The company alleged, in asking for a writ, that the majority of the commissioners had refused to grant relief in a similar case brought by J. E. Blomberg, and would follow the same course in the Tacoma Commercial Club's case unless otherwise directed by the Supreme Court.

Mr. Tanner opposed this assumption on the ground that it could not be officially known what action would be taken by the commission in the case still to be tried, until the commission had made a decision and that the Supreme Court could take no jurisdiction until it had been so disposed of by the commission and referred to the Supreme Court in the regular course of review. He stated that in the Blomberg case, the question of increasing the 5-cent fare had not been raised, but that it was now raised by the company. He also questioned whether the Supreme Court could reinvest the commission with jurisdiction in the case that it had already passed upon, through a writ of mandate governing another hearing still to be held, the general challenge being directed to the method followed by the company, and the nature of relief asked. Mr. Tanner contended the process of writ of law provided ample remedy.

This form of defense Commissioners Lewis and Spinning refused to in-dorse because of their purpose to have it appear that they would follow their former course in refusing to attempt to revoke franchise requirements, and to increase the 5-cent fare if the question of jurisdiction were raised in the Commercial Club complaint when that was heard. They want the Supreme Court to dispose of the vexed question of commission jurisdiction before another hearing involving that question was called.

#### MR. CALDWELL CLOSES FOR CITIES

Alex Winston, assistant city attorney for Spokane, joined with Attorney-General Tanner and City Attorney Harmon of Tacoma, and Corporation Counsel Hugh M. Caldwell, Seattle, in calling attention to previous pleas by the company in which it had asked concession on the admission that it was unable to realize more revenue by increasing fares on account of the statutory 5-cent limitation. Mr. Caldwell closed for the cities with a vigorous plea in behalf of franchise integrity. He supported Mr. Tanner's view that the company has adequate remedy in applying for a writ of review rather than for one of mandate to perform something it had not yet passed upon.

## Service-at-Cost Discussed

Company at Columbus Shows What a Grant With Such Provision Means to City

The publicity campaign of the Columbus Railway, Power & Light Company, Columbus, Ohio, is now turning to the service-at-cost plan. In one advertisement used recently the company compared the present service with what might be enjoyed, with such a plan in operation, if the people choose to pay the real cost. Under the present contract, made in 1901, only one kind of service can be had and that is the kind provided in that agreement, and the income is not even paying for that.

The community should pay the cost of the service, the advertisement says, and the city ought to have the right of purchase at a price based upon a fair value. None of these things are included in the agreement under which the company is operating. The community is not paying and for several years has not been paying the cost of the service demanded in 1901, and the city has only a technical right to purchase the property, as neither the city nor the company knows the price at which such a purchase could be effected.

### PLEA FOR A FAIR RETURN

In another advertisement the company called attention to the fact that Columbus citizens all desire that merchants and manufacturers receive a fair return on a fair value of property used in business. Emergencies occasionally arise when returns must be increased and usually they are promptly met in this way. The railway emergency is no different from any other and should be met in the same way, until a permanent flexible service, with a flexible rate of fare, is adopted.

On April 2 Samuel G. McMeen, president of the company, asked fellow members of the Rotary Club to give the railway a fair, square deal in its request for an increase in the rate of fare, so that it may take care of increased operating and construction costs. He said that books of the company were open to any Rotarian who wishes to confirm the statements that were made in the advertisements of the company. No effort was made to have the club go on record for or against the request.

### Report on Syracuse

Charles R. Barnes, electric railway inspector of the Public Service Commission for the Second District of New York, has reported the result of his study of traffic conditions on the lines of the New York State Railways in Syracuse. Mr. Barnes made a general recommendation for the rerouting certain lines. He recommended that the University Summit and West Genesee-Grape lines be divided, the Summit line to be joined with the Grape Street line and the West Genesee with the University. There are other minor recommendations for rerouting.

Mr. Barnes also recommends that all double-truck cars be equipped with air-brakes, that a certain number of single-truck cars be retired, that two sand cars be acquired, that all cars be equipped with proper destination signs, etc.

Many of the recommendations contained in the report have already been put into effect.

Mr. Barnes criticized the people of the city in the following words:

"In none of the other large cities of this State are cars so delayed in movement by the deliberate and slow progress of passengers in boarding and leaving. This delay is further amplified by the number of people who board the 'pay-as-you-enter' cars without having the proper fare ready for deposit. Before real rapid transit can be obtained in Syracuse the people must change their habits in these respects."

### The Nickel

I was once a popular fellow  
And I did a lot of things.  
But my prestige has been waning  
And my vogue has taken wings,  
And I feel my day is passing  
And my value, now I fear,  
Is like the storied bird nest  
In the treetop of last year.  
Time was when I went for sodas,  
Of the luscious ice cream sort,  
Or procured a fair "Havana"  
As a headlight for a sport.  
I was welcome at the airdrome  
At the closing of the day—  
For 'twas I who killed the "drammer"  
And made moving pictures pay.  
But "That's all shove' behind me,"  
I hear Mr. Kipling sigh,  
And my name is rarely mentioned  
Where men come to sell and buy;  
Still they take me on the street car,  
But I feel I'm in there wrong—  
For the red ink of the ledger cries,  
"How long, O Lord—how long?"  
—Kansas City Railwayman.

### Portland Fare Argument April 20

Mayor Baker of Portland, Ore., announces that if the city loses its fight before the State Supreme Court to annul the 6-cent fare order of the Public Service Commission to the Portland Railway, Light & Power Company, the Council will demand a rehearing before the commission. The Mayor plans to have the Council petition the commission to reopen and reconsider the 6-cent fare decision, on the ground that conditions for the company may have improved.

City attorneys state that such an action on the part of the Council would be a strategic mistake, and might jeopardize the city's interests.

Edward Cousin, valuation expert for the city, has been instructed to familiarize himself with all features of the fare situation, in order that the city may be properly prepared with information in asking for a reconsideration of the case if such a course is necessary. The city will endeavor to show that the valuation placed on the rail-

way is excessive, and should not be made the basis for the order for a 6-cent fare.

The hearing before the Supreme Court on the appeal of the city from the decision of the circuit judges upholding the commission in the 6-cent case will take place about April 20.

## Commission Has Jurisdiction

Missouri Body So Rules with Respect to Fare Application of the Kansas City Railways

The Public Service Commission of Missouri on April 6 rendered an informal decision that it had jurisdiction to regulate the rate of fare for street railway service. The decision followed a hearing on the subject in Jefferson City on March 26, at which briefs were submitted by the Kansas City Railways and the city.

The city contended that the franchise of the railway explicitly provided for 5-cent fares, and that the city alone had power to change this provision. Many citations were made by the railway to show that the Public Service Commission, even without the authority explicitly given by the act creating it, would have power to regulate rates as against the authority of a city which granted a franchise to the railway.

The ruling of the commission grew out of the request of the Kansas City Railways to the Public Service Commission of Kansas for increased fares. The company has a franchise in Kansas City, Kan., with seven years to run. It is probable that one or more joint meetings may be held by the two state commissions, during the progress of their consideration of the petitions now before them.

Since February the railway has been conducting a campaign of advertising, showing the need for higher fares and emphasizing the statement of President Wilson that "it is essential that public utilities be maintained."

### "Cut Out" Stops Decided Upon

The San Francisco-Oakland Terminal Railways, Oakland, Cal., has completed its program for the elimination of unnecessary stops. The company has consulted with the officials of Oakland, Berkeley and Alameda and so-called "cut out" stops have been decided upon. The Councils of the three cities mentioned have indorsed the plan by resolutions.

It is not proposed arbitrarily to eliminate "every other stop," but to skip "every unnecessary corner." The skips, however, will be so regulated as to leave no unreasonable distances between stops.

The company proposes to put the new plan into effect as fast as possible, taking one line at a time. Notices will be posted in the cars of each line prior to the change. As soon as possible after the new system is in good working order, the schedules will be revised, so as to give better service.



## Transportation News Notes

**One-Man Car in Nashville.**—The Nashville Railway & Light Company, Nashville, Tenn., is trying out its first one-man car.

**Zone Fare Increase Sought.**—The Jersey Central Traction Company, Keyport, N. J., will apply to the Board of Public Utilities Commissioners for higher fares on a zone system basis.

**Bundle Racks Required in Kentucky.**—During the final hours of the General Assembly of Kentucky a bill was passed and becomes a law under which all interurban cars will be compelled to provide bundle racks.

**City Will Appeal Hartford Case.**—It has been decided by the City Council of Hartford, Conn., to take an appeal from the recent decision of the Public Utilities Commission sustaining the 6-cent fare of the Connecticut Company in that city.

**Seven-Cent Fare for Mauch Chunk.**—The Town Council of Mauch Chunk, Pa., has consented to allow the Carbon Transit Company to increase its fares from 5 cents to 7 cents for the duration of the war and for eighteen months thereafter. The company operates 12 miles of line.

**Stark Electric Asks Increase in Fare.**—On April 2 the Stark Electric Railway, Alliance, Ohio, submitted an ordinance to the City Council of Alliance for an increase in the rate of fare as follows: Cash, from 5 cents to 6 cents; tickets, from six for a quarter to five for a quarter and from twenty-five for \$1 to twenty-one for \$1. The ordinance has been referred to the committee.

**Increase in Fare in Lexington.**—On March 24 the Kentucky Traction & Terminal Company, Lexington, Ky., increased the cash fares on its interurban lines from 2½ cents to 3 cents a mile with the exception of the through rates from Lexington, where in each instance the straight one-way ticket was increased 5 cents, thus making the former 5-cent zones, which were for a 2-mile ride, 6 cents under the present increase.

**Would Abolish Skip Stops.**—The City Council of Toledo, Ohio, on April 1 adopted a resolution abolishing the skip-stop plan adopted by the Toledo Railways & Light Company last winter. The resolution was introduced by Councilman Collins, after Councilman Curtis and Bitters had asserted that the people were anxious to have the old method resumed of stopping cars at all street intersections. H. G. Wilson, county fuel administrator, promptly notified councilmen that the skip-stop plan was advocated by the government as an aid to fuel conservation.

**Objects to Interurban Cars in City Service.**—An appeal has been taken to the Supreme Court of Ohio by the Northern Ohio Traction & Light Company in the case brought by the city of Akron to force the company to operate interurban cars within the city limits as local cars and at the city rate of fare, including the issue of free transfers. The company contends that it is a hardship to stop interurban trains and cars at each corner and carry city passengers at the local rate of fare. The contention of the city was sustained by the Court of Appeals.

**Increase in Fare Wanted in Paducah.**—The Paducah (Ky.) Traction Company petitioned the City Commissioners on April 1 for an amendment to its franchise to permit the company to increase fares from 5 cents to 7 cents. A. S. Nichols, manager of the company, presented the company's case, after the ordinance had been introduced. He stated that the company's books were open for investigation. Mr. Nichols said that 5-cent fares had been responsible for the troubles of the electric railways at Bowling Green and Henderson, Ky., as auto competition and increased costs of material and operation left no profit on a 5-cent basis.

**Reduced Rate Tickets Eliminated.**—The Railroad Commission of Wisconsin authorized the elimination of six-for-a-quarter tickets and the 3-cent fares to children under twelve years of age at Fond du Lac, effective on April 1, thus complying with the petition of the Eastern Wisconsin Electric Company to eliminate all fares of less than 5 cents. Up to April 2, the commission had rendered no decision on the company's request to apply a surcharge of 1½-cents per kilowatt-hour to the electric and power rates at Fond du Lac, and had also rendered no decision with reference to the application to eliminate the eight-for-a-quarter tickets at Oshkosh.

**Resort Line Would Increase Fares.**—Clarence L. Cole, receiver for the Atlantic City & Shore Railroad, Atlantic City, N. J., has asked the Board of Public Utility Commissioners for increased rates that would bring additional revenue of about \$20,058 a year. The company proposes to charge 12 cents instead of 10 cents between Atlantic City and Pleasantville and Linwood; 6 cents instead of 5 cents between Linwood and Somers Point, and to sell six tickets for 60 cents instead of six for 50 cents between Atlantic City and Pleasantville. The petition shows that the company had a deficit of \$17,236 in 1915; a deficit of \$17,484 in 1916, and one of \$20,050 in 1917. It is also shown that for the first two months of 1918 the deficit was about \$1,000 a month greater than for the corresponding period in 1917. It is proposed to put the new rates into effect on May 10. The commission will hold a hearing on the matter at Trenton on April 30.

**Little Rock Wants Six-Cent Fare.**—The Little Rock Railway & Electric Company, Little Rock, Ark., will ask

permission from the City Council to raise its present 5-cent fare to 6 cents, preserving the present transfer system, according to a statement by D. H. Cantrell, president of the company. Mr. Cantrell said in part: "We have delayed asking the Council for permission to raise our rates but now further delay is impossible if efficient service is to continue. We expect shortly to petition the Council to grant us permission to charge a 6-cent fare with free transfers as at present. The fairness and justice of such an increase will, we believe, appeal not only to the Council, but to all thoughtful citizens. It is not necessary for me to say that every article we use in construction, maintenance and operation has increased in price. If anything that is sold at present has not advanced in price in the last year, I don't know what it is except it is electric railway transportation."

**Council Sticks to Jitney Measure.**—In an attempt to secure the repeal of the ordinance passed on March 6, regulating and licensing jitneys in the city of Terre Haute, Ind., the jitney drivers went on strike during the week of March 24. On April 3 the jitney drivers, members of various labor unions and socialists, headed by Eugene V. Debs, paraded to the city hall carrying a petition 39 ft. in length and bearing 4730 signatures demanding the repeal of the jitney ordinance. While the demonstration was taking place the City Council met, but an attempt to repeal the ordinance was lost by a vote eight to two. The ordinance went into effect on March 19. It was upheld by the Council as being necessary to regulate the jitney properly and provide for the safety of the public. The Council stated that it was manifestly unfair to the Terre Haute, Indianapolis & Eastern Traction Company not to tax the jitneys, which were operating over the same streets and in competition with the railway.

**Wants Utility Act Made Clear on Fares.**—George L. Record, counsel for the Associated Municipalities in the case of the application of the Public Service Railway, Newark, N. J., for an increase in fares to 7 cents, has written a letter to Governor Edge urging him to call an extra session of the New Jersey Legislature to amend the public utility statute. Mr. Record says the company contends that a recent decision of the Supreme Court of New Jersey relieves it of its franchise 5-cent fare limit. He adds that the statute creating the Board of Public Utility Commissioners was never intended to have that effect and calls on the Governor to have the Legislature amend the statute. Mr. Record recommends the enactment of "an amendment of the public utility statute, providing in substance that nothing in the statute shall be construed by any court to relieve any company operating a street railway from any of the obligations imposed upon it by the original franchises granted by the local public authorities."

## Personal Mention

C. E. Cox, formerly vice-president and purchasing agent of the Chicago & Interurban Railway, Chicago, Ill., is now connected with the Mid-West Box Company, Cleveland, Ohio, where he is installing a new cost system. Mr. Cox expects to be located in Fairmont, W. Va., in the future, as manager of the West Virginia plant of the company.

P. C. Chestnut, superintendent of the New Castle Electric Railway, Youngstown, Ohio, a division of the Mahoning & Shenango Railway & Light Company, with which he has been connected for eleven years, has resigned to become general manager of the Pittsburg County Railway and the Choctaw Power & Light Company, McAlester, Okla.

R. W. Spofford, general manager of the Augusta-Aiken Railway & Electric Corporation, Augusta, Ga., who is a retired officer of the United States Navy, has been called to active service. W. C. Callaghan succeeds him as general manager. Mr. Callaghan has been with the J. G. White management organization, New York, N. Y., the operators of the Augusta company, since 1913.

C. J. Fifer has resigned as general manager of the Cleveland, Alliance & Mahoning Valley Railroad, Ravenna, Ohio, to become general superintendent of the Gary & Southern Traction Company, Crown Point, Ind. Mr. Fifer has also been secretary of the Columbus, Magnetic Springs & Northern Railway, Ravenna. He was formerly general manager of the Philadelphia, Coatesville & Lancaster Passenger Railway, Parkersburg, Pa.

Prof. George F. Sever, formerly professor of electrical engineering and acting dean of the Faculty of Applied Science at Columbia University and for over twelve years consulting electrical engineer for the department of water supply, gas and electricity for the city of New York, has been commissioned a major in the Engineer Officers' Reserve Corps, with headquarters in Washington, D. C. He has closed his engineering office in New York.

F. G. Buffe, formerly of the Illinois Traction System, has been with the Kansas City (Mo.) Railways since Sept. 1, 1917, in the office of the president, Philip J. Kealy. Mr. Buffe instituted the publicity department of the Illinois Traction System in 1909 and for five years was in charge of this work for the interurbans and city utilities of this system. He re-entered newspaper work as managing editor of the *Herald-Transcript* of Peoria, Ill., for two years. He then returned to the Illinois Traction System in the office of H. E. Chubbuck, vice-president

executive, in connection with the publicity work, labor matters, franchises, rate cases and commission hearings, and he remained with the company until he assumed his present duties at Kansas City.

H. G. Lauter has been appointed superintendent of transportation of the Chattanooga Railway & Light Company, Chattanooga, Tenn. Mr. Lauter was born in Chattanooga. Previous to engaging in electric railway work he was in the cigar business. In 1901 he began his railway career as gatekeeper for the Chattanooga Electric Railway at the old transfer station. He held this position until he was promoted to transfer agent the year following. In 1906 the Chattanooga Electric Railway



H. G. LAUTER

and the Rapid Transit Company were consolidated. Following the merger the transfer station was abandoned and Mr. Lauter was made dispatcher. In 1907 he was promoted to assistant superintendent under G. E. Miller. When the Chattanooga Railway, the consolidated company, was taken over by E. W. Clark & Company, Philadelphia, Pa., and their associates, Mr. Lauter continued as assistant superintendent and retained that position until his recent appointment as superintendent of transportation.

John A. Ritchie has been elected president of the Fifth Avenue Coach Company and the New York Transportation Company, New York, N. Y., to succeed Richard W. Meade, who becomes chairman of the board of the companies. Mr. Ritchie enters the motor bus field after twenty years of experience in steam railway operation and in municipal rapid transit work. He was formerly connected with the Illinois Central Railroad and more recently with the Interborough Rapid Transit Company as operating statistician.

Thomas F. Murphine has been appointed superintendent of public utilities of the city of Seattle, Wash., to succeed A. L. Valentine, who was removed by Ole Hanson, the newly-elected Mayor. Superintendent Valentine has been in charge of the department since September, 1909, and his term would have expired on Dec. 31, 1918. Mayor Hanson gave as his reason for announcing the appointment of Mr. Murphine that he did not believe that Mr. Valentine was "whole-heartedly for the city and city-owned utilities." Mr. Murphine was assistant attorney general at the time of his new appointment.

H. E. Blain, operating manager of the London General Omnibus Company, the Metropolitan District Railway, the London Electric Railway and other companies in the city of London, England, was the subject of a special letter contributed by Helen H. Hoffman to the New York *Evening World* of April 5. The writer told how Mr. Blain fearlessly tackled the problem of increasing his force with women and how his action proved something more than an interesting experiment. The account was accompanied by a portrait of Mr. Blain and photographs of women ticket collectors and omnibus employees on the lines in London that are under Mr. Blain's direction.

Richard W. Meade, president of the Fifth Avenue Coach Company and the New York Transportation Company, New York, N. Y., has been elected chairman of the board of the companies. Mr. Meade has been president and general manager of the two companies since 1904. He will continue to be actively interested in their direction, the rapid development of the coach company in particular opening up various broad phases of urban transportation to which he will give his attention. Mr. Meade was formerly connected with the Metropolitan Street Railway, New York, now the New York Railways, under President H. H. Vreeland.

G. H. Blaikie, formerly auditor of the Albany (N. Y.) Southern Railroad, is now auditor of the Connecticut Light & Power Company, with general offices at Waterbury, Conn. This is a newly created office with that company and Mr. Blaikie was appointed to the position largely as a result of his record with the Albany Southern Railroad. From April, 1904, to December, 1911, Mr. Blaikie was head bookkeeper and chief clerk of the Consolidated Railway and the Connecticut Company, New Haven, Conn. When the United Electric Light & Water Company began operation on Jan. 1, 1912, at Waterbury, he was offered the position of chief accountant and continued in that capacity until May, 1914, when he was appointed to the Albany Southern Railroad.

J. C. Rockwell has been promoted from manager of the light and power department to general manager of the Manila Electric Railroad & Light Corporation, Manila, P. I. Mr. Rockwell

was graduated in 1904 from Cornell University with the degree of mechanical engineer. Following his graduation he engaged in track construction work. In 1906 he became superintendent of transportation of the Syracuse, Lakeshore & Northern Railroad, Syracuse, N. Y. He was appointed general superintendent in 1909 of the Charleston (W. Va.) Interurban Railroad and the following year was made general manager of the company. In 1911 he joined the operating organization of the J. G. White Management Corporation, New York City, and was assigned to the Manila Electric Railroad & Light Corporation as manager of the light and power department. Mr. Rockwell has been on a visit to the United States and is now returning to Manila.

Lesley C. Paul, who has been connected with the editorial staff of the *ELECTRIC RAILWAY JOURNAL* in the New York office, has been appointed editorial representative of the paper in Chicago, to succeed H. L. Brown, whose acceptance of a position in Government work was noted recently. Mr. Paul was graduated from the civil engineering department of the University of Colorado in 1915, and accepted a position in the field service department of the McGraw Publishing Company, Inc., publishers of the *ELECTRIC RAILWAY JOURNAL* immediately following his graduation. He remained in the field service department until October, 1916, during which time he traveled over a large part of the United States in the interests of the company. He then accepted the position of assistant circulation manager in charge of *ELECTRIC RAILWAY JOURNAL* circulation and continued in that capacity until November, 1917, when he was appointed to the editorial staff of the paper in New York.

W. B. Voth has resigned as manager of the Ogdensburg (N. Y.) Street Railway, the Ogdensburg Power & Light Company, and the Ogdensburg Gas Company, to become manager of the properties at Eau Claire, Wis., operated by the Wisconsin-Minnesota Light & Power Company. Mr. Voth was formerly chief engineer and purchasing agent of the Empire United Railways, Inc., Syracuse, N. Y. Before that he was general superintendent of the electric railway and lighting properties at Sheboygan, Wis. Mr. Voth is a native of Milwaukee. He was graduated from the University of Wisconsin in 1897. After designing, constructing and operating several small hydroelectric plants in his native State, he was appointed resident engineer at Sheboygan in 1904 during the building of a steam station and the reconstruction of the local commercial and street lighting system. After finishing the construction work, Mr. Voth remained to operate the plant as general superintendent. At the same time he acted as consulting engineer for the Greensboro (N. C.) Company, controlled by the same interests. He resigned from these companies in 1914 to

enter the service of the Empire United Railways.

J. W. Welsh, electrical engineer and traffic agent of the Pittsburgh (Pa.) Railways, has been called to Washington, D. C., by A. Merritt Taylor, manager of passenger transportation of the Emergency Fleet Corporation of the United States Shipping Board. Mr. Welsh, who will serve on Mr. Taylor's staff, will assist in providing transportation facilities and abating deficiencies, where such exist, to the various shipyards on the Atlantic and the Pacific coasts. Mr. Welsh became associated with the Pittsburgh Railways in 1906 as assistant electrician. In 1910 he was made electrical engineer and in 1913 took charge of the traffic department. Prior to this time he was employed as an electrical engineer by the National Tube Company, Wheeling, W. Va., and also by the Westinghouse Electric & Manufacturing Company at East Pittsburgh. He was graduated from Wittenberg College in 1900, Harvard University in 1901 and Massa-



J. W. WELSH

chusetts Institute of Technology in 1903. He is a "Fellow" in the American Institute of Electrical Engineers and several years ago served as chairman of the Pittsburgh Section of this organization. Since 1914 he has been chairman of the power generation committee of the American Electric Railway Association and has written many articles for the *ELECTRIC RAILWAY JOURNAL* and other technical papers.

In January the number of delays of more than five minutes' duration to cars of the Public Service Railway, Newark, N. J., exceeded 2200. The company will put warning notices in the cars calling the attention of drivers of all classes of vehicles to the law in regard to impeding traffic and the penalty imposed for violations of the statute. It will also send to the 146 municipalities which it serves cards telling of the movement and asking the co-operation of the police and municipal authorities. Placards have been placed on the front platforms of the company's cars calling the attention of drivers of vehicles to the matter of causing delays to electric railway cars.

## Obituary

John Thomas Funk, general superintendent and claim agent of the Louisville (Ky.) Railway, died on March 20, following an illness of several months. Mr. Funk was born at Jeffersontown, Ky., on April 20, 1854. He entered the service of the old Louisville Street Railway in 1865 as a switch boy. In 1890 Mr. Funk was named a member of the State Constitutional Convention, and aided in drafting the present constitution. He was active in politics for many years, and was a member of the Board of Education, of which he was at one time president.

Richard Ward Baker, aged sixty-eight years, superintendent of outside construction of the Watson-Stillman Company, New York, died on March 24 at his home at Roselle, N. J. He spent his entire business life in the services of the Watson-Stillman Company, the service of which he entered at the age of fourteen. Upon the completion of fifty years' service in 1914, the board of directors of the company celebrated the event by the presentation of a substantial check and an engrossed copy of the resolution setting forth the company's appreciation.

R. W. Blackwell, president of R. W. Blackwell & Company and Johnson & Phillips, cable and electric supply manufacturers, London, England, died in that city on March 29. Mr. Blackwell was born in New York City on Jan. 27, 1858. He was educated at Andover Academy; Princeton, class of 1879, and Columbia Law School, class of 1881. He was associated with R. R. Hazard in the Gramme Electric Company, a combination of all the early electric companies. He was also associated with Mr. Hazard and with W. B. Parsons in the first proposed underground railroad in New York. He was one of the organizers in 1883 of the Bentley-Knight Electric Company, of which he was president. This company built underground and overhead electric railroads in New York, Boston, Providence, Cleveland and a number of other cities. The Bentley-Knight Company was purchased by the Thomson-Houston Electric Company in 1888. Mr. Blackwell then went to England, where he formed the importing and contracting firm of R. W. Blackwell & Company, which built the first electric railways in England and equipped them with American apparatus. In all, some fifty roads were built by the firm, the last important work being the electrification of the London, Brighton & South Coast Railway in order to increase its capacity as a supply line to the war front in France. Both R. W. Blackwell & Company and Johnson & Phillips have been active in furnishing munitions to the British government since the beginning of the war. Mr. Blackwell is survived by his widow, Lillian Rogers Blackwell.

# Construction News

## Franchises

**Bessemer, Ala.**—The Alabama Interurban Corporation has asked the City Council for a franchise to construct a line in Bessemer, in connection with its proposed line from Birmingham to the Warrior River. Thomas L. Cannon, Birmingham, president. (March 23, '18.)

**Newark, N. J.**—The Public Service Railway has asked the City Council of Newark for a franchise to construct an extension of its line in Hamburg Place to the Submarine Boat Corporation's shipyard at Port Newark terminal.

**Lockport, N. Y.**—It is reported that the Niagara River & Eastern Railway will renew its application to the Public Service Commission for the Second District of New York to build a double-track line from Lockport to Niagara Falls. The petition of the company was denied by the commission two years ago. The plans of the company included the acquisition of the Buffalo, Lockport & Eastern Railway and the double-tracking of the line. E. G. Connette, president of the International Railway, was reported interested in the Niagara River & Eastern Railway. (Dec. 9, '16.)

**Dallas, Tex.**—The City Commission of Dallas has granted the second six months extension to the Dallas Railway for beginning construction on the new 30-mile interurban provided for in the franchise given the company last year. The first extension was granted Oct. 1, 1917, and at that time it was tentatively agreed that if war conditions continued other extensions would be granted until financial difficulties in promoting the new interurban could be easily overcome. A second interurban line must be constructed, under the terms of the franchise, when the earnings of the company reach a certain point. The traction company is under \$200,000 bond as a guarantee that the interurban lines will be built.

## Track and Roadway

**Clear Lake Suspended Monorail Company, Hopland, Cal.**—The government committee has granted the application of the Clear Lake Suspended Monorail Company for the issuance of \$500,000 in bonds for the construction of its proposed line from Hopland to Lakeport. G. L. Hardison, San Francisco, is interested. (March 2, '18.)

**Pacific Electric Railway, Los Angeles, Cal.**—Work has been begun by the

Pacific Electric Railway on the double-tracking of its line from Long Beach to San Pedro.

**United Railroads of San Francisco, San Francisco, Cal.**—Taxed with not affording sufficient transportation to the Union Iron Works, the United Railroads has offered to build a mile of temporary track over Army Street. This, it was agreed, would solve most of the difficulties. Mayor Rolph has asked the engineers of the city and the company to get busy at once and in the meantime the attorneys are to draw up an agreement whereby the city can take over the temporary tracks at their value any time it desires.

**Washington-Virginia Railway, Washington, D. C.**—The construction of an extension from Mount Vernon to Camp Humphrey, 4 miles, is being considered by the Washington-Virginia Railway.

**\*Tamiami Railway, Miami, Fla.**—Work will be begun by the Tamiami Railway on the construction of an electric line between Miami and the Curtiss aviation school, now a government marine aviation camp. The line will be a part of the proposed steam railway between Miami and Fort Myers. J. F. Jaudon, Miami, is interested.

**St. Petersburg-Tampa Railway, St. Petersburg, Fla.**—Work will be begun about May 1, by the St. Petersburg-Tampa Railway on the construction of a 6-mile bridge across Old Tampa Bay in connection with its proposed 20-mile line from St. Petersburg to Tampa. The cost is estimated at \$1,000,000. George S. Gandy, Sr., St. Petersburg, president. (Nov. 24, '17.)

**Frankfort & Shelbyville Traction Company, Shelbyville, Ky.**—The Frankfort & Shelbyville Traction Company, which proposes to construct an electric road between Frankfort and Shelbyville, 20 miles, has placed on the market an issue of \$175,000 cumulative 7 per cent preferred stock, with shares of the par value of \$100. The full issue authorized is \$250,000. Dividends are payable June 1 and Jan. 1. The stock is redeemable on any dividend date after Jan. 1, 1923, at 105 and accrued dividends. The total capitalization of the company is \$500,000. Half of this is common stock. The stated limited liability is \$1,000,000. The money realized from the sale will be used as working capital for the company during the construction period and for part payment of construction work. First mortgage bonds amounting to \$600,000 will be presently issued. The company was inaugurated in 1917 in Kentucky with a ninety-nine-year franchise and no burdensome restrictions. The line will connect the Kentucky Terminal & Traction Company and the Louisville & Interurban Railway Company at Shelbyville, thus affording

through electric passenger and freight service from Lexington and the Blue-grass country to Louisville. A survey of the line is now being made. It is proposed to build the road throughout with rock ballast. Pending the construction of their own power plant the company will purchase power from a near-by central station. The cars will be of the modern interurban type. L. G. Smith, Shelbyville, president. (Dec. 8, '17.)

**Mattawamkeag & Northern Railway, Bangor, Me.**—Application has been made by the Mattawamkeag & Northern Railway to the Public Utilities Commission of Maine for a three years' extension of its charter to construct a line from Mattawamkeag to Millinocket and East Millinocket, 23 miles. George W. Stearns, Millinocket, and Artemus Weatherbee, Lincoln, interested. (Nov. 13, '15.)

**Detroit (Mich.) United Railway.**—An extension will be built by the Detroit United Railway to the Ford plant on the River Rouge.

**Kansas City (Mo.) Railways.**—This company reports that it is rearranging and adding to its tracks at Forty-eighth Street and Harrison yards. The company will construct an extension of its crosstown line from the North Liberty Street terminus to Sugar Creek.

**International Railway, Buffalo, N. Y.**—E. G. Connette, president of the International Railway, recently informed the City Council at a public hearing that the company's line on Bailey Avenue between Genesee Street and Broadway and between Kensington and Delavan Avenues will be completed this year if the company can finance the proposition, which will cost \$260,000.

**Long Island Electric Railway, New York, N. Y.**—Owing to the improvement of Rockaway Turnpike from Hook Creek to Broadway, Lawrence, through service has been discontinued temporarily on the line of the Long Island Electric Railway between Jamaica and Far Rockaway. A new steel bridge is being built over Mott Creek to replace the old bridge.

**Portland Railway, Light & Power Company, Portland, Ore.**—Work will be begun immediately by the Portland Railway, Light & Power Company repairing its tracks on Second Street, between Madison and Flanders Streets.

**Philadelphia, Pa.**—Mayor Smith of Philadelphia on April 4 made a plea to the Government for permission to complete the Frankford elevated line, after a conference at which he received reports from the heads of the city departments giving the status of all public works under construction which are affected by Secretary McAdoo's work-stoppage order. Copies of the reports, together with a detailed account by W. S. Twining, Transit Director, of the work on the elevated line and the necessity for its completion now, were forwarded to the capital-issues committee of the Treasury Department, which has charge of the matter.

**Montreal & Southern Counties Railway, Montreal, Que.**—An agreement has been concluded between the Montreal Tramways Company and the Montreal & Southern Counties Railway, by which a loop will be constructed around the terminal station of the Southern Counties Railway, involving the crossing of the Montreal Tramways Company's lines, to enable a more speedy handling of the cars.

**Charleston-Isle of Palms Railway, Charleston, S. C.**—It is reported that the Charleston-Isle of Palms Railway will construct an extension from the Mount Pleasant ferry wharf to the shipyard site at Remley's Point, 2½ miles.

**Dallas (Tex.) Railway.**—The Dallas Railway, the consolidated street car lines under the Strickland-Hobson service-at-cost franchise, is now carrying forward much improvement work under the provisions of its franchise which authorize the expenditure of \$1,000,000 in betterments and extensions. These include the purchase and installation of many electrically-driven machines designed to save labor and facilitate the work of making repairs and maintaining track and equipment. An electric track drill, an electric spike driver, an electric bonding machine and an electric tie tamper are among the new machines installed. The new tie tamper does the work of twenty men. Gravel is being hauled by electric trains at a cost of 75 cents per cubic yard below the cost of hauling in wagons with teams. Much new equipment has also been purchased and the arrival of the following materials is reported: Twenty carloads of cross ties, twenty carloads of steel rails, one carload of spikes, three carloads of special track material, consisting of frogs, curves, etc. Shipment of the following material is also reported: Thirty carloads of steel rails, forty carloads of cross ties and fifteen carloads of special track material.

**Houston, Richmond & Western Traction Company, Houston, Tex.**—It is reported that the bonds of the Houston, Richmond & Western Traction Company have been sold to Howard Kenyon, Houston, who has the contract for the construction of the company's line from Houston to San Antonio, 186 miles. Ed. Kennedy, Houston, president. (Feb. 16, '18.)

**Bamberger Electric Railroad, Salt Lake City, Utah.**—A report from the Bamberger Electric Railroad states that the company plans many improvements at its Lagoon resort, which include a new \$14,000 merry-go-round, a 1-mile double-racing coaster, new bath houses, concreting of three bath pools and the construction of a mammoth sand beach.

**Seattle (Wash.) Municipal Street Railway.**—C. B. Bagley, Secretary, Board of Public Works, is receiving bids for the furnishing of labor, material, tools and equipment for driving capping and bracing the pile supports for the municipal elevated railway along Railroad Avenue, from Washington Street to Holgate Street. About

200,000 lin.ft. of piling will be required, the bulk of the piling to be untreated. Piers supporting the twelve wooden trusses across the street crossings will be creosoted piling. A station platform with covered shelter and stairways leading to the streets below is provided about every 1000 ft. on the completed railway. The trestle will be 13 ft. wide and 2¾ miles long. The first section will cost about \$30,000 to \$40,000. Other calls for bids will be issued for the trestles and ties as fast as certain stretches of the piling substructure work is completed. The construction of the line will be pushed as rapidly as possible. F. A. Rapp, assistant city engineer, in charge of bridge construction, states that bids for the work will be let in sections. It is expected that line will be completed within six to eight months. The State of Washington recently offered to buy the \$350,000 in bonds issued for the elevated railway line, and the City Council has voted to accept the offer.

### Shops and Buildings

**Gadsden, Bellevue & Lookout Mountain Railway, Gadsden, Ala.**—A report from the Gadsden, Bellevue & Lookout Mountain Railway states that within the next three weeks it expects to construct a new carhouse 50 ft. x 140 ft.

**Pacific Electric Railway, Los Angeles, Cal.**—It is reported that the Pacific Electric Railway contemplates the construction of a new passenger station at San Pedro.

**Boston (Mass.) Elevated Railway.**—Fire on April 7 completely destroyed the wooden section of the Clarendon Hill carhouse of the Boston Elevated Railway, located in West Somerville, together with thirty-five open cars and five of the semi-convertible type, sixteen snowplows and thirty-five box cars. The loss is estimated at about \$250,000.

**Kansas City (Mo.) Railways.**—A report from the Kansas City Railways states that the company is constructing an addition to its carhouse at Forty-eighth and Harrison Streets, 75 ft. x 114 ft., to be used as a shelter for car repairs.

**Hocking-Sunday Creek Traction Company, Nelsonville, Ohio.**—This company reports that it expects to construct a new carhouse.

**Philadelphia & West Chester Traction Company, Upper Darby, Pa.**—A new freight and passenger station will be built by the Philadelphia & West Chester Traction Company at Gay and Walnut Streets, West Chester.

**Montreal & Southern Counties Railway, Montreal, Que.**—A new passenger and freight station will be built by the Montreal & Southern Counties Railway on Youville Street. The building will be three stories, constructed of steel, concrete and pressed brick.

### Power Houses and Substations

**New York, New Haven & Hartford Railroad, New Haven, Conn.**—A contract has been awarded by the New York, New Haven & Hartford Railroad to C. W. Murdock, New Haven, for the construction of a one-story electric battery building, about 20 ft. x 140 ft., at Dover, near Boston.

**Maryland Electric Railways, Annapolis, Md.**—A contract has been awarded by the Maryland Electric Railways to the Cogswell-Koether Company, Baltimore, for the construction of a new two-story brick substation at Linthicum Heights.

**Kansas City (Mo.) Railways.**—A report from the Kansas City Railways states that the company has purchased twenty underfeed stokers, two boiler feed pumps, one locomotive crane and one feed water heater.

**Southern Public Utilities Company, Charlotte, N. C.**—The Southern Public Utilities Company contemplates increasing the generating capacity of its power plant.

**Hocking-Sunday Creek Traction Company, Nelsonville, Ohio.**—A report from the Hocking-Sunday Creek Traction Company states that it has purchased a large rotary converter set to be delivered this month. A new substation will be built by the company.

**Lehigh Valley Transit Company, Allentown, Pa.**—An order has been placed with the General Electric Company, Schenectady, N. Y., by the Lehigh Valley Transit Company for a style A interlocking machine to be installed at Easton, Pa.

**Charleston Consolidated Railway & Lighting Company, Charleston, S. C.**—A new 500-kw. rotary substation is being built by the Charleston Consolidated Railway & Lighting Company near the navy yard for the purpose of supplying direct current to the suburban railway.

**Puget Sound Traction, Light & Power Company, Seattle, Wash.**—Plans are being prepared by the Puget Sound Traction, Light & Power Company for the construction of coal bunkers for its coal pulverizing plant at 1316 Western Avenue. The improvement will cost about \$17,000.

**Monongahela Valley Traction Company, Fairmont, W. Va.**—Surveys are being made by the Monongahela Valley Traction Company for the erection of a high-tension transmission line from the Speedway to the new electric power plant at Rivesville.

**Ashland Light, Power & Street Railway, Ashland, Wis.**—Plans are being made by the Ashland Light, Power & Street Railway for the construction of a new hydroelectric plant at Superior Falls, to cost about \$100,000. The L. E. Meyers Company, Chicago, is in charge of the work.

# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS

FOR THE MANUFACTURER, SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES • MARKET QUOTATIONS • BUSINESS ANNOUNCEMENTS

## Trolley Cord Advancing With High Price of Cotton

Within a Year the Cost Has About Doubled—The Latest Increase—Stocks Low

With the fluctuations in cotton every article using the material to any extent—there are a number in the electric railway line—is affected. This has been going on since the beginning of the war, and to-day the principal raw material of cords of all kinds is going higher. For nearly a year the cost of trolley cord, bell and register cords has been on the upward trend. Within the last twelve months trolley cord, that sold for about 45 cents a pound, has advanced to from 75 cents to 80 cents a pound. The last advance of 8 per cent was made inside of a month.

Manufacturers and sales agents, describing conditions, said cord—trolley, bell and register—which is of a superior quality, to withstand the hard wear and tear of careless and trying usage—was subject to the uneasy and changing situation of cotton. The price is jumping in sympathy with this state of affairs. Wednesday cotton was from 28 to 36 points higher than on the previous day, making a new high record. Manufacturers are therefore obliged to pay stiff figures for their material, and, consequently, to reflect the views of large handlers of trolley cord, another increase in price would not be surprising. Stock is none too plentiful and deliveries are far from prompt.

## Brush-holders Likely to Be Advanced in Price

Additional and Repeated Increased Cost of Castings and High Wages the Cause

A manufacturer of brush-holders who has had the price of his casting advanced 3 cents a pound several times recently, says he is very much inclined to pass this extra cost along to the selling agency and the ultimate consumer. As a brush-holder weighs about 5 lb. the castings price runs into money. Improved machinery for stamping slots, whereby six are stamped at one operation as against one before, has reduced the cost of production slightly; but this is offset by the increase to almost double the wages formerly paid the skilled mechanics employed. Other overhead charges have also added materially to the cost.

In relating these facts the chief of an Eastern railway supply house specializing on brush-holders, and

handling the aforementioned manufacturer's product, stated that under the circumstances an advance in price would be justified and doubtless will be shortly announced. If the producer marks up his goods, added the supply man, the higher figure will naturally be added on the seller's quotation. Deliveries to near-by points were prompt, but were behind to the Middle West, South and New England.

## Car Curtain Specialties Gradually Going Higher

Pantasote to Be Marked Up April 20—Rollers and Metal Fixtures Also Advance

Railway supply men, when asked if an advance in price on the material or accessories or machinery they handle had been made, almost invariably answer "things are about at peak, and can hardly go higher." Notwithstanding this encouraging attitude prices are still going higher particularly where cotton is a basic staple. One of the latest products to advance is car curtain materials. While the preliminary announcement has been sent out to the second line manufacturers and sales agents of an advance in the price on pantasote of 5 per cent, the increase does not become effective until April 20. Agasote, another product of the Pantasote Company, used for car headlining, was marked up 10 per cent within a month. Factory deliveries are fairly good.

Car curtain self-acting spring rollers, inside of a year or so, have gone up 125 per cent, although the last increase was made in January. Several manufacturers of car curtains stated they were not consulted by customers as a rule. The railways, in buying passenger cars, designate the curtain material to be used, whether pantasote, peppercorn or what not, and their choice is mandatory. In fact, as one widely-known concern stated its case, "we would make curtains of calico if they were specified." With the revised cost of pantasote a higher figure will also be established on the above date for car curtains of that material.

Likewise, with the scarcity of tin and the high cost of brass no surprise would be expressed if an increase in the cost of curtain fixtures were to come along. With the past rapid jumps in the price of curtain rollers no one pretends to deny that if a further revision on a higher level were to be forthcoming it would be only in keeping with market tendencies.

## To Prevent Confusion in Government Ordering

Requirements Division Created to Collect All Purchasing Information, With Special Sections for Separate Commodities

A new plan of organization of the War Industries Board has been undertaken, the general purpose of which is to prevent confusion and conflict in the ordering and delivering of supplies and to secure unification of the government's policy in dealing with industrial problems. The essential change involved is the creation of a requirements division to which will be furnished information on all contracts, purchases and deliveries, and to which the supply divisions of the purchasing departments and the Allied Purchasing Commission will as far in advance as possible submit statements of their respective needs.

To take charge of particular problems of supply there have been created special commodity sections, and whatever necessary to handle raw materials or finished products of which there is an actual or threatened shortage or the price and production of which should be controlled new sections will be created by the chairman of the War Industries Board. It is the purpose of the chairman of the War Industries Board to make each of the section heads the sole government agency for dealing with the industry for which his section is responsible.

The chief of the commodity section will study the problem referred to his section and will procure from all available sources, including the supply departments, information and data which will be helpful in the allocation of these requirements. At meetings of the commodity section the allocation of materials or facilities to meet the requirements will be determined.

In addition the commodity sections they will consider from time to time the extent of the existing sources of production, the creation of new facilities, the disclosure—if necessary, the opening up—of additional sources of supply, and the conversion of existing facilities to new uses.

Each commodity section will consider market conditions pertaining to the materials or commodities over which it has jurisdiction and will, where deemed advisable, recommend purchase plans to the several purchasing departments. In cases where it becomes necessary to control an industry in whole or in part by means of allotments, the appropriate section will determine the allotments of materials, commodities and facilities to the several departments of this

government and to its allies, and also the extent to which manufacturers and others, whether serving the civilian population or engaged in the manufacture of war supplies, shall be supplied.

### Asphalt Paving on an Advancing Market

Nearly Every Month Prices Have Been Revised—Still Another Increase Is Expected Shortly

Paving material, used largely in city railway construction work particularly, is reflecting the general tendency of the times by increased cost. Asphalt is one of the most important in this line, and importers of the raw material testify to the uncertainties of the market. The greatest percentage of asphalt comes from the island of Trinidad, one of the West Indies off the north coast of South America. Its production and supply is in the hands of practically a monopoly. The concession is held by an American company, and in discussing conditions this week one of the leading officers said that for some time asphalt had been commanding a higher price, and a further increase could be reasonably anticipated. Scarcity of tonnage for regular shipments, heavy freight charges and absorption for government work is responsible for the shortage and consequent high selling cost.

This authority also stated that last month asphalt had gone up \$2 a ton. It meant where previously \$36 was the price it was now \$38 a ton, in minimum lots of 150 tons, for "hot" asphalt. "Cold" asphalt, in the same quantity, with packages weighed in f.o.b. plant in New Jersey, was \$42 a ton against the former price of \$40. Another increase was expected next month. Asphalt filler, which follows the primary product, is now quoted at \$48 a ton.

### Dumping Cars for Excavation Work in San Francisco

The White Company, Cleveland, Ohio, reports that White 5-ton power dumping cars have been used extensively in the excavation work for the Twin Peaks Tunnel in San Francisco. This tunnel is being constructed for use by the cars of the Municipal Street Railway. In this construction work one White truck, in service twenty months on a sixteen-hour schedule, covered 34,000 miles. Another on the same time ran 35,500 miles. Two others in service ten months, for twenty-four hours a day, registered mileages of 15,000 and 16,000. The dumping trucks were used to haul rock blasted from the tunnel and to bring up supplies. Inside the tunnel mules were employed to haul out the material. Later White trucks with special bodies and flanged wheels for running on rails were substituted for this inside work, in addition to the fleet used for general construction purposes.

### Rolling Stock

Kansas City (Mo.) Railways recently purchased 100 National Pneumatic door-operating equipments.

Sheffield (Ala.) Company is reported as having bought a number of open trail cars from the North Alabama Traction Company, Albany, Ga.

International Railway, Buffalo, N. Y., is reported as having ordered thirty new cars from the G. C. Kuhlman Car Company.

Gadsden, Bellevue & Lookout Railway, Gadsden, Ala., within a month will be in the market for two open ten-bench cars and two closed cars, second-hand.

Brooklyn (N. Y.) Rapid Transit Company has ordered 220 sets of Gould slack adjusters from the Railway Utility Company. These are to be applied to the company's semi-convertible cars having Peckham 14D5 trucks.

Washington Railway & Electric Company, Washington, D. C., has placed an order for twenty-five new cars with the J. G. Brill Company as referred to in the ELECTRIC RAILWAY JOURNAL of March 23.

Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind., has placed an order with the St. Louis Car Company for twenty-five single-truck one-man cars, mention of which appeared in the ELECTRIC RAILWAY JOURNAL of March 30.

Springfield (Mo.) Traction Company's order for twelve new one-man cars, placed with the American Car Company, referred to in the ELECTRIC RAILWAY JOURNAL of March 30, comprises the following specifications:

Number of cars ordered.....	12
Name of road.....	Springfield Traction Co.
Builder of car body.....	American Car Co.
Type of car.....	Double-end safety motor
Seating capacity.....	32
Length over bumpers.....	27 ft. 9 1/2 in.
Length over vestibule.....	26 ft. 9 1/2 in.
Width over all.....	8 ft. 0 in.
Height, rail to trolley base.....	12 ft. 6 in.
Body.....	Semi-steel
Interior trim.....	Cherry
Headlining.....	None (rafter finish)
Roof.....	Arch
Air brakes.....	Westinghouse Traction Brake Co.
Axles.....	J. G. Brill Co.
Bumpers.....	American Car Co.
Car trimmings.....	Dayton Mfg. Co.
Control.....	West. K-63
Curtain fixtures.....	Curtain Supply Co.
Curtain material.....	Pantasote
Destination signs.....	Hunter illuminated
Door operating mechanism.....	Am. Car Co.
Fenders or wheelguards.....	H. B. Life Guards
Gears and pinions.....	West. Elec. & Mfg. Co.
Hand brakes.....	Am. Car Co. with standard drop brake handle
Heaters.....	Peter Smith
Headlights.....	Golden Glow
Journal boxes.....	J. G. Brill Co.
Lightning arresters.....	West. Elec. & Mfg. Co.
Motors.....	G. E. 506-AN-2
Motors.....	Inside hung
Sanders.....	Elec. Service Supplies Co.
Sash fixtures.....	Dayton Mfg. Co.
Seats, style.....	Waylo light-weight reversible
Seating material.....	Birch, veneer and rattan
Springs.....	J. G. Brill Co.
Step treads.....	Feralun
Trolley catchers or retrievers.....	Elec. Service Supplies Co.'s
Trolley base.....	West Elec. & Mfg. Co.
Trolley wheels or shoes.....	West. Elec. & Mfg. Co.
Trucks.....	Brill 78-M-1
Ventilators.....	Utility Honeycomb
Wheels.....	24-in. cast spoke

Richland Public Service Company, Mansfield, Ohio, on April, it is reported, took over the property of the Mansfield Public Service & Utility Company, and has placed orders for several new pay-as-you-enter cars. The merger, reports say, was approved by the Ohio Public Utilities Commission.

Hudson & Manhattan Railroad, New York, N. Y., mentioned in last week's ELECTRIC RAILWAY JOURNAL as about to construct a spur or new line from Newark, N. J., to the Port Newark Terminal, the site of the new shipyards, and purchase additional all-steel rolling stock equipment, being under government control, must be officially financed before the plan can be put into effect. In the meantime the proposition is held in abeyance, and as soon as the matter is finally determined the order for cars will be placed and the work pushed to completion on a special rush schedule.

Lehigh Valley Transit Company, Allentown, Pa., recently placed in service twelve new double-truck center-exit and entrance cars built by the J. G. Brill Company, at a cost of \$10,000 each, reference to which was made in the ELECTRIC RAILWAY JOURNAL a year ago. An immediate inquiry was made for a quotation on twenty additional cars of the same type. The figure submitted to the Lehigh Valley Company was \$15,000, which was so surprising that the proposal was withdrawn at once. In normal times such cars cost about \$6,500.

Central Arkansas Railway & Light Corporation, Hot Springs, Ark., which ordered seven new one-man cars, from the American Car Company, St. Louis, Mo., as mentioned in the ELECTRIC RAILWAY JOURNAL of March 30, furnishes the appended specifications:

Number of cars ordered.....	7
Name of road.....	Central Arkansas Railway & Light Corporation
Builder of car body.....	American Car Co.
Type of car.....	Double-end safety motor
Seating capacity.....	32
Length over bumpers.....	27 ft. 9 1/2 in.
Length over vestibule.....	26 ft. 9 1/2 in.
Width over all.....	8 ft. 0 in.
Height, rail to trolley base.....	12 ft. 6 in.
Body.....	Semi-steel
Interior trim.....	Cherry
Headlining.....	None (rafter finish)
Roof.....	Arch
Air brakes.....	General Electric
Axles.....	J. G. Brill Co.
Bumpers.....	American Car Co.
Car trimmings.....	Dayton Mfg. Co.
Control.....	K-63-B
Curtain fixtures.....	Curtain Supply Co.
Curtain material.....	Pantasote
Destination signs.....	Hunter Illuminated
Door-operating mechanism.....	Am. Car Co.
Fenders or wheelguards.....	H. B. Life Guards
Gears and pinions.....	General Electric
Hand brakes.....	Am. Car Co. with Pittsburgh drop handle
Heaters.....	Peter Smith
Headlights.....	Golden Glow
Journal boxes.....	J. G. Brill Co.
Lightning arresters.....	General Electric
Motors.....	2 G. E. 258
Motors.....	Inside hung
Registers.....	International Register Co.
Sanders.....	Electric Service Supplies Co.
Sash fixtures.....	Dayton Mfg. Co.
Seats, style.....	Waylo reversible seats
Seating material.....	Birch wood, veneer and rattan
Springs.....	J. G. Brill Co.
Step treads.....	Feralun
Trolley catchers or retrievers.....	Electric Service Supplies Co.
Trolley base.....	General Electric
Trolley wheels or shoes.....	General Electric
Trucks.....	Brill 78-M-1
Ventilators.....	Utility Honeycomb
Wheels.....	24-in. cast spoke

**Trade Notes**

H. W. Johns-Manville Company, New York, N. Y., has opened a new branch office at 1015 A Street, Tacoma, Wash. This branch carries a complete stock of asbestos packings, molded and in sheet form, and other well-known Johns-Manville power-plant specialties.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has moved its service department from Amberson Avenue to new quarters at 6905 Susquehanna Avenue, in the Homewood district of the city. Express and freight should be consigned to East Liberty, Pa., via Pennsylvania Railroad.

Railway Improvement Company, New York, announces that it has received an order for Rico Anti-Climbers to take care of the 100 new cars for the Philadelphia Rapid Transit Company's Hog Island service, specifications for which cars were published on page 552 of the ELECTRIC RAILWAY JOURNAL March 16.

Economy Electric Devices Company, Chicago, Ill., has recently sold the Dayton, Springfield & Xenia Southern Railway Company, Dayton, Ohio, Sangamo Economy electric railway meters for use in an energy-saving campaign. These devices will be used on all city and interurban cars of this railway.

W. Nelson Nib Smith, for a number of years electric traction engineer with Westinghouse Church Kerr & Company and recently efficiency engineer for the

American Agricultural Company, has become connected as an electrical engineer with Sidney E. Junkins & Company, engineers and constructors at Vancouver, B. C.

Walter A. Zelnicker Supply Company, St. Louis, Mo., has recently secured the services of G. W. Bichlmeir, formerly connected with the supply departments of the Missouri Pacific and Kansas City Southern Railway companies. Mr. Bichlmeir joins the Zelnicker machinery department.

**New Advertising Literature**

George W. Fleming Company, Springfield, Mass.: Illustrated circular descriptive of the company's "Combination Lathe, Boring and Milling Machine."

Diamond Power Specialty Company, Detroit, Mich.: Bulletin No. 119, illustrated in two colors throughout, is a review of current mechanical soot blower practice.

Spray Engineering Company, Boston, Mass.: Bulletin No. 202 describes the Spraco system for cooling condensing water and gives illustrations of some installations.

Ingersoll Rand Company, New York, N. Y.: Booklet describing its products and giving a list of the uses of compressed air. Valuable engineering data and information are also presented in the booklet.

Walter A. Zelnicker Supply Company, St. Louis, Mo.: Bulletins No. 236 listing and describing rails, locomo-

tives, cars, machinery and other railway equipment and material.

Economy Electric Devices Company, Chicago, Ill.: Bulletin No. 50 describes construction of Economy meters and advantages to be derived from checking energy used in car operation.

Automatic Reclosing Circuit Breaker Company, Columbus, Ohio: Bulletin No. 30, illustrated, entitled "Automatic Reclosing Circuit Breakers and Relays" for the protection of direct-current circuits—general description, theory and application.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.: Bulletin entitled "The Further Prospect of Railroad Electrification." A discussion of the cost and advantages of railroad electrification is made in the bulletin.

Otis Elevator Company, New York, N. Y.: A bulletin referring to its skip hoists, which are automatically operated. Different types of skip hoists, their layout, and some typical installations in manufacturing plants, coal and coke plants, gas, electric light and power stations are shown.

Westinghouse Traction Brake Company, Pittsburgh, Pa.: The industrial department has issued an illustrated, copyrighted 6-in. x 9-in. booklet, designated as publication No. 9035, 113 pages, describing in detail its complete line of motor-driven compressors, both stationary and portable installations, ranging in capacities from 11 to 110 cu. ft. Compressed air accessories for doing almost every possible job of work are included.

**NEW YORK METAL MARKET PRICES**

	April 3	April 10
Copper, ingots, cents per lb.	23½	23½
Copper wire base, cents per lb.	26½ to 26¾	26½ to 26¾
Lead, cents per lb.	7, 20	7
Nickel, cents per lb.	50	50
Spelter, cents per lb.	7½	7
Tin, Straits, cents per lb.	*85	*85
Aluminum, 98 to 99 per cent., cents per lb.	†32.10	†32.10

\* Nominal. † Government price in 50-ton lots, f.o.b. plant.

**OLD METAL PRICES—NEW YORK**

	April 3	April 10
Heavy copper, cents per lb.	22	22
Light copper, cents per lb.	19½	19½
Red brass, cents per lb.	18	18
Yellow brass, cents per lb.	13	13
Lead, heavy, cents per lb.	6½	6½
Zinc, cents per lb.	5½	5½
Steel car axles, Chicago, per net ton.	\$42.41	\$41.52
Old carwheels, Chicago, per gross ton.	\$30.00	\$29.00
Steel rails (scrap), Chicago, per gross ton	\$35.00	\$34.00
Steel rails (relaying), Chicago, gross ton	\$60.00	\$60.00
Machine shop turnings, Chicago, net ton	\$17.00	\$16.50

**ELECTRIC RAILWAY MATERIAL PRICES**

	April 3	April 10
Rubber-covered wire base, New York, cents per lb.	27 to 30	30
Weatherproof wire (100 lb. lots), cents per lb., New York	28½ to 34½	28½ to 34½
Weatherproof wire (100 lb. lots), cents per lb., Chicago.	33.42 to 38.35	33.42 to 38.35
T-rails (A. S. C. E. standard), per gross ton	\$70.00 to \$80.00	\$70.00 to \$80.00
T-rails, high (Shanghai), cents per lb.	4½	4½
Rails, girder (grooved), cents per lb.	4½	4½
Wire nails, Pittsburgh, cents per lb.	3½	3½
Railroad spikes, drive, Pittsburgh base, cents per lb.	4½	4½
Railroad spikes, screw, Pittsburgh base, cents per lb.	8	8
Tie plates (flat type), cents per lb.	*3½	*3½
Tie plates (brace type), cents per lb.	*3½	*3½
Tie rods, Pittsburgh base, cents per lb.	8	8
Fish plates, cents per lb.	*3½	*3½
Angle plates, cents per lb.	*3½	*3½
Angle bars, cents per lb.	*3½	*3½
Rail bolts and nuts, Pittsburgh base, cents per lb.	4.90	4.90
Steel bars, Pittsburgh, cents per lb.	5	5
Sheet iron, black (24 gage), Pittsburgh, cents per lb.	4.90	4.90
Sheet iron, galvanized (24 gage), Pittsburgh, cents per lb.	5.80	5.80
Galvanized barbed wire, Pittsburgh, cents per lb.	4.35	4.35
Galvanized wire, ordinary, Pittsburgh, cents per lb.	3.95	3.95

	April 3	April 10
Car window glass (single strength), first three brackets, A quality, New York, discount	80% to 82-3%	80% to 82-3%
Car window glass (single strength), first three brackets, B quality), New York, discount	79%	79%
Car window glass (double strength, all sizes AA quality), New York, discount	80%	80%
Waste, wool (according to grade), cents per lb.	11½ to 22	11½ to 22
Waste, cotton (100 lb. bale), cents per lb.	12½ to 13	12½ to 13
Asphalt, hot (150 tons minimum), per ton, delivered	\$38	\$38
Asphalt, cold (150 tons minimum, pkgs. weighed in, F. O. B. plant, Maurer, N. J.), per ton	\$42	\$42
Asphalt filler, per ton	\$45	\$45
Cement (carload lots), New York, per bbl.	\$2.65	\$2.65
Cement (carload lots), Chicago, per bbl.	\$2.71	\$2.71
Cement (carload lots), Seattle, per bbl.	\$3.05	\$3.05
Linseed oil (raw, 5 bbl. lots), New York, per gal.	\$1.59	\$1.59
Linseed oil (boiled, 5 bbl. lots), New York, per gal.	\$1.60	\$1.60
White lead (100 lb. keg), New York, cents per lb.	10	10
Turpentine (bbl. lots), New York, cents per gal.	42½	41

\* Government price.