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## One Reason Why Transportation Work Fascinates

**A**N EX-LAWYER, then prominent in the electric railway field, said a few years ago that he left the law for transportation work because people spend so much more money on the latter. His idea was that where the most money is spent in paying for needed service there the opportunity is greatest. Even now, when the whole transportation industry is in dire straits, the business continues to hold large numbers of able men, who could make a living in other fields with less expenditure of nervous energy, but they remain in the business because they feel that transportation is an essential industry and must continue in one form or another permanently to supply a vital public service. As good service is one of the most saleable of commodities, its merchandizing will always attract the men who can produce, deliver and advertise it well.

The very difficulty of producing good transportation under the present transient conditions furnishes an appeal to real transportation men. With reasonable encouragement in the way of compensation they can be held indefinitely.

## Declining Usefulness or Greater?

**T**HE harassed electric railway manager who has to find ways and means of securing more revenue can hardly be blamed for seeking the immediate path offered by the higher unit rate of fare. He gets a certain increase in revenue at a sacrifice in number of passengers. Costs go up again and there is another increase in fare, some increase in revenue and a further decline in the number of customers. How long is this process going to continue before the usefulness of the electric railway has shrunk to such a point that it will be patronized only by those too poor to own an automobile or bicycle or so situated that they cannot use a jitney?

If an electric railway was carrying well-loaded cars throughout its working day of eighteen to twenty hours, then it would be obvious that an increase in fares was the only resource. Fortunately, if we may use the word for such a situation, almost every electric railway is badly underloaded most of the day. If, then, there are ways of getting more riders during the off-peak hours that have not been tried, those ways ought to be tried before we reconcile ourselves to making the electric railway less useful instead of more useful.

Have we not been treading a dangerous road in assuming that the riding characteristics of the community, hour by hour, could not be affected favorably by different standards of service and rates? Are we not unduly timid also in assuming that the public cannot be convinced that one-man cars, graduated fares, whole-

sale-ride tickets, etc., are worth trying to stave off higher fares and poorer service? Have we ever realized how the coming of other means of transportation can be turned to the benefit of the street railway if we modernize the street railway, because the man who is used to an automobile is becoming disused to walking? Have we forgotten that the more customers we have, the more likelihood there will be of our getting a square deal?

Therefore, in trying to meet the need for more revenue let us exhaust every possibility of securing riders, more riders and still more riders during those hours of the day that we have seats and service to spare. The sensible investor will always take more interest in a concern whose customers are increasing year after year than in one whose customers are showing a steady decline while the competitors are flourishing. There is always hope for the concern which is growing even though it pays only a small return; but there is no hope for the concern which is deliberately getting all it can to-day with no thought for the morrow. We must never forget that before anything else, an electric railway must make itself useful to the greatest number of people who could possibly benefit from its service. As one of the greatest electric railway operators in the world said recently: "Don't begin to increase fares until you are sure that you have attracted all the people who not only need but who also like your service."

## Modern Cars Are a Necessity for Holding Traffic

**I**N ANALYZING the rolling stock of a small-town electric railway recently we were struck by the fact that one-half of the rolling stock was almost thirty years old. And when we went a step further into the analysis, we learned that two of these cars were required to give the same annual mileage that could reasonably be expected from one up-to-date car which would be able to do the trick partly through faster schedules but more largely through staying on the line instead of in the shop.

While wondering whether these prehistoric relics could have any connection with the red-ink statements of the operating company we passed a 20-cent movie. Lined up in front of this theater and for several feet more in each direction was a choice collection of automobiles from "Henries" to the ultra-luxurious sort in which only Success is said to ride. Now, what could have induced the several hundred automobile owners to have come down to a 20-cent show from a radius of 2 to 3 miles on their machines instead of in the street cars? Simply because of the taste which they had acquired for a faster and more quickly available form of transportation than was being offered by the local street railway. There had been a time when to wait



10 minutes for an electric car was not considered a hardship and when 8 miles an hour was considered pretty lively going. But the years had come and the years had gone with the street cars growing dingier and slower, while the electric car's rival, the automobile, was becoming cheaper and more plentiful. On the day that the balance figures changed from black to red, the street railway began to realize that it had failed to satisfy the appetite thus acquired by the public for more and better transportation.

It has been remarked that no merchant would think of foisting a 1900 hat upon a 1919 customer. Why then should a street railway expect to get along with the car of 1890, which certainly has not improved with age, when the car of 1919 is needed to meet new conditions? It is all very well to point to the difficulty of getting new money. The fact remains that bondholders and stockholders eventually will lose a lot more money if they will not back up the efforts of the management to modernize the property.

### How Deep Is Public Prejudice?

**I**F WE ARE to believe the pessimists of the electric railway industry, the public has decided that "the sins of the fathers shall be visited upon the children even unto the third and fourth generation." Firm in this belief, the "What's the Use" clan turn deaf ears and dull eyes to anyone who holds a contrary opinion.

Those who are in and of the electric railway field are prone to assume rather too readily that the minds of the people are poisoned against them by the sensationalism of newspapers, the currying for favor by peanut politicians and the tales of high financing committed by their forebears in the job. Of course, there is some truth in this assumption, but it is very far from being the whole truth. The man in the street (who ought to be "the man on the car"!) may have some confused notion about interlocking directorships, overlying and underlying securities, excessively liquid stock, etc., but it is a confused idea at best and one that becomes tangible only when he has to wait an unconscionably long time for a car and then find it too crowded to be worth the fare. In short, public prejudice is about 10 per cent due to dislike in the abstract and about 90 per cent due to dislike in the concrete. What proofs can be brought forward for this statement? Here's one of many.

On a large Eastern system with a past that the present management is doing its best to live down, it was necessary to go to a 6-cent fare. The change did not meet with unanimous approval—far from it. About the same time, however, the company equipped one of its lines with light-weight cars and added 50 per cent more service. What followed? An increase in traffic, despite the 6-cent fare, practically proportional to the increase in service! Not the least pleasing feature of the operation on this line is the obvious desire of the passengers to help the car operator through having exact change ready. But the great, big, outstanding fact is that despite the bitter opposition which this community put up against an increase in fare and despite the prejudices of a generation, traffic has increased as it never did increase in the palmiest days of this electric railway company. If there is a better index to the decrease of prejudice than the increase of riding, we would like to hear of it. And it was all done within

three or four months with no other means than the honest-to-goodness service that the elimination of hard feeling and the extirpation of jitneys demanded! Prejudice is only *service* deep after all.

### Is the Proposed Change in Method of Testing Girder Rails a Good One?

**T**HE news columns of this paper on July 5 carried a rather extended notice of the proposed change in the American Electric Railway Engineering Association's standard specifications for girder and high T-rails. This is proposed by the American Society for Testing Materials acting jointly with the way committee of the Engineering Association. The change has to do with the method of testing, a proposition to substitute a modified form of Brinell hardness test for the present drop-test requirement.

The drop test as now specified differs slightly from the same sort of test required by standard specifications for standard (low T) section rails, the height of the drop being regulated by the depth of the rail as well as by certain limits of rail weight. Thus it was recognized that the testing of girder rails presented some different problems from those present in the standard-section rails. Another factor regulating the girder rail tests is the higher limit of the carbon content in the standard girder rails. The greater tendency toward brittleness had to be provided for in the drop test.

Girder rail breakage in service is comparatively rare and, in paved streets at least, the element of danger from this source is much less. Consequently there were ample reasons for using drop tests of somewhat less severity. Nevertheless, we call attention to the desirability of some form of test which will cover the girder strength of the rails. There are also such defects as piping, segregation, seams and other detrimental factors which may come from unsound ingots and these must be guarded against. These forms of unsoundness contribute largely to the breakage of rails in connection with electric welding of joints. To eliminate drop tests without providing some other agency for the discovery of unsound metal would be a step backward. If the drop test is to be abandoned, we suggest the possible substitution of the "quick-bend" or hydraulic-bend test for this purpose. Its very name implies that it is quite rapid, and it is now thought that it will produce results equal to, or even better than, the drop test. The American Railway Engineering Association is considering its adoption in place of the drop test, and we do not think our association can afford to discard the sort of test which is thus obtained without very serious consideration of the A. R. E. A. action in the same matter. In electric railway work these tests need not be so frequent as to be burdensome, but they should be made. There can be no harm in sticking to the drop test for another season—that is, until the Pennsylvania Railroad and A. R. E. A. reports on comparison of the "quick-bend" and drop tests come to hand.

The proposed new test is one which may better be added to the specification rather than used as a substitute, and a hardness test of the sort proposed will be well worth while as it doubtless can be made at little, if any, extra expense. We favor its adoption, but as an addition and not as a substitute.

In conclusion, attention is called to the present title of the specifications referred to. The use of the words



"high T" is out of date, and the association has long been trying to get rid of the word "tee" because of its red flag effect in the minds of municipal engineers. Several of the association specifications and recommendations have already been edited in this regard, and the rails referred to are now called "plain girder rails," which indicates their similarity in form to I-beams. We suggest that the way committee take this point up and ask the A. S. T. M. to join in the standardization of the use of better terminology. The title of the specifications should be "Standard Specifications for Girder Rails."

### Seeing Things from the Customer's Viewpoint

EVERY department-store merchant knows that if he had no stools at the counters there would be more room in the aisles; also that he could carry more stock if he could dispense with writing rooms, nurseries and other accessories that have no direct relation to the selling of his wares. Yet he seems glad to install these conveniences because he does believe that they have a beneficial, even though indirect, effect upon sales.

If we were to apply this policy to the merchandising of transportation, we should doubtless have to give up certain things which make for efficiency but not necessarily for ultimate maximum net. In the matter of aisles, we would surely use cross-seats in preference to longitudinal seats, at least to the extent of two-thirds of the entire seating capacity. It is true that a car with longitudinal seats is the easier to load, but it is not the kind of seat that the customer prefers. It may even please the customer himself during the rush hours, but why not have a car that will attract passengers during the other fourteen operating hours of the day? We recall distinctly an instance where the change from longitudinal to crossseats increased the earnings by 3 cents a car-mile. That there was nothing "fluky" about this was proved upon investigation, as it was found that many people would walk over about one-eighth mile for the sake of riding in these cars instead of using the longitudinal seat cars upon the nearer line. As for summer riding, the cross-seat convertible car can be made as attractive as an open-bench car, and safer, whereas the longitudinal seat car will get compulsory riders only.

The provision of shelters at important transfer points is another example of seeing things from the customer's viewpoint. The weather may be bad and the wait may be long only once in a month, but that is the occasion he recalls to the disadvantage of the railway. It cannot be claimed, of course, that shelters directly increase riding, but if they please the customers they will prove a good investment for many a day.

For an industry that never had the inspiration that comes from competition and that was further handicapped by the absurdity of charging a price that had no relation to quantity or quality or cost, the road to the merchandising sense is going to be a hard one; but there are already encouraging signs that the electric railway in future will win out on merit and service, quite regardless of price, just as progressive merchants win out on the simple basis of proving to the customer that they are always trying to see things from his point of view. As Marshall Field is reported to have said: "The customer is always right."

### The Tragedy of Precedent

WHETHER we acknowledge it or not precedent has much to do with the course of human life and human activities and incidentally has had a very considerable influence on the development of the electric railway industry. If we do a certain thing in a certain way a few times the action becomes reflex or automatic, conscious thought about details no longer being necessary. If a man travels from his residence to his place of business over a certain route for a few days he will tend to continue following that route, although other routes just as short and as satisfactory in other ways may be available. If we see some one perform an operation new to us, when our turn comes we tend to try to imitate the performance. The "homing" instinct, the tendency to run in the same groove, the blind following of precedent, seem to be an inherent quality of the human mind.

To illustrate, years ago some bell wether in the industry enunciated that most fallacious of ideas, that a 5-cent fare would always be adequate for a passenger fare within city limits and often beyond. Of course, the theory upon which this was based was that improvements in the art would counterbalance the greater expense of increasing lengths of haul, but besides including a very loose assumption upon a very important matter this theory was faulty because it did not take into consideration the varying purchase power of the nickel.

Again, somebody in the years gone by decided that cars should be big and heavy. The idea appealed to everybody. The public liked to see battleships passing up and down the street. The idea has been developed until now it is not uncommon for us to be hauling, on the average 1000 lb. of passengers on a 50,000-lb. car. An awful waste of effort! And so we might go on reciting bad precedents. Of course, there have been many good precedents that have resulted in great benefit to the industry, but good precedents like good men do not need watch dogs to keep them from doing damage.

It is said that you cannot teach an old dog new tricks, and the transportation industry is an old one. Ever since some cave man ancestor of ours invented a vehicle by rigging a forked sapling into a sledge, men have been selling transportation. History is a young thing and leaves no record of this cave man benefactor of mankind, but we do know that the way-bills of Nebuchadnezzar's day are not a very far cry from those in use to-day. Possibly the development of sales methods for selling the transportation of men and materials has been hampered to no little extent by the efforts of our illustrious ancestors. Certain it is that the methods of selling transportation of communication and electric energy have been placed on a far more scientific basis. And these methods have been developed within the memory of men now living.

The moral of the whole story is that it is worth while to stop short occasionally, look around a bit, do a bit of thinking, and get a perspective of our job and our industry. The cry of the teamster to the hurrying throug "Heads up" is a warning worthy of attention. Railway operating men are busy men, in these days they are harassed men, but in many instances a little more time spent in getting a broad outlook on the industry and its development would pay big dividends in the way of increased progress.



# Maintenance of Air-Blast Transformers

**United Railways of St. Louis Has Sixty-three Air-Blast Transformers in Continuous Service, Forty-four of Which Were Rebuilt in 1913 for 13,200 Volts—Maintenance Confined to Rebuilding from Burnouts and to Bi-Weekly Cleaning—New Cover Designed to Prevent Fires**

**T**HE United Railways of St. Louis has in continuous service thirteen substations, three portable substations and two power plants, each of the latter having two rotaries in addition to their generators. The largest substation has a capacity of 12,000 kw., and the smallest a capacity of 500 kw. The total capacity of rotary converters is 47,500 kw.; of alternating-current generators, 3600 kw.; of direct-current generators, 18,100 kw.; of steam boosters, 600 kw.; and of motor boosters, 200 kw., giving a total kilowatt capacity of 70,000.

The company has a total of sixty-six transformers in continuous service, sixty-three of which are of the air-blast type. These range in capacity from 2200 kva. to 110 kva. and only seven are of a 6600-volt primary type, all of the rest being wound for 13,200 volts primary. The secondary voltage on all of these ranges from 370 to 430. Practically all of the air-blast transformers are General Electric.

## FORTY-FOUR TRANSFORMERS REBUILT IN 1913

During the first half of 1913 it became necessary to change part of the high-tension system at St. Louis from 6600 volts to 13,200 volts. This necessitated the taking apart of forty-four transformers to install new primary coils and rebuild. This work was done by four men in the maintenance gang and four men in the armature room. The armature winders assembled the primary and secondary coils in their insulation casings, while the maintenance men did all of the lining up of coils in the transformer casings and the laying of the laminated irons and connecting of transformers to the lines and rotaries. It might be stated that a wrong connection was not made during the rebuilding of the entire forty-four transformers.

At present the company has plenty of spare transformer equipment. There have been times, however, when not a single spare part was available and it was necessary to have a machine down until it could be repaired and rebuilt before it could be placed back on the line. On one occasion a coil in one phase of a three-phase 1100-kva. transformer burned open in the Quincy Street substation on April 5, 1918, and the equipment was back on the line five days later. This would not appear to be much of a record, but the various steps necessary to accomplish the work should receive careful consideration and will furnish an example of the work which is necessary to rebuild a transformer after a burnout.

The transformer, which weighs 10½ tons, was back in a corner on a raised concrete air chamber and would not pass the other equipment in the station. There was no crane, and there was not room enough around the transformer either to take it apart or build it up. It was impossible to get at the unit with jacks except below in the air chamber, so screw jacks were used to raise it high enough to get some iron slides underneath it. It was then forced away from the wall, and in this position was jacked up high enough to get 8-in. rollers

under it. The fan had to be moved entirely out of the station to make room for the transformers to be loaded onto a flat car, by means of which it was hauled to the central power station. Here it was taken apart, one phase was hauled to the armature room, repaired and hauled back, the transformer was rebuilt and the former operations repeated to get it back in the station and running again.

The above transformer consists of three phases and about 20,000 pieces of laminated iron placed in layers, no two of which must lap anywhere. Each alternate layer is painted, thus insulating all layers from each other to reduce iron losses due to heating caused by eddy currents. Another feature worth noting is the fact that only four men can lay irons at one time, one on each side and one at each end.

The accompanying diagram shows the position of the laminations during the process of rebuilding a transformer. There are fourteen pieces in each layer, every other layer being laid opposite the previous layer—that is, piece No. 2 will be where piece No. 1 is and so on. There are about 150 layers to a section and fifteen sections to a transformer, and, as mentioned before, only four men can build at a time, their position being one on each of the four sides.

After laying about twelve sections without pressing the irons down, there is very little space left between the coils at the top and the iron where the key is driven in. The loose irons are pressed down by means of two heavy plates of iron with the screws in one pushing against the other, these are placed in the same position as the timber shown in one of the accompanying photographs. This press is generally left on overnight in order to compress the irons and force them to remain in position. After all of the irons are in place, a hard maple key is driven in where the timber shows in the photograph. It is then an easy matter to put the top and side casings in position and connect the transformer to the line.

Considering a 1100-kva., three-phase transformer, it will under ordinary conditions take four men one day to take the irons out of the transformer and get the three phases into the armature room from any location on the system where there is a crane for loading onto a car. It will require four men in the armature room six days to take the three phases apart and reassemble and put the casing around them again. It requires four men one-half day to get the coils back to the station and lined up ready for laying irons. It requires four men two days to lay the irons and put the transformers in shape for connecting. Thus it normally requires four men working steadily eight hours a day, nine and one-half days to complete the repair and rebuilding of an 1100-kva., three-phase transformer.

The original policy of the company was to install air-blast transformers for the reasons that they were cheaper in first cost and required less floor space and considerably less head room than self-cooled transformers. These air-blast transformers operated satisfac-



torily until the inter-connection of the Union Company's power system and water system greatly increased the generating capacity available and caused damage in case of short-circuits. It was found that even the transformers which had been rebuilt in 1913 were seriously damaged due to the disruptive force of heavy currents on the coils of the transformer. The construction of an air-blast transformer is inherently poor to withstand heavy mechanical jars because the coils have to be separated to allow the passage of air, and these separators become loosened and disarranged.

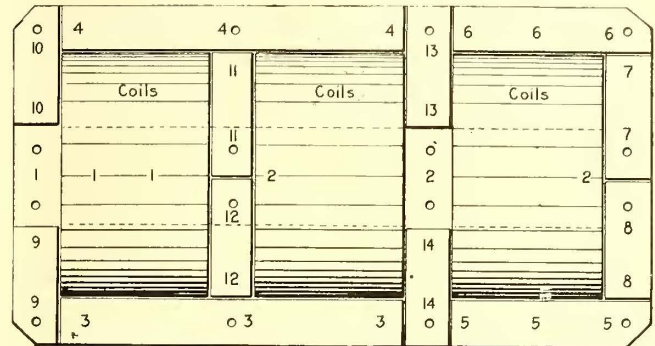
The oil-insulated transformer, either self-cooled or water cooled, is particularly advantageous where large amounts of power are involved because the coils can be compactly constructed and braced mechanically against strains. No trouble of any kind has been experienced with the three oil-insulated transformers in service in St. Louis. This type of transformer has the disadvantage of higher first cost and more floor space required, and some insurance companies object to the fire risk on account of the oil. The oil used, however, has a high flash point and the fire menace is not of much importance.

The question which arises concerns the best method of preventing damage and limiting fires in air-blast transformers following short-circuits. These might be briefly stated as follows:

1. Install some protective devices, say, an aluminum cell lightning arrester, perhaps two, on the busbar supplying the transformers, which acts as a safety valve to relieve the surges, and hence protects the transformers. This has been done at two stations in St. Louis and the results have been very beneficial.

2. If a fire does start in the transformer, means should be provided so that it can be quickly smothered out. This has been accomplished by means of airtight lids a description of which appears in the following

might cause a fire. At one station the United Railways suffered a \$3,000 loss because a spark from a small piece of apparatus, which had been damaged, flew into a transformer which was not in service and caused a



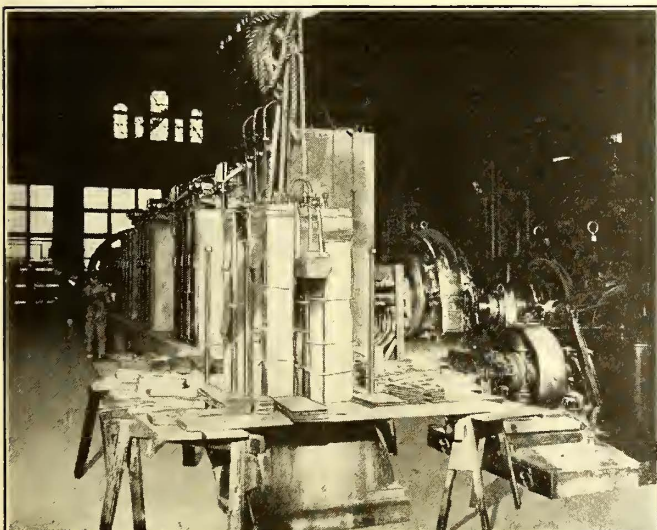
DIAGRAMMATIC LAYOUT OF AIR-BLAST TRANSFORMER LAMINATIONS

fire which ruined the big transformer. At this station all apparatus which can cause sparks from the air chamber has been removed.

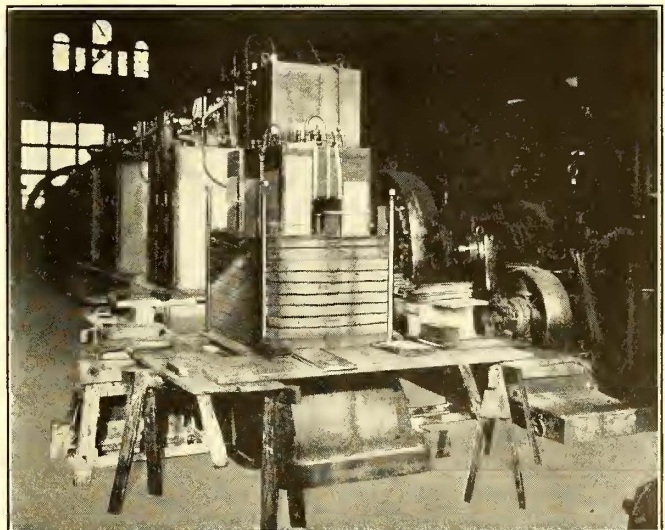
NEW COVER DESIGNED TO SMOTHER OUT FIRES

As mentioned above there is always danger of bad fires in an air-blast transformer. A very slight spark will cause a fire in the insulation and the constant pressure of air will soon fan this into a roaring flame. Thus it is necessary that the operator be watchful at all times and if he smells smoke he must find the source immediately and try to smother it out. It has sometimes been necessary to shut down a whole station in order to shut off the air from a transformer to stop a fire. This is due to the fact that the lid cannot be made airtight.

With this in mind the United Railways has rebuilt



POSITION OF LAMINATIONS DURING PROCESS OF REBUILDING AN AIR-BLAST TRANSFORMER



REBUILDING AN AIR-BLAST TRANSFORMER, SHOWING METHOD OF LAYING IRON LAMINATIONS

paragraphs. In addition, transformers should, if possible, be run either with individual fans or arranged so that they can be separated into compartments so that in case of fire in one transformer it can be isolated and the rest of the station continued in operation.

3. Remove causes for fires as much as possible by keeping the transformers blown out with air and by removing from the air chamber any apparatus which

its transformers as shown in an accompanying illustration. First a series of 3/8-in. holes is drilled all the way around the top as shown, giving, when the piece is taken out, an opening 20 in. x 34 in. A tool is then run over this, giving a flat, smooth surface about 1 in. wide. A new cover is then made from No. 16 gage iron reinforced around the top edge by 3/8-in. x 1-in. angles and fitted with felt around the lower bearing sur-



face. This cover is hinged and equipped with a special lock device. During operation this device props the lid up on one side about 4 in. as the transformers cannot operate at all without the air passing through the coils. In case of fire, however, the device is used to clamp the lid securely shut. With this new lid which has been put on, it is believed that an ordinary fire can be smothered out without shutting down the fans.

Another advantage of the hinged top is that during cleaning it can be opened back while the old top had to be lifted off and put on the floor. As this weighed about 50 lb., it was hard for one man to perform the operation where he had as many as eight transformers to clean. The new top also affords ample room for changing transformer taps during construction work. All of the 13,200-volt transformers can be connected for 6600 volts, and it is sometimes necessary to make this change.

The care of air-blast transformers is practically limited to the matter of cleaning the dust from between the coils and from the iron laminations. This is mostly carbon dust from the rotary brushes sucked into the air chamber by the fans. The cleaning is done once every two weeks by means of compressed air and is accomplished after midnight when the station is shut down. The air pressure



AT LEFT, NEW COVER DESIGNED TO SMOTHER OUT FIRES; AT RIGHT, OLD COVER DRILLED TO ENLARGE COVERING

must not be too high as the cleaning of the coils would tend to loosen the insulation. Each station is equipped with an air compressor and enough air hose to reach any desired point.

After the station is shut down the operator on the watch, wearing a wet sponge over his nose and mouth and with the air pumped up to about 60 lb., starts at the end transformer and blows down through the coils in a direction opposite to that in which the air ordinarily passes. This dislodges any dirt or dust which has collected during the operation of the transformers. After the transformer is blown free of all dirt, the top is closed tight and after all transformers have been cleaned, all dirt is cleaned from the air chamber so that when the station is again started up the same dirt will not be carried back into the coils. The tops on all the transformers are then raised and the transformers are ready to cut back into service.

In the new Midland station, there is a separate compartment air chamber and separate fans, so that in case of fire in a transformer this can be smothered out without taking the air away from the other transformers. These fans take fresh air from outside of the station, and it is noticeable that there is not as much dirt and dust as in other stations where the air is taken from inside the building.

It may be of interest to note that the company has had in continuous service since 1906, three 1100-kw. air-blast, 6600-volt transformers which have never been

opened up or taken apart for repairs. These have been subjected to 50 per cent overload for a half hour to an hour per day for a number of years. The principal trouble has been experienced at the Spring Avenue Station which is connected to the water power source by three heavy tie lines and is therefore in a particularly exposed position.

The foregoing information was secured through the courtesy of W. E. Bryan, superintendent of power stations and P. C. Varble, power department United Railways of St. Louis.

## Pay Subsidies, if Necessary

### Rhode Island Receiver Advocates Guarantee by State of Cost of Service to Provide Reasonable Fare

**T**HEODORE FRANCIS GREEN, for the last five years connected with the Rhode Island Company, of Providence, R. I., first as trustee and then as receiver, has given his views to one of the Providence daily papers on the future of the electric railway. After referring to the needs of the community for good transportation service which only an electric railway can supply, Mr. Green pointed out that the great increase in wages and cost of materials has made it impossible for the Rhode Island Company and most other electric railways to continue to pay a fair return to the owners of the property; in fact, he says that at present the Rhode Island Company's receipts are less than its expenses and fixed charges, and it may be that no reasonable system of fare can be devised that will provide for proper operation.

His remedy is that "the whole community, that is, the State, or cities and towns affected, should in some way make up any difference between the receipts from a reasonable system of fares and the amounts necessary to provide for the proper operation of the road. This may be by remission of general or special taxes, or by guaranty, or even, if necessary, by direct subsidy."

Mr. Green believes that a fair return on the investment should be guaranteed to the investors and that any surplus of receipts over expenditures, including such return, should go to the whole community, either directly by payments to the State, cities and towns, or by providing a lower system of fares for better service. He also recommended profit-sharing with the employees, and that they should have some voice in the management of the company. He maintains that the questions of the past history of the Rhode Island Company, and the extent of "water" in its stock have nothing to do with the case because "all that is now asked and all that for several years has been asked by the investors in several companies constituting the system is that a reasonable return shall be paid to them on the actual value of the property which they own and for which their money was spent."

According to Mr. Green, the receipts of the Rhode Island Company during the first six months of 1919 amounted to \$3,429,418.12, while the operating expenses and fixed charges for the same period amounted to \$3,769,854.97, a deficiency of more than a third of a million dollars.

Some prepayment cars with door and step control have been put in service on the Rome Municipal Railway system. They are the first of this kind to be tried in Italy.



# Public Ownership May Be Only Means of Restoring Credit\*

Massachusetts' Problem Particularly Acute—Higher Fares Have Been Unsatisfactory—Subsidy Plan or Public Ownership Seems Necessary—Further Legislative Aid Anticipated

BY FREDERICK J. MACLEOD

Chairman Massachusetts Public Service Commission

**T**HE crisis in the street railway situation in Massachusetts is due in the main to the same general causes and conditions which have been described in the testimony already given before your commission. The problem with which we have been confronted in Massachusetts has been, however, in certain respects more than ordinarily difficult and complex owing to certain special conditions resulting from the history of street railway development in our State.

1. The losses due to experimentation in successive stages of street railway development and to replacements and renewals made necessary at frequent intervals by successive advances in the art, have been heavier in Massachusetts than in most of the other states.

2. In Massachusetts the financial stability of the street railway industry has been impaired by over-production. Massachusetts has more street railway mileage in proportion to its population and area than any other state in the Union, and this mileage is not only large in amount, but in many cases badly located. This condition is the result of the era of speculation in street railway building which set in with the advent of electrification. It might have been better in the long run if this boom period had been allowed to run its natural course, if unnecessary lines had been abandoned and if a number of small companies which had sprung up during this period of mushroom growth had reorganized by scaling down their securities to correspond with the traffic possibilities of the territories they served. Instead, these speculative companies were saved from prospective bankruptcy or the scrap heap by the policy of consolidation, under which they were taken over, with all their questionable debts and obligations, on a share-for-share basis by the more prosperous urban companies. From this union of prosperous and potentially bankrupt companies there emerged a number of street railway systems with just sufficient vitality to keep their heads above water during fair weather, but incapable of meeting the stress of hard times and war conditions.

3. Our Massachusetts companies undertook the disastrous experiment of trying to extend to the country districts the ordinary type of street railway service which had been developed to meet city conditions. The interurban lines have been merely appendages to the city systems, with similar fares and methods of operation. Our present hybrid and diversified street railway systems were built up on the theory that the city lines would prove sufficiently profitable with a 5-cent unit of fare to absorb the losses on the suburban and interurban lines. For a time a downward trend of

prices as the result of improved methods and the comparatively low cost of upkeep while the properties were new, offered some encouragement that the experiment might prove successful. As soon, however, as prices began to rise and the need of extensive renewals arose, it was found that the money which was needed for the proper upkeep of the more prosperous city lines had to be expended in the reconstruction of the cheaply built promoters' lines which were taken over, and in meeting the deficits from their operation. Companies originally prosperous then found themselves unable to support the burdens imposed by the consolidation of unprofitable lines.

4. While in the early days a substantial amount of water was injected into street railway securities, most of the electric railway lines in Massachusetts have been built under rigid State supervision of security issues. Generally speaking, the stocks and bonds of Massachusetts street railway companies represent an equivalent amount of money paid in in cash and expended for legitimate corporate purposes. In all cases, moreover, the bonded indebtedness had been protected by the issue of an equivalent amount of stock paid for in cash at par or better.

This policy, in conjunction with the policy of consolidation already referred to, has resulted in giving an extended lease of life to properties which would otherwise long ago have been faced with bankruptcy and forced to abandon operation, and in saving Massachusetts until recently from the frequent failures of street railway companies which have marked the financial history of other states. This policy, moreover, in its immediate effect has been in many ways beneficial from the public standpoint, as it has made possible longer rides and additional transfer privileges for former units of fare, has prevented unwholesome congestion in the cities, has made possible more healthful living conditions for a large part of our population, and has largely increased property values and otherwise contributed to the prosperity of our suburban communities.

## FARES INADEQUATE FOR MANY YEARS

The prevailing fares, however, were insufficient for many years prior to the war to enable the companies to maintain themselves in sound financial condition. Depreciation requirements were almost wholly neglected and many companies were not even making adequate provision for current repairs and maintenance. The companies, in other words, were not meeting current expenses out of current revenues, but were in effect paying dividends by drawing upon invested capital. During all this period, the companies, influenced

\*Abstract of statement made before the Federal Electric Railways Commission, Washington, D. C., Aug. 15, 1919.



by the necessity of preserving their financial credit in order to obtain new capital, affected an air of prosperity, and shrank from disclosing their real financial situation, even to obtain an increase of rates, and were thus left in an impoverished condition with no reserve of financial strength to stand the shock of wartime prices and conditions.

#### MANY FARE INCREASES GRANTED

Since 1914, successive applications for fare increases to meet the constant rise in prices have been made by almost every company in the State and have from time to time been granted, in whole or in part, by the commission. In considering these proposed increases the commission has tried to do justice both to the companies and to the public, and in every instance has fully recited the facts and its findings, in order that there might be no doubt as to the basis of its decision. The decision has been based upon the principle that in the long run the rate-paying public, as well as the investing public, will be best served by recognizing that our public utility companies are entitled to charge such rates as will, under honest, efficient and economical management, produce revenue sufficient to meet operating costs, including proper provision for depreciation and other reserve funds in order to prevent an impairment of assets, and to pay taxes, interest charges, and a moderate return on invested capital, based, not upon the cost of reproduction with or without depreciation, but upon the capital honestly and prudently invested in the property. On the other hand, the commission has emphasized the fact that in any proper method of dealing with street railway rates, the public cannot be expected to pay dividends upon watered stock, or interest upon indebtedness improperly incurred, or to make good any losses due to mismanagement.

Under proper public regulation dividends do not represent profits, but merely interest upon invested capital. The man who invests his money in street railway stock is entitled to the prevailing interest rate for the use of his money equally with the man who makes his investment in the form of bonds. Indeed, in so far as the stockholder assumes the risk of having his principal impaired or entirely wiped out before bonds are affected, he is entitled to something more than the bond interest rate. Public service companies, however, should be so managed and regulated that the risk to the investor and other speculative elements will as far as possible be eliminated, and the dividend return practically limited to the going interest rate. But if the possibility of speculative profit is removed, it is essential that the investment be reasonably secure, or private capital will not enter the field.

In the past, the legitimate investor has been receiving a very moderate return, usually less than the current interest rate, and is confronted with the prospect of a substantial loss of principal if forced to realize upon his investment. The public have had much to put up with in the way of poor service, but this service has nevertheless been furnished in many cases for less than cost and at the expense of the properties and the investors. Broadly speaking, the deterioration of the properties and service of our street railway companies is due to deferred maintenance, and that in turn is due, in part at least, to deferred increases of rates. As between the car rider and the investor, the car rider has, up to the present, had much the better of the bargain.

Recent fare increases in Massachusetts have been greater, both in number, variety and extent, than in any other state, and the effects of such increases upon traffic and revenue have been such that they supply little evidence indicating that a general increase of rates offers a panacea for the present ills of the industry. When it is pointed out that interurban fares in Massachusetts are now generally on the basis of about 2½ cents a mile, that a straight 10-cent fare is now charged in twenty-three cities and a 7-cent fare, with a 6½-cent or 6¼-cent ticket rate in the remainder, it can hardly be claimed that the experiment of increasing fares has not been given a fair trial. The results of fare increases for the smaller companies have been less satisfactory than for the larger companies.

Rather than pay the higher fares passengers will forego all mere convenience riding, will walk, change their place of residence, or remain at home, will patronize the jitneys, or use the railroads where lower rates in many cases are available through the purchase of commutation tickets. The revenues received even by the larger and more prosperous systems under the high fares now prevailing fall far short of meeting the legitimate costs of service under present high prices. As a practical matter, a maximum limit for fare increases is fixed by what the traffic will bear, and increases beyond that point will decrease rather than increase gross revenue. It is possible that some further increase of revenue may be obtained by raising fares still higher, although it would appear that the saturation point must be almost reached with fares already on a 10-cent basis. If further increases are made, it is clear, in any event, that the burden imposed upon the car riders will be wholly disproportionate to any benefit which the companies can possibly receive.

#### LEGISLATIVE SOLUTION OF TROUBLES SOUGHT

The unsatisfactory revenue results from fare increases under the old regulatory system have stimulated efforts to solve the street railway problem through new legislation. Last year the Massachusetts legislature passed a general act to provide for service at cost by street railway companies. No company, up to the present time, has availed itself of the provisions of that act. The service-at-cost principle, however, has been recognized in two special acts providing for the public operation of the two principal street railway companies in the commonwealth, the Boston Elevated and Bay State companies, representing together approximately 46 per cent of the mileage and about 72 per cent of the capital investment of all street railways in the commonwealth. Under the plans embodied in these special acts the properties of the company are in effect leased to the commonwealth for a period of ten years, and the entire direction and control of the properties is placed in the hands of public trustees appointed by the Governor. The trustees are required to advance the fares from time to time as may be needed in order to meet the cost of service, including a return on legitimate invested capital as determined by the commission, at a rate of a little over 5 per cent in the case of the Boston Elevated Company and of 6 per cent in the case of the Bay State Company. The Boston Elevated act also provides that any deficit in the amount necessary to meet the cost of service may temporarily be raised by assessing it on the communities served, but must ultimately be repaid by the car riders.



During the year ended June 30, 1919, the fares of the Boston Elevated Company were successively advanced to 7 cents and 8 cents, and on July 1 to 10 cents. A general strike on the company's lines and other abnormal conditions during July make it difficult to draw conclusions from the revenue figures thus far available, but there appears to be little reason to anticipate that the company will prove self-supporting even on that basis. On the Bay State system, under the 10-cent fare, the increase in revenue for the month of July was only 10.06 per cent, which is less than half the percentage of increase under the former 7-cent fare.

During the present year further attempts have been made to secure remedial legislation for our street railway companies, but the various plans presented all failed of enactment. The gravity of the present street railway situation under the conditions disclosed is so great that the Governor of the commonwealth has found it necessary in the public interest to appoint a special commission for an expert study of the problem, and to provide for the calling of a special session of the legislature in the latter part of this year in order to enact appropriate legislation.

#### ORDINARY LAWS OF ECONOMICS PREVAIL

In considering the remedies which are open, it must be clearly kept in mind that no legislative enactments can override the operation of ordinary economic laws. The street railway companies have no revenue except that which is received from the public, and unless the public, in one form or another, contributes an amount sufficient to meet the legitimate cost of operation, service must deteriorate or be entirely abandoned. Every effort must of course be made to secure the greatest possible economy and efficiency of operation, but the chief problem is to determine the method by which the burden of street railway cost can be distributed with least detriment to the public interest.

In our judgment street railway service should be supported through the fares paid by the car riders in so far as this can reasonably be done without unduly interfering with the freedom of traffic which is essential for the business prosperity of the communities served. But when fares have been raised to a point where a further increase is likely to prevent the public from availing themselves with reasonable freedom of the service and facilities furnished, and where the burden upon the car riders is likely to be wholly disproportionate to any revenue benefits received by the company, any additional revenue needed to maintain the service should, we believe, be contributed by the communities served out of the general tax levy. I believe that where rides of substantial length are furnished, there would be little public protest and little diminution of riding if fares were established on the basis of 6 cents, or possibly higher. If that is so, and the fact can only be determined in the light of experience in each particular case, there is no convincing reason, on account of historic reasons or a mere accident of coinage, for preserving fares at the old five-cent level. There are, however, manifest advantages as a matter of convenience as well as a matter of psychology, in retaining the five-cent unit of fare and that may prove to be the wisest policy.

Under a plan of making up deficits out of taxation, the financial drain upon the communities served would

be enormously less, and the advantages resulting from the free movement of traffic would inure mainly to the benefit of the merchant, the manufacturer and the real estate owner, and would thus more than offset any amount paid through increased taxation. Any payments so made, it is true, are likely to be passed on to the ultimate consumer through increased rents and higher prices paid to the local merchant, or, broadly speaking, to the same class of persons who constitute the present body of car riders, but the economic waste under the existing system will be eliminated.

#### PUBLIC OWNERSHIP MAY BE THE REMEDY

Other remedies besides an increase of fares may be available as a means of increasing the net revenues of the companies, such as new shop machinery and labor-saving devices and improved equipment including the one-man cars which may permit of a sufficient frequency of operation to reclaim a considerable portion of the traffic which has been lost to the jitney. No substantial saving can, however, be effected without new capital and the credit of the companies is such that the necessary capital cannot be obtained.

It may well be that the ultimate solution of the street railway problem must be found through public ownership. No other method offers any reasonable prospect for the restoration of the companies' credit, which is necessary to provide needed capital. The figures presented to your commission, indicating the decline in the street railway riding per capita, emphasize the fact that, with the growth of motor transportation, street railway service is no longer a public necessity to the same degree as heretofore. The street railway is no longer in undisputed possession of the field of urban transportation, and the possibilities of profit are correspondingly curtailed. While no other agency of transportation yet devised can supplant the street railway and while its retention is vital in the public interest, it is extremely doubtful if the street railway, under present economic conditions, can be supported wholly by private investment. As a matter of abstract theory, private operation may have many advantages over public operation, but where a public utility must be retained in the interest of public service rather than as a possible source of profit, and where private capital continues to occupy the field only in the hope of salvaging the investment already made, recourse must be had to public credit if adequate service is to be retained.

If it should be deemed necessary or advisable in any case for the public to acquire existing street railway properties, many difficult questions will arise in regard to the terms of purchase. In determining the proper purchase price, while consideration should be given to the investment cost and perhaps also to the cost of reproduction less depreciation, the most important factor, in my judgment, is the actual or potential earning power of the companies. If it can reasonably be shown that the actual results of operation are due to restrictive legislation or supervision through the denial of needed increases in fares the value of the property should not be depreciated because of losses due to that policy but should be based upon its revenue potentialities under the maximum fare which the traffic will bear. On the other hand, the investors must assume the losses incident to a decline of business from general economic causes, which would have operated even if



the companies had been free, like the ordinary business corporation, to fix the price of their product at the point which would yield the maximum return.

Massachusetts, as already pointed out, has already embarked upon the policy of public operation for about half the street railway mileage of the State through the lease rather than the purchase of street railway properties. While this experiment has, up to the present time, not proved in all respects as successful as was hoped, there is, as far as I can judge, absolutely no public sentiment whatever in favor of a reversion of the properties to the old system and in so far as there is agitation for change, it is directed towards the outright purchase of these properties. But even if we should be forced into public ownership as the only way out of our present street railway difficulties, it must be borne in mind that no change in ownership of the properties will materially affect the cost of the service, and that under any form of operation, the public can obtain in the way of service just as much as it is willing to pay for, and no more.

## Safety-Car Experience in Virginia

Fifty Safety Cars Are Now In Operation On the Lines of the Virginia Railway & Power Company

BY H. N. CALLARD, JR.

Commercial Engineer Westinghouse Electric & Manufacturing Company

CERTAIN franchise matters delayed the inauguration of safety-car service on the various lines of the Virginia Railway & Power Company on its Virginia properties, but these have now been ironed out and to-day twenty cars are in operation in Petersburg, Va., twelve in Norfolk and eighteen in Richmond.



THE INCREASINGLY FAMILIAR SAFETY CAR IN A NEW ENVIRONMENT IN VIRGINIA

In Norfolk the cars operate on the Atlantic City, East Main and Brableton line which passes through the narrow, congested streets of this city, including Granby Street, the principal thoroughfare. Formerly this line was operated with seven cars on a ten-minute headway. Now a seven-minute service with ten cars is given. Car mileage has been increased 38 per cent and the number of revenue passengers approximately 20 per cent.

In Petersburg the cars are used to replace old single-truck, longitudinal-seat cars, with a seating capacity of twenty-four passengers. With the decreasing soldier traffic from Camp Lee, the density of travel did not

warrant an increase in service, and a car-for-car replacement was made. The new cars are so convenient and comfortable, however, that a slight increase in travel has resulted. The cars are used on the Sycamore Avenue, Grove Avenue-Cemetery line, and the Washington Street and Ferndale Park lines of this property.

In Richmond the cars are operated on the Belmont Avenue and Laurel Street lines, both of which make the Eighth Street, Main Street, Ninth Street and Broad Street loop which handles the most congested travel in the city. Service has been increased on the Belmont Street line approximately 55 per cent and on the Laurel Avenue line 40 per cent.

On Aug. 6 a test trip was made by the Mayor of Richmond, accompanied by city officials, to determine whether the operation of a street car by one man was hazardous. The car was put through various "stunts" on the level and on some of the 7 per cent and 8 per cent grades. As a result the entire investigating committee, including the Director of Public Safety, were enthusiastic over the car and were convinced that the safety features provided for every emergency. The following extract is from the *Richmond Times-Dispatch* of Aug. 12:

### MYERS GIVES APPROVAL TO SAFETY STREET CARS

DIRECTOR REPORTS TO COUNCIL COMMITTEE THAT NEW EQUIPMENT IS BEST EVER USED HERE

In a report made at the meeting of the City Council's committee on streets yesterday afternoon, Director of Public Safety Myers declared that the one-man street car used in Richmond is a "thoroughly safe car" and that the modern appliances with which it is equipped "make it the safest of any car operated by the Virginia Railway & Power Company in the city."

It is probable that this report brings to an end the movement in the Council against these cars which are now being run on two lines in Richmond. The committee yesterday took no action beyond "receiving and filing" the report.

In order to popularize the cars in Richmond, as much as possible, marker lights are used to help patrons to distinguish their cars more readily at night. The Belmont Avenue cars show red, and the Laurel Street cars green markers.

The maximum permissible load in the car is placed at fifty passengers and when the car has this number of passengers aboard, a "car full" sign is shown. This is a welcome innovation for the people in the car and, since very frequent service is given, passengers who are passed up do not complain.

*Colored Patrons Will Please Fill the Seats From the Rear. White Patrons Will Please Fill the Seats From the Front. Thank You!*  
VIRGINIA RAILWAY & POWER COMPANY.

Separation of the races is necessary on all lines of this company. When the safety cars were installed, the above sign was placed in the center of each car to accomplish this purpose.

The *Interborough Bulletin* for July, 1919, contains an account of the 60,000-kw. turbo-generator unit installed by the company in its Seventy-Fourth Street power station in New York City. This was based upon the article published in the *ELECTRIC RAILWAY JOURNAL* for May 10. This article was written by W. S. Finlay, Jr., superintendent of motive power of the company.



# Mr. Jackson Discusses Foreign Fare Practice\*

Short Zones, High Density, Short-Haul Traffic and Concessions as Features of Foreign Operating Practice Described at Commission Hearing — Interesting Australian Zone System Data Are Presented

THE development of the fare system on a distance basis has taught the Britisher that people can not be carried for the same price for a like distance in different cities or even over different parts of the same line. His fundamental endeavor is to secure the greatest possible revenue from the greatest possible number of riders rather than the greatest amount per individual passenger. It is characteristic, therefore, that British zones begin and end at a traffic-gathering point wherever possible instead of having definite lengths. These points may be an intersection with another line, a large store, a theater, a junction of several streets, the foot of a severe grade or other condition that tends to attract riding. Municipal boundaries have an influence on the location of zone limits due to the fact that they also represent the boundaries of the local municipal system. Zone boundaries change from time to time as fares are changed. Depending on the character of the route and the nature of the territory, zones vary greatly in length, as from 1.62 miles to 0.74 mile on a 20.8-mile run and from 1.75 to 1.42 miles on a 13.8-mile run.

## ZONE STAGES CLASSIFIED

The difference between end-on and overlapping stages is that in the latter the passenger has the advantage of being able to travel from the middle of one stage to the middle of the next. If the London County Council Tramways had end-on stages it would be necessary for a passenger to go to the boundary of the stage in order to be sure of getting  $1\frac{1}{2}$  miles for a penny. Instead, the stages are halved (approximately), so that the passenger has a much shorter distance to walk in order to get his full money's worth. The disadvantage of the overlapping stage in a large city is the difficulty of collecting the full fare. Thus the London County Council Tramways figured that a system averaging fourteen passengers per car mile should have  $\frac{3}{4}$ -mile laps in order that the conductor might be able to collect all the fares due from the passengers. The lengthening of the lap from 0.6 mile to 0.75 mile was estimated to be good for an increase in revenue of £40,000 per annum. The London cars are very large, seating seventy-eight passengers on two decks.

However, the practice in London must not be taken as indicative of the proper practice for other systems with thinner traffic and smaller cars. The British Electric Traction Company uses much shorter laps. In a number of cases this company has reached the statutory fare of 1 penny per mile with end-on stages. It has realized that it can not get 2 pence from a man who is going  $1\frac{1}{2}$  miles, as he would walk after getting his pennyworth. To keep him on the car, the company had devised the quarter-of-a-mile farthing increment. As

the farthing is a rare coin, farthing tickets were sold before the war in strips at full price. These were legal tender for either penny fares or penny-plus-fraction fares. The farthing increment has since been superseded by the half-penny.

## LENGTH OF ZONE FOR A GIVEN FARE

The British form of discrimination is intended to work out for the greatest benefit of the greatest number, whereas the American unit fare has discriminated always against the short rider—the very person who should be encouraged to use the service. The length of stage for a given fare is best illustrated by a table which includes data for thirty-four municipal properties.<sup>1</sup> The statutory maximum rate is still 1 penny per mile, but this is likely to be raised in the near future. At the same time, the general principle of irregularity in length of zones will be maintained. Bus fares, which are not regulated, are in the London area about 30 per cent higher than tramway fares where tramways are not in competition; otherwise, they are the same except that the buses do not attempt to have a 4 pence maximum fare (as on the London County Council Tramways) because of their long-ride pleasure traffic. Bus fares run up to 1 shilling 6 pence (36 cents) or more for long runs into the suburbs. The latest ordinary fare of the London County Council Tramways is 1 penny for two sections totaling  $1\frac{1}{2}$  miles, replacing the rate of 1 penny for a three-section zone totaling 1.8 miles—the average distance current, February, 1919.

The 0.3-mile cut and the use of two sections instead of three are expected to bring more revenue and assure better fare collection. The variations in length for a penny ride are also noticeable on the tube lines, ranging from 1.1 to 1.9 miles on the Piccadilly line and 1.1 to 2 miles on the South London and Central London tubes. The Aberdeen system has practically a two-fare arrangement. A halfpenny fare is charged for distances averaging 0.6 mile; a penny fare is charged for the overall ride on any line from the center of the city. A ride across town costs the sum of the fares on the opposite sides of the center. The short-ride fare is so popular that it is responsible for more than 25 per cent of the traffic at ordinary fares.

## SUBURBAN TRAFFIC IS ENCOURAGED

Zone fares are not necessarily cumulative. On the London County Council Tramways, as already explained, the maximum fare does not exceed 4 pence, regardless of distance beyond four two-section zones, and on the London Underground lines also certain concessions are made to the long rider. This is to encourage riding on the outer or suburban ends. Thus, a passenger who rides the full length of the Hampstead tube gets two or three stations on the connecting District Railway or Piccadilly tube, so that he is carried into a large part

\*Abstract of testimony of Walter Jackson presented during the hearing on fares of the Public Service Railway before the Board of Public Utility Commissioners of New Jersey, at Newark, June 23, 24 and 25, 1919.

<sup>1</sup>ELECTRIC RAILWAY JOURNAL, May 3, 1919, page 856.



of the business district without extra charge. As a general proposition British electric railways favor the suburban rider, the theory being that since a certain base service must be given on a suburban line the railway should be willing to reduce the fare or lengthen the zone if the result promises a greater revenue because of the capture of walkers.

From the earliest days of the British tramway, passengers boarding cars before 7.30 or 8 a.m. (according to local franchise conditions) have enjoyed less-than-cost transportation. This fact emphasizes the buncombe in statements that the zone fare has prevented the British workman from living in the country. In its last fare increase, the London County Council Tramways management noted that instead of losing £160,000 per annum on workmen's fares they would lose only £105,000—a mere half million dollars!

#### SHORT-HAUL TRAFFIC

It is difficult to make any real comparison of the headways and other service standards except to bring out this fundamental fact: If a street railway is operated on the assumption that the short rider is wanted,

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### British Discrimination

The British form of discrimination is intended to work out for the greatest benefit of the greatest number, whereas the American unit fare has discriminated always against the short rider—the very person who should be encouraged to use the service. People cannot be carried for the same price even over different parts of the same line.

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a certain number of invitations must be extended to a person before he has walked a mile or less. If he has already walked half the way before a car comes, he is not likely to be interested, but should a car come along every two or three minutes the temptation to ride is irresistible.

The chief difference between the American and British rush hour is that the contrast between off-peak and peak riding is less in the United Kingdom, chiefly through the excellent short-ride traffic throughout the day which comes from the non-factory part of the population—women shoppers, school children, office workers going to and from lunch, delivery boys, agents and others. One parallel which brings out the difference between the short-ride and long-ride system is the cinema, or moving-picture theater. In Great Britain the rise of the neighborhood playhouse has improved afternoon and night traffic; in the United States it is said to have injured such traffic. Actually almost every British system has three peaks—morning, noon and night.

In Belfast, a fairly wide-spread city, the ordinary penny passengers constitute almost 50 per cent of the riding, although the penny passenger can not get much over a mile for his fare.<sup>2</sup> In general, the minimum fare on British tramways, whatever that fare may be, is responsible for from 40 to 60 per cent of the traffic.

While the revenue return per passenger carried is  $1\frac{1}{2}$  to  $1\frac{3}{4}$  pence (3 to  $3\frac{1}{2}$  cents) on a number of British lines, that figure is not so far below the United States average after allowance is made for the dilution caused by the free transfer. Furthermore, many British passengers pay two fares or, say, 4 to 6 cents in all in making a trip, because they get no free transfers but pay only for actual distance. Figures of many British operators show that even where the individual zone fares are low, the earnings per car-mile compare very favorably with those secured with the higher unit fares paid in the United States. For example, the 1918 report of the Liverpool Corporation Tramways showed earnings of 18.91 pence per car-mile, or very close to 38 cents, despite the fact that fully 80 per cent of the passengers paid a fare equivalent to 2 cents and that this fare was good for a ride of not more than 2 miles.

The short-ride habit can be illustrated in no better way than by the fact that in London a man who has already paid 6, 8 or 10 cents for an underground ride will jump on a bus and pay another 2 cents for the  $\frac{1}{4}$  to  $\frac{1}{2}$  mile to his home. In fact, in building up its bus traffic, the London Underground looks upon every subway station as a focal point for short-ride traffic. It will deliberately turn a bus line a block or two off its route in order to pick up this class of traffic. British operators are usually willing to reduce the rate of fare where there is a chance of getting more revenue without a corresponding increase in operating expenses.

#### WHY BRITISH CITIES HAVE LESS TRACK

The smaller suburban development of British as compared with American cities accounts largely for their smaller track mileage. At the same time even the municipal lines do not hesitate to take up unremunerative sections of track. After all, the only way to determine whether a city has sufficient track is to inquire if what it has is meeting the needs of the community. Most British managers do not see the need for any great enlargement of mileage, as the British systems were fortunate in having been developed systematically without duplicate competitive lines and the like. America is ahead of Great Britain as regards the mechanical side of the industry; but the British, because of the influence of the short-ride traffic, appear to be ahead of Americans on the commercial or selling side.

#### CAR SPEED AND EQUIPMENT STANDARDS

In spite of the heavy traffic the schedule speed of British cars is not more than a mile-per-hour or so lower than American cars in cities of equal size, and this difference is not chargeable to fare collection but to the lower motoring of British cars. The average American car has four 50-hp. or two 75-hp. motors, whereas many British single-truck, double-deck cars have only two 35-hp. motors. Most British cars are double-decked. Opinion concerning their desirability is divided. Some British managers contend that they are absolutely necessary for their heavy traffic while others wish for the single-deck car. Within the past decade, the tendency has been to inclose the upper deck except on lines where pleasure traffic is a factor. The seating usually is longitudinal on the lower deck and transverse on the upper. The seating capacity is high, ranging from fifty-four to seventy-eight. The Glasgow car seats sixty-two passengers. Standing in pre-war times was permitted only to a very small extent. The

<sup>2</sup>ELECTRIC RAILWAY JOURNAL, May 10, 1919, page 909, and May 24, 1919, page 1005.



managements realize that the short rider must get comfort or he will walk.

A great variety of signs are used to indicate stop and fare points. Inside the car is a poster showing the rates of fare between different points on the route. The regular rider, of course, simply asks for a penny or 2-penny ticket, etc., but the poster is helpful to the stranger. No automatic devices for showing the number of the stage reached by the car are in use. Stopping periods are short, owing to the prevalence of open platforms, the absence of prepayment and the presence of loading inspectors at busy points. The number of stops per car mile is not greater than in the United States, despite the greater number of passengers per car mile. Compulsory stops are few in number, the fire-hose type of America being unknown. One factor, which tends to keep down the number of boarding stops, is the tendency of people to walk to a fare stage boundary.

#### EFFECT OF INCREASED FARES ON TRAFFIC

British roads are now getting higher fares, but under the zone system adjustments in fares are much easier. It is not necessary to change the coins; it is enough to give smaller packages of transportation at the old prices. The most striking feature is that, despite the greater proportionate increase, 50 to 100 per cent, there are no such decreases in riding as followed a mere 20 per cent increase in the United States. Also, the greatest increase in cost has to be borne by the short rider whose fare rose from  $\frac{1}{2}$  penny to 1 penny. Riding is holding up very well since the armistice, although many managers had feared a drop after the war fever. The reasons for the good post-war riding are various, including the eight-hour day, which gives the workman more leisure.

The Dublin United Tramways may be regarded as a good example of the effect of increased fares; first, because it is a private undertaking; second, because it serves a non-industrial community; third, because the fare in the older part of the city was fixed at 1 penny by local statute. Despite two fare increases, an enforced cut in service due to fuel shortage and the influenza epidemic, there has been a gain in traffic. The report period, covering eleven months of 1918, is divided as follows: Jan. 1 to March 20, full service at ordinary fares; March 21 to April 26, reduced service but no increase in fares; April 27 to Nov. 13, first fare increase; Nov. 4 to Nov. 30, second fare increase. The total number for the 11 months was 64,996,883 passengers, an increase of 4,356,447.<sup>3</sup> It is only fair to state that British tramways have had no competitors except buses—and the latter are a factor chiefly in metropolitan London. Even in the case of Leeds, one of the few cities showing a drop, the loss in traffic for the fiscal year ended March, 1919, was only 3 per cent as compared with an enforced cut of 4 per cent in mileage, due to fuel shortage. Probably some increase might have followed if the mileage had been maintained.

During the war almost every able-bodied man went into some kind of war service. As a result of the war hundreds of thousands of women went into industry and a good deal of the increased riding came from them. They rode more than men do. The workers, generally, have become better riders because of higher pay. Men in working clothes get on a bus or car to ride for only

one or two traffic stops. They can not refrain from riding apparently because of the frequency of service and the short-ride fare rate.

#### BRITISH ZONE FARE COLLECTION METHODS ARE UNIFORM

In Great Britain the system of fare collection current involves the issuance of a receipt showing the amount of fare paid and some other details. Prepayment is used to some extent for upper-deck passengers on some properties and for all passengers only at Gateshead and on one or two other small properties. Among the reasons why the prepayment idea has not been popular in Great Britain are the following: Occupancy of rear platform by the stairway to upper deck; length of time necessary to handle a variety of fares; smaller losses than in America from stealing by conductor or passenger due to the fare receipt system; absence of enclosed front and rear platforms; low standing load, which prevents conductor's presence within the car from becoming obnoxious.

Three well-known kinds of fare receipts are: The Belfast type, which shows only the number of stages or

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### Encourage the Short-Haul Traffic

If a street railway is operated on the assumption that the short rider is wanted, a certain number of invitations must be extended to a person before he has walked a mile or less. If he has already walked half of the way before a car comes along he is not likely to be interested. A car every two or three minutes is irresistible.

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zones to which the passenger is entitled to ride; the London type, which shows both the number and the name of each stage; the Glasgow type, which shows only the names of the stages. With any kind of a ticket, the conductor must as a precaution against fraud cancel each receipt in a counting-type bell punch. At the end of the day the total increase over the starting number shown by the bell punch must equal the total number of receipts issued, whether cash or non-revenue exchange for tokens or workmen's "returns."

The use of differential fares on the British pay-while-you-ride system necessitates the use of ticket inspectors. These men board the cars at irregular intervals to check the passengers' receipts against the route and serial numbers shown on the conductor's way-bill or trip-sheet. The use of defunct tickets is rare, the chief loss being due to over-riding the zone to which fare has been paid. On detecting over-riding, the conductor issues a new ticket for the additional amount exactly as for a second passenger. On lines of moderate traffic, that is to say ten to twelve passengers per car-mile (British standards) missed fares and over-riding are declared to be negligible. It is amazing that the British conductor can collect so much money for the treasury as he does in view of the fact that he has to handle differential fares on double-deck cars seating from fifty-four to seventy-eight passengers. Unlike the American conductor, the British conductor has no time-limit transfer to worry about, however. In general, the zone

<sup>3</sup>ELECTRIC RAILWAY JOURNAL, May 31, 1919, page 1038, and June 7, 1919, page 1087.



fares in Glasgow where there are about twenty passengers per car-mile are collected with less difficulty than is the unit fare plus the time limit transfer in America. On the Alexandria Park crosstown line in Glasgow it has been found possible to make twenty-three fare collections per car-mile.

#### THE ZONE SYSTEM IN AUSTRALIA

Statistics on zone fare practice in Australia show that short riding is as popular there is in Great Britain, although the conditions in Australia, such as widespread cities, liberal amount of trackage, high wages, etc., are much closer to American conditions than to British. Australian practice appears to be a blend of British and American. Much of the Australian equipment is of American origin.

Sydney, New South Wales, with a population of from 750,000 to 800,000 people, has 225½ miles of single track in its "city and suburban lines." During the fiscal year ended June 30, 1918, the fare was 3 cents for any initial section varying in length from 1 to 2 miles plus 2 cents for each additional 1 to 2-mile section.

AUSTRALIAN ZONE FARE DATA

City	Population	Length Zone Miles	Fare for First Zone Cents	Fare for Other Zones Cents	Earnings per Car-Mile Cents
Sydney	750,000	1 to 2	3	2	44.7
Melbourne	708,000	1 to 2	3	2	34.0
Brisbane	170,000	1	2	2	45 to 50
Adelaide	145,000	0.94 to 1.9	2	2	

Certain concessions were made to teachers and school children. The number of passengers carried was 212,372,470. The average revenue per car mile was 44.70 cents, the operating expense 35.1 cents, and the corresponding operating ratio was 78.5 per cent. The percentage of profit on the capital invested was 5.51 per cent.

Melbourne, the second city of Australia, with 708,000 people, for the fiscal year ended June 30, 1918, showed traffic receipts of £901,474; passengers carried, 113,034,157; average fare per passenger, 1.914 pence, or nearly 4 cents; revenue per train mile (cable grip and trailer) 16.859 pence, or nearly 34 cents. A remarkable feature in the Melbourne report is that fares actually have been reduced. The reason for this is that in 1916 the cash fare on the suburban sections was reduced from 3 pence to 2 pence, bringing the average to 1.95 pence; and in the following year a further reduction lowered the average to 1.91 pence, or 3.8 cents. These reductions proved justified by the increase in traffic, for in 1916 the receipts were £805,778; in 1917 they were £841,784, and in 1918 they were £901,474. During these years the revenue per train mile also increased, being 16.217 pence in 1916, 16.261 pence in 1917 and 16.859 pence in 1918. The length of the penny stages varied from 1 to 2 miles.

One peculiarity of Australian systems is that they sell a weekly 12-ride ticket in addition to the season tickets. About one-third of the Melbourne riders used such weekly tickets, although they were no longer obtainable at reduced prices. The single-trip fares in Melbourne were 1½, 2 and 3 pence, or 3 to 6 cents, with an average ride of 1.628 miles per penny. The number of passengers per train mile was 8.8. The total revenue for the fiscal year ended June 30, 1918, exceeded that of the preceding year by £59,690. Most of this excess had been absorbed in the increased costs of fuel and

stores and wages. The operating ratio of 56.6 per cent was, of course, lower than that for electric railways.

The Brisbane Tramways serve a population of 170,000. At Brisbane the zones or sections average about 1 mile in length, variations being made to take in traffic concentration points wherever practicable. As at Sydney, the suburban sections are rather longer than those near the center of the city. Furthermore, the maximum fare for a ride taken from the business and retail shopping district does not exceed the cost of three sections or 3 pence (6 cents) even if the ride covers four or five sections. Frequent stopping places attract the short rider and 60 per cent of the fares are from penny (2-cent) passengers. The earnings per car mile are between 45 and 50 cents.

Data covering the operations of the Adelaide Tramways Trust for the year ended July 31, 1914, are of interest. For this year Australian conditions closely paralleled those in America for cities of populations comparable to Adelaide which then had 145,000 people. The beginning wage was a shilling (24 cents) an hour and the maximum 32 cents, with time and one-quarter for each hour in excess of nine hours a day. Actually, eight hours' work corresponded to seven hours' platform time. The men received six days' vacation a year plus three days more for good behavior. Uniforms, overcoats, punch and miscellaneous supplies were furnished free.

#### AUSTRALIAN ZONES FAVOR SUBURBANITE

While the 1914 figures on Adelaide are probably obsolete now as regards rates of fare, the ratios of different classes of passengers are instructive. In the fiscal year ended July 31, 1914, 41.91 per cent of the passengers paid the base fare of 2 cents, 43.42 per cent paid 4 cents, 8.69 per cent paid 6 cents, 1.49 per cent paid 8 cents and 1.41 per cent paid 10 cents. The length of the sections varied from 0.94 to 1.9 miles, indicating the usual zone fare plan of giving an extra bit to the suburban rider. A report dealing with the Adelaide tramways makes the statement that "the extension of the electric railway system has been in a large measure responsible for the rapid growth and extension of the suburban districts." This is good evidence that the right kind of zone system does not hamper suburban growth. Adelaide suburbanites could buy commutation (concession) tickets at 16½ to 18½ per cent discount if they rode three, four or five sections. There were also concession tickets for school children.

A report of the Auckland, New Zealand, property of the British Electric Traction Company shows for the period Sept. 23, 1916, to Sept. 28, 1917, 27.13 miles of route, a schedule speed of 9.31 m.p.h. and the high car use of 63,705 miles per car per annum. The passengers per route mile were 860,158; the passengers per car mile, 12.35, and the earnings per car mile were 19.95 pence, or nearly 40 cents, based on an average fare of 1.6 pence or 3.2 pence per passenger.

Although the inability of Australia to ship its surplus food and wool abroad probably prevented the need for wage increases as high as in the United States, the Australian tramways have nevertheless been obliged to make certain increases as well as to carry the war allowances to enlisted employees and the increase in the prices for fuel and materials.

The Australian practice of favoring the suburbanite is in accord with British and Continental zone practice.



Zone fare operators see no sense in reducing rates on saturated sections but are willing to do so at the outer ends where there is a possibility of filling up the cars. In short, their theory is to get the largest number of passengers that will bring the maximum revenue.

#### OBJECTIONS TO ZONE FARES CONSIDERED

As to the relation between zone fares and congestion, Glasgow, the lowest zone fare city in the world, and New York, the lowest flat fare city in the world, are alike in the prevalence of tenements. The rapid transit lines of New York have not taken people out into the country as expected. What they have done is to take the New York (Manhattan) tenement houses to Brooklyn and the Bronx. People who moved out of Manhattan did not want a cottage but a still-easier house-keeping apartment than they had had before. Local habits, as well as topography, have much to do with the character of dwellings. The people of Glasgow and Edinburgh are like New Yorkers in their preference for the multi-family house. In an English city, on the other hand, the average house is a one-family structure.\* No doubt, America's adjustment from the flat to the distance fare will be fraught with real estate adjustments too, but this can not be avoided. The realty business has been a parasite long enough. That the zone fare does keep the price of land within reason is also illustrated by the case of the distance-fare suburban railroad of the United States. People would not travel 25 miles or more on a distance-fare road if there was no set-off in lower rents.

American electric railways, in changing to zone fares, are faced by a hard task. Such readjustment is always harder than direct evolution. People demand all sorts of things such as: "Why not give us another block?" etc. If the zone fare is to be a success, discrimination—the giving of different distances for the same rate—is unavoidable, but is not the American unit fare discrimination against the short rider? Human nature is not substantially different in Britain, Australia and America. What has proved good abroad in the way of selling transportation would serve here, too.

City zone fares require a reasonable density of population. Many American cities have that density, but cities like San Diego and East St. Louis are rather too scattered for complete zone fare practice. Newark, Jersey City and Hoboken, all of which are served by the Public Service Railway, are well adapted to zoning. Railways ought to have every encouragement from regulatory bodies in working out a flexible system of zone fares. Otherwise both would be disregarding the vast body of experience on the subject.

While the personnel in field and office for a zone-fare system is greater than for the unit-fare system, the zone-fare operator has the advantage of securing an absolute audit of every fare transaction whereas it is practically impossible to do this with the time-limit transfer. If fare receipts are to be issued in America on a prepayment car, a machine would be more desirable than the British hand punch. However, the general tendency here is to operate the zone system on the pay-as-you-leave scheme of fare collection.

The zone fare tends to make a better business man of the railway operator because of the short riders. A manager who knows that the bulk of his traffic can leave

him over night necessarily grows into a different point of view than a manager who feels that the bulk of the traffic must stay with him.

British systems that begin with a penny go in the ratio of 1, 2, 3, 4, etc., or 1, 1½, 2, 2½, and the same rule applies on the Continent. In other words, the second fare is either double or one and one-half times the initial fare. It is clear that in fixing these rates, the desire is to establish the lowest feasible minimum that will attract the short rider. If it be assumed that a corresponding condition exists in the United States, a series like 2, 4, 6, 8, 10 cents, etc., or 3, 5, 7, 9, 11 cents, etc., would result. In any event zone fare systems in which the base or initial fare is three, four or five times the following increment fares, are not known abroad. If foreign zone-fare practice for long rides were applied to the Public Service Railway, the charges might run: An initial charge of 3 or 3½ cents; 2 cents more for the second mile; then 1½ miles for the next 2 cents; 1½ miles for the next 2 cents; 1½ miles for the next 2 cents, and so on, thus reducing the rate for the suburban rider. Whatever method is pursued, the extra revenue has to come in some way, but foreign specific graduated fare systems do not attempt to assess a standby charge against the short rider.

#### ADJUSTMENT OF CHARGES

The fact that 52.2 per cent of the workers in factories of 250 employees or more live within 2 miles of their work creates an ideal situation for the development of short-ride traffic on the Public Service Railway. With the traffic density on this system it appears hardly necessary to adhere strictly to the mile divisions. There might well be a greater tolerance than the 500 ft. plus or minus to the mile. If a zone fare is tied up to a rigid mileage system it is, in some respects, just as bad as a flat system. It would lack the element of flexibility and of adjustment to increased or decreased costs.

The zone system means more work for everybody. Nevertheless it is necessary to look at this problem as a merchant does. If he could sell everything at one price regardless of quality his bookkeeping would be immensely easier—but it would not be good business. The public is thoroughly used to the fact that he sells the same articles at one price on bargain mornings and at another price on other mornings. It has not acquired that conception about street railways possibly because the latter has been a monopoly. A street railway ought not to be held down to giving exactly the same amount of transportation at the same price under a great diversity of conditions; the manager of a street railway ought to be in the position of saying: "How can I get the greatest possible number of customers and the greatest possible revenue from these customers, regardless of what I do 10 miles from here?" The merchant is not questioned on this discrimination because the customer has freedom of choice. Under the old-time transportation conditions the customer had no choice except to walk. Today he has the choice of some other vehicle. Therefore, the railway operator ought also to be free to meet competition.

A number of foreign zone systems earn more in cents per car mile than the Public Service Railway expects with either a 7-cent flat fare or its 5-cent first-mile plan. It is not uncommon to find car mile earnings 40 cents or more where the base fare is only 2 or 3 cents.

\*See also ELECTRIC RAILWAY JOURNAL, May 24, 1919, page 1017; Aug. 9, page 276.



# Pittsburgh Valuation Reviewed

**Cost of Financing, Working Capital and Other Important Valuation Problems Are Discussed—Zone Fares Are Recommended by City Expert**

AS WAS NOTED in the news columns of the ELECTRIC RAILWAY JOURNAL for last week the report of the Engineers Valuation Board, Pittsburgh, Pa., was filed before the Public Service Commission of the Commonwealth of Pennsylvania on August 20. The report will be considered at a meeting of the commission now scheduled for Sept. 24. This board was formed early in 1918 for the purpose of assisting the commission in connection with a determination of the rate-making value of the property of the Pittsburgh Railways Company, and of a reasonable return thereon. The report, which is an eighty-eight-page volume, contains the letter of transmittal to the commission which includes a general summary of the report, a general description of the property, a summary of the historic cost of the property, the estimated cost of reproduction on several different bases, the estimated cost of operation, maintenance and renewals, organization charts, maps of the component parts of the property, and separate statements filed by members of the board. The report was signed by Robert M. Feustel and George W. Fuller, representing the City of Pittsburgh and the neighboring boroughs respectively, J. A. Emery and Morris Knowles, representing the Pittsburgh Railways Company, and by F. Herbert Snow, chief engineer of the commission and chairman of the valuation board.

## DETAILS OF THE REPORT

Statements of original and historical costs were prepared by the railway companies under the direction of Ford, Bacon & Davis, consulting engineers, New York City. This work was done under general instructions laid down by the valuation board, and was checked while in progress, and after completion by the city's representatives on the board. The several bases upon which the cost of the physical property was determined, together with the corresponding costs were detailed in the news story of last week. Depending upon the basis used, the estimated cost of reproduction ranged from \$49,324,791 to \$102,842,274. The reproduction cost figures include: Real estate and right of way; organization and development cost prior to construction; engineering, legal and administrative expenses; interest and taxes during construction; cost of financing; materials and supplies and the working capital necessary for operation. The railway company purchases its power of the Duquesne Light Company, and has done so since Dec. 31, 1913. While the actual transfer of title to all of the power plants has not taken place, these plants were not considered part of the property as valued for rate-making purposes.

The board found superseded property costs as follows:

Horse car system.....	\$1,542,178
Cable system.....	3,778,639
Early electric equipment and construction.....	5,950,641

A large proportion of this property was superseded while still in good operating condition, some of the cable

systems having been in operation for only seven years. Corresponding to the several bases upon which the physical cost was determined, the accrued depreciation was estimated in amounts ranging from \$12,039,600 to \$23,775,500.

While able to agree on a physical value of the property the board was unable to come to an agreement relative to the value to be used for rate-making purposes. Development value, going concern value and other elements of value proved to be stumbling blocks. In the valuation work no allowances were made for franchise values in excess of cost, the special charter of the Pittsburgh Railways Company, earning capacity, terminal rights or facilities and bridge rights in excess of cost.

According to the report the Pittsburgh Railways Company system embraces 600.2 miles of single track, of which 441.9 is paved. The rolling stock consists of 1861 cars, of which 1630 are passenger cars. The company owns 167 bridges, and has borne a portion of the cost of 32 others. One tunnel, the Mount Washington, 3500 ft. long, is owned by the company. During the year 1918 the company operated 33,573,578 car-miles and 4,209,989 car-hours, carried 264,232,927 passengers, and purchased 173,500,078 kw.-hr. of energy from the power company. The present system is made up of properties, rights and franchises originally acquired by some 200 separate companies. Upwards of 70 municipalities in two counties of Pennsylvania are involved. The report summarizes the history of the property both from a structural and an investment standpoint.

In making the appraisal due recognition was given to probable omissions from inventory, to unavoidable construction wastages, and losses and contingencies as actual experience shows them to be encountered under the customary methods of construction followed by capable engineers. The allowances made for these items range from nothing at all for special work, trolley wire supports, poles and fixtures, etc. to 15 per cent for fences and signs. The percentages were added to costs and not to quantities.

In recognizing the construction expenditure items of engineering and superintendence, legal services, administrative and miscellaneous general expenses, interest during construction, taxes during construction, and financing, the report states that while it has been common practice to estimate these overhead expenses by taking either a percentage of the total property expenditure or a lump sum intended to cover such item, the limitation of such a procedure was considered. Accordingly the probable expenditures for each of the several services named were considered separately, due account being taken of all the available evidence on the conditions and cost of reproducing the property in question.

In estimating these overhead costs it was considered that the property was reproduced at the rate of 150 miles of track per year, that is a four year reproduction period was used. While 5 per cent is ordinarily used



to cover engineering, 4 per cent was used in this case because of the absence of power plants. Administrative, legal and miscellaneous general expenses were estimated at  $3\frac{1}{2}$  per cent.

#### COST OF FINANCING DISCUSSED

The discussion of the cost of financing is of particular interest. Quoting from the report: "In this case, taking into account the magnitude of the property and the amount of securities necessary to be issued to reproduce it, the board is unanimously of the opinion that there is an additional element of cost, separate and distinct from bond discount, which may be properly considered as the cost for services that should be included, like engineering and legal expenses, in the cost of property.

"We submit that a distinct factor in the cost of reproducing this large property, not present perhaps in a smaller one, is the expense involved in assembling the necessary capital. This expense is commonly met by money retained from the sale of securities, so that the utility company receives less than the sale price. Moreover, the sale of the securities to the ultimate holder is frequently at less than par, so that the sum actually realized to be devoted to construction purposes is still further reduced below the face value of the securities.

"There are two elements of expense which make up the difference between actual sale price to the investor, and what the company realizes, and the significance of each element is recognized by this board in arriving at a fair estimate of allowances for cost of financing. The first element represents only the reasonable compensation for bankers services in marketing the securities, and forwarding the funds yielded. It covers personal and corporate service and the expenses of examination, negotiation and advertising and selling, through all of the various stages, until a sale to the final investor is effected. Such expenses would be incurred even if the utility company dispensed with bankers and marketed its securities through its own salesmen and agents. In fact, this latter method undoubtedly would require more time and cost more than if recourse were had to an existing banking house with established reputation and clientele.

#### WORKING CAPITAL IS DEFINED

"The second element of cost in financing is experienced in the case of an issue of securities running into many millions of dollars like those of the property in question. This is the underwriting of a large firm or a syndicate to guarantee that the entire issue will be promptly marketed without even a temporary lack of funds to embarrass the company or halt construction."

In the opinion of the board these two elements of expense constitute a part of the cost of reproduction. The report goes on to say that these costs frequently are merged with an additional definitely recognized element which reduces the sale price of securities below par value. The element referred to is that of the bond discount which is necessary to attract the investor. For the cost of reproduction as of the actual date of construction the cost of financing is estimated at 3 per cent, while for the cost of reproduction as of the present date the cost of financing is estimated at 5 per cent.

Working capital is defined in the report as the total mobile capital required in addition to the fixed capital. This capital was separated into two elements, one re-

lating to general stores and supplies, the other to the funds necessary to meet minor irregular payments incident to the ordinary conduct of the business, and for the prompt payment of bills in order to secure trade discount, for prepayments found to be desirable and necessary, and for the purchase of materials at advantageous market prices. Several different methods of arriving at an estimate of the necessary amount of working capital are discussed in the report. In summing up this discussion the report states: "This board finds, after giving due consideration to the fact that the street railway business is a cash one, revenues being collected almost entirely in advance of ordinary disbursements, that \$1,075,000 should be allowed for cash working capital, and that \$1,134,000 should be allowed for stores and supplies, making the sum total \$2,209,000 for working capital.

#### SERVICE-AT-COST CONTRACT RECOMMENDED

In arriving at the figures for accrued depreciation mentioned above, consideration was given only to the condition of the inventoried property at the time of the inspection as affecting the ability of the item to give service. Except where the particular part in question could not be satisfactorily inspected, obsolescence was not given consideration; in such cases recourse was had to life tables where obsolescence is automatically reflected. Wherever the part being depreciated had a scrap or salvage value, its value was given recognition. The Mount Washington tunnel was depreciated on the basis of a 100-year life.

Relative to contractual relations, the report expresses the opinion that all expenditures for street improvements, bridge tolls, etc., add nothing to the facilities for the convenience of passengers on street cars. On the other hand these things use up money which would otherwise be available for better cars and improved service generally. It is suggested that there be a readjustment of the contractual relations between the public and the company managements, and that this readjustment should result in a material modification of the terms of the public's consent to the company's operation, and should make possible an agreement in partnership in the construction, maintenance and operation of the railway system. Regarding this point the report says further: "It is beyond the experimental stage in at least two American cities where an effort is seen to give service at cost, to fix a definite return on definite value, to afford public participation in the management of the transportation system, to remove inequitable tax burdens from the rider, to adjust easily and smoothly the fare to the needed revenue and generally to reward good management."

#### BOARD MEMBERS FILE SEPARATE STATEMENTS

While agreeing on certain figures representing historic cost and cost of reproduction new, the members of the board were not able to agree as to what weight should be attached to each of these factors in arriving at a rate base. Separate statements representing the several opinions of the members of the board were included in the report. In his statement, Robert M. Feustel reviewed the various bases of costs used in making the valuation. He stated it to be his belief that the average prices for the period 1906-1915 were fair prices upon which to base the physical value of this property. He expressed the opinion that going value, as it is commonly called, is not a value which inherently attaches to



all properties. In his opinion, this value exists primarily where the business is showing favorable earning possibilities as a result of the efficient way in which the whole enterprise has been built up and operated. He did not believe that the past earnings of the Pittsburgh Railways Company, taken as a whole, warrant any conclusion that there is an additional value which should be added to this property. In his opinion, the proper rate base should not be greater than \$48,000,000 and a fair return was believed to be 7 per cent. Where the money is raised 60 per cent from bonds and 40 per cent from stock, this return corresponds to a 6 per cent return on the bonds and 8½ per cent on the stock. He recommended that earnest consideration should be given to a trial of zone fares.

In a concurring statement George W. Fuller agreed as to rate base and rate of return with Mr. Feustel, but held slightly different views relative to certain particulars. In his opinion appreciation of plant because of prevailing high prices should not appear in the rate base. His concluding remarks were, to quote the report: "The first requisite of this proposition is to provide good service, and the cooperative efforts of all concerned should be directed expeditiously to that end. Actual investments of the past should be respected and steps taken to safeguard the necessary return on the new money needed for imperative rehabilitations, extensions, and betterments."

In the statement signed by J. A. Emery and Morris Knowles, the opinion is expressed that neither the present company nor the preceding companies, considered as one system, could have charged off the superseded horse car, cable and early electric system, to say nothing of the accrued depreciation of parts of the present physical property, and at the same time have maintained their credit for the development which was required of them by paying a proper and reasonable rental for the capital required.

They stated it as their belief that the records are clear that at least \$6,000,000 cash was put into the property for consolidation purposes. Regarding appreciation they expressed the opinion that the company is justly entitled to enjoy fully the appreciation in value represented by present prices, especially since prices are not expected to revert to their former low levels. As fair average prices they advocated those based on the averages for the period 1914-1918 inclusive. The inclusion of such development cost, together with their estimates of going value, consolidation value and other elements of value represented by actual expenditures, brings their estimate of the rate base to at least \$65,000,000. They also expressed the opinion that the rate of return upon new capital should be at the rate of 8 per cent. In their estimate of annual return an item of \$4,900,000 covering contingent expense, tax reserve, functional depreciation and amortization of abnormal replacements was included.

### Changes in the Cost of Living July, 1914—July, 1919

THE cost of living for American wage-earners was 71 per cent higher in July, 1919, than at the outbreak of the World War in August, 1914, according to a preliminary statement just issued by the National Industrial Conference Board based on a careful survey of conditions the country over. This represents

an advance of 6 per cent since March, 1919, and of 12 per cent since June, 1918. The increase of 71 per cent to July, 1919, makes the highest point yet reached and compares with an increase of 61.3 per cent to March, 1919; of 65.9 per cent to November, 1918, and of 52.3 per cent to June, 1918.

The total increase for the five-year period since the beginning of the war in the average cost of each of the principal items entering into the family budget is shown below:

Budget Items	Relative Importance in Family Budget, Per Cent	Increase in Cost Between July, 1914, and July, 1919, Per Cent	Increase as Related to Total Budget, Per Cent
All items.....	100.0	..	70.8
Food.....	43.1	85	36.6
Shelter.....	17.7	28	5.0
Clothing.....	13.2	100	13.2
Fuel, heat, and light.....	5.6	57	3.2
Sundries.....	20.4	63	12.8

### More Statistics Added to Washington Testimony

#### Data on Distribution of Capital Stock, Comparison of Operating Revenue, Expenses and Wages, etc., Presented

TO SUPPLY supporting data for statements which had been made during the hearings for the railway side before the Federal Electric Railways Commission and to answer questions which had been raised by the commissioners, the American Electric Railway Association, through its counselor, Bentley W. Warren, presented several statistical reports at the close of the recent hearings for the public side. Among these reports was one covering the distribution of the securities of electric railways which showed, in summary, that of 27 companies reporting, 4,665,462 shares of stock outstanding are held by 30,492 individuals, or an average of 153 shares to each holder. Of 98 companies reporting, \$440,867,735 worth of stock (par value) outstanding is held by 32,788 individuals, or an average of \$13,446 worth to each holder. Of 49 companies reporting, \$240,347,825 worth of bonds outstanding is held by 448,475 individuals, or an average of \$536 to each holder.

The distribution of the capital stock of 11 electric railways among men, women, and fiduciary institutions showed the following totals:

		Per Cent of Total
Number of men stockholders.....	11,324	47.28
Number of shares held (men).....	667,750	52.42
Number of women stockholders.....	10,941	45.68
Number of shares held (women).....	290,556	22.81
Number of fiduciary institution stockholders.....	1,686	7.04
Number of shares held (fiduciary institutions).....	315,564	24.77
Total number of stockholders.....	23,952	100.00
Total number of shares held.....	1,273,870	100.00

A comparison of the valuation and capitalization of twenty-six companies showed in summary, a valuation of \$107,985 per mile of single track and a capitalization of \$119,663. The ratio of capitalization to valuation is 110.8 per cent, or in other words, the capitalization includes 10.8 per cent of water.

Other data which were furnished the commission included a report covering the wages of trainmen, one on one-man car operation, one showing the effect of increased rates of fare on passenger revenues as shown by the results of 125 companies and a summary of the cities in which fares have been increased and the character of the change.



# Some Light on British Tramway Conditions\*

Companies, Municipal and Private, Are Not Prosperous—A Rational System of Zone Fares Is Outlined—The Effect of Present and Proposed Fares on Congestion

BY WILLIAM L. MADGEN, M.I.E.E.

Director British Electric Traction Company, Ltd.

THERE are two criticisms which apply generally to tramways in the United Kingdom. The first is that they fail to produce an adequate financial return to their proprietors; the second is, that in many respects they fail to give the community all the benefits of which they are capable. As a matter of plain fact, we have here a simple example of cause and effect—of what happens when a community is working a stranglehold on an industry.

Both these criticisms apply in greater or less measure alike to the tramways owned by municipalities and to those owned by companies, and to a large extent these failures are the result of faulty legislation. This legislative handicap weighs with different force upon company and municipal tramways, but both are affected, and the remedies have not so far been within the power of any body but Parliament itself. The immediate object of this paper is to point out some ways in which it appears to the writer that the controlling bodies have a considerable responsibility for the failures mentioned, and have it within their power to bring about better results.

The first point is that tramways do not produce an adequate financial returns to their owners. It is taken first for the reason that an insufficiently remunerated industry cannot provide the community with the full service of which it is capable under more encouraging conditions.

A prosperous industry can accumulate funds available for the improvement and extension of its activities or can attract the necessary capital for such purposes. A starved industry cannot do this. Municipal corporations can no doubt obtain loans upon favorable terms because they offer to investors the security of the rates, but they are naturally loth to increase municipal indebtedness for the extension of services which are not likely to be remunerative unless such services are obligatory. Tramway companies cannot obtain capital for extensions unless they can show that their existing enterprise is giving a reasonable return.

It has to be noted that while a number of the municipal tramway systems show good financial returns they are none the less starved because the bulk of their net receipts are ruthlessly appropriated in aid of the rates, instead of being utilized in the improvement of the service. This point was well taken by Mr. McElroy in his report on the Manchester Tramways, wherein he showed that the whole of the extensive improvements recommended could be financed from the tramway net receipts if the City Council would refrain from appropriating £100,000 per annum for the benefit of the borough fund.

Apart from this unjustifiable diversion of tramway profits where they exist, which is not under the direct

control of the managing bodies, it remains to inquire why tramways are not more prosperous and therefore more useful to the communities which they serve.

It is clear that for a service to be remunerative the sums charged for it must cover the whole of the costs, including capital charges, and provide a reasonable margin. It is also clear that the charges made for the service ought to be equitable, *i.e.*, every passenger should pay his fair share of each of the items of cost involved in carrying him. In transport undertakings some of these items of the cost of service are proportional to the distance a passenger is carried. Some of them are more nearly represented by a fixed amount per passenger.

If, therefore, we can ascertain what these costs amount to *per passenger* in any given case, the result gives a sum which must be exceeded by the fares charged for the shortest journey. The fares for longer journeys should be increased over this minimum in proportion to the distances.

The results of such a scheme of fares are—first, that every passenger pays his fair share; secondly, that the longer journeys are relatively cheaper than the shorter ones; and, thirdly, that the cost of living consequent upon residing at a greater distance from the place of employment is less than the increased cost of traveling greater distance. The last-named effect would be of immense importance in making tramways of greater service to the community.

Taking "standing charges" to include all the costs of having the system equipped and ready to meet the traffic, and the "running costs" as those proportional to the passenger miles, we distinguish a figure for standing charges which can, with entire fairness, be spread equally over the whole number of passengers. The equity of this as regards passengers at the minimum fares is made more apparent by the fact that, taking all the tramway systems collectively, a far larger number of passengers are carried at minimum fares than at any others. This is true for at least the majority of individual systems. For the tramways of the whole kingdom the Board of Trade's return for the year 1913-1914 show that the average receipts per passenger were 1.105d., proving that the number of passengers at one penny (the minimum fare on the majority of systems) is far in excess of those at higher fares.

As an example of a particular system, Glasgow may be cited where the minimum fare of one halfpenny was paid in the year 1918-1919 by 63 per cent. of the total number of passengers.

The following figures represent a reasonable division of tramways costs into a fixed charge per passenger and charges proportional to the length of journey. They are extracted from the last published Board of Trade returns, *viz.*, for the year 1913-1914. They represent pre-war costs, and require considerable modification to

\*Abstract of paper read at a convention of the British Tramways & Light Railways Association, July 25, 1919.



make them fit present conditions. There is not sufficient data available for a safe estimate covering stable post-war costs of labor and material, but this does not affect the principle, and it is better to use figures representing facts under known conditions than to make alterations dependent upon guess work.

ANALYSIS OF TRAMWAY EXPENSES EXTRACTED FROM THE BOARD OF TRADE RETURNS FOR THE YEAR 1913-1914

	Total		Standing Charges		Running Costs	
	£	%	£	%	£	%
Depreciation, say 4% of capital	3,239,113	100	3,239,113	nil	.....	.....
Expenditure interest at 3.03%	2,389,208	100	2,389,208	nil	.....	.....
Permanent way	815,561	50	407,781	50	407,780	.....
Electrical equipment	171,114	80	136,891	20	34,223	.....
Engines, etc.	20,628	nil	.....	100	20,628	.....
Rolling stock	1,177,431	nil	.....	100	1,177,431	.....
Building tools, etc.	125,769	80	100,615	20	25,154	.....
Traction power	2,137,361	nil	.....	100	2,137,361	.....
Traffic expenses	4,236,026	5	211,801	95	4,024,225	.....
Rent of offices, etc.	50,064	100	50,064	nil	.....	.....
Rates and taxes	638,537	100	638,537	nil	.....	.....
Compensation and insurance	235,971	20	47,194	80	188,777	.....
Other expenses	551,094	100	551,094	nil	.....	.....
	15,787,877		7,772,298		8,015,579	
Average per passenger	1.105d.		0.544d.		0.561d.	

It has to be observed that these figures are an allocation of the total receipts, the first two items, "depreciation" and "interest," being an allocation of the net receipts of £5,628,321 deduced from the returns.

The operating figures given in the return are as follows:

Passengers carried	3,426,473,192
Car miles	354,379,672
Gross receipts	£15,787,877
Working expenses	£10,159,556
Net receipts	£5,628,321
Capital expenditure	£80,977,838

The gross profits amount to 7.03 per cent of the capital expenditure. Allowing 4 per cent for depreciation, the average net yield on the capital invested was only 3.03 per cent.

This result proves that the tramway work in the United Kingdom is a starved industry, for a return of 3.03 per cent is not sufficient to attract capital or to justify its expenditure, nor does it provide a margin for enterprise in improvements and extensions.

The figures show that the average receipts per passenger were 1.105d., of which standing charges absorbed 0.544d. and the running costs 0.561d.

From this it follows that the basic or fixed charge per passenger to which running expenses proportional to the length of journey have to be added should exceed 0.544d. at pre-war rates, or, in other words, that in 1913-1914 every passenger carried should have paid 0.544d. plus an amount varied according to the distance traveled. This fare would, however, have provided a yield of only 3.03 per cent on the capital, which, of course, is quite insufficient.

A moderate yield is 6 per cent, amounting to 0.340d. per passenger. Taking the depreciation, etc., at 4 per cent, as before, gives 0.227d. per passenger; rent, rates, etc., as before, gives 0.090d. per passenger; and, taking 100 per cent increase over pre-war prices for the items mainly made up of labor and material belonging to this side of the account, gives 0.120d. per passenger, making a total of 0.777d. as the basic figure for standing charges, to which must be added in each case an amount per mile traveled to cover running costs.

In tabular form, standing charges modified from 1913-1914 Board of Trade returns to give a yield of 6 per cent on capital and 100 per cent increase on items effected by post-war prices follow:

	Total	Per Passenger
Depreciation, 4 per cent	£3,239,113	0.227d.
Interest, 6 per cent	4,858,640	0.340
Rent, rates, taxes, etc.	1,286,889	0.090
Material and labor items	1,714,176	0.120
	£11,098,818	0.777

It has to be observed that, taking the figures of depreciation and those for rents, rates, taxes, etc., from the 1913-1914 returns unaltered, is an assumption too favorable to the passenger. As depreciation has to provide for replacement of equipment, it will be increased by the rise which has taken place in labor and materials. Taxation is also unlikely to revert to pre-war levels in any near future, so that this basic figure of 0.777d. per passenger is rather on the low side, and leaves something to be made up by the passenger-mile charge for depreciation and return on capital, and meets the criticism that a portion of these charges is in fairness proportional to the use made of the system by each passenger.

There are no statistics in the Board of Trade returns or the accounts published by tramway undertakings of the passenger-miles, so that the running expenses per passenger-mile can only be estimated. A fair estimate of the average distance each passenger was carried in 1913-1914 for the average fare of 1.105d. is 2 miles, or a total of 6,853,000,000 passenger-miles for running costs of £8,015,579, or 0.281d. per passenger-mile. At post-war prices of labor and material, this cost will be doubled, but let us take it on the low side at 0.55d. per mile.

On the bases set out then a table of fares against distance would give the following figures:

	Standing Charges	Running Cost	Total	Rate per Mile
For 1 mile	0.77d.	0.55d.	1.32d.	1.32d.
For 2 miles	0.77d.	1.10d.	1.87d.	0.935d.
For 3 miles	0.77d.	1.65d.	2.42d.	0.806d.
For 4 miles	0.77d.	2.20d.	2.97d.	0.742d.
For 5 miles	0.77d.	2.75d.	3.52d.	0.704d.

This table is an illustration of the plan on which an equitable fare table can be made up. It is believed to give fair average figures for United Kingdom tramways under post-war conditions, but each undertaking can determine the two basic figures—standing charges and mileage rate—from an analysis of its own accounts. Greater London is, of course, a particular case in which special factors have to be considered.

It is submitted that this is a sound method of settling fares, and that it will tend to raise the tramway industry, legislation permitting, from the position of being starved to one in which it will be moderately prosperous, and therefore able to attract and to expend capital in improvements and extensions. Such a result will meet the first criticism mentioned at the beginning of this paper, viz., that tramways fail to produce an adequate financial return to their proprietors, and will enable them to meet the second criticism, viz., that in many respects they fail to give the community the benefits of which they are capable.

Of the failures to benefit the community as much as they should, by far the most important is that tramways have not brought about that spreading of the population of large and crowded industrial centers which they clearly can assist. It is admitted that they have done something in this way, but, on the other hand, it is believed that the practice of giving very low fares for short distances, which militates against reasonable financial returns, has another very serious effect, in that it encourages people to continue to live at distances from



their work within the radius of the minimum fares. The table of fares given above shows that on a sound basis the fare per mile would be lower for long distances than for short ones. That is, a man living two miles from his work would not pay twice as much in tramway fares as one living a mile away.

#### TRAMWAYS SHOULD AID IN DISTRIBUTING POPULATION

It is obvious that successive rings at distances of one mile, two miles, etc., from a given center have areas proportional to their distance. Taking the rings as a mile wide, that lying between 1 and 2 miles radial distance will have an area of nearly  $9\frac{1}{2}$  square miles, or 6030 acres; that between 2 and 3 miles an area of  $15\frac{3}{4}$  square miles nearly, or 10,050 acres; and that between 3 and 4 miles an area of nearly 22 square miles, or 14,070 acres; and that between 4 and 5 miles an area of  $28\frac{1}{4}$  square miles, or 18,090 acres. With these increases of living room it is at least probable that rents will decrease with increasing distance from the center more rapidly than the annual expenditure on fares increases. There will be more room to live, more garden and park space, more sunlight and fresher air.

The importance of providing the poorer classes with these improvements in their living conditions is so well understood that it is unnecessary to dwell on it, but it has not been sufficiently recognized that a rapid and economical means of traveling over the greater distances between house and work is essential to the purpose, and that it is best afforded by tramways up to at least 6 or 7 miles from the industrial centers.

The most serious social fault of the systems of very low fares for short distances is that they discourage families from moving outward.

It is at least partly due to this effect of low fares that the central districts of some of our large cities, such as Glasgow, have not been relieved of their overcrowded slums to anything like the extent which might have been expected from the operation of the very efficient tramways there. As above explained, this low-fare system charges the short-distance passenger less and the long-distance passenger more than his fair share of the standing charges, and is therefore a direct handicap upon the spreading of the overcrowded population. This is not because Glasgow has not made tramway extensions to long distances from the center. It has done so in a few directions, but only seven of these spurs go beyond three miles from the central districts. Similar conditions as to fares and extensions prevail around other crowded centers, and the only reasons for mentioning Glasgow are that the corporation has made a special feature of halfpenny fares, keeping them in operation throughout the war, and that 14 per cent of the population are reputed to live in one-roomed "houses." If the corporation had perceived the relation of tramway fares to overcrowding, there can be little doubt that it would have arranged them to encourage the spreading of the population rather than to discourage it.

Most of us are familiar with the consideration which I might mention here that the crowding of cars by minimum fare passengers has a tendency to drive away those wishing to travel longer distances and to encourage competitive services.

There are two obvious difficulties against setting up a rational fare system. The first is that tramway fares are generally limited to a maximum of one penny per

mile, and any sound system—at present costs—must charge more than a penny for the first mile.

Besides this general statutory obstacle, there are numerous provisions in special acts and orders, agreements between companies and local authorities, and the like, setting out scales of fares or maximum fares which cannot be reconciled with the principles laid down.

An entirely different set of circumstances has also had a serious influence upon the development of improved transport facilities by means of tramways and light railways. The ratable value of a town is in some degree a measure of the remuneration paid to some of its principal officials and of the personal prosperity of the trading classes, of which with a sprinkling of professional men the Council itself is largely composed.

Now we must not regard these gentlemen as municipal Pharaohs who consciously and intentionally "will not let the people go," nor can we believe that they impose bad fare systems upon the tramways in order to keep the population within range for business purposes or to promote congestion; but we may urge that the community should be no longer subject to the "ratable value" fetish which tends to provide particular attractions for the centers of population and an influence adverse to the provision of adequate housing arrangements in more healthy surroundings.

The working classes have been misled into the idea that the halfpenny tram fare is an advantage to them, but as a cold and cruel fact the conditions which it helps to foster are the very worst in all respects for themselves and their children.

There is very strong evidence that the contrast between the sheer discomfort of the crowded working class quarters and the comfortable homes of those who are able to live in decency and comfort—though they may derive their incomes from the same industries as the workmen—is a chronic and growing cause of the unfortunate spirit which manifests itself in labor unrest. Of the many manifestations of this spirit during the war, it was noticeable that the worst and most persistent cases occurred precisely in those districts where overcrowding is most prevalent.

What labor needs above all things is to improve its living conditions, and one of the most effective means to that end is to spread the houses outside the industrial areas in bright and pleasant surroundings, where the working man and his family can enjoy their allotments or other favored occupations of their increased daylight hours and leisure time. To make this possible the lowest possible fares for the longer distances, and ample transport facilities for those districts are essential. Both these conditions will be favored by abolishing non-paying short distance fares, graduating all fares in an equitable way, and making the tramways sufficiently remunerative to induce an enterprising spirit in the management.

It is obvious, therefore, that a campaign of education and propaganda among the authorities concerned in favor of sound fare tables and a more tolerant spirit is urgently necessary, and the tramway interests should take up this work with energy.

There is another difficulty about the application of rational ideas to tables of fares, viz., the coinage. Referring to the table of rational fares, it is seen that for the first 2 miles the nearest coins include farthings, and, even so the difference between the theoretical fare and the nearest coin is a somewhat large percentage

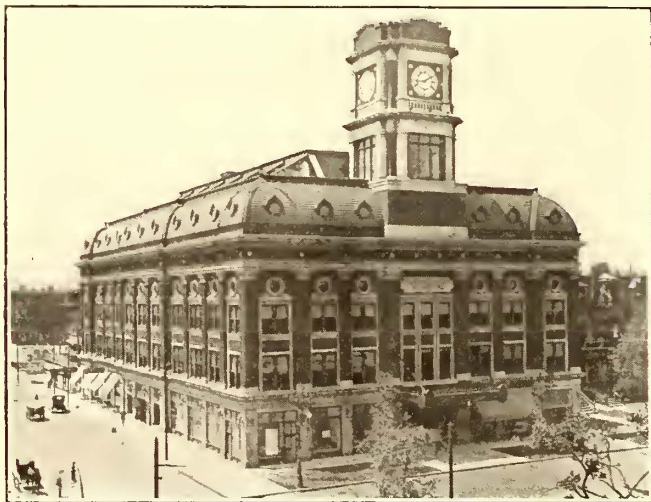


of the total. Farthings are not popular. The penny has too small a value for the minimum fare, because the standing charge item alone is nearly 8d., and the length of ride which could be given for the 2d. balance is too small for a stage.

The writer strongly advocates the adoption of the decimal system of coinage as approved by the Associated Chamber of Commerce, the Institute of Bankers, the Decimal Association and by numerous other bodies, including your Association. This system divides the £1 into 1,000 mils, and includes the provision of a 5 mil nickel coin of the value of ten to the shilling. This is equivalent to 1.2d., and would suit a rational system of fares very well. The value is a little lower for the mile distance as set out above, but that table is only an illustration based on collective figures. The actual length of the stages will in every case have to be adjusted to the circumstances and costs of the particular system. There is no need to keep to even miles in making this adjustment. As it is, the lengths of fare stages are rarely based on even miles. They vary on different routes on the same system as the stages are in practice defined by traffic points, junctions, etc. There is no more difficulty in fitting the stages to the coins of a decimal system than to the halfpennies and pennies now in use. Five mils is a better starting point than a penny or the near equivalent four mils, and there are very strong reasons in other directions for making the coin of the slightly higher value.

### Electric Railway Employees Own Half-Million Dollar Building in Chicago

THE accompanying illustration shows the carmen's building in Chicago owned by Local Division 241 of the Amalgamated Association of Street & Electric Railway Employees of America. This local comprises



HEADQUARTERS FOR TRACTION EMPLOYEES  
IN CHICAGO

the employees of the surface lines. The Elevated Railways' men, who have no financial interest in the building, have offices in it. The building is located on Ashland Boulevard and Van Buren Street, and is 100 ft. x 180 ft. in plan. It contains an auditorium with a seating capacity of 4000. The Union which owns the building comprises about 10,000 members, including carhouse workers (truckmen and cleaners), trainmen, switchmen, watchmen, etc.

## Some Observations on Signal Maintenance

The Author Urges the Necessity for a Signal-Maintenance Department on Any Property Where Automatic Signals Are Used

BY CARL P. NACHOD

President Nachod Signal Company, Inc., Louisville, Ky.

FROM a year's personal observation of the way in which automatic signals are maintained on electric railways I am convinced that the operating managers of many railways unwittingly hamper their service seriously, as well as injure the reputation of their signals, by not providing proper signal maintenance. In contrast, some few roads stand out as shining examples of good practice in this line and enjoy the excellent service that should be attained by all. It is false economy for electric railways to spend large sums for automatic signals and then to neglect to provide properly for their maintenance. It is to be hoped that eventually the signals on electric lines will receive maintenance care of the same standard as prevails on steam railroads, and this is a reasonable expectation because at one time the steam roads treated their automatic signals with indifference also.

Signals do not require an abnormal amount of attention, but they do need periodical inspection and prompt attention when out of order. A minor trouble, if neglected, will often produce severe damage to the signal because the latter is connected to the relatively high-voltage trolley system.

Too many railways are not getting good signal service and many are satisfied with indifferent results. Very often when the signals are in bad shape this condition is due to the passing of responsibility from one department to another. The creation of a signal department would concentrate this responsibility. Installation and maintenance of signals is usually allotted to the line department merely because the signals are connected to the overhead lines; but signal maintenance and repair require a skill in handling fine mechanism which the average lineman does not possess. The characteristics and training of the lineman are not such, in general, as to enable him to acquire this knowledge easily, and he cannot read blueprints or trace out the somewhat complicated signal circuits. Few linemen can make intelligent tests on signals to locate trouble, and in "hunting" trouble most of them expose the elements of the signals in succession or at random until some part shows by its appearance that it is damaged. This procedure is lengthy and uncertain, as many parts do not always show defects to the eye. In addition some part is liable to be put out of adjustment by unnecessary disturbance. With the signals cared for in the line department, and not understood properly, a lack of confidence will result. The line foreman is apt to blame the signals and not the workman, and will do nothing to remedy conditions.

At the head of the signal department there should be a man with a natural aptitude for this work, one who has been trained by working in the testing and assembling department of a signal-manufacturing company as an employee of the signal company, or one who has been sent to the factory by the railway company for instruction. This man should have a helper or understudy. Even a small railway has a man in the electrical



department or at work on telephone circuits who is "good timber" for signal work.

The signal department should be provided with a well-lighted work bench, with small tools and testing facilities. The last named should preferably include a miniature trolley or track plan already wired up, so that the signal leads can be connected directly to the terminals. Such an arrangement can be used not only to demonstrate the signals to others but as a basis for study. (See *ELECTRIC RAILWAY JOURNAL*, March 22, 1919, page 572.) A road having more than three or four blocks of signals should have at least one spare signal on hand, or preferably one block of two signals complete. Other parts should be kept in stock also, so that home-made parts will not have to be used.

In cases where electric railways have not considered it necessary to provide a signal-maintenance department, the manufacturers have endeavored to show them how to get the best results from their signals under existing conditions by furnishing a skilled service man for the purpose. Such a service man finds that the maintenance of signals is often regarded as a minor matter, and the manager is not familiar with the way in which the signals are operating. The superintendent of transportation is apt to say that the signals are not giving any trouble; in fact, this is the general reply. To this statement the service man replies: "Perhaps the signals are all right now, but since I have come all the way for the purpose, it would be to your interest to have me inspect them, note their condition and point out ways of preventing future trouble." On being told to do so, he may find that the signals have been allowed to fall into such condition that only with his help, together with the co-operation of the railway, can they be put back into shape again. Such co-operation is difficult to secure, and it must extend all the way from the manager down to the maintainer. An indifferent official can block the procedure. Sometimes such co-operation cannot be obtained, and service work stops where it began. Sometimes after an inspection a dozen reasons can be pointed out as to why the best results are not obtained, but these do not seem to awake interest in betterment. Obviously, the signal-maintenance work should come under the transportation department, as that department is most interested in signal operation.

The above facts are pointed out in the belief that a clear presentation of them to the progressive and intelligent railway official will be appreciated and will result in improvement in the desired line. It is proposed in a later article to tell how the signals on a certain road, having fallen into an evil estate, were put into another department by co-operation, and by means of hard work were raised to a high standard of operating condition.

### Revision of National Electrical Code

The chairman of the Electrical Committee of the National Fire Protection Association has announced the appointment of several committees to consider various questions in anticipation of the 1920 code. The standing committee on cars and railways consists of M. Schreiber, chairman; R. C. Bird and Ralph Sweetland. The American Electric Railway Engineering Association has appointed two committees to co-operate with this standing committee on the revision of rules on car-house wiring and car wiring for more than 600 volts.

## Letter to the Editors

### More About That Discouraged Railway Official

BROOKLYN, N. Y., Aug. 15, 1919.

TO THE EDITORS:

I have noted the editorial comment printed with my letter of July 29, in which you point out that the manager mentioned by me should have tried all possible expedients to overcome the obstacles to successful operation before giving up. I reported the interview with this manager rather fully because it brought to my mind a thought new to me, that is, the responsibility of the public, through the rate-making bodies, for the morale of the officers and employees of public utility companies.

It might be interesting to digress on the question of what those officers should do after they have used all means known to them to make both ends meet on the income account. Even then they should avoid discouragement as far as possible, but can they not be excused for accepting a call to service under more favorable circumstances, and so leaving open a position the difficulties of which could perhaps be better met by a new man?

The regular readers of the *ELECTRIC RAILWAY JOURNAL* are well informed as to the various expedients which have been devised to increase revenues and decrease operating expenses. The public is inclined to think that these expedients have no limit under any circumstances. There is urgent need of public education in the fundamentals of economies and finance, including the function of good credit. The old proverb, "The destruction of the poor is their poverty," seems to be particularly applicable to present-day public utility companies. If the unfortunate companies only had earnings enough to give them credit they might make capital expenditures which would result in new economies of operation.

GEORGE H. JOHNSON

### A New Development in Japanning

DR. W. P. DAVEY, of the General Electric research laboratory, describes in the current issue of the *General Electric Review* a new form of japan. It comprises a base, consisting, say, of an asphalt and an oil such as linseed, very finely subdivided and emulsified in water. The water japan was developed to eliminate fire and accident hazard, particularly, in "baking on" coatings of japan in which volatile and inflammable solvents are employed.

The new japan is less viscous than ordinary japan, so that it cannot be applied by dipping in the usual manner. However, special methods of dipping have been devised which accomplish the same purpose. These are termed the "electric dip" and the "hot dip."

The electric dip operates on the principle that electrically charged bodies are carried along by an electric current when in suspension in a liquid. The particles of the base (which are only 0.000010 in. in diameter) carry negative charges, hence when an object to be coated is attached to the positive terminal of a bath and



current is sent through it the particles are deposited on the object. As in a metal-plating bath the material tends to spread uniformly over the surface to be coated. The dipping requires about two and one-half seconds for a satisfactory coat and the current required is about 0.8 amp. per square inch. The coating is then baked in the usual manner. This process is adapted to small odd jobs of japanning rather than to quantity production.

The hot-dip process consists in heating the objects which are to be coated to about 500 deg. Fahr., cooling them 100 deg., and plunging them into cold water japan. Woven wire baskets are convenient for holding them for this purpose. After being kept for about ten seconds in the japan the objects are drained for thirty seconds and transferred to the baking oven. The preheating was originally adopted to remove the grease and oil from metal pieces, but experience showed that the plunging of the heated metal at a temperature from 250 to 400 deg. Fahr. produces an effect similar to that which is produced by electro-deposition in the electric-dip method.

## Association News

ATLANTIC CITY CONVENTION, OCT. 6 TO 10

### Standards Committee Plans Exhibit at Convention

A TWO-DAY meeting of the Engineering Association committee on standards was held at association headquarters on Aug. 25 and 26. Of the committee those in attendance were: H. H. Adams, Chicago, Ill., chairman; E. R. Hill, New York City; C. G. Keen, Philadelphia, Pa.; H. H. Norris, New York City; E. D. Priest, Schenectady, N. Y.; Martin Schreiber, Newark, N. J.; A. B. Stitzer, New York City; N. W. Storer, Pittsburgh, Pa.; N. B. Trist, Pittsburgh, Pa. Other interested members who were present for part of the meeting included E. B. Burritt, secretary of the association; C. L. Cadle and J. H. Libbey of the power distribution committee; Daniel Durie, of the equipment committee, and J. W. Welsh, special engineer.

In addition to consideration of the recommendations as to standards, recommended practices and miscellaneous practices contained in committee reports, the committee discussed ways and means for increasing the use of the standards. A decision was reached to endeavor to have at the Atlantic City convention a tangible exhibit of the results of the Engineering Association committees' work, and plans to this end were immediately formulated. At the convention every available means will be employed to impress upon the men in attendance the urgency of adopting association standards as a measure of economy in construction and maintenance.

In its routine procedure the committee approved for adoption as standards several gages for use in checking car wheels, and specification of gaging points and terms in connection therewith. The same action was taken in reference to a specification for bolted frogs and steam railroad crossings, and to a revised form of rules for carhouse wiring which had been prepared by a committee in co-operation with the National Fire Protection Association.

The Aug. 26 sessions of the meeting were taken up largely with the recommendations of the power distribution committee. A revision of the standard specification for 750-volt overhead line material was approved, and a specification for electrical conduit construction, to replace one included in 1909 in list of miscellaneous practices, was approved for such substitution.

The committee expressed itself as pleased with the quality of the work submitted to it and pledged itself to a renewed effort to "sell" the results of this and previous work to the company members of the association and to others who should buy it.

### Committee on Mail Pay Meets

THE committee on compensation for carrying United States mail, consisting of V. S. Curtis, New Haven, who acted as temporary chairman; W. S. Rodger, Detroit; S. S. Ashbaugh, New York; L. H. Palmer, Baltimore, and J. W. Welsh, New York, held a meeting at association headquarters to consider plans for the preparation of a brief which Mr. Ashbaugh, counsel for the association, will present before the Interstate Commerce Commission.

The brief will consist of four parts, as follows: (1) Statements pertaining to the legal phases and issues involved in carrying mail on trolley cars. (2) An abstract of the 3000 pages of testimony presented at the recently held regional hearings, which abstract will be prepared by a sub-committee consisting of Messrs. Palmer and Curtis, in the form of a topical brief covering all subjects on which testimony was presented. (3) Consideration of the operating methods in handling mail on electric railways, especially the portions of service that may be recommended for elimination, such as carrying parcel post on passenger cars, side and terminal service required of car crews. (4) Determination of specific rates applicable to various kinds of service performed. It is planned to submit by letter to all member companies the proposed rates so that in case any companies feel dissatisfied, they can present individual briefs stating rates that would be applicable for the service performed in their respective individual cases. Such briefs must be filed with the Interstate Commerce Commission not later than Oct. 15.

The committee plans to hold another meeting within the next two weeks to prepare a full report covering the entire matter for presentation to the Atlantic City convention.

### More Convention Exhibitors

DIRECTOR OF EXHIBITS WELLS reports that the following have been assigned exhibit space in addition to those listed in the Aug. 2 and Aug. 16 issues of this paper:

American Engineering Company.  
Automatic Reclosing Circuit Breaker Company.  
Dayton Mechanical Tie Company.  
Differential Car Company.  
Fire Gun Manufacturing Company.  
National Conduit & Cable Company.  
Republic Engineers, Inc.

These seven exhibitors bring the grand total up to 129, a very encouraging number at this date. Obviously the success of the exhibit feature is now assured.

Mr. Wells will appreciate prompt return by exhibitors of the forms recently sent out covering requirements for furniture, flowers, etc.



# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Service Withdrawn

### Pittsburgh Railways Unable to Resume Service on Account of Strike Disorder

A series of riots, in which several persons were injured, blocked the first attempt, on Monday, Aug. 25, of the receivers of the Pittsburgh (Pa.) Railways to break the strike which has had the lines of that company tied up since midnight on Aug. 14.

#### PROTECTION INADEQUATE

Absolute failure of municipal authorities to provide adequate police protection was given by the receivers as the reason for their inability to start service.

No attempt was made to resume operation on Aug. 26, the receivers postponing further efforts until police arrangements could be strengthened, according to a statement by Mayor E. V. Babcock. It was planned to send cars out again on Aug. 27.

In the meantime, Division 85 has been disowned by the Amalgamated Association for striking in violation of a contract entered into last May, by which it pledged itself to accept the decision of the War Labor Board in the wage decision then pending. As was related in the *ELECTRIC RAILWAY JOURNAL* of Aug. 23, the board awarded the men an advance of 6 cents an hour, instead of the 12-cent raise they had asked.

In fact, Division 85 expelled itself from the union by its refusal, upon a referendum vote on Aug. 21, to return to work and carry out its contract, according to President W. D. Mahon, in a telegram to P. J. McGrath, secretary of the local union, an international vice-president and one of the leaders of the strike. This action by President Mahon was taken up by the international executive committee in Detroit on Monday and although no statement would be made by international officials, it was understood that his stand was to be upheld. What the further plans of the Amalgamated Association may be had not been developed late on Aug. 26.

#### RECEIVERS STATE THEIR POLICY

Following the men's referendum vote on Aug. 21 in which they refused to return to work under the War Labor Board award, the receivers announced that they proposed to resume service without an agreement with the union. They declared that they would bring no operatives in from outside Pittsburgh. Their hope then, they said, was that enough of their own striking employees would return to work to start

the cars and that the rest would fall in shortly, leaving the strike to die for lack of strikers.

No attempt was made to send any cars out on Monday morning. Shortly after noon, however, a sand car was run around the carhouse loop. Two or three other cars followed, but the attempt to operate had to be abandoned.

Monday night the receivers issued a statement calling attention to the impotence of the city administration in affording protection for their operatives. Tuesday was a day of innumerable conferences about the City Hall. In the afternoon it was decided that several hundred city firemen would be added to the police force for Wednesday's resumption of operations. Promptly the firemen called a meeting at which to vote on a motion to strike.

General opinion in Pittsburgh is that eventually State troopers will have to be called in to handle the situation, for both the receivers and the men appear to be firm in their resolve not to yield. The city police showed on Monday that they are temperamentally unfitted for such an emergency as exists.

## Minneapolis Increases Wages

Trainmen of the Twin City Lines, Minneapolis, Minn., are receiving a wage advance of 5 cents an hour. The increase was effective on Aug. 20 following a series of conferences between officials of the company and members of the trainmen's co-operative committee from the six stations in the Twin Cities. Other departments are raised proportionately. Horace Lowry, president of the company, said in part:

Following ten days consideration by the management and directors, the company to-day announced an increase in wages to its employees, which will mean added annual cost of operation in all departments of the Twin City Lines of approximately \$600,000 per year.

This increase in wages was granted because general conditions are so unsettled all over the country that an increase seemed necessary until conditions become more normal.

In making this increase in its operating expenses, the management was influenced by its belief that the people of the Twin Cities will, without unnecessary loss of time, approve a service-at-cost agreement so that the company may soon be able to furnish the public with the service required.

Until such measure of relief is in effect between the company and the city, this added burden of expense will be a severe strain upon the company's ability to furnish service, and emphasizes the necessity—in the public interest—of the pending negotiations with the Twin Cities being brought to a successful issue at the earliest possible date.

The additional 5 cents an hour will be paid to regular trainmen. Extra trainmen are guaranteed \$3.50 a day, a daily increase of 50 cents. Regular trainmen have been receiving 40, 43 and 45 cents an hour, depending upon experience and length of service.

## Boston Elevated Affairs

### Legislative Commission at Work— Company Not Ready for Zone Fares —Five-Cent Line Run

The special commission on street railways appointed by Governor Coolidge of Massachusetts to investigate financial conditions opened its hearings at Boston on Aug. 26. Chairman Washburn presided, and the entire session was devoted to an inquiry into the affairs of the Boston Elevated Railway.

Chairman Jackson of the company's board of public trustees was the principal witness. He stated that there is no likelihood that fares will ever have to be raised above 10 cents on the Boston Elevated system; that if all the dividends now paid to the stockholders were to be eliminated, there would be a reduction in fares of less than one-half a cent; that the increase in wages to the carmen as a result of the recent strike adds \$2,600,000 to the annual financial burden of the company; that the cost of the strike to the company was about \$50,000 a day or \$200,000 for its duration; and that practically every fare paid to a jitney in Boston must be paid back by the city to the company in making up the cost of service deficit below electric railway earnings.

Relief might be obtained, the speaker said, by the remission of corporation taxes and subway rentals, together with the purchase by the State of the Cambridge subway. The trustees have given a zone system very careful study, but have not yet reached the point of trying it. Mr. Jackson said that he questioned whether fares could be reduced in future below 8 cents.

The 10-cent fare has not yet been in effect long enough to warrant conclusions as to its practicability, but each week the trustees receive some additional hope that it will eventually yield the necessary revenue. If the Cambridge subway should be purchased by the State, the prospects of an 8-cent fare would brighten considerably. Relief from the burdens of highway maintenance, the witness said, is also most important.

On Aug. 23 an experimental 5-cent fare line was established between Franklin Street in the retail district and the North Station. No transfers are given on this line, which covers a round-trip route about 2 miles long, the one-way fare being a nickel. So far results have been rather disappointing. The trustees are considering the establishment of another 5-cent trial line, possibly between the North and South stations. The hearing was continued until the next day.



## Toledo Traction Talk

### Ouster Ordinance Suspended, Company Suggests Service-at-Cost Settlement

The situation in regard to the railway department of the Toledo Railways & Light Company is clearing. The action of the City Council in passing an ordinance ordering the railway to vacate the streets brought the long-standing franchise dispute to a focus. The company had made all preparations to comply with the terms of the ordinance and would have taken the cars from the streets on the night of July 31, but the citizens of Toledo, realizing what complete cessation of the service would mean to the city, circulated petitions demanding a referendum on the ordinance. More than 10,000 signatures were obtained on the first day the referendum petitions were circulated, and filing of the petitions automatically suspended operation of the ouster ordinance. Had the operation of the ordinance not been suspended by the filing of the referendum petitions, Toledo would have been without railway transportation after Aug. 1.

#### MEASURE BEFORE VOTERS ON NOV. 4

Frank R. Coates, president of the Toledo Railways & Light Company, has presented to the City Council copies of the proposition of the company for a new franchise ordinance, adoption of which would settle the franchise controversy. This ordinance is now before Council, and steps will be taken to place it before the voters of the city for adoption on Nov. 4. President Coates in his letter to the City Council said that if the proposition the company submitted was not found acceptable, the company would be willing to accept any fair and reasonable plan the city may propose. President Coates also said in his letter to the Council that if the city and the company were unable to agree on a plan, the company would initiate the ordinance it had presented, at the election on Nov. 4. He asked that the City Council make all possible speed so that the company might know by Sept. 1 whether it would be necessary to circulate petitions to initiate the ordinance.

The ordinance presented to the Council by the company aims to provide railway service at cost, including a fair return on the investment made by the company in the property. The ordinance provides for a twenty-five year franchise, and also contemplates a scientific rerouting, which would include a crosstown line.

Other provisions of the ordinance include the following:

The motive power shall be electricity or such other motive power as the Council may approve. The company is to maintain the pavement between the rails and 1 ft. outside. It must have at least 300 cars of modern design.

The right is reserved to the city to prescribe service, schedules, routes and character of cars. The city shall name a street railway commissioner, who shall keep himself informed and advise the Council as to

service, cost and rate of fare and company's accounts.

The company shall pay the salary of the commissioner, as fixed by the Council, but not to exceed \$10,000 a year. Differences between the city and company shall be settled by arbitration. In the case of non-agreement upon a third arbitrator, the person who is the federal district judge of the United States District Court, Western Division of Ohio, shall appoint the third arbitrator.

The company shall pay the expenses of arbitration. A decision must be reached within thirty days. The decision of the arbitrators shall be final. The company's books shall be open to inspection by the city at all reasonable times.

A valuation of the company's property shall be made by three arbitrators chosen in the same way as other arbitrators provided for. The decision of any two of such arbitrators shall be binding upon the city and the company.

The arbitrators shall not take into consideration the amount of bonds, stocks and securities of the corporation or franchise value or rights, but shall determine the amount which would be required to create the business and property anew, and from this amount they shall deduct a sum sufficient to put the property in first-class operating condition and the remainder shall

be the valuation and shall be the initial capital value of the system.

Arbitrators will also determine what would be a reasonable rate of return to the company, but in no event shall it be less than 6 per cent. To the capital value shall be added the cost of any extensions, betterments and permanent improvements. The fare will be on a sliding scale basis to be determined by an equalizing fund consisting of the earnings above the operating expenses and the maintenance, depreciation and renewal and allowances.

Whenever the balance in the equalizing fund shall be more than 5 per cent of the capital value by an amount equal to 2 per cent of the capital value, the fare shall be lowered to the next lower rate. Either the city or the company may give notice of a change in fare not in accordance with the schedule, and if the two parties cannot agree, the question of the rate of fare will be submitted to arbitration.

In case the city purchases the property, the company agrees that it will furnish electric current at a rate to be agreed upon, or if not agreed upon, to be fixed by the Ohio Public Utilities Commission. The city must give at least six months notice of its intention to purchase the railroad system. The price shall be the capital value of the company as provided in the ordinance. The company shall have sole control of betterment extension and permanent improvement whenever the unexpired term of the grant shall be less than fifteen years, and, at that time, may charge such a rate of fare as will provide a sufficient reserve to provide an amortization fund equal to capital value of property less the amount of the salvage value of the property.

## Des Moines Strike Settled

### Council Agrees to Put Matter of Increased Fares Before the Public

Employees of the Des Moines (Ia.) City Railway returned to their cars on Aug. 20 after having been on strike since Aug. 13. The settlement was the result of a compromise secured by business men of the city and the union officials.

The settlement was arranged on the following basis: The men agreed to return to work if the Council passed an ordinance submitting a 6-cent fare to the people; secondly, that Judge Wade of the Federal Court should order the issuance of receiver's certificates to cover \$105,000 of back pay.

The first condition was met immediately by the passing of an ordinance by the City Council providing for putting the 6-cent fare before the people on Sept. 22.

The ordinance as passed by the Council provides that the voters shall decide upon the collection of a 6-cent fare effective immediately after the election and continuing until the increased pay and the back pay have been paid. The fund raised by this additional fare is to be kept intact and used only for the payment of the men under the scale provided in the arbitration award.

Upon the request of both sides to the controversy Judge Wade returned to Des Moines for a hearing on the settlement and after the case had been presented ordered that "the receivers shall forthwith, as soon as certificates are issued to the employees, pay upon each certificate one-third of the amount thereof, such payment to be indorsed upon the certificates at the time of payment and the money to make such payments to be taken from such other funds as may be on hand, the same to be in the nature of a loan from such

fund and to be reimbursed from the advance fare of the ordinance when adopted."

Judge Wade also wrote into his order that a further consideration of additional payment would be deferred until Sept. 10, at which time he would order further advances if he was morally satisfied that the ordinance would be adopted by a vote of the people.

This order did not satisfy the union men, who demanded that the full amount of the certificates be paid at once. They threatened another walk-out if this condition was not met by Aug. 25.

A citizens' committee and officials of the State fair, which is being held in Des Moines, conferred on Sunday with the union executive committee and finally a mass meeting of the union voted overwhelmingly to accept the proposition made by the citizens' committee. This proposition offers the men all receipts of the company between Aug. 1 and Sept. 22, over and above the actual operating expenses and specifies that in figuring the expenses taxes and depreciation are not to be considered. Earnings will be paid to the men on second certificates. The receipts for the month of August are to be paid on Sept. 5 and the receipts up to Sept. 22 to be paid Sept. 24. The money thus derived to be applied pro rata upon the certificates. The initial third payment of the certificates ordered by Judge Wade is to be made on Aug. 26.

In his ruling upon the original settlement proposed Judge Wade said:

At the present stage, I cannot assume the moral responsibility of ordering the payment of the back pay in full, but as the evidence of good faith and to give some aid to the men who have waited so long, I



am making an order that the receivers shall pay forthwith as soon as receiver's certificates are made out one-third of the back pay. It will no doubt be a surprise to the people of Des Moines to know that in order to make this one-third payment part of it will have to be taken from funds on hand to meet the payment of \$63,000 taxes due on Oct. 1, and this is true after the collection of the balance due from the Interurban Railway and other available accounts.

I make special appeal in behalf of these men to the newspapers of the city to get the facts before the people. There is no mystery about the financial condition of the railway. The figures are on file with the city and the receivers will aid in every way in getting the facts to those interested—and this means every citizen in Des Moines.

Upon hearing of the action of the union in threatening another walkout on the morning of Aug. 25 in case the full amount of the certificates was not made Judge Wade ordered the federal clerk to withhold action on his original order for the one-third payment.

### Ohio Electric Strike Settled

After a strike lasting more than a week a settlement was reached between the Ohio Electric Railway and its platform employees at a conference held in Springfield on Aug. 23. The men had demanded an increase of 10 cents an hour over their old schedule, but they accepted 5 cents an hour. The company had offered an increase of 3 cents. This was refused at the time the men walked out.

After the strike became effective, the officers of the union announced that they were willing to arbitrate and intimated that they might be willing to accept 5 cents instead of 10. They persisted, however, in their claim that the company's offer of 3 cents was entirely inadequate.

Under the terms of the settlement the union agreed to drop the employees other than trainmen from the organization. They may form a new organization later. The company has agreed to settle with them at the prevailing wages.

### Aurora-Elgin Strike Settled

The Aurora, Elgin & Chicago Railroad strike, which tied up transportation on that system for more than three weeks and deprived a number of cities of light and power, was called off at noon on Aug. 21 by practically a unanimous vote of the 600 employees.

The striking employees have accepted a temporary increase of 5 cents an hour with the understanding that if the situation warrants it, a further increase will be granted by Judge Evan Evans of the United States District Court in Chicago.

In offering the men a maximum increase of 5 cents an hour E. C. Faber, general manager for the receiver, estimated an 8-cent fare in Aurora and Elgin and slight increases in the interurban fares would provide for an increase in wages of about 4 cents an hour. It is understood that the company will file an application with the Public Service Commission for an increase in rates.

### Westchester Strike Settled

Service on the New York, Westchester & Boston Railway, which had been tied up for five days through a strike of the motormen and conductors, was resumed on the morning of Aug. 27. A settlement was effected on Aug. 26 after negotiations lasting continuously for more than thirty hours. The men struck because their demand for the same wages that are paid to similar classes of labor on the federalized steam railroads was refused.

The men won the rate of pay they asked for, but they conceded to the company a nine-hour day instead of the eight-hour day. On Aug. 17 the company advanced the rate of pay 25 per cent, but the men were not satisfied and demanded steam railroad rates, which the company said it could not pay because it would mean an additional increase of 30 per cent. The men denied this and during the conference statisticians of the Public Service Commission submitted a table showing that the increase asked for would amount to only about 9 per cent, which, with the 25 per cent already granted, would mean an advance of about 34 per cent, which many of the conferees deemed reasonable. L. S. Miller, president of the Westchester line, based his refusal of the men's demands on the belief that the increase they demanded would amount to 30 per cent. When he learned that it meant only an increase of approximately 9 per cent his attitude became conciliatory. The strike situation was complicated by threats of the men against the New York, New Haven & Hartford Railroad, by which the Westchester line is controlled.

### East St. Louis Strike Ended

The employees of the East St. Louis & Suburban Railway, East St. Louis, Ill., went on strike on Aug. 15.

The strike was precipitated over dissatisfaction by the men with the War Labor Board increase of 12 per cent. Service was resumed on Sunday morning, Aug. 24. During the time between Aug. 15 and Aug. 24 no attempt was made to operate cars, and practically no discussion was entered into on the part of the company as to wages or rates, but the pertinent issue as to the breaking of the contract was kept most prominent.

Following the declaration of the strike, W. H. Sawyer, president of the East St. Louis and Alton companies, telegraphed President Mahon of the Amalgamated reviewing the issues involved. Mr. Mahon later ordered the men back to work under threat of taking away their charter.

The men returned without any promise on the part of the management other than that contained in the company's telegram to Mr. Mahon. The company felt that it had no option except to take the ground that it did, making no further agreement or promise with men who were then breaking an agreement.

It was explained by the company in the telegram to Mr. Mahon that it would again agree to abide by the results of the War Labor Board award, and if the men promptly returned to work and continued in the future to respect their contract the company would further agree that after the full War Labor Board award was received, if it was unsatisfactory to either party the management would sit in conference with the Amalgamated members alone or with representatives of the public included, in order that there might be a full inquiry as to whether any injustice had been done, and if an injustice had been done, as to what further steps, if any, were practicable.

### Mr. Huff Raps the Amalgamated

In announcing the increase of 25 per cent in the wages of the trainmen of the Third Avenue Railway, New York, N. Y., to which brief reference is made in this paper for Aug. 23. Slaughter W. Huff, president of the company, made the following statement:

In our notice to you advising you of an increase of wages of approximately 10 per cent, effective on Aug. 13, we told you that we were unwilling that you should be paid less than the prevailing rate of wages in the immediate vicinity; and complying with this assurance to you, your rate will again be increased, so as to make a total increase within the last month of approximately 25 per cent, including starters, inspectors, switchmen and plowmen.

This increase will become effective as of the date of the former 10 per cent increase, namely, Aug. 13, 1919.

The financial condition of this system is not such as to justify such a large increase, and without an increase in fare it is simply a question of how long we will be able to meet these largely increased expenses before disaster overtakes the system.

I believe that the large majority of our men are satisfied with their pay and working conditions, and do not wish any interference from the outside with their relations with the management of the system, and particularly in view of your past experience with the Amalgamated Association, you are not willing that they should again take possession of you and use you for their own selfish purposes in the great gamble with the New York transit situation start a strike almost immediately after it that they have been engaged in for the last several years.

Since they violated their contract with the companies of this system and called you out in a sympathetic strike three years ago and threw you down, you have remained independent of the various brotherhoods, both national and local, that have entered into the transit situation. There seems to be ample evidence that during that time a spirit of co-operation and confidence has been developing between the management of this system and its employees, and if this has been developed to a point where you can trust the management to give you a square deal you do not need the Amalgamated Association or any other outside influence to control your course.

As you well know, the policy of the Amalgamated Association has been to get control of the employees of a system, and in your case they are even now threatening to call a strike before they get control of you, or even before they get a representation among you, trusting to the disorderly element in the community to force you from your positions and into their control. You can rest assured that the management of this system will stand with you in your efforts to keep out these professional agitators, and dismiss from the service those who ally themselves with them.

On Aug. 26 Justice Guy in the Supreme Court postponed until Sept. 8 the hearing on the injunction and restraining order against Patrick J. Shea and others to prevent them from interfering with the management and conduct of the Third Avenue Railway.



## Everybody Censured

The local transit committee of the Brooklyn (N. Y.) Chamber of Commerce reported to the membership on Aug. 14 on the Brooklyn Rapid Transit strike situation. It is the opinion of the committee, of which Herman A. Metz, former comptroller of the city, and himself a large employer of labor, is chairman, that the attempt by Receiver Garrison of the company "to deny the right of collective bargaining \* \* \* was of itself a challenge from which the strike was natural and to be expected." The committee says that Mr. Garrison "took an arbitrary stand."

The chamber also sees an error of judgment on the part of Mayor Hylan. The committee says that "for the chief magistrate of the city to take a position which could not by any chance be interpreted as neutral to disorder, places directly the responsibility for the disorder that followed."

For the employees the committee has the following words of censure:

For the employees of our transit lines to take an unfair advantage of the present financial and industrial situation brings them directly within the class the President brands as un-American and as profiteers.

The committee draws attention to its report of Feb. 4, 1919, in which it "offered co-operation to settle and adjust the transit tangle if the facts were all put upon the table by the transit companies and all of the facts that now are claimed to warrant increased fares are stated." In this connection the committee said:

This has not been done. The whole transit situation should be settled now without further delay and talk, but we believe that no satisfactory or permanent settlement can be reached which leaves uncovered any of the facts of cost, finance, or leasehold in connection with these properties.

As a matter of fact, the quotation from the reply by Mr. Garrison to the chairman representing the Amalgamated Association, on which the chamber bases its criticism, was to the effect that Mr. Garrison would not deal with outside organizations, but would meet with the employees.

## Strike in Los Angeles

On Aug. 16, at 2 a. m., some 3000 trainmen, electricians, shopmen and maintenance-of-way employees of the Pacific Electric Railway and Los Angeles Railway lines, Los Angeles, Cal., went out on strike because the companies had refused to grant certain demands for an increase in pay and changes in working conditions.

The Los Angeles Railway, with the employees who remained loyal and the reserve force of student trainmen, was able to maintain 50 per cent service and has bettered service each following day.

The Pacific Electric Railway, however, due to practically all the substitution operators going out, was not able immediately to maintain more than 50 per cent service, but in the succeeding days with competent substitutes was able to restore service to normal.

There was no serious interruption to

the Pacific Electric Railway freight service except the delay of interchange with the steam roads, as the members of the Brotherhoods on these lines are refusing to accept or deliver freight to the Pacific Electric. No violence of consequence was evident on either line up to Aug. 19.

A United States court injunction was obtained by the Pacific Electric Railway during the strike of 1918 and an injunction of the Los Angeles Railway returnable on Aug. 20, 1919, restrains the striking employees from intimidating employees who are still working and from molesting or damaging the property. The Pacific Electric Railway trainmen are organized under the National Brotherhood of Locomotive Engineers, and the Los Angeles Railway trainmen are unionized under the Amalgamated Association.

## Dissatisfied With Wage Award

The employees of the Eastern Massachusetts Street Railway, Boston, Mass., dissatisfied with the wage award of the War Labor Board, voted on Aug. 25 to go on strike.

During the voting a telegram was received by James H. Vahey, general counsel for the carmen's unions, from President William D. Mahon of the Amalgamated Association, giving instructions to have the men remain at work and accept the award under protest, until he could come to Boston in about three weeks, when he would try and effect a settlement personally.

After receiving the telegram the union leaders conferred with Mr. Vahey for several hours trying to evolve some means by which the men could be persuaded not to put into effect their strike vote.

## Disorder and Bloodshed at Olean

All platform men in the employ of the Western New York & Pennsylvania Traction Company, Olean, N. Y., went on strike on Aug. 12. The motormen and conductors were receiving from 27 to 33 cents an hour. They demand 43 cents an hour for the first six months; 50 cents an hour for the next nine months, and 55 cents thereafter. They also ask a reduction in working hours and recognition of the Amalgamated recently organized in Olean.

Wilson R. Page, president of the company, told the men the company is not in a financial position to grant a wage increase at this time and promised he would consider their demands after action is taken by the Public Service Commission for the Second District, on the company's application for permission to raise its local fares in Olean from 7 cents to 10 cents and its interurban fares from 3½ to 4½ cents a mile. This plan the men rejected.

The company then brought to Olean about sixty-five men from Philadelphia, and an attempt was made to run cars. On the night of Aug. 18 strikers attacked a car operated by an outside

crew and demanded that the company release the outside employees quartered in the carhouse. More than twenty persons were taken to hospitals suffering from gun shot wounds and as many more were attended by local physicians.

The police and deputy sheriffs were unable to stop the disorder and the carhouse was stormed and after considerable difficulty the outside employees were hurried to the police headquarters in automobiles. Many were badly wounded.

The mob then stormed the jail until State troopers arrived. The strike breakers were then taken to the county jail at Little Valley where they are being held pending a Grand Jury investigation.

No attempt was made by the company to run cars after the riot. James P. Quigley, secretary and counsel of the company, told a correspondent for the ELECTRIC RAILWAY JOURNAL that he is willing to submit to a board of arbitration all questions in dispute between the strikers and the company and said the company will not discriminate against union men. The strikers are also willing to arbitrate all points in dispute but demand recognition of the union.

Alfred D. Ewing, president of the Olean Chamber of Commerce, called a conference between the strikers and the company officials in an effort to bring about a settlement, but no agreement was reached. The Mayor of Olean also tried to bring about an agreement, but without avail.

## Strike in Charlotte, N. C.

Electric railway service in Charlotte and Winston-Salem, N. C., and Greenville, S. C., stopped on Aug. 10, when the trainmen of the Southern Public Utilities Company walked out on short notice demanding a further wage increase and recognition of the union. Z. V. Taylor, president of the company, had refused to treat with the men as members of the Amalgamated Association, although expressing willingness that they form a union of their own.

The men asked for a maximum wage of 45 cents an hour for motormen and conductors and for 50 per cent above the scale for operators of one-man cars. The company, which had raised the pay more than 100 per cent during the last three years, contended that no further increase was possible at present. The men operating the line in Anderson, S. C., who had recently received an increase, refused to join in the strike. The company presented its case to the men and to the public in the last edition of its monthly magazine.

For more than a week electric railway service in Charlotte and neighboring towns was completely tied up. The striking car men were backed up in their demands by the workers in the company's power and gas plants, who walked out in sympathy with them.



### Rumor About Mr. Mitten

It was reported by the evening newspapers of New York in their editions late on Aug. 27 that Thomas E. Mitten, president of the Philadelphia (Pa.) Rapid Transit Company, had been invited to succeed Theodore P. Shonts as head of the Interborough Rapid Transit Company, New York. It was said that the resignation of Mr. Shonts was in the hands of the company's directors. The New York *Sun* said that, according to the report in circulation, the plan was for Mr. Mitten, upon assuming the presidency of the Interborough, to take charge of a general merger of all railway lines in New York. That paper, however, quoted an officer of the banking firm of J. P. Morgan & Company as having said that he did not believe there was any foundation for the report.

## News Notes

**Wage Increase in Easton.**—The employees of the Easton (Pa.) Transit Company have been granted an increase in pay of 5 cents an hour. The men had requested an advance of 10 cents.

**Railway Takes Over Buses.**—The bus lines running between Houghton and Calumet, Mich., and Houghton and Painesdale have been taken over by the Houghton County Traction Company, which is purchasing four new buses for the service. The company is also erecting a garage for the accommodation of the equipment.

**St. Louis Men Accept Award.**—The wage award of the Public Service Commission of Missouri, granting trainmen of the United Railways, St. Louis, Mo., an increase of 45 per cent, was presented to the men officially at a meeting of their union. The secretary of the union announced that the men were satisfied with the award.

**Truce in Burlington Strike.**—The Burlington (Vt.) Traction Company resumed operation on Aug. 16, an agreement having been reached with the strikers for a thirty-day truce. The men went on strike on Aug. 8 to enforce their demands for an increase in wages, an eight-hour day and time and a half for overtime.

**Strike in Nashville.**—Electric railway service throughout Nashville, Tenn., was entirely suspended on Aug. 21 as a result of the strike of conductors and motormen of the Nashville Railway & Light Company. The company attempted to operate a few cars, but the effort was quickly abandoned. It is said that the principal issue involved is recognition of the union.

**Wilmington Men Ask More.**—The employees of the Wilmington & Phila-

delphia Traction Company, Wilmington, Del., have presented a request to the company for an increase in wages of 15 cents an hour. Conferences looking toward an adjustment of the matter have been held by representatives of the men with Thomas W. Wilson, vice-president and general manager of the company.

**Examination for Mechanical Engineer.**—The United States Civil Service Commission has announced that on Sept. 23 next an examination will be held for the position of associate mechanical engineer. Vacancies in the Safety Section, Bureau of Standards, Department of Commerce, Washington, D. C., at salaries ranging from \$2,000 to \$2,800 a year, will be filled from this examination.

**Strike to Enforce Reinstatement.**—Between 400 and 500 employees of the Niagara, St. Catharines & Toronto Railway, St. Catharines, Ont., refused to take out their cars on Aug. 21, carrying out their threat to strike made when Superintendent E. W. Oliver, Toronto, refused to give the employees sufficient evidence for the dismissal of William Bell, a conductor. There is no wage controversy involved.

**Present Wage Scale Will Continue at Tacoma.**—Motormen and conductors of Tacoma Railway & Power Company, Tacoma, Wash., have agreed to sign a contract continuing the present rate of pay for one year. Union officials said that higher pay was not demanded at this time so that no greater burden need be put upon industrial workers for fare. Fares were raised from 5 cents to 7 cents when the present wage scale went into effect last year.

**Solution of Traction Program Proposed.**—Traction matters are again due for a stirring up at a special meeting of the City Council of Chicago, Ill., called for Sept. 9. Mayor Thompson has announced that he will present a message on the subject at that time, proposing a solution of the transportation problem. While the details of his plan have not been made public, it is thought they have to do with the construction of a subway system with the traction fund and the forcing of the companies to agree to some form of public operation.

**Hammond Strike Still On.**—The strike on the Hammond, Whiting & East Chicago System, Chicago, Ill., is still in effect. The employees want the Chicago wage scale and the company insists this cannot be granted without a 7-cent fare. The Hammond city authorities have applied for a receiver to resume operation of the cars, and the hearing was set for Aug. 26. It is said the local authorities are willing to concede a 7-cent fare, but they insist on extension of lines which the company officials say will be too costly.

**Brotherhood Men Satisfied.**—A statement prepared on their own initiative by employees of the Kansas City (Mo.) Railways and signed by a majority of them, has been sent to the committee

of 100 appointed by the Chamber of Commerce to investigate traffic conditions, especially the operation of the railway. The statement reflects satisfaction with their working conditions, and a spirit of co-operation with the company. The employees declare it to be against the interest of the public and the company, for the company to restore to their position men affiliated with the Amalgamated Association who participated in the recent strike.

**Disorder Prevents Operation.**—Aug. 22 marked the fourth day of the strike in Louisville. It is claimed the strikers are now asking increases in wages and various other things which were settled by arbitration prior to the walkout. At the time of the walkout the question of the company's right to discharge men without preferring charges within twenty-four hours was the principal grievance. The four days have been marked by considerable violence. The company has told the Mayor that it could run its cars if given police protection.

**Washington Men Want Seventy Cents.**—Demands for a wage scale of 70 cents an hour for motormen and conductors, beginning on Sept. 1; an eight-hour day, an increase for other employees of 25 cents an hour and other improvements in conditions of work and wages were submitted to the Washington Railway & Electric Company, Washington, D. C., on Aug. 22, by a committee of Division 875 of the Amalgamated Association. The Amalgamated claims a membership of more than 800 employees out of the total of 1050 employees of the company. The Brotherhood of Street Railway Workers a few days previous had presented ten demands to the company. The brotherhood demanded a flat increase of 25 per cent for all employees of the company. This was the principal demand. The nine other demands were all for improvement in working conditions.

**Holyoke Award Announced.**—The report of Henry B. Endicott, as arbitrator on the wage question as affecting the employees of the Holyoke (Mass.) Street Railway gives the trainmen a maximum of 55 cents an hour, beginning June 1, 1919, an increase of 14 cents an hour over the present maximum. Trackmen get similar increases and the snow sweepers get 10 cents an hour more than at present. Spare men will get one-half of one day's pay, when reporting on orders of the company, instead of two hours pay, as at present. In making the award Mr. Endicott said: "If the public is to have the privilege of street railway transportation, it must pay a fair price for it; and the unwillingness of the public to recognize the full cost of transportation by street cars, or the hesitancy of public officials to co-operate with the street railway managements in devising means for the collection of the necessary revenue, is not a reason for requiring railway employees to work for inadequate wages."



# Financial and Corporate

## Foreclosure Sale Soon

Reorganization Plan Is Announced for the Fort Wayne & Northern Indiana Traction Company

The stage is being set for the reorganization of the Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind. The plan for carrying out the financial rehabilitation is that advanced by the committee representing the holders of the thirty-year first consolidated mortgage 5 per cent bonds of the Fort Wayne & Wabash Valley Traction Company. Out of the \$6,966,000 of this issue outstanding, \$6,063,000 has been deposited. The reorganization plan is dated Aug. 18. A period of grace of thirty days is extended to dilatory holders of the bonds to come in under the plan.

### 220 MILES OF ROAD

The various companies included in this system of 220 miles of street and interurban railways had outstanding \$11,801,700 of bonds, of which the largest issues were \$6,966,000 of Fort Wayne & Wabash Valley Traction first consolidated mortgage 5's and \$3,000,000 of Fort Wayne & Northern Indiana Traction Company first and refunding mortgage 5's. This amount of \$11,801,700 does not include \$200,000 of car-trust certificates. The stock issues outstanding consist of \$2,500,000 of 6 per cent preferred stock and \$4,000,000 of common stock. There is also \$75,000 of dividend scrip.

Under the reorganization plan only a very small amount of the issues outstanding will remain undisturbed. Those which it is proposed to leave untouched are the \$29,000 of Fort Wayne Traction Company first mortgage 4's, the \$57,700 of Fort Wayne Power Company first mortgage 5's and the \$400,000 of Fort Wayne, Marion & Bluffton Traction Company first mortgage 5's. There has been no default on these.

### HOLDINGS OF STOCKHOLDERS REDUCED

The proposed capitalization of the new company will be \$13,901,700, divided as follows: \$4,679,450 of 5 per cent first and refunding mortgage bonds, \$4,807,750 of three-year 6 per cent adjustment mortgage bonds, \$2,202,250 of 7 per cent preferred stock, and \$2,212,250 of common stock. The details of the various exchanges are of interest mainly to the holders of the issues involved. So far as the stockholders are concerned, however, the scaling down of their holdings appears somewhat drastic. For the holders of the \$4,000,000 of present common there is apportioned \$400,000 of new common, or 10 per cent. For the holders of the \$2,500,000 of present preferred stock there are apportioned \$225,000 of adjustment

mortgage 5's, \$100,000 of 7 per cent preferred stock and \$1,600,000 of common, or securities to the extent of 77 per cent of their original holdings.

The committee explains that the property has been improved considerably during the period of interest default out of earnings and the reorganization plan contemplates that no interest shall be paid upon any of the new bonds during 1919 in order that further use may be made of earnings for construction and renewals, thus eliminating the necessity of selling securities.

The receiver, Robert M. Feustel, will shortly apply for an order of sale for the property.

## Court Fixes Status of Debentures

In a friendly suit brought by the Connecticut Company, New Haven, Conn., against the New York, New Haven & Hartford Railroad, the Travelers' Insurance Company and the Aetna Life Insurance Company, the Connecticut Supreme Court of Errors has handed down a decision holding that the company cannot mortgage certain property owned by it without providing for participation in the security by the holders of \$14,000,000 of debentures issued by the Consolidated Railway before the company came into control of the electric railways in New Haven. The Connecticut Company asserted that these debentures constituted a cloud on its title to certain property and prevented it from raising funds by way of mortgage.

The following questions were passed upon:

(a) Whether the plaintiff is debarred from mortgaging the main line, formerly of the old Fairhaven & Westville Railroad, situated in New Haven, without providing in such mortgage for participation in security thereof for the holders of the debentures.

(b) Whether or not an equitable lien was created on the property and franchise owned by the Consolidated Railway by the issue of the debentures.

(c) Whether or not the Connecticut Company, having acquired the street railway properties and franchises as described in the pleadings, holds them free and released from any obligation or lien imposed thereon in favor of the purchasers and holders of the Consolidated Company's debentures, and whether or not the Consolidated Company can effect a valid mortgage without providing for the debenture holders.

(d) Whether the obligations of the contract with the debenture holders is protected by the federal Constitution so that its terms are inviolable and cannot be altered or impaired or defeated by subsequent special acts of the Connecticut or Massachusetts Legislatures in 1915 set up in the complaint or by a decree of a judicial tribunal.

With Justice Gager writing the opinion, the Supreme Court's answer was wholly in favor of the bondholders. Justices Prentice and Beach, however, concurred in all except the answer to the second question, dissenting from the conclusion that it should be answered in the affirmative.

## See Depreciation Need

San Francisco Committee Opposed to Depletion of Fund to Pay Increase in Wages

The finance committee of the Board of Supervisors of San Francisco, Cal., composed of Ralph McLeran, J. C. Kortick and F. Suhr, Jr., has reported against the resolution to transfer \$10,247 from the depreciation fund of the Municipal Railway so that the money would be available to cover the increase in wages of the railway employees for July, making the rate \$5 a day.

### DEPRECIATION PERCENTAGE STANDS

As noted in the ELECTRIC RAILWAY JOURNAL for July 19, page 144, the board voted to increase the pay of the platform and the track men, but declined to reduce the percentage of gross passenger revenue that is set aside for depreciation. In its report to the Board the finance committee said in part:

In the judgment of the committee it will be most unwise to attempt a reduction of the 18 per cent of gross revenue set aside for depreciation. As a matter of fact, a study of this problem and comparison with reports of other cities indicate that the depreciation percentage should be raised instead of lowered. This statement is substantiated by a very complete report presented by the city engineer of San Francisco, which is attached to and made a part of this report.

### FAVORS SIX-CENT FARE

To meet the extraordinary charges now being imposed upon the Municipal Railway it will be necessary for the Board of Public Works and the superintendent of the Municipal Railway to inaugurate most rigid economies in operating expenses and wherever possible eliminate excess service. The committee is advised that some economies may be made without impairment of the excellent service being given by the Municipal Railway. These economies may bring about partial restoration of the financial balance which makes for the profitable operation of our municipal street railway system.

After a very thorough investigation, the committee believes that the true solution is an increase in fare to 6 cents or more, but does not recommend that such action be taken at this time, for this reason: Increase in electric railway fare can only be successfully installed after education of the public.

The committee has before it reports from other cities where fares have been increased in some instances as high as 10 cents, as in Boston. Other cities have increased to 6, 7 and 8 cents. It is a question that should be brought to the attention of the public, and when the cost of labor, material and all necessities of life is doubled and trebled, there is no reason why railway fares should not be raised proportionately.

### NO MORE EXTENSIONS OUT OF REVENUE

To continue the \$5 a day wage on the railroad the committee will from time to time recommend to this board transfers from the depreciation fund of a sufficient amount to meet the payrolls. A 3 per cent reduction of the present 18 per cent would not be sufficient to meet the increase which has been granted.

The attention of the Board of Supervisors, Board of Public Works and the public is directed to the questions of extensions of the Municipal Railway, and under existing financial conditions it is certain there can be no further extensions of the Municipal Railway financed out of revenues. Future extensions can only be made by a bond issue or by some method of financing other than from revenue. And unless there is a marked increase in revenue in all probability the Board of Supervisors will be compelled in future years to provide for bond interest and redemption in whole or in part from the annual tax levy.



## Running Behind

### American Public Utility Company Has Loss of \$104,816 for Year Ended June 30

The earnings of the subsidiary companies of the American Public Utility Company, Grand Rapids, Mich., for the year ended June 30, 1919, follow:

Gross earnings from operations	\$4,643,318
Operating expenses	3,052,717
Net earnings from operations	\$1,590,601
Miscellaneous income	76,429
Gross income	\$1,667,030
Loss	\$ 104,816
Net income	\$1,542,273

#### FIXED CHARGES FOR TWELVE MONTHS

Interest on underlying securities	\$1,389,653
Interest on collateral trust bonds	172,815
Interest on two-year notes	29,340
Miscellaneous interest	55,731
Total interest charges	\$1,647,539
Loss	\$ 104,816

The report of the directors covering the operations of the company for the fiscal year ended June 30, 1919, was, to some extent, anticipated by the letter of the president of the company, addressed to the preferred stockholders, on July 1, in which were discussed the conditions of income leading the directors to suspend payment of preferred stock dividends until conditions became more favorable. There is no cessation in the public demand for service furnished by the company, but the net returns from the service give, for the present, no adequate basis for the immediate recompense of the capital already interested, or for attracting the new funds which are constantly required for extensions and betterments.

#### OPERATING EXPENSES OUTSTRIP EARNINGS

Proof of these statements can be found in a comparison of gross earnings and operating expenses of the company for the years ended respectively, June 30, 1918, and June 30, 1919. For the first of these periods the gross earnings of the properties owned by the company (the Holland City Gas Company and the Jackson Light & Traction Company being excluded) were \$4,089,090. For the year just closed the gross earnings from seven of the properties which contributed to the previous year's figures of gross earnings were \$4,643,318, an increase of \$554,227 of gross receipts. For the first period the net income was \$1,590,831, while for the year just closed the net earnings were \$1,590,601, showing a decrease of \$230 in the net results of the last year's operations as compared with its predecessor. A sum greater than the total amount of increased gross earnings had been absorbed by the increase in operating expenses.

The attitude of the public authorities of Jackson, Miss., toward the Jackson Light & Traction Company resulted in its failure to meet its obligations, and that property has also been put under the protection of the bankruptcy court to protect its mortgage and its

creditors. Proceedings affecting this property are still in progress.

Gross earnings for the past fiscal year from the operations of the subsidiary companies, as compared with those of previous years, were:

Year ended June 30, 1912	\$1,738,192
Year ended June 30, 1913	1,981,320
Year ended June 30, 1914	2,319,594
Year ended June 30, 1915	2,932,069
Year ended June 30, 1916	3,309,586
Year ended June 30, 1917	3,819,820
Year ended June 30, 1918	4,089,090
Year ended June 30, 1919	4,643,318

The total for the year ended June 30, 1918, in the foregoing table excludes \$363,034 of earnings from the Holland City Gas Company and the Jackson Light & Traction Company, included in the last annual report, the adjustment being made for purposes of comparison.

## B. R. T. Receiver's Certificates Offered

A group of bankers consisting of the Central Trust Company, the Bankers' Trust Company, the Chase Securities Corporation, Hayden, Stone & Company, and J. & W. Seligman & Company has purchased the \$18,000,000 Brooklyn (N. Y.) Rapid Transit Company 6 per cent two-year receiver's certificates sold by Lindley M. Garrison, receiver.

These certificates are being offered for public subscription by bankers at 98 and interest. They are in denominations of \$1,000 and are dated Aug. 1, 1919, and are due Aug. 1, 1921. They are redeemable at any interest date at par and accrued interest on thirty days notice.

The proceeds of not less than \$13,000,000 and not more than \$15,000,000 of the certificates are to be used principally to complete the subway contracts with the city of New York, and the proceeds of the balance will go to complete the power house improvements of the company required in connection with the new rapid transit lines.

The certificates will be secured by a pledge of not less than \$13,000,000 nor more than \$15,000,000 of the joint certificates of the receiver of the rapid transit lines (New York Municipal Railway Corporation and New York Consolidated Railroad) which are in turn secured by a first lien on all the property and income of these two companies being subject only to the underlying liens of the first mortgage of the Brooklyn Union Elevated Railway under which \$22,967,000 of bonds are outstanding, also by a first lien on all property of the Brooklyn Rapid Transit Company, in possession of the receiver or subject to the administration of the court and on the income therefrom, subject only to the prior lien of the 4 per cent refunding mortgage of 1902, under which \$27,621,000 bonds are outstanding; also by a pledge of \$5,822,000 of various bonds including \$5,092,000 of 4 per cent refunding bonds of 1902 and by a first lien on all the property susceptible of separation purchased with the proceeds of the certificates, principally the power house improvements.

## Financial Briefs from St. Louis

Exceptions to the report of Special Master Henry Lamm, who investigated the receivership case of the United Railways, St. Louis, Mo., have been overruled by Judge D. P. Dyer of the United States District Court. The exceptions included objections to the recommendation of the special master that Rolla Wells, receiver, be authorized to issue more than \$2,000,000 of receiver's certificates, payable in one year, the receipts from the sale of which were to be used to pay bonded indebtedness which has matured. The issuance of these certificates is now authorized.

One of the greatest transcripts of evidence ever prepared for a court in St. Louis will be submitted about Sept. 1 to attorneys in the suit of John W. Seaman against the directors of the United Railways for an accounting. The transcript contains about 1,250,000 words. A decision is not likely in the Seaman suit before Jan. 1, 1920.

Valuation of the physical property of the United Railways, on which the chance of higher fares depends, has been held up by the Public Service Commission because the State is short of funds. The valuation was to have been completed by June 1. The date was later put ahead to Sept. 1. Now, on account of the lack of funds, the commission is unable to employ engineers and it is doubtful if the valuation can be completed before next spring.

## Five-Cent Fare a Failure

With a straight 5-cent fare during the month of July the Grand Rapids (Mich.) Railway lost \$19,323, according to its monthly report submitted to the City Commission.

This loss is shown in the face of an increased net revenue of about \$10,000 over the same month a year ago. The receipts for the month are shown at \$120,183, against \$109,279 for 1918.

A reduction of nearly \$1,000 is shown in the general expenses over the same month a year ago. The total expense, however, is \$90,757 against \$77,172 for the same month a year ago. The increase is brought about through increased wages to employees and increased operating expenses.

The net operating income for the month was \$29,426, but with interest depreciation and other items totaling \$48,749 charged off the deficit is shown.

To date since Jan. 1, \$87,500 has been charged off as a depreciation item. Of this amount \$41,411 has been spent, leaving a balance of \$46,088 in the depreciation fund.

When the commission, through the railway committee, requested a trial of the 5-cent fare during July Benjamin S. Hanchett, president of the company, estimated that the operating loss would be about \$20,000, which is shown to have been just about correct. The company has reverted to a 6-cent fare with nineteen tickets for a dollar.



### \$635,395 Deficit in Columbus

In response to a resolution of the Chamber of Commerce of Columbus, Ohio, the Columbus Railway & Light Company, through president Charles L. Kurtz, has published the following statement covering the year 1918:

Operating revenue.....	\$4,197,177
Operating expense (no depreciation) .....	2,770,370
Net operating revenue.....	\$1,426,807
Taxes .....	342,698
Operating income.....	\$1,084,109
Non-operating income.....	67,309
Gross income.....	\$1,151,418
Deductions from gross income.....	1,786,813
Deficit .....	\$ 635,395

It is explained that the deductions consist of bond and note interest, liability on account of fare rebate coupons, back wages due employees under the award of the War Labor Board, depreciation and other usual and proper deductions, with no allowance for any dividends on preferred or common stocks.

### Abandonment Threatened

According to the announcement from Homer Loring, chairman of the board of trustees of the Eastern Massachusetts Street Railway, the successor to the Bay State Street Railway, some of the cities and towns will lose their service because of the added burden of the increased wages to the employees under the recent decision of the War Labor Board unless they contribute to the cost of service, as provided in the public control act of 1918. The increased wage, it was reported, will mean a total increase of nearly \$1,000,000 the first year.

Unless the communities contribute to its support the company will be compelled to abandon 200 miles of track. Service has been discontinued or will be discontinued on other lines, but the new announcement includes 200 miles additional to these places. Under the new edict the lines which will be affected are the New Bedford, Middleboro & Brockton line and the Georgetown Rowley & Ipswich line. The cities and towns which will be affected have been notified of the proposed abandonment of service unless they contribute to the road under the 1918 act.

### Argentine Earnings Decline

The shareholders of the Anglo-Argentine Tramways, Ltd., met in London, England, on Aug. 14. The traffic receipts for the past year amounted to £2,909,375, so that, notwithstanding the continuance of abnormal conditions, there was an increase of £209,131 over the figure of 1917. The directors regretted that, having regard to the uncertain labor position and to the cost of current during the first five months of the present year, they were unable to recommend the distribution by way of dividend on the first preference shares of any part of the £83,042 standing to the credit of profit and loss.

For eighteen days, from May 27 to June 13, the service was entirely disorganized, and the receipts were reduced by £90,000, owing to a strike of the employees. In the end a full service was resumed on the understanding that the employees would be granted an eight-hour day and other advantages so soon as the municipality of Buenos Aires sanctioned the increase of fares.

Application was made to the municipality to sanction the increase, and a committee appointed to consider the matter had unanimously reported in favor of the application. The matter was still under consideration by the municipality, and the manager was hoping for a favorable decision. When the concession was granted, a uniform fare of 10 cents was sanctioned, upon the ground that it was fair in the interests of the city of Buenos Aires, and was sufficient to give them an adequate return upon the capital of the company.

## Financial News Notes

**Lighting Company Purchased.**—The Alabama Power Company, which operates an electric railway in Anniston and Huntsville, Ala., has purchased the Selma (Ala.) Lighting Company.

**East St. Louis Removing Track.**—The East St. Louis, (Ill.) Railway will remove its tracks on St. Louis Avenue between Collinsville Avenue and Fifth Street. The double track on this street has been used very little.

**Notes to Buy Cars.**—The Springfield (Mass.) Street Railway has requested authority of the Public Service Commission to issue notes totaling \$44,805 to pay in part for ten one-man cars which the company will soon put into operation.

**Note Issue Asked.**—The East St. Louis & Suburban Railway, East St. Louis, Ill., has filed a petition with the Illinois Public Utilities Commission for permission to reissue notes to pay off part of the original indebtedness of the company in the amount of \$400,000.

**Another Abandonment Threatened.**—The Mahoning & Shenango Railway & Light Company, Youngstown, Ohio, has made application to the Public Utility Commission of Ohio for permission to abandon operation of its electric line between Niles and Mineral Ridge, 2½ miles long. Traffic revenues have not been sufficient to cover operating expense.

**Threaten Abandonment.**—The trustees of the Eastern Massachusetts Street Railway, Boston, Mass., have written to George A. Schofield, who is acting counsel for Ipswich, to the ef-

fect that it is their intention to stop operating the Georgetown, Rowley & Ipswich line on Sept. 1, unless the three towns make contributions to keep the line running.

**City Asks for Receiver for Railway.**—With the Hammond, Whiting & East Chicago Street Railway, Chicago, Ill., refusing additional service in exchange for permission to raise its fare to 7 cents, the city of Hammond on Aug. 22 filed a petition for a receiver for the railway in the Crown Point Circuit Court, after it had begun mandamus proceedings to force the company to resume the operation of its lines or lose its franchise.

**Abandoned Road to Be Sold.**—The properties, franchises, etc., of the Abilene (Tex.) Street Railway will be sold at public auction on Sept. 9, by W. G. Swenson, receiver. The sale is to be made to satisfy a judgment and foreclosure for \$38,670, issued out of the District Court of Taylor County. The company owns about 5 miles of track in Abilene, but its cars have not been operated for some time, having been superseded by a motor bus system.

**Suspension Threat in Oswego.**—The Empire State Railroad, Syracuse, N. Y., has called a stockholders' meeting for Sept. 23 for the purpose of considering the advisability of abandoning its lines within the city of Oswego. This is frankly stated to be a movement resulting from the position taken by the city officials regarding matters of fare increase and public improvements. It in no way affects the operation of the company's lines between Syracuse and Oswego.

**Chicago Receipts Increase 23.4 Per Cent.**—A comparison of the results of operation on the Chicago (Ill.) Surface Lines for the first seven days following the strike with those of the seven days immediately preceding the strike shows that in place of the theoretical 40 per cent increase in revenue resulting from the increase in fares from 5 cents to 7 cents, the revenue has actually been increased 23.4 per cent. This comparison also shows that riding has decreased 11.31 per cent.

**Prompt Interest Payment Planned.**—The directors of the Quebec Railway, Light, Heat & Power Company, Quebec, Que., have decided to pay up the interest on the first mortgage issue in place of taking the full three months grace as has been the custom for some years back. The *Financial Post* of Toronto says that the annual statement of the company for the year ended June 30 will show a big improvement in earnings due to increased fares, increased rates for gas and electricity, etc.

**Youngstown Doing Better.**—The report of the Youngstown (Ohio) Municipal Railway, controlled by the Mahoning & Shenango Railway & Light Company, for the month of July, during which month a 6-cent fare was in effect, shows the deficit in the stabilizing fund cut from \$24,182 for June, when



a 5-cent fare was in effect, to \$9,374. The 7-cent fare now in effect is expected to end the monthly deficit in this fund and perhaps show a profit. The report shows the gross revenue for July to be \$130,335 against \$112,482 for June.

**Buses Will Supplant Railway**—On account of the very high cost of operation and the small earnings the Southern Railway & Light Company, Natchez, Miss., is now dismantling 4 of the 6 miles of railway and has forfeited its franchise, except for the 2 miles of track that leads from the Ferry Landing through the center of the city. The cars with motors and tracks are being offered for sale as it is not probable that railway service will be resumed. The question of operating gasoline buses is being considered, and as soon as two suitable buses are purchased a trial will be made.

**Foreclosure Sale Approved.**—Judge George W. English in United States District Court has approved the sale of the property of the Southern Traction Company to H. D. Mephram, New York, N. Y., the original promoter of the road. The Southern Traction Company planned to build from East St. Louis to the coal fields near Belleville, Ill. William E. Lorimer, Chicago, Ill., and the Lorimer & Gallagher Construction Company were interested in the road and their insolvency contributed to the failure of the LaSalle Street Trust & Savings Bank, Chicago, a few years ago. Litigation over the railway was started in the United States District Court in 1914. The purchaser is to pay the full amount of the purchase price by Oct. 1.

**Washington Merger Urged.**—Resolutions advocating the merger of the Capital Traction Company and the Washington Railway & Electric Company, Washington, D. C., practically identical with those adopted by the public utilities committee of the Chamber of Commerce some weeks ago, were adopted by the chamber's board of directors at a meeting on Aug. 22. The board's resolutions set forth that a merger of the two companies would be for the best interests of the companies, stockholders, residents, employees and all concerned. A committee is to be named by President Robert N. Harper of the chamber to draw up a bill for presentation to Congress providing for the merging of the two companies.

**A Road Reclaimed.**—The Massachusetts Street Railway, successor to the Bristol & Norfolk Street Railway, is to resume traffic on the line between Holbrook Station, Randolph and Stoughton Square. The line has not been operated since Dec. 1, 1918, when, owing to financial loss, the cars were stored in the carhouse and partial dismantlement begun with the view of junking the road. A few weeks ago it was stated that the rails would be torn up and the wires taken down. This announcement caused a storm of protest which was followed by the demand of a heavy bond for the

replacement of the streets in their original condition. A company has been formed by local men with the result that service will be resumed.

**Iowa Railway & Light Notes**—Harris, Forbes & Company, New York, N. Y., and the Harris Trust & Savings Bank, Chicago, Ill., are offering for subscription at 99 and interest, yielding more than 6½ per cent, \$731,500 of two-year, 6 per cent collateral notes of the Iowa Railway & Light Company, Cedar Rapids, Ia. The notes are dated Aug. 15, 1919, and are due Aug. 15, 1921. The Harris Trust & Savings Bank is the trustee. The bankers offering the issue point out that the net earnings are more than one and three-fourths times the annual interest on the outstanding funded debt. The note issue is secured by the pledge of first and refunding mortgage bonds on the basis of 77 per cent of the face value of bonds pledged. The authorized issue of the notes is \$2,000,000.

**Another Long Island Abandonment.**—The Public Service Commission for the First District of New York has been informed that the Long Island Electric Railway, which operates from Jamaica to Far Rockaway, is ready to ask the courts, through a receivership, to discontinue operation, wind up its affairs and sell its rails and other property to the highest bidder. The company is owned jointly by the Interborough Rapid Transit Company and by the Long Island Railroad, which have advanced numerous sums in recent years to provide its running expenses. The company has not paid interest on its bonds for many years and never has paid dividends on its stock. The parent companies refused longer to advance moneys for maintenance and operation, and officials of the road declare they must shut down.

**Liquidates Back Dividend.**—Directors of the Standard Gas & Electric Company, Chicago, Ill., on Aug. 20 declared the regular quarterly 2 per cent cash dividend on the preferred stock payable on Sept. 15 to stockholders of record of Aug. 30, and passed a resolution providing for the payment of 13 per cent cumulated dividends on the preferred payable in common stock of the company at par. The operating statement for the first six months of 1919 shows the full 4 per cent for the preferred and 3.52 per cent on the common shares, including the increased common stock due to payment of the accumulated dividends on the preferred. This is at a yearly rate of 8 per cent for the preferred and more than 7 per cent for the common, without taking into consideration any earnings from the Shaffer Oil & Refining Company, which company, the directors state, is progressing most satisfactorily.

**Exception Taken to Report of Special Master.**—Exceptions have been filed in the United States District Court to the report of Special Master Henry Lamm regarding the issuance and sale of receiver's certificates to take up a debt of \$2,300,000 of the United Rail-

ways, St. Louis, Mo., which is due. Those who filed were John W. Seaman, who instituted the receivership suit against the company, and Elmyr A. and Robert T. Laughlin, intervenors in the suit. They object to language of the report, in so far as it refers to a "default" on the part of the company, in not taking up bonds issued in 1904 by the St. Louis Transit Company which leased the railways in St. Louis from the United Railways. They assert that there was no consideration for the indorsement by the United Railways of the Transit Company bonds and that therefore the indorsement is void. Judge David P. Dyer of the United States District Court will pass on the exceptions.

**Property of Projected Road Sold.**—The properties of the Eastern Texas Traction Company, including franchises for the construction of an interurban line from Dallas to Greenville, a distance of 32 miles, right-of-way on which the roadbed has been graded for considerable distances and other intangible assets, were sold at sheriff's sale recently to S. B. Brooks, Greenville, Tex. The sale was made to satisfy a judgment granted on June 10 on suit of Phil Karner, contractor, to recover \$53,690 alleged to have remained unpaid for construction work on the right-of-way. R. R. Neyland, Mr. Brooks' attorney, of Greenville, said that the sale was in effect a formality intended to place the entire control of the property in Mr. Brooks' hands. As originally organized, F. E. White was president of the Eastern Texas Traction Company and J. W. Crotty was its vice-president.

**Bay State Interest Not Earned.**—The Boston News Bureau of Aug. 26 said: "Operating expenses of the Eastern Massachusetts Street Railway (Bay State System) have increased so rapidly in relation to gross receipts that the road will be unable to pay any interest this year on the refunding mortgage bonds. There are nearly \$20,000,000 of these bonds outstanding, bearing interest at 4½, 5 and 6 per cent. Interest requirements on these bonds are in the vicinity of \$900,000 a year. The failure to meet the interest due will not, however, operate as a legal default. It was provided as a part of the recent reorganization of the road that "any instalment of interest payable at any time prior to June 30, 1921, may be extended if there is no available income for payment thereof. Interest so extended, plus 20 per cent of its amount, shall be payable sixty days after the close of the first period ending June 30 or Dec. 31 in which available income shall have accrued for the payment thereof, but in no event later than Dec. 31, 1925." In other words, the company can, if required earnings are not available, defer until Dec. 3, 1925, the first two years' interest on the refunding mortgage bonds, being penalized, however, 20 per cent of the amount of interest that is so deferred.



# Traffic and Transportation

## Portland Wants More

Oregon Company Asks for Rate to Return Seven Per Cent on Commission Valuation

The Portland Railway, Light & Power Company, Portland, Ore., has filed with the Public Service Commission application for an increase in rates. This is pursuant to the company's intention as announced following the 12 per cent wage increase allowed the company's employees by the War Labor Board recently. This increase, the company's petition asserts, increases its annual expenses \$350,000, and an increase in rates is sought sufficient to make a minimum return of 7 per cent upon the value of the railway property as determined by the commission.

The company makes representations that the net earnings of the system for the twelve-months period ended June 30, 1919, were insufficient to pay interest on its bonded indebtedness and its maturing street improvement assessments.

### COMMISSION'S VALUATION

The value of the railway property as fixed by the Public Service Commission in its order of Nov. 19, 1918, was \$18,568,073 as of Dec. 31, 1916. Between the latter date and July 31, 1919, the company alleges it has added improvements and betterments netting an additional valuation of \$129,437, bringing the valuation up to \$18,698,510.

The company asserted "that for the twelve-months period ended June 30, 1919, the net operating revenue of the railway system was \$792,203, which is equivalent to 4.24 per cent on the value of the railway property established by the commission." It is further charged the net earnings provided no return whatever upon that portion of the value of the railway system represented by the investment of the stockholders.

The petition shows since the commission's order of Jan. 5, 1918, establishing a 6-cent fare, operating expenses have increased materially through conditions beyond control of the company. On that date the average wage of platform employees was approximately 43 cents an hour as established by a board of arbitration in October, 1917. Subsequent increases, says the company, have since increased wages periodically, and the war board's 12 per cent order will increase its operating expenses approximately \$350,000 a year.

### GREAT INCREASE IN COSTS

The application alleges that since the 6-cent fare order was rendered operating costs have increased greatly, so that notwithstanding an increase in

traffic, net earnings have shown no tendency to increase.

As indicating that a material increase in traffic may not be expected in Portland in the immediate future the petition shows that for July this year gross earnings of the system were \$3,000 less than for July last year, and it is estimated that gross earnings for the year ending June 30, 1920, will not exceed the gross earnings for the year ending June 30, 1919.

Assuming that the gross revenues for the next year will equal those of the past year, it is asserted that net earnings will not exceed \$392,203, equivalent to only 2.1 per cent on the value of the railway property.

To show the increase in operating expenses, exclusive of taxes and depreciation, the application gives the following figures showing operating expenses since 1915, inclusive: 1915, \$1,707,912; 1916, \$1,697,586; 1917, \$2,017,136; 1918, \$2,890,228; for the twelve months ending June 30, 1918, \$2,410,814; for the twelve months ending June 30, 1919, \$3,119,791.

## St. Louis Wants Ten Cents

Rolla Wells, receiver of the United Railways, St. Louis, Mo., has gone before the Public Service Commission of Missouri with an application for permission to charge a 10-cent cash fare and to sell metal tokens good for one fare at the rate of 7½ cents apiece. It had been indicated before the hearing that the company would ask for an 8-cent fare.

Col. Albert T. Perkins, manager for the receiver, is opposed to the idea, recently adopted in Kansas City, of varying fares, dependent on number of tickets purchased. Col. Perkins' plan is to sell the disks conveniently wrapped in flat packages and by an advertising scheme get merchants about St. Louis to dispose of the tokens as a convenience to their customers. He believes that the saving will induce 95 per cent of the passengers to use tokens. Colonel Perkins said:

I am very anxious to get permission from the Public Service Commission to use one metal token, sold at one price, irrespective of the quantity bought. To make metal tokens popular with the public there must be a reduction in price from the cash fare. Use of these tokens, if they are made sufficiently attractive to the public, is certain to result in a decided improvement in the movement of cars. It will reduce the delay that now results while the conductors make change under the 6-cent fare.

In the hearing for increased fare Receiver Wells will show the State board that the recent granting of a 45 per cent wage increase to employees means an additional expenditure of \$2,740,000 annually, plus \$684,000 in back wages to June 1, which must be paid by March, 1920.

## Six Cents in Birmingham

City Commission Allows Increase Following Request by Receiver—Reserves Right to Lower Fare

The City Commission of Birmingham, Ala., on Aug. 23 adopted a resolution allowing the Birmingham Railway, Light & Power Company to increase its fare to 6 cents. This action was taken in accordance with a written request filed by Lee C. Bradley, receiver for the Birmingham Railway, Light & Power Company, the Birmingham Tidewater Railway, and the Birmingham-Edgewood Electric Railway. The resolution provides that the 6-cent fare is temporary and is subject to modification on the part of the City Commission at any time and that the 5-cent fare may be restored on thirty days notice by the city.

All rights of the city under the franchise of the Birmingham Railway, Light & Power Company and the other companies are reserved to the city. The resolution provides that the 6-cent car fare shall become effective on the acceptance of the terms of agreement as set forth in the resolution and the reservations by receiver and their approval by the Federal Court.

### RECEIVER ASKS FOR INSTRUCTIONS

Asking instructions as to what steps he should take in regard to the new wage contract presented by the local division of the Amalgamated Association, Mr. Bradley recently filed a petition in the United States District Court in which he stated that the income for the six months ending July 31 was \$88,072 less than the total operating expenses, taxes, and interest on the funded debt. The present contract with the employees expires on Aug. 31 and must be renewed by Sept. 1. The receiver points out that the increase in operating expenses will amount to \$791,311 per annum if the wages now asked are granted. In submitting their new pay agreement the men asked for a minimum wage of 60 cents an hour.

### COURT RECOMMENDS INCREASE

The petition, which was filed on Aug. 16, was taken up by Judge William I. Grubb, of the Federal Court on Aug. 18. He ordered the receiver to take the matter up with the Public Utilities Commission and ask that body to grant such an increase in fare as would allow the operation of the property without the wasting of the estate.

He also ordered the receiver to take up the matter with the City Commission of Birmingham and to petition that body to waive the 5-cent fare limit as provided in the franchise in order that such a fare may be collected as will allow the operation of the property without loss. Receiver Bradley stated that until the wage demands of the men have been settled it could not be decided as to just what rate of fare will be asked for.



## Key Route Fare Raised

Rate Across San Francisco Bay Made Fifteen Cents  
—Valuation Is Slashed

Because of the increased cost of labor and materials fares on the trans-bay service of the Key Route (San Francisco-Oakland Terminal Railways) were increased on Aug. 12 by authorization of the State Railroad Commission. Authority is granted to raise the one-way fare from 11 cents to 15 cents and the commutation rate from \$3.30 to \$4. The rates may be made effective within thirty days.

The commission briefly reviews the history of the company, how its fares were increased 10 per cent in June, 1918, in parallel with the increases on the Southern Pacific fixed by the federal administration, and how in August, 1918, the Oakland Traction division of the company was given an increase in fares from 5 cents to 6 cents. The commission, therefore, had remaining for consideration only the trans-bay rates under the application filed in July, 1917. This is the matter now decided.

The commission rejects the company's claim of a \$46,000,000 investment value as unsound and prefers to recognize the estimates of the commission's engineers, which are \$8,000,000 for the Key division property and \$11,000,000 for the Traction division, a total of \$19,000,000. The commission, however, holds that neither the investment nor the valuation can be considered the chief factor in determination of rates for this company.

### DECREASE IN GROSS INCOME

A table showing the income of the company for the past four years shows an advance in gross operating revenue from \$4,353,891, for the year ending June 30, 1915, to \$5,160,385 for the calendar year 1918. While this increase in gross operating revenue occurred a decrease in gross income was equally positive, the gross income dropping from \$1,232,021 for the year ending June 30, 1915, to \$882,924 for the calendar year of 1918. Out of this gross income the payment of interest on funded and unfunded debt and the return on property investment is paid. During the period alluded to there were many increases in the cost of materials and particularly advanced wages for the many classes of employees. Comparing the period of Aug. 1, 1918, to June 30, 1919, with a similar period of the preceding year leaves, the commission says, a decrease in operating profit of \$126,867 on the Key division alone.

In discussing the income showing of the company, the commission says:

Were it not for the fact that there has been a remarkable increase in traffic during the last two years on both the Traction and the Key divisions of this system, the financial results would be much worse. There appears to be so healthy and rapid a growth in population in the territory served by this company that it is sound to estimate that this growth will further continue. This condition is taken into consideration in reaching our conclusions.

Even with this condition obtaining it is apparent that the increased gross revenue from the increased traffic has failed to keep up with the increasing operating expenses.

In discussing the many increases in wages granted, the commission says:

The commission has definitely adopted the policy to recognize as operating expense all increases in labor costs and this policy will be adhered to in this proceeding. It will not be necessary in this decision to go into the details of the increases in operating expenses and the reasons for such increases. The subject is a familiar and pressing one and has been dealt with exhaustively in a number of previous decisions made by this commission.

### FINDINGS OF COMMISSION

The commission's conclusion on the company's finances is shown in the following declaration:

A careful analysis of the applicant's financial condition leads to the conclusion that the margin between revenues and operating expenses is steadily growing less. This is true for the property as a whole, taking the Traction and the Key divisions together. It is also true to a lesser extent for the Traction System alone, although it is apparent that the street car operations of the applicant taken by themselves are still, even with the increased operating costs, returning a profit even though this profit on a fair rate basis is less than 8 per cent. The Traction division earnings now are, as they have been in the past, carrying the Key division's losses. Considering the Key division alone (and it must be remembered that it is the rates on the Key Division that we are dealing with in this decision), the point has almost been reached where the revenues are insufficient for operating expenses and taxes alone with no margin whatever for a return on any rate base.

For the property as a whole, the net income after operating expenses, depreciation and taxes, is less than 5 per cent on the rate base.

It is our estimate that with these fares, the applicant's revenues will be increased by approximately \$400,000 per annum. The greater percentage of this amount will be a net increase. We believe that with this increase, the applicant will be enabled to render an entirely efficient and adequate service to the public.

In discussing the rate base the commission declares that the suburban service cannot be segregated from the other services of the company and that it is impracticable to have one set of rates for the Key Route and another for the competing Southern Pacific lines. The commission holds that "a fair decision both to the public and to the company should provide for increase in fares sufficient to place this company in a position where it can render adequate and efficient service to the communities on its lines."

A remedy for the financial condition of the company is suggested by the commission, which says:

It has been repeatedly pointed out by this commission that the only permanent remedy for the financial difficulties of this company is a thorough-going reorganization of its finances. As long as the Key System rests on the present unsound financial structure, it is bound to continue in financial difficulties in the future as it has in the past. The rate increases will not effect a complete or permanent remedy of this situation. If it were practicable to do so, we would make reorganization one of the conditions of this order. The value and the cost of the service rendered by the company, in our opinion, justify an increase of interurban fares.

The commission criticises the depreciation reserve account of the company. It finds that it has been bookkeeping

and not actually making money, and directs that in the future an adequate cash depreciation reserve be set aside equal to \$100,000 a year for the Key division and \$140,000 a year for the Traction division, accumulating by monthly installments of \$20,000.

### I. C. C. Favors I. T. S.

Upon application of the Illinois Traction System, Peoria, Ill., for an order requiring the establishment of through routes and joint rates between points on the lines of the Illinois Traction System on the one hand and points on the New York Central System on the other, the Interstate Commerce Commission has issued an order involving the following points:

1. That through routes should be established for the transportation of freight traffic except coal from and to all points on the line of the Illinois Traction System between Lincoln and Mackinaw, to and from all points on the New York Central System, and joint rates applicable thereto not higher than the rates contemporaneously applied on like traffic from and to Peoria.

2. That through routes for the transportation of freight traffic except coal should be established to and from Mechanicsburg from and to all points on the New York Central System, and to Fetzler from all points on the New York Central System, and joint rates applicable thereto not higher than the rates contemporaneously effective on like traffic to and from Springfield.

3. That through routes for the transportation of grain should be established from elevators located on the Illinois Traction System at points now served by defendant carriers to all points on the New York Central System, and joint rates applicable thereto not higher than the rates contemporaneously applied on grain from Peoria.

The case was submitted on March 7 and was decided on June 30. The order of the commission is to continue in force for a period of not less than two years from the date it goes into effect.

### Eight Cents in Kansas City On Sept. 1

The Kansas City (Mo.) Railways, ordered by the Public Service Commission of Missouri to install an 8-cent rate on Aug. 20, has with the consent of the commission postponed the charging of 8-cent fares until Sept. 1. The company is charging only a 7-cent cash fare for the interim, and is recognizing as full fare the metal tickets already in circulation, for which patrons had paid 6 cents. The company has received a new form of metal ticket for sale under the 8-cent fare arrangement. These tickets are being put on sale now, and it is hoped will be generally bought before Sept. 1.

One reason for the 7-cent fare period was the lack of an adequate supply of the new 8-cent metal tickets. The old 6-cent tickets will be redeemed at face value by the company after Sept. 1. The present half-fare tickets were not used after Aug. 19, being redeemable at face value, 2½ cents. The company through the *Railwayman*, its own publication, circulated on the street cars, and through newspaper display space, gave wide publicity to the fare plan which it proposed to install.



## Buffalo Case Closed

Briefs Are to Be Filed by Sept. 1 in Connection with Increased Fare Application

The question of increased fares in Buffalo, N. Y., was submitted to the Public Service Commission for the Second District on Aug. 20. Assistant Corporation Counsel Pierce may ask for another hearing if he deems it necessary to submit further evidence as the result of checking up certain expenditures of the International Railway upon which the company bases its application for higher fares. Briefs are to be filed in a week.

The hearing on Aug. 20 was devoted to Mr. Pierce's examination of the railway company's witnesses. Frank Fuller, who checked up the company's expenditures, gave the result of his investigation. He said the company's distribution of expenses between Buffalo and other parts of the system appeared fair to him except in the charges for accidents and damages credited to the Buffalo lines only and amounting to about \$750,000.

Mr. Pierce told Chairman Hill that he would have no further proofs to submit as to the company's valuation.

It developed in the examination that the International Railway owned a coal mine in Pennsylvania. This it bought from the International Traction Company in 1918 for \$300,000. The traction company acquired the coal mine in 1917 for \$150,000. E. G. Connette, president, said the company bought the coal mine because of market conditions. The company got its coal from the mine and sold the coal to companies in Elmira and Lockport at cost plus \$1 a ton. He said the buying of the mine was a life saver. The railway considered it a good purchase at \$300,000 and the directors voted to buy it. Mr. Connette also told about financial transactions between the two companies.

Mr. Pierce questioned Charles A. Chavel, auditor, about the balance sheet and income account statements. He was questioned in detail in regard to the intercorporate relations of the two companies included in the system at Buffalo and also with respect to the ownership and control of the securities by the companies included in the system.

H. C. Hopson, New York, N. Y., expert for the railway; H. E. Reixinger, engineer, and Henry C. Young, purchasing agent, were also examined by Mr. Pierce.

## Seven-Cent Fares in Oshkosh

The Railroad Commission of Wisconsin on Aug. 10 handed down a decision granting the Eastern Wisconsin Electric Company a 7-cent cash fare on its Oshkosh city lines. The company's petition, which was filed early in the spring, originally asked for a 6-cent fare.

The commission's order calls for the

sale of tickets in strips of six for 35 cents and of individual fifty-ticket books for \$2.50. These books are good for one person only; that is, only one fare can be paid from each book at a time. The new rates have already gone into effect.

The City Council of Oshkosh has passed an ordinance relieving the railway from paving obligations. The city authorities and the public have shown willingness to co-operate with the railway, and the petition to the Mayor and the Council calling for relief from paving obligations was signed by more than 1500 persons. There was practically no opposition when the higher fares went into effect.

## Jitney Service for Boston

Eight Companies Apply for Rights Under Recently Enacted Automobile Measure

Eight jitney bus companies, with plans for operating ninety-one buses with seating capacities ranging from ten to thirty persons each, have applied to the City Council of Boston, Mass., for licenses under the terms of an ordinance recently approved by Mayor Peters. The bus companies, one of which is incorporated for \$100,000, propose to establish jitney service over a large number of routes throughout the city.

The prevailing fare over the shorter routes will be 5 cents, while 10 cents will be the charge for a longer ride. The applications are under consideration by the jitney committee of the Council.

The jitney ordinance, enacted recently, provides for the issuance of licenses by the Council. The fee is \$5 and the license shall remain in effect until revoked by the Council. The license must specify the terminals, routes, stopping places, and hours and the fare to be charged. Before issuance of a license a prospective jitney operator must file with the city clerk a bond of \$5,000 for a vehicle having a seating capacity of five persons or less, and \$500 additional for each passenger seat in excess of five. A bond of \$25,000 shall be deemed sufficient for all the vehicles operated by one licensee.

In addition to this license and the chauffeur's license issued by the Massachusetts Highway Commission, each jitney operator must obtain from the police commission of the city of Boston a special annual license, the fee of which is \$5. Every licensee must file with the police commissioner a schedule of fares, and the seating capacity of each vehicle operated by him.

Every bus must have a printed sign stating the terminals of the route, the fare charges, the license number, and the schedule of hours. The schedule of operation filed with the application shall provide for regular operation over the route specified by this schedule, but the operator may make extra trips at certain hours or on special occasions.

## Transportation News Notes

**Coast Jitneys Boost Fares.**—The City Commission of Atlantic City, N. J., has issued an order allowing jitney drivers to charge a higher fare. To certain points the drivers are allowed to charge as high as 20 cents. Double fare may be charged between midnight and 5 a.m.

**Bus Line for Lawrence.**—A bus line competing with the interurban electric railway between Lawrence and Salem, Mass., began operation on Aug. 21. The fare is 45 cents against 55 cents charged by the railway. The running time is reduced from ninety minutes to seventy-five minutes.

**Six Cents in Evanston.**—The Evanston (Ill.) Street Railway on Aug. 9 began charging a 6-cent fare. The increased rate will continue until Feb. 1, 1920, unless the company is directed by the Public Utilities Commission of Illinois to re-establish a 5-cent fare. Children's half-fare rates have not been raised.

**Would Raise Fare Again.**—Although an increase in fares was allowed only last January by creation of an additional fare zone, the East Taunton (Mass.) Street Railway has applied to the Public Service Commission for a fare increase on its four zones from 5 to 8 cents. The company operates about 11 miles of track through East Taunton and Middleboro.

**Fare Revision at Holyoke.**—The Holyoke Street Railway has notified the Public Service Commission of Massachusetts that on Sept. 20 it will put a revised fare system into effect. The zones will be shortened and the fare will be placed at 6 cents in each zone instead of 7 cents as at present. The recent wage award to the company's employees made by H. B. Endicott has made necessary an increase in revenue.

**Advocates Freight by Trolley.**—Governor William N. Runyon of New Jersey in an address before the Ocean County Grange on Aug. 21, advocated the use of the electric railway under State supervision in the distribution of freight to lower the cost of living. If re-elected Governor, he said that he would bring the subject of shipping freight by electric railway to the attention of the next Legislature.

**Interurban Road Wants More.**—The Washington-Virginia Railway, Washington, D. C., which operates lines to Mount Vernon, Clarendon, and other points in Virginia, on Aug. 22 petitioned the Interstate Commerce Commission for an increase in rates between Washington and points more than 2½ miles from that city. The company incurred a deficit of \$20,768 during the first



five months of 1919, according to the petition.

**Fare Raised in Waltham and Newton.**—Officials of the Middlesex & Boston Street Railway, Newtonville, Mass., have announced an increase in fares from 7 cents to 10 cents on all the lines of the company operating in Waltham and the line in Newton. The fare increase will go into effect on Sept. 20. The fare on these lines was not raised when the Public Service Commission recently allowed the company a 10-cent rate on its other lines.

**Employees Taught Electric Railway Facts.**—"Electric Railway Truths" is the title of a booklet prepared by John A. Britton, vice-president and general manager of the Pacific Gas & Electric Company, Sacramento, Cal., for distribution among the company's employees. The booklet outlines the general electric railway situation, points out facts generally overlooked by the public, and urges trainmen to pass this information along to riders.

**Would Raise Interurban Rates.**—Increases in passenger rates of from 15 to 20 per cent and in freight rates of from 5 to 20 per cent are sought in the application filed recently with the Public Utilities Commission of Kansas by the Kansas City, Kaw Valley & Western Railway. The new schedule would make the fare to Lawrence \$1.08—an increase of 18 cents. Applications for similar increases on the company's Pittsburg-Joplin-Columbus lines are also before the commission.

**Seven Cents Asked in Calais, Me.**—The Calais (Me.) Street Railway, which operates a road 7 miles in length, has filed a new schedule of rates with the Public Utilities Commission, increasing the single fare from 6 cents to 7 cents, effective on Sept. 12. A 6-cent fare has been effective on this road since June 10, 1918. The present fare of 2½ cents for school children is retained under the new schedule.

**Interurban Fares Raised by Court.**—The Chicago & Interurban Traction Company, Chicago, Ill., may now charge 3 cents a mile between Chicago and Kankakee, under an order recently issued by Judge Carpenter. Attorney-General Brundage, the Illinois Public Utilities Commission and the State's attorneys of Cook, Will and Kankakee Counties have been enjoined from interfering with the charging of 3-cent fares.

**Asks Increase in Charleston, W. Va.**—Increased rates are asked by the Charleston (W. Va.) Interurban Railroad in an application filed with the Public Service Commission of West Virginia. Forty per cent increase is asked for in the cash fares, and 30 per cent in the ticket prices. A rate of 7 cents for fare in the city limits is desired and the proposed rates for tickets are: Fifty for \$3.25; 100 for \$6.50; for school children, 100 for \$3.50, and forty for \$1.40. Hearing has been set for Sept. 9.

**Fares Raised in Joliet and Rockford.**—The Public Utilities Commission of Illinois has granted the Chicago & Joliet Electric Railway, Joliet, Ill., an increase of fare, allowing a 10-cent fare for adults, 5 cents for children between seven and twelve years of age and 3½ cents for children under seven years of age. The rate also applies to Lockport and Rockvale. The commission has also issued an order permitting the Rockford & Interurban Railway to charge 6 cents in Rockford.

**Wants a Ten-Cent Fare.**—The Corpus Christi (Tex.) Street Railway has made application to the City Council for authority to increase fares from 5 cents to 10 cents. Claude Pollard, Houston, Tex., attorney for the company, appearing before the City Council, said that if the city charter was not amended so that the increased fares could be authorized, the company would be compelled to discontinue its service. The petition of the company was taken under advisement.

**Will Ask for Eight-Cent Fare.**—The Aurora, Elgin & Chicago Railroad has announced that it will ask permission of the Public Utilities Commission of Illinois to raise fares in Aurora and Elgin to 8 cents and to increase interurban rates on its Fox River lines to 3 cents a mile to meet the 5 cents an hour increase granted the employees. The commission recently denied the company's petition for a 7-cent fare and ordered the present 6-cent rate continued to July 1, 1920.

**Six-Cent Fare Extended in Springfield.**—The Public Service Commission of Missouri has issued an order extending to Oct. 1 the 6-cent fare charged by the Springfield Traction Company since Feb. 1. Revenue statements submitted by the company to the commission showed that since the higher fare was authorized earnings had been inadequate to meet expenses, although conditions had improved during the last few months. The company's original petition for a 6-cent rate was supported by the citizens' committee headed by Judge John G. Sturgis, presiding judge of the Court of Appeals.

**I. T. S. Wants Increased Rates.**—The application of the Illinois Traction System, Peoria, Ill., for filing a schedule, increasing rates for interstate transportation of milk and a number of by-products between all stations on its lines in Illinois and St. Louis, Mo., has been approved by the Interstate Commerce Commission which has just handed down its decision in the case. The commodities for which increased rates are asked are milk, skimmed milk, buttermilk, curd, cream, condensed milk, evaporated milk and concentrated milk.

**Ticket Holder Brings Suit.**—An interesting case developing from the increased fares in Chicago, Ill., is pending in the courts. This is a suit brought by a passenger who had bought 100 elevated tickets at 6 cents each. One of these tickets was refused at a sta-

tion without the payment of 2 cents additional. Inasmuch as the ticket bore the words "Good for one fare," the complainant insists that this was a contract for transportation regardless of any change in the rate of fare, and that he was entitled to a ride at the price he had paid for it.

**Interurban Rates Modified.**—An order recently issued by the Public Service Commission of Oregon provides for reduction of 7-cent fares on the interurban lines of the Portland Railway, Light & Power Company to 6 cents, and requires establishment of junior and joint through tickets. Under the so-called fifty-two-ride commutation ticket, effective between Portland and all stations south and east of Golf Junction, the fare is fixed at 6 cents as against 7 cents under the old schedule. This schedule applies only to passengers riding on commutation tickets, the cash fare remaining under the new tariff the same as at present. The rates become effective on Sept. 19.

**Public Will Pass on Skip Stops.**—The Dallas (Tex.) Railway has been ordered by the supervisor of public utilities to speed up its schedules which have been in effect in Dallas since the skip-stop system was discontinued on July 1. The supervisor found after careful checking of the schedules on all the important lines of the city that the company had lengthened its schedule too much, and was not giving the same relative service as before the skip stop was discontinued. For instance, on the Ervay line the round-trip schedule was ordered reduced from forty-eight to forty-five minutes. Under the skip stop this time had been forty minutes. Under the order passed by the City Commission the skip stop in Dallas was discontinued for a period of three months from July 1, after which there is to be a referendum and the railway patrons are to express their choice of the skip-stop or stop-at-every-corner plan of operating.

**City Lacks Power Over Fares.**—The dispute between the city of Columbia, S. C., and the Columbia Railway, Gas & Electric Company growing out of the establishment of a 7-cent fare on July 1, remains unsettled. Morris C. Lumpkin, Assistant Attorney General of South Carolina, has rendered an opinion in which he holds that the City Council has no authority to amend the franchise of the company so as to regulate street-car fares. An ordinance giving the Council such power had been introduced in that body, as noted in the issue of this paper for Aug. 16, page 363. The Attorney General's opinion holds as follows: The streets of Columbia are the property of the State and the original grant or franchise was given by the State Legislature. The original franchise was for a period of thirty years. This expired in 1912 and was then renewed in perpetuity, and any authority to interfere with rate making must come from the Legislature.



## Legal Notes

### IOWA—*"Scrambling Possession" at Crossing Does Not Determine Future Expenses of Construction and Maintenance*

Where the first steam railroad track at a crossing was laid years before the intersecting street railway track and the steam railroad started to lay a second track before the electric road, but the latter anticipated possession of the crossing from fifteen minutes to an hour prior to the steam road and proceeded to erect a second track at night, it was held that "scrambling possession" of the electric railway company conferred no rights upon it, and that it was liable for expenses of installing and maintaining the crossing. [Waterloo, Cedar Falls & Northern Railway vs. Chicago Great Northern Railroad, 173 Northwestern Rep., 81.]

### LOUISIANA—*Ordinance Raising Street Railway Fares Does Not Impair the Obligation of Contracts and Citizens Cannot Enjoin Their Collection*

Contracts granting privileges, such as contracts between a city and a street railway company under express legislative authority and under the police power of the State and city, are always within the control of the State to change, modify, or revoke, so that an increase in street railway fares, authorized by ordinance, does not impair the obligation of contracts, in violation of Const. La., Art. 166, or Const. U. S., Art. 1, Sec. 10.

Contracts between a city and a street railway permitting an increase in fares as a war measure for a limited time, at the suggestion of national authorities, to avoid receivership, etc., were made for the public good, so that city taxpayers, not alleging any vested right or interest in the contracts and not alleging that the ordinance was unreasonable or in bad faith, or that their taxes would be thereby increased, and not referring to any law forbidding the city to modify the contract, had no interest to sue to enjoin the collection of the increased fares, and suit against the city would be dismissed, in view of Code Prac., Art. 15. [Black et al. vs. New Orleans Railway & Light Company et al., 82 Southern Rep., 82.]

### MARYLAND—*Liability of Initial Carrier for Torts of Connecting Carrier*

Where a street car was operated to a certain point by one company and beyond such point and to the end of the trip by another company, with the same car employees, without charge of additional fare and without notice to the passengers that when the car reached such a point the latter company acquired

control, and where both companies had the same officers, directors and employees and were parts of one railway system referred to as "the company," the former company is equally liable with the latter company for the conductor's failure to protect a passenger during that part of the trip when the car was operated by the second company. [Pugh vs. Washington Railway & Electric Co., 106 Atlantic Rep., 522.]

### MASSACHUSETTS—*Motorman Starting From Temporary Stop*

Where a car stopped temporarily on account of a blockade and the motorman had no knowledge that a passenger would attempt to leave the car, the point not being a regular stopping place, he was not negligent in starting the car in relation to a passenger who attempted to alight, though no starting bell was given by the conductor. [Bush vs. Boston Elevated Ry., 123 North-eastern Rep., 613.]

### MISSOURI—*Deficiency in Number of Passengers on Special Excursion*

Where persons attempting to get up an excursion for certain societies induced a railway company to publish a special tariff at a certain rate providing 400 passengers were transported and deposited \$50 as evidence of their good faith, they are not liable for any deficiency arising under the tariff, in the absence of a contract by them guaranteeing the number of passengers carried. [St. Louis Electric Terminal Railway vs. Buechel et al., 213 Southwestern Rep., 177.]

### NEBRASKA—*Public Service Corporation Is Entitled to a Fair Return on the Value of Its Property*

If, owing to changed conditions, the net earnings of the company, properly managed, are not a fair return upon the value of its property, the rates should be increased without imposing impossible or unnecessary conditions. When, under the rates allowed, dividends are fairly earned and declared, such dividends become the property of the stockholders, and, if used to make proper additions to the property, such additions should be considered in adjusting rates. The State Supreme Court, upon appeal, will not disturb findings of the State Public Service Commission, unless it appears that some requirements of the law have been violated or disregarded, or that the result reached cannot reasonably be derived from the facts proved. [In re Lincoln Traction Company (two cases), Lincoln Traction Co., vs. City of Lincoln et al. Same vs. City of Lincoln, 171 Northwestern Rep., 192.]

### NEW JERSEY—*Injury at Public Crossing of Right-of-Way*

A pedestrian who attempts, at a public crossing, to cross the tracks of a trolley railway laid, not in a public street or highway, but on what is obviously its private right-of-way, is under a duty to look out for an approaching car, and if he neglects this duty, and is run into in consequence, there can be no recovery. [Merkel vs.

Jersey City Ry. Co., 75 N. J. Law, 654; 68 Atl. 74, distinguished; Aquino vs. Morris County Traction Co., 106 Atlantic Rep., 802.]

### NEW YORK—*Duty to Person Entering Car to Pay Fare for Passengers*

Where the plaintiff entered a car with lady passengers, whose fares he paid, and requested the conductor to stop at the next street crossing, and the conductor, learning for the first time that plaintiff was not a passenger, consented and signaled the motorman to stop, he recognized that the plaintiff was not wrongfully on the car and permitted his presence, so that the plaintiff was a licensee and not a trespasser. [Barrett vs. Brooklyn Heights Railway, 176 New York Sup., 590.]

### NEW YORK—*Relocation of Subway Entrances and Exits a City Charge*

Where the board of rapid transit railroad commissioners, acting under authority of law, granted a certificate to a company to operate a subway under the streets of the city of New York, and the city consented to the use of sidewalks for exits and entrances to the subway and the company accepted these locations, it was held that a contract was created which conferred upon the company an irrevocable franchise. Hence the city was bound to recompense the company when it required the latter to change the entrances and exits. [City of New York vs. Hudson & Manhattan Railway, 177 New York Sup., 4.]

### TEXAS—*Ordinances Reducing Fares Do Not Have to Be Confiscatory to Be Enjoined. Unreasonableness Is Sufficient Ground, but This Must Be Shown.*

To enjoin the enforcement of an ordinance reducing fares to be charged by a street railway, it was not incumbent upon the railway company to show that the reduced rate was confiscatory within the meaning of the federal constitution, but it was entitled to the injunction if the reduced rate was unreasonable, unjust and insufficient to maintain a fair return upon the value of the property.

Where, on account of the war, a city passed an ordinance increasing street railway fares, it cannot be said that the court abused its discretion in refusing an injunction to restrain the city from enforcing an ordinance repealing the ordinance, where the city officials made affidavit that when the armistice was signed most of the material necessary for the operation of the street railway had declined and that conditions which impelled the council to grant temporary relief had ceased to exist, that the "jitney" menace had then become nearly obliterated and that earnings of the company had reached practically the highest point in its existence, the street railway not having shown in its bill the actual statistics to support its allegation that the normal fare was unreasonable. [Houston Electric Co. vs. Mayor and City Council of City of Houston, 212 Southwestern Rep., 198.]



### WISCONSIN—Company Entitled to a Reasonable Rate of Return

In an action to set aside an order of the Railroad Commission requiring the electric railway company to sell tickets in packages of thirteen for 50 cents instead of six for 25 cents, the evidence was held to show that at the time the order was entered in August, 1912, the rate was not unreasonable. A reasonable rate of fare is a rate which yields a fair return on the value of the property necessarily employed over and above expenses and depreciation, and a rate of 7½ per cent was approved by the court as a fair return. [Milwaukee Electric Railway & Light Co. vs. Railroad Commission of Wisconsin (City of Milwaukee, Intervener), 172 Northwestern Rep., 746.]

## New Publications

### Safe Practices in Fire Extinguishment

Fire Extinguishment, No. 24, of Safe Practices. Pamphlets of the National Safety Council, Chicago, Ill.

### Industrial Standards Series

Issued by the Department of Commerce, Division of Publication, Washington, D. C., listed in the May, 1919, monthly list of publications of the department. Standard specifications for wrought iron, cast iron and steel bars, pipes, plates, bolts, wheels for electric railway service, etc.

### Electrical Power Transmission

By Alfred Still, Professor of Electrical Design, Purdue University. McGraw-Hill Book Company, Inc., New York, N. Y. 403 pages.

This book is really a revision and amplification of the author's earlier and well-known book on "Overhead Power Transmission" and covers in addition to the context of the earlier book the subject of underground conductors. Much new material of value to the practicing engineer and of interest to the student of the subject has been incorporated in the new edition. A discussion of the electrical and economic principles and theories underlying the design of transmission lines, together with some cost data, occupies the first portion of the book.

In connection with this discussion some little space is given to the use of iron wires for transmission purposes and synchronous machines for phase modification and control. Other portions of the book deal with such subjects as overhead line insulation, lightning protection, underground cables and underground power transmission, and aerial line supports and the theory relating thereto.

One of the chapters is devoted to a brief discussion of the Thury high voltage direct current system and the appendix contains sample specifications of wood pole and steel tower transmission lines.

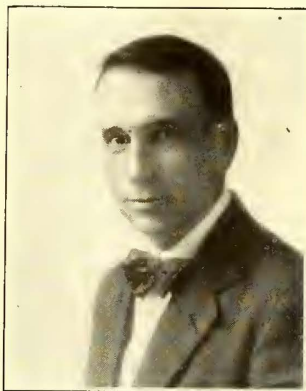
In its new form the book should constitute a valuable addition to the working library of the practicing engineer. Also its value as a college text book has been greatly enhanced by the revisions and amplifications.

# Personal Mention

## G. C. Estill General Manager

Named by Receiver Rushton to Have Charge of Montgomery Light & Traction Company

G. C. Estill has been appointed general manager of the Montgomery Light & Traction Company, Montgomery, Ala., by Ray Rushton, receiver for the company. Mr. Estill was born on a farm near Lexington, Ky., where he attended school. He was graduated from Kentucky University at Lexington in 1902 with an A. B. degree and



G. C. ESTILL

later from Cornell University with the degree of mechanical engineer.

He was with the Nashville Railway & Light Company as foreman of bonding from October, 1907, to July, 1908, leaving to join the Birmingham Railway Light & Power Company where he served as motorman and conductor, helper in car shops and the power house, and in the meter and line department from 1908 to 1910. He was first assistant engineer of that company from May, 1910, to July, 1915. During the most of this time the engineering department had direct charge of all construction, track maintenance, and maintenance of all lines in the railway, power and light departments.

He became connected with the Cumberland County Power & Light Company, the Lewiston, Augusta & Waterville Street Railway, the York County Power Company and the Westbrook Electric Company as chief engineer with headquarters in Portland, Me., in August, 1915. He resigned from those companies in April of this year.

John M. Stevens has been transferred by the Southern Public Utilities Company, Charlotte, N. C., from Green-

ville to Winston-Salem, where he will act as superintendent of lines.

J. Howard Sturge, Trenton, N. J., has been made division superintendent, in Bergen county, for the Public Service Railway, having been transferred from the southern division.

James E. Gibson, formerly general manager of the Kansas City (Mo.) Railways, has become associated with a firm of stock and bond dealers in Kansas City.

Rudolph Burkhalter, district superintendent in Orange, N. J., for the Public Service Railway, has been made division superintendent of the southern division, with headquarters in Trenton.

A. W. Macpherson, for the last fifteen years on the engineering staff of the San Francisco-Oakland Terminal Railways, Oakland, Cal., five of which he was chief engineer, has resigned to take up ranching.

Robert O. Bentley has been appointed division superintendent of the Public Service Railway, Newark, N. J., in charge of the Essex Division, which has been created by combining the Newark and Orange districts. He was superintendent in the Newark district.

E. G. Shoup, superintendent and traffic manager of the Peninsular Railway, San Jose, Cal., cousin of Paul Shoup, vice-president of the Southern Pacific and president of the Pacific Electric Railway, Los Angeles, was caught in the wreckage in a collision between two cars on that road, Aug. 3 and his left leg was amputated below the knee.

William B. Hartshorn has been appointed in charge of the central division of the distribution department of the Public Service Railway, Newark, N. J. He succeeds Jacob T. Barron, with headquarters at Elizabeth. Mr. Barron was recently made general superintendent of production. Mr. Hartshorn was with the Bergen division of the company.

# Obituary

Theodore Cooper, civil engineer, who took part in the construction of the first elevated railroads built in New York, as assistant engineer in charge of construction, died at his home in New York City on Aug. 24 at the age of eighty-one years. Mr. Cooper was an authority on iron and steel construction. In 1872 he was superintending the erection of the St. Louis bridge across the Mississippi River and was later superintendent of the Delaware and the Keystone Bridge Companies.



# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,  
SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## Car Manufacturers Looking Ahead

**Present Prices and Failure of Railways to Obtain Relief Responsible for Slow-Up in Building**

Railway car manufacturers are experiencing a quiet season and are awaiting with interest the outcome of the present railroad situation. Some of the electric railway car builders still have work in their plants from the contract for 100,000 freight cars which was let by the government more than a year ago. While some are busy finishing up their orders, which came from the steam railway field, others are busy building one-man safety cars, though it is generally admitted that the majority of the plants are not working up to normal production.

It is believed that the electric railway plants may benefit from the steam railway field to a considerable extent within the next six months. It is expected that when the present railroad situation clears it will be found that there are almost 500,000 freight cars which are badly in need of repairs, and to avoid a possible car shortage these may be apportioned among all the railway car manufacturers, in which case electric railway car manufacturers would benefit in the same way as they did when the government awarded the contract for the construction of 100,000 steam freight cars.

Whether or not the electric railways will secure relief by the first of the year or early spring to the extent that they may place considerable orders for equipment is problematical. It is generally believed, however, that a considerable number of companies will have obtained relief by that time and that the car builders will have considerable business in view.

## Wire and Cable Orders Indicate Unusual Activity

**Heavy Demands for Insulated Wire with Deliveries Slower—No New Increases in Prices Noted**

On account of the recent heavy demand for insulated wire, wire manufacturers are behind with their orders and are liable to become swamped if the present conditions continue as they have in the past month. A great deal of work has been deferred, but a considerable amount of work is ahead, and orders of considerable volume are being placed. This is especially true in insulated wire for all purposes although building operations are requiring more

than any other line of work. Deliveries on large orders, which usually are quoted at four to six weeks, have slumped from two to three months. All electrical manufacturing plants are demanding more than the average amount of copper and wire.

For three weeks there has been little advance in wire base and no immediate increase is expected, although wire manufacturers are confident that the market will continue to rise. Rubber covered is quoted around 30 cents, weatherproof at 29 cents, while bare wire is offered at 27 cents. Electrical manufacturing plants are running up to normal production, with one or two exceptions, and the prospects for a good fall season are bright.

Trolley wire requirements are below normal, and the railways seem to be purchasing as little as possible. The volume of business, although more than it has been, is still considerably off, although it is known that a good many roads must soon come into the market, if the properties are to be properly maintained.

Copper demands for transmission purposes are light. There is not only a scarcity of large projects, but small installations of branch power lines have been held up and few extensions made, although a considerable amount is planned. The only demand along these lines is in the rail bond market, where large orders have been placed for fall requirements.

## Sales of Shop Machinery Improving

**Orders Coming In Are Still Light, However—Stock Available at the Present Time Would Last About Thirty Days Under Normal Buying**

Electric railways are purchasing machine tools and special railway shop machinery in better amounts than a few months back. Although the financial condition of most roads is such that they have been able to purchase only a minimum of new equipment, still they have done a large amount of repair and rebuilding work in their own shops and have had to repair and renew their machinery to carry out this program. New machinery has been bought for this purpose and with the financial relief afforded some of the traction lines sales are beginning to pick up in a moderate degree. While the eastern part of the country seems to be rather quiet in this respect the West and Middle West have been more active in the machine tool and special machinery market.

Manufacturers of special machinery for use principally in railway shops are working to a pretty fair capacity in order to build up as large a stock as they are able to carry. The storage space is the main factor to be considered, as the weight and bulk of the special machinery is so great that large stocks cannot be accumulated on account of limited storage facilities available. This space has already been stretched about to its capacity through acquisition of new warehousing facilities, so that at the present time sufficient stocks of miscellaneous special railway shop machinery are available to withstand about thirty days of normal railway buying.

Manufacturers of shop equipment are satisfied that both steam and electric

railways must soon start a buying movement on account of the condition of much machinery in their shops. It is a question of financial relief as to how soon this time will come. It is very probable that this opportunity will be presented to the railroads and electric railways pretty much at the same time and they will all endeavor to satisfy their needs at once. Present stocks will last for a short time when this buying begins, while in a very short time deliveries will begin to mount up to two or three or four months. The steam railway market, of course, has a considerable effect on the electric railway market because of the similarity of equipment required, and thereby will undoubtedly buy a bigger volume than that of the traction companies, so the market really hinges on early deliveries.

### PRICE MAY ADVANCE NEXT MONTH

Prices on machine tools and shop equipment have held steady for several months and at the present time are firm. Only from one source has come any intimation of a possible rise in price and that was a prediction of a 10 per cent increase in September. Other reports show no evidence of any advance in the near future.

Ordinary machine shop tools are selling in satisfactory volume and manufacturers are working to a fair capacity in order to satisfy the demand. It is expected that the disposal of the War Department's present stock of machine tools will have little effect on the general market.



## Effect of Labor Unrest on Electrical Trade

Deliveries Lengthening So that It would Not Be Unwise to Accumulate Substantial Stocks

Increasing uneasiness of labor is having its effect on the electrical trade, all of which is proving to be cumulative. A railroad strike in New England, a walkout of brass and copper operations, a shutdown of some wire mills—all tend to lengthen deliveries. These, taken on top of a large consumer demand, a shortage in freight facilities and local labor troubles, are preventing the trade from doing a larger business.

With this condition today the industry is faced with the prospect of a railroad strike early next month and a strike in the iron and steel field. Should this latter strike come about with a large percentage of operatives out, the visible supply of conduit and other iron and steel products would quickly vanish. Electric railways, therefore, can well afford to carry stocks which right now might appear to be rather large, and even where possible make accumulations for some time in advance.

### Rolling Stock

**Ashtabula (Ohio) Rapid Transit Company** purchased three Birney safety cars from the Kuhlman Car Company.

**Milford, Attleboro & Woonsocket Street Railway, Milford, Mass.**, is remodeling two single-truck closed cars into safety cars.

**Southern Public Utilities Company, Charlotte, N. C.**, has placed an order for twelve safety cars to replace a similar number of wornout cars of the old single-truck type.

**Dallas (Tex.) Southwestern Traction Company**, is expected to be in the market for equipment as soon as financial arrangements for the completion of this road have been made.

**Sioux Falls (S. D.) Traction System**, has ordered from the American Car Company, five completely equipped Birney safety cars. Delivery on these cars is expected in September.

**City of Toronto, Canada**, is having a report prepared by R. C. Harris, city engineer, for extension of the civic electric line and purchase of new cars, equipment, etc. The amount involved is about \$5,000,000.

**Municipal Railway of San Francisco, Cal.**, is to receive a sample railway passenger coach. The Board of Public Works of San Francisco has been authorized to advertise for bids and enter into a contract for constructing the car.

**Eastern Massachusetts Street Railway Company, Boston, Mass.**, has just let a contract to the J. G. Brill Company for 100 safety cars. They will be equipped with General Electric Company's motors, Westinghouse air brakes and Safety Car Devices Company's safety equipment.

**Southern Traction Company of Illinois, East St. Louis, Ill.**, which is expected to make connection between Belleville and East St. Louis within sixty days, will spend between \$1,500,000 and \$2,000,000 for rolling stock, most of which will be for coal cars.

**Fort Smith Light & Traction Company, Fort Smith, Ark.**, is reported to have purchased eight new safety cars for delivery within sixty days. It is expected that the company will soon place orders for converting all cars now in operation into one-man safety cars.

### Franchises

**Montgomery, Ala.**—The Montgomery Light & Traction Company has received a franchise from the City Council to construct an extension to the Aviation repair depot.

**Los Angeles, Cal.**—Bids will be received by the City Council of Los Angeles until Sept. 3 for a twenty-one year franchise to construct an electric railway on Maple Avenue from Seventh Street to Thirty-second Street.

### Recent Incorporations

**Tonopah Divide & Goldfield Electric Railroad, Tonopah, Nev.**—Incorporated to construct an electric railway between Tonopah and Divide, 6 miles. Capital stock, \$50,000. Officers: Charles S. Stout, Reno, president; Joseph H. Hutchinson, Tonopah, vice-president, and Lowell Daniels, secretary.

**Carolina Beach Railway, Wilmington, N. C.**—Incorporated to construct a line from Greenfield, a suburb of Wilmington, to Carolina Beach, 13 miles. It is planned to operate the line by electricity. Capital stock, \$650,000. Officers: P. Q. Moore, president; E. T. Burton, vice-president and treasurer, and A. W. Pate, secretary and general manager, all of Wilmington.

### Track and Roadway

**Birmingham Railway, Light & Power Company, Birmingham, Ala.**—An extension is being built by the Birmingham Railway, Light & Power Company from Fairfield to Westfield.

**Petaluma & Santa Rosa Electric Railroad, Petaluma, Cal.**—Plans are being made by the Petaluma & Santa Rosa Electric Railroad for the construction of an extension from Forestville to the Walls-Ford bridge across the Russian River.

**Connecticut Company, New Haven, Conn.**—Bids will soon be received by the Connecticut Company for the construction of about 1000 ft. of grooved rail, with several switches over State and Water Streets, Bridgeport, in connection with the new plaza. The cost is estimated at about \$35,000.

**Perry & Gulf Coast Traction Company, Perry, Fla.**—Initial steps have been taken by Ellis Bartholomew of

Palm Grove, Fla., and R. C. Flack of Canton, Ohio, toward organizing a company to finance a project of building an electric railway from Perry to the gulf waters. The company has a trackage contract with the South Georgia Railway and the Interstate Company for rights from Perry to Hampton Springs and the line will be built to Palm Grove and Boneta Beach. Later it is likely that the line will be extended down the coast to the mouth of Deamans's Bay, as provided in the proposed charter of the line.

**Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.**—The Fort Wayne & Northern Indiana Traction Company will double track South Calhoun Street from Creighton Avenue to Pontiac Street.

**St. Louis, Mo.**—The City of St. Louis plans to build an electric railway belt line to connect the Municipal and McKinley bridges. An appropriation of \$1,920,000 has been made and plans prepared by J. A. Hook, director, and C. S. Butts, engineer, both of the Board of Public Utilities, for laying 63 miles of track of the United Railways, extending the Natural Bridge line 1½ miles to Pine Lawn, thence to Florissant Avenue, north, also extending the Tower Grove line 1½ miles to Lindenwood, the Taylor line 3¾ miles south to Gravois Avenue, the Lee line 2 miles west and shortening the Cherokee line between Eighteenth Street, Twelfth Street and Geyer Avenue. Another appropriation of \$1,300,000 will be made for the construction of elevated railway tracks and approach to the Municipal Free Bridge at the southern terminus, for which plans have been drawn.

**Brooklyn, (N. Y.) Rapid Transit Company.**—Transit Construction Commissioner John H. Delaney has received and opened bids for the construction of tracks on the section of the Culver Rapid Transit Railroad extending along Shell Road and West Sixth Street from Avenue X to Sheepshead Bay Road, Coney Island. The lowest bid was that of the Slattery Engineering Contracting Company, at \$58,313. It is expected that an award will be made in the near future. The time for completion is four months.

**Goldsboro (N.C.) Electric Railway.**—Extensive improvements to its system are being planned at an early date by the Goldsboro Electric Railway, including the placing of new rails and the construction of an extension.

**Shawnee-Tecumseh Traction Company, Shawnee, Okla.**—Work has been begun by the Shawnee-Tecumseh Traction Company on the rehabilitation of its line between Shawnee and Tecumseh.

**Toronto, (Ont.) Civic Railway.**—Bids will soon be received by the City of Toronto for the construction of a double-track line on Bloor's Street from Quebec to Runnymede Avenue. The cost will be about \$160,000. A report is also being prepared by R. C. Harris, city engineer, for an extension of the civic



electric line and the purchase of new cars, equipment, etc., to cost about \$5,000,000.

**Dallas (Tex.) Traction Company.**—Surveys will be begun at once by the Dallas Traction Company for a proposed interurban line from Dallas to Greenville. It is planned to route the line via White Rock, the municipal water reservoir and summer resort.

### Power Houses, Shops and Buildings

**Fort Wayne & Northern Indiana Traction Company, Fort Wayne, Ind.**—Tecumseh Trail, a resort owned by the Fort Wayne & Northern Indiana Traction Company on the Wabash River near Lafayette, Ind., was the scene of a destructive fire when the large casino and other buildings were destroyed by fire. The loss is \$20,000, partly covered by insurance. The buildings were erected on the site of an old Indian village, the company developing it for a pleasure park and for many years it was the principal picnic ground in the vicinity of Lafayette.

**Duquesne Light Company, Pittsburgh, Pa.**—A large electric power plant will be built at Cheswick by the Duquesne Light Company, which supplies energy to the Pittsburgh Railways. The initial installation will have a capacity of 60,000 kw. and the building will provide for an output of 129,000 kw. The ultimate capacity of the Cheswick plant, it is expected, will be about 300,000 kw. The contract for the construction of the station has been awarded to Dwight P. Robinson & Company, Inc., New York, N. Y.

**Dallas (Tex.) Railway.**—Work is now under way on an addition to the Interurban Building of the Dallas Railway. The addition will contain 26,000 sq.ft. of floor space and will give the building a total of 99,400 sq.ft.

**Ohio Valley Electric Railway, Huntington, W. Va.**—Improvements are being made by the Ohio Valley Electric Railway amounting to about \$200,000. These improvements include the erection of a substation at Ashland to cost about \$75,000; the installation of a cooling system which will increase the capacity of the Johnston Lane substation at Huntington to cost about \$30,000, and betterments at Kenoba to cost about \$60,000 and at Russell, Ky., to cost about \$8,000.

**Intermountain Power Company, Spokane, Wash.**—By an arrangement recently completed, the Intermountain Power Company, which has contracted for power to operate the Chicago, Milwaukee & St. Paul Railway from Othello to the Sound terminals, has made a connection at Taunton with the Puget Sound Power Company, which in turn is connected with the Olympia Light & Power Company. The Intermountain Power Company obtains all its power from the Pong Lake plant of the Washington Water Power Company.

### Trade Notes

**Chicago Pneumatic Tool Company** announces the appointment of J. L. Canby as district manager of sales at Chicago, succeeding Nelson B. Gatch, who has been transferred to New York as district manager of sales.

**Roller-Smith Company** announces that an agency arrangement has been made with L. B. Gottschall, 211 N. St. Paul Street, Dallas, Tex., who will handle the company's lines of instruments, meters and circuit breakers in Texas, with the exception of a small portion in the western part of the state.

**Acme Wire Company, New Haven, Conn.**, announces that owing to the increasing volume of its business in the Middle West and the desirability of keeping in closer and more frequent touch with the requirements of customers, it has opened an office at 521 Guardian Building, Cleveland, Ohio, where it will be represented by J. T. Crippen.

**Edward Marshall Syndicate, Inc., Times Square, New York City**, announces that it has on the ground in Germany, England, France, Sweden and Italy, able men competent to watch every detail of the foreign trade situation, to cover the European commercial field in every way for different trades and to supply complete information with regard to American opportunities in Europe.

**Trade Directory of South Australia.**—To meet the requirements of American business men who wish to make connections with houses in South Australia, the Bureau of Foreign and Domestic Commerce, Washington, D. C., has prepared a directory of manufacturers, wholesale dealers, retail dealers, agents and exporters in that state. Only the most important firms have been included, and the list has been carefully checked and rechecked.

**Page Steel & Wire Company** has opened a branch office in Chicago at 29 South La Salle Street. This office will handle all Armco iron products, including welding rods, twisted pairs, plain and galvanized strand, bond wires, barbed wire and fence manufactured by the company. This company has another new branch office in the Book Building, Detroit. Distribution in Canada is in the hands of Taylor & Arnold, Ltd., Montreal, Toronto and Winnipeg.

**The Duff Manufacturing Company, Pittsburgh, Pa.**, is constructing a 160 x 80 ft. steel and brick addition of the Austin type at its Pittsburgh plant to accommodate the forge shop and heat-treating department. Provision has been made for installing sixteen steam hammers, with an equal number of trimming presses. This department will be equipped with furnaces of the latest type and will be completed about Oct. 1, enabling the production of jacks to be greatly increased.

**Green Engineering Company, East Chicago, Ind.**, announces the appointment of the firm of Bull & Livensparger as its sales representatives in Chicago and northern Illinois territory. They have taken charge of its Chicago sales office, 14 East Jackson Boulevard, serving in all matters pertaining to proposals for Green chain-grate stokers, "sealflex" arches, steam-jet ash conveyors, cast-iron ash tanks and allied products and replacements. E. H. Bull has served the company as an engineer for the past seven years, and D. A. Livensparger has been a member of the sales force for the past nine years.

**Wellman-Seaver-Morgan Company of Cleveland, Ohio**, manufacturer of hoisting engines, hydraulic turbines, mining and other heavy machinery, has recently received an order from the Hydro-Electric Commission of Ontario for two turbines of 52,500 hp. each, the largest in the world, for installation at Niagara Falls. In the last four years the company's business has increased enormously. The gross business in 1915 amounted to \$1,038,945; in 1916 to \$2,491,518; in 1917, to \$4,687,929 and in 1918 to \$7,559,488. Unfilled orders on hand Jan. 1, 1919, amounted to \$4,670,995. The company states that the net earnings for the first four months of the current year compare favorably with the earnings for the same period of last year, and the orders in hand and under negotiation gives assurance of a satisfactory volume of business in profits for the coming year. The officers of the company are: Edwin S. Church, president and general manager; S. H. Pitkin, first vice-president; George Burrell, second vice-president, and W. H. Cowell, secretary and treasurer.

### New Advertising Literature

**United States Light & Heat Corporation, Niagara Falls, N. Y.**: Bulletin 700 illustrating and describing electric welding apparatus.

**Association of Manufacturers of Chilled Car Wheels, Chicago, Ill.**: Booklet on the chilled-iron car wheel gives manufacturing practice, tests, etc.

**Vulcan Soot Cleaner Company, DuBois, Pa.**: Bulletin 451 illustrates and describes the Vulcan diagonal method for cleaning soot from the tubes of horizontal water-tube boilers.

**Manganese Track Society and Manganese Steel Founders Society, 122 South Michigan Avenue, Chicago, Ill.**: Booklet No. 8 gives rules and detailed design for laying out rail bound manganese steel frogs.

**Electrical Engineers' Equipment Company, Chicago, Ill.**: A comprehensive bulletin wherein are described and illustrated cable end bells, switchboard and bus-rack structural devices, copper connections, indoor switching and protective equipment, insulating supports, outdoor switching and protective equipment and insulator pins.