# Electric Railway Journal

*Consolidation of Street Railway Journal and Electric Railway Review*

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## The Men Down the Line, as Well as the Boss, Have Brains

IN EXPLANATION of the good spirit which pervades a certain shop organization a foreman stated that the master mechanic treated his subordinates as if they possessed gray matter in their craniums. This seems like a simple and obvious proposition, but it merits more than a passing thought. After all, the men who in their daily work come into contact with equipment really know most about its shortcomings and are in a position to make excellent suggestions regarding the elimination of defects. Skilled mechanics are natural inventors, and they are in a position to invent useful practices if they know they are considered as more than mere machines, or as more than so many hands. Of course, through lack of opportunity to know what others have done, they will often, nay usually, reinvent what others have previously produced, but it is better thus than a sluggish mind and an apathetic attitude toward a task. Tactful leadership is required to secure alertness and efficiency in work without waste of effort in "wild goose chases" after impracticable ideas. Such leadership, however, is necessary if the best results with men are to be secured.

## Do Not Expect the Committee Chairman to Do All the Work

THIS paper has commented from time to time upon the work and activities of the standing committees of the Engineering Association. While the work of these committees is in full swing, it seems worth while to call attention to the importance of committee work in general and to some matters in particular relating to their proper functioning.

In the first place the committees are organized to promote the advancement and application of scientific principles to the problems confronting the industry and to assist in the promotion of the education of the members of the association as individuals. In view of these objects, it is patent that membership in a committee calls for the performance of important duties and lays heavy responsibilities upon the individual members.

Some men accept committee membership lightly and exert no diligence in the work, not even to the extent of writing a letter; likewise they find trivial excuses for not attending meetings. Men of this character have no place on committees, and failure to perform a reasonable amount of work should be a bar to future appointment. Committee appointments are in a large sense privileges which carry duties which may not lightly be discharged. Mere "ornaments," who like to see their names in a list of committee members and refrain from justifying their appointment by engaging vigorously in the work, are hindrances to effective committee activity.

Sometimes the chairman is not the right man in the right place, but as a rule he has won his spurs through capable efforts while serving as a committeeman. It is obvious that the chairman should not be required to bear the responsibility for the work of the whole committee and at the same time find it necessary to do very much of the detail work. His function is principally that of an executive or manager who is expected to get results from the entire committee organization and to co-ordinate the work to the end that profitable reports are produced. Each committeeman should bear these facts in mind and endeavor to shoulder his part of the burden.

The reason why committees are divided into sub-committees for special consideration of each particular subject is that such division is necessary in order to develop intensive study, which always may best be done by small groups. It should be impressed upon each committeeman that the work of his sub-committee needs all the attention he can give it. And it is quite true that busy men can do a large amount of effective committee work if this work has really enlisted their interest. Time can usually be found for those things which are enjoyed in the doing.

Active committee work will generally yield a large return to the individual, and the meeting of minds during meetings of the committees cannot do otherwise than improve the mentality of those participating. The best results have only been attained by those committees wherein every member has done his level best to aid in the work. It should be remembered that the slang phrase "let George do it" is entirely out of place in committee work, particularly when "George" is supposed to be the chairman either of the whole committee or of the sub-committee.

## Telephone Interference Factor Not an Accepted Unit

THE use of the "telephone interference factor" as an accepted and established standard of measure of the electrical interference of power lines on telephone circuits is being attempted. This intention developed at a recent hearing before one of the principal state public utility commissions, where this factor was entered as evidence by a witness under examination, who cited the American Institute of Electrical Engineers as the authority for the establishment of the unit. Those familiar with the activities of the Institute will recall that a study was undertaken, but by no means completed, to determine whether such a factor could be set up. At the present time the inductive interference committee of the National Electric Light Association and the wave shape committee of the Institute are carrying on studies designed to provide definite information from which further conclusions may be drawn. But at present there is no such factor with any official or authoritative sanction, and this fact should be borne in mind by electric railway engineers in participating in interference negotiation.

## What Makes Transportation Customers?

IN A recent report on the traffic-provoking proclivities of large unit fares versus short-ride fares a noted engineer expressed the opinion that the large unit fare for a city, irrespective of distance, was the more valuable in promoting riding, inasmuch as it encouraged the spread of the population beyond walking limits. To put the thesis baldly: The way to secure riders is to generate conditions that preclude walking.

This statement bears affinity to that enunciated by the Hebrew glazier. Asked how he had built up his business, he remarked with a palpebral spasm of the left eye: "In the night mine boys goes out to break windows. In the morning I goes out to fix 'em. Dat's why I'm so busy alvays."

The subject of "What makes transportation customers?" offers too extensive a field for discussion to be taken up in detail here. The old story of the jocose glazier is quoted simply to point the moral that no business attains maximum selling power through the imposition of arbitrary force, no matter how concealed. We are all pretty confident that the prosperity of glaziers is not dependent upon the number of broken windows, but upon the extent of building activity and the growing appreciation of the value of glass in securing more light and, therefore, promotion of health and economy in artificial illumination. In other words, the glass industry wins out because people have been taught to want more glass.

The same psychology holds in the case of transportation. It is conceivable that a long-ride town may have more rides per inhabitant than a short-ride town if neither of the railways possesses the selling instinct. No undue risk is taken when the assertion is made that the short-ride town will show much the better results of the two if its management preaches with right service, right fares and right publicity the doctrine that every minute saved by the higher speed of the car is a minute added to the active life of the car user.

## Are Poorly Paying or Abandoned Lines Worth Saving?

MUCH good should come of the investigation to be conducted under the direction of the Massachusetts Legislature of the reasons for electric railway abandonment in that state and what can be done about it, if anything. The study will be conducted by the Department of Public Utilities and will cover four topics. The first is to learn what railways, whether in operation now or not, are necessary to promote the public welfare and convenience in the localities served. The second is to determine whether it is desirable to restore service on any of the discontinued lines. The third is to decide whether the additional cost of service on lines now in operation above the popular unit fare should be borne by the public and if so how apportioned, and the fourth is whether the state should own and operate lines deemed necessary for the public welfare and convenience.

Undoubtedly some of the properties already abandoned or about to be abandoned never could have paid their way, even under more favorable conditions of operation than now exist. Another group probably would have continued to have earned living expenses and served the public if it had not been for the advent of the automobile, which has taken away a considerable part of the travel. A third group would probably have survived even this competition, if they have not been overwhelmed by burdens with which the railway man is familiar and which take the form of taxes, paving and bridge charges, and assessments of other kinds.

It will be part of the duty of the new commission to determine which of the roads composing these several groups are worthy of living or resuscitation. All perhaps are not. Nevertheless some of the lines now abandoned undoubtedly should be kept going in the interests of general economy. Finally, there is a good sized group whose construction would not now be considered, but are worth keeping because the tracks are now in. For such particularly the suggestion made in this paper some time ago by R. W. Perkins, president of the Shore Line Electric Railway of Connecticut, might be worth consideration. This was that the state should own the tracks, just as it owns the highways, for the sake of promoting travel. Then the rails could be leased to an operating company. Another principle for guidance was outlined at a hearing before the commission by F. J. MacLeod, street railway counsel, who suggested that each person of a community derives a double benefit from the local trolley line. One was individually as a car rider. The other was from the benefit which the community as a whole received. For the former he might well pay as high a fare as the traffic will bear without unduly discouraging the use of the utility. For the latter benefit, the community as a whole can properly contribute through taxes to the extent that the fares as determined by the plan mentioned above are insufficient to defray the legitimate costs of service.

## Somewhat Different Motives Are Impelling Railroad Electrification Abroad and Here

WHILE railroads in the United States are marking time in the matter of electrification, pending the arrival of rejuvenated credit and cheaper money, they can learn much by keeping in touch with the accelerated electrification movement abroad. At the same time they must make due allowance for the differences in conditions which are bringing about electrification, and which are dictating the purpose of electrification on the two sides of the Atlantic. There the dominant motive is conservation, here it is increase in track capacity.

In all of the discussions of substitution of electrical motive power for steam in Great Britain and on the continent of Europe, the principal stress is being laid on saving in fuel. Some countries are dependent upon imported fuel, and obviously the less they are obliged to import the better for them. In other countries fuel is scarce and expensive, while "white coal," as water power has been felicitously nicknamed, is abundant. With the strong government backing which electrification has on the other side, the conservation appeal is strong enough to produce results.

While Americans want conservation, as well as many other desirable things, the economic pressure for it in this country is not yet sufficiently strong to overcome the forces which are holding back electrification here. The most powerful of these resisting forces are financial, the present difficulty of securing the capital needed for the change and the prospective one of making ends meet after the change is made. Again, a self-contained, one might say self-sufficient, motive-power unit like the steam locomotive is ideal from many points of view. Moreover, the steam locomotive is being improved so as

to reduce the margin of possible fuel saving by change of motive power. But when a railroad is up against the proposition of increasing its track capacity, entirely different considerations enter. Wherever there is overtaxed track, electrification offers in general the cheapest solution of the congestion problem. Except where certain non-economic factors dictate, such as the necessity for eliminating smoke and gases in tunnels, the best place at which to expend the money that is available for electrification is at the congested points.

Besides the two salient differences which have been pointed out above, there are numerous minor considerations which require the discounting of European experience in application to American conditions. Here the tendency is toward enormously heavy tonnage trains, whereas there drawbars are weak and trains light. On the other side speed seems to be favored rather than tractive effort. The penchant of European railways for trying out new types of locomotives ought to be beneficial to railroad engineers in the United States. At present there is much of this process going on. This lends great technical interest to the present electrification activity on European roads.

## The Madison Experiment with Safety Cars

THE standard type of safety car has been adopted by so many roads in the country it is not surprising that modifications have been suggested in it. Some of these have related to the construction of the car without change in its general design, so that in a sense they may not be considered as involving in any way the interchangeability of the car or its use on a system where cars of standard safety dimensions only are employed. Other changes have gone further, and of these probably the two which have been advocated more than any others provide for an increase in the size of the car to be used with one-man operation and an increase in the number of doors from one to two.

The thought underlying the standard plan of single entrance and exit for the standard safety car was that it would be of no value to interchange passengers faster than they could be handled by the car operator from the dual points of safety and efficient fare collection. Hence the one-way, single-file arrangement has prevailed, and the increased standing time has been more than offset almost everywhere by the greater acceleration and retardation effected, as well as the fewer stops caused by the smaller capacity car operated on a shorter headway, as compared with its larger rival. Nevertheless, the advocates of the two-door arrangement have continued their arguments in its favor, and this design is now receiving a trial at Madison, Wis. In the interests of car design such a test is desirable, because arguments in favor of the two-door arrangement have been continuous and a trial is the simplest way of determining its real merit. The test at Madison so far is said to be successful. It should be borne in mind, however, that this trial has been for only a limited time and on a very limited scale, as compared with the 4,000 or more safety cars of standard design in use elsewhere in this country. The conditions under which the test is being conducted also are exceptional, in so far as Madison is a college town and has few if any industries. Finally, a very great superiority for the two-door plan must be shown to commend it to the industry for adoption elsewhere to counterbalance the disadvantage it has of non-conformity to standard.

Efforts to increase the size and seating capacity of one-man cars over those of the standard safety car bring in a different set of considerations, as these efforts have been dictated in nearly all cases by a desire to convert former two-man cars to one-man operation rather than a desire to improve one-man car design. In some cases power operated doors and steps have been used, and in other cases they have not. Undoubtedly there are cases to which one-man cars of greater seating capacity than standard are adapted, these being generally on long suburban runs where the cost of running two-man cars would be so high that it would mean a very long headway, and where the average length of ride per passenger is considerable. In such cases there would not be the same tendency to congestion at the front of the car. Such a car, however, is avowedly an expedient and adapted only for definite and somewhat limited conditions. It is not suitable for congested city service.

## The Indirect Economy of the Welder

EVERY electric railway management is now pretty well aware of the economy commonly effected through the use of a welding outfit to reclaim worn or broken equipment or special trackwork. This is the direct economy derived from extending the life of the piece required. There is also an indirect economy that is perhaps not so generally realized. An important track intersection will illustrate the point. Before the advent of welding outfits, it was necessary for the track department to purchase a replacement intersection at the first indication of failure or major deterioration, in order to have it on hand ready to install when the failure came. This might actually not occur for many months, but meantime several thousand dollars invested in the replacement is tied up and carried in the store's account. With the welder to depend upon, the superintendent of track knows that no matter how bad the intersection may get, he can always fix it up to give service for a few weeks more. Consequently, he does not need to purchase the new intersection until the full life of the old, as further extended by the welder, has been obtained, and until he is ready immediately upon receipt to put the new one in service.

This example multiplied over an entire railway system must mean a very substantial saving in the amount of money required to carry the store's account.

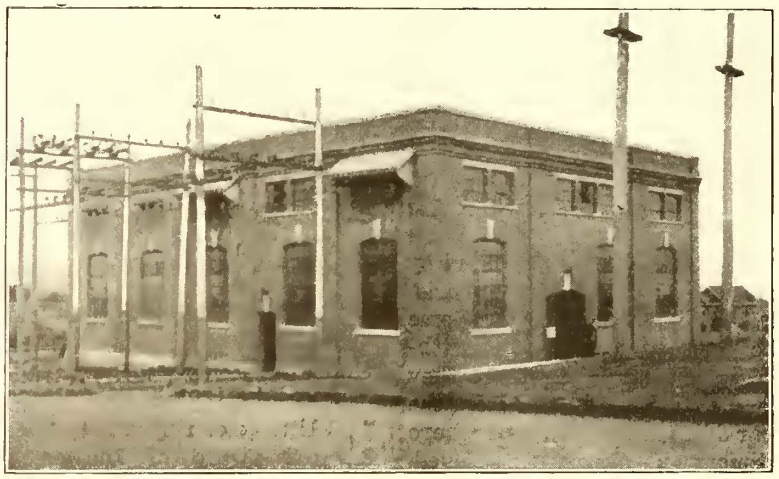
*Quotation from the Federal Electric Railways Commission Report* No. 11

IT IS the law that utilities are entitled to a fair return upon the value of their property used in public service at the time of the inquiry. The methods for finding fair value are in dispute. No permanent solution of the electric railway question can be found in the absence of a finding of value for rate-making purposes. This applies to commission form of regulation, cost-of-service contracts, or public ownership and operation. The public should know what it is paying for, and this question cannot be settled without knowing what the property is worth.

# Thirty Years of Municipal Operation

**Municipal System in Ontario City Now Receiving Power from New Cameron's Falls Plant on Nipigon River, Purchasing This Through Hydro-Electric Power Commission of Ontario—City Also Has Small Water Power Development of Its Own—Some Early and Recent Facts Regarding the System Are Given**

PORT ARTHUR, Ont., is a city of 12,000 or more inhabitants, which has had an interesting electric railway history. As in a number of other Canadian cities, the electric railways, as well as the other utilities, are municipally owned and operated. Desiring to study municipal operation at first hand, one of the editors recently visited this city and went over the property with M. M. Inglis, manager of the Public Utilities Commission of the city. The results of some of his observations are here set down, without comparison of conditions on other municipal or private properties. Port Arthur is located on the northwest coast of Lake Superior, contiguous to its slightly larger neighbor, Fort William. Both are wideawake little cities with many natural advantages and they are important lake ports, among other things being the western terminals for the Canadian Pacific line of lake steamers.



THE CITY POWER SUBSTATION IN PORT ARTHUR

The development of the electric railway system of Port Arthur was traced in an address which Mr. Inglis gave a short time ago before a body of citizens of that city. He said that the system was inaugurated in 1891 and it was, he thought, the first municipally owned electric railway in Canada. To start the railway debenture bonds were issued in the sum of $75,000 on March 1, 1891, the bonds to run twenty years and to carry an interest rate of 5 per cent. Today the railway is capitalized at more than $785,000, not only covering the city of Port Arthur but extending into the adjoining city of Fort William.

From 1891 to 1908 the ownership and operation of the Fort William extension centered in the City Council of Port Arthur, but in 1908 arrangements were consummated whereby that portion of the system in Fort William became the property of that city by purchase, and the dual system was placed under the management of a joint board, composed of members from both cities. This arrangement continued from 1908 to 1913.

At the end of 1913 a complete separation, so far as ownership was concerned, took place, each city owning its respective system but continuing a through car service on both systems. When the joint board official existence terminated in 1913, the control and management of the Port Arthur system reverted to the City Council of Port Arthur and continued in its hands until the Public Utilities Commission was formed in 1915, which now administers the street railway.

Two types of debentures were sold to provide for the financing of the electric railway, namely, sinking fund debentures and serial debentures. The total par value of those issues since 1891 is $940,184. Anual interest and sinking fund charges are now slightly under $70,000.

The assets of the civic railway at present comprise mainly the following physical properties: Twenty miles of track on a single track basis, carhouses and sheds, twenty-two convertible cars, five of which are single-truck cars; two trail cars, two combination work cars and snowplows and sweepers, one baggage car, one open trailer, power-plant machinery to the capacity of 2,500 hp. (the main power supply being purchased), overhead equipment, feeders, tools, etc., necessary for the operation of the system. A simplified map is reproduced to show the general layout of the railway lines.

The principal supply of power for the Public Utilities Commission was, until Dec. 20, 1920, furnished by the Kaministiquia Power Company, the power plant of which is located 20 miles west of the city. From this company, through the Hydro-Electric Power Commission of Ontario, the city purchased 7,000 hp. at 32,000 volts, three-phase, 60 cycles. In addition the city operates a water-power plant on the Current River, where approximately 2,500 hp. is produced at 2,200 volts, three-phase, 60 cycles. Since Dec. 20 the power has been purchased from the Hydro-Electric Power Commission direct.

The "Hydro Commission" furnishes this power from its new development on the Nipigon River at Cameron's Falls, about 70 miles east of the city. While the ultimate development on the Nipigon River will be in the neighborhood of 300,000 hp., provision is being made in the initial development at Cameron's Falls for six units of 12,000 hp. capacity each.

The power furnished by the "Hydro Commission" is brought to the eastern boundary of the city over a transmission line of wood-pole construction, at 110,000 volts.

At the boundary is a terminal station where the pressure is reduced to 22,000 volts; from the terminal station 22,000-volt power feeders run to the city of Port Arthur substation, where the interswitching, transforming and distribution of the local power supply are centralized.

The Port Arthur substation was originally built in 1910, but was enlarged three years later to meet the increasing demands for power for industrial purposes. It contains two 500-kw. synchronous motor-generator sets, provided with direct-connected induction starting motors, with wound rotors. These sets are used exclusively for supplying power to the Port Arthur Civic Railway. The two incoming 22,000-volt feeders are provided with the usual protective switching and metering equipment and the two 2,200-volt outgoing feeders

TABLE I—PASSENGERS CARRIED, BY YEARS

| | Revenue Passengers | Transfer Passengers | Annual Total | Boundary |
|---|---|---|---|---|
| 1915..... | 2,102,373 | 407,719 | 2,510,092 | ..... |
| 1916..... | 2,407,190 | 341,023 | 2,748,213 | ..... |
| 1917..... | 2,997,974 | 248,970 | 3,246,844 | From July to Dec. 304,007 |
| 1918..... | 3,877,543 | 241,789 | 4,119,332 | 749,656 |
| 1919..... | 3,944,269 | 288,486 | 4,232,755 | 782,603 |

are similarly protected and are controlled through remote-control oil switches. Branching from the outgoing feeders, through air-break switches fitted with horn gaps and mounted outdoors, is an additional feeder.

Provision is also made on the outdoor construction work for the transfer of the load from one outgoing feeder to another in the event of failure of any one of the oil switches in the substation, by means of the aforementioned air-break switches and a transfer bus.

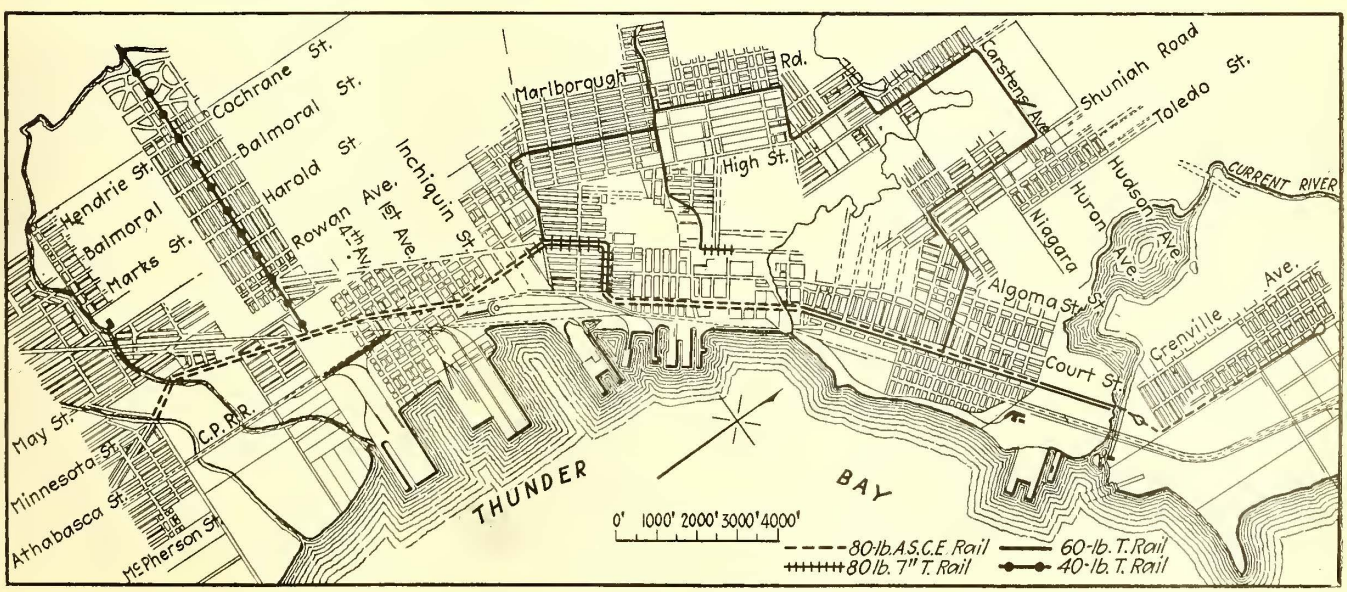
The substation also contains two sets each of three 750-kva., single-phase, oil-immersed water-cooled transformers for lowering the voltage from 22,000 to 2,200. There are also ten 2,200-volt remote-control feeder switches connecting the overhead distribution throughout the various sections of the city and supplying power for lighting transformers and small power consumers. Two 2,200-volt three-phase oil-immersed switches connected to overhead feeders are used in tying in the Current River power plant, which is about 2 miles from the substation.

The complete equipment of this substation was manufactured by Siemens Brothers, Stafford, England, and was supplied by the Siemens Company in Canada. Two photographs which are reproduced show the interior and exterior of this substation, including some of the outdoor overhead work, the motor-generator sets, and the 2,200-volt (low-tension) operating gallery.

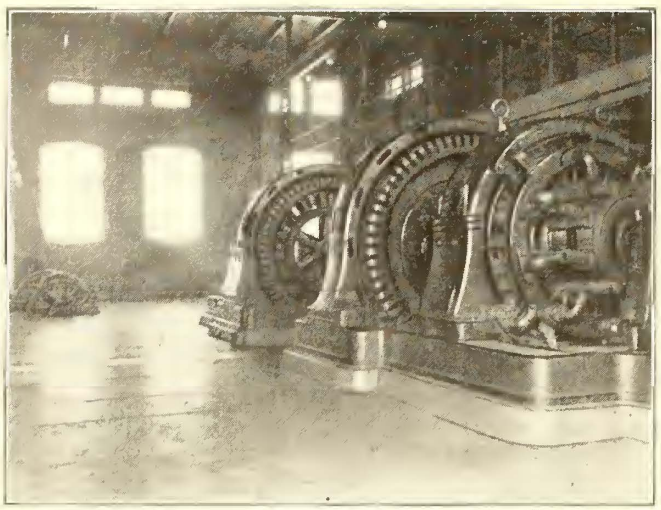
HEADQUARTERS OF PUBLIC UTILITIES COMMISSION OF PORT ARTHUR, TYPICAL CITY CARS IN FOREGROUND

### THIS WATER-POWER PLANT IS OVER TWENTY-FIVE YEARS OLD

The Current River power plant was built in the period from 1903 to 1905 and is today in first-class condition. It contains four Allis-Chalmers generators, three alternating current and one direct current, all direct connected to Jenckes horizontal water turbines. The alternators are respectively of 600-kva., 250-kw., and




ELECTRIC RAILWAY LINES IN PORT ARTHUR, ONT.



HERE THE CITY TRANSFORMS POWER FOR THE RAILWAY AND OTHER LINES

250-kw. capacity, and all are provided with their own belt-driven exciters. There is also a separate 15-kw., 37-volt turbine exciter set, and to furnish an additional supply of direct current there is a 300-kw. synchronous motor-generator set, with a geared starting motor which can be disconnected by shifting the pinion on the motor shaft.

In one of the illustrations of this plant a 250-kw. alternator and the 200-kw. direct-current generator are shown, and in another the switchboard is the conspicuous feature. The latter contains three alternating-current generator control panels in the foreground, and there are local alternating-current distribution control feeder panels and direct-current generator and motor-generator control panels. All panels are fitted with necessary instruments and protective relay equipment. This switchboard was furnished by the Canadian Westinghouse Company.

### SOME OPERATING DATA FOR THE SYSTEM

The accompanying tables give some of the latest operating data available at the time of the preparation of this article. The fare on the system until Sept. 1, 1920, was 5 cents, since which date it has been 6 cents.

The year 1919 was notable in the recent history of the Port Arthur Railway in that during the year the road earned the interest on the bonds and the contribution to the sinking fund, which was accomplished by more than doubling the gross revenue while holding the expenses to an increase of about 50 per cent. In 1919 the number of employees was sixty-one and they were paid $88,000. In the same year insurance and incidentals cost $19,000 and power $20,000.

As to accident expense, the city has been fortunate in that during the past five years only $8,340, an average of $1,688 for a year, has had to be spent in settling claims. This is approximately 1 per cent of the annual gross earnings.

The schedule speed of the cars in Port Arthur, as well as those in Fort William, is high, averaging for the main-line cars about 11¼ m.p.h., although traffic conditions are making the maintenance of this speed increasingly difficult. City regulations require that a car shall stop at almost every street intersection. As in the downtown section the blocks are only about 250 ft. long, the speed in that section is necessarily slow.

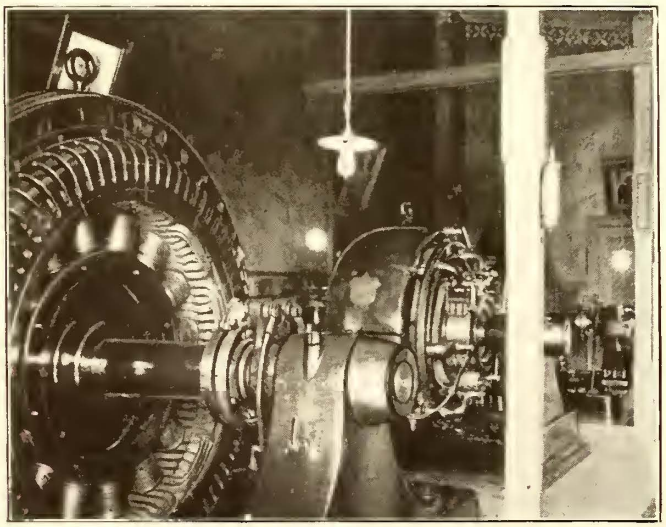
TABLE II—INCOME AND EXPENSE STATEMENT

| | Gross Earnings | Maintenance | Operation | General Expenses | Total Operating Expenses | Net Operating Earnings | Interest, Sinking Fund, Etc. | Net Income or Deficit |
|---|---|---|---|---|---|---|---|---|
| | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars | Dollars |
| 1915 | 94,989 | 14,919 | 57,139 | 10,019 | 82,077 | 12,913 | 76,006 | 63,093* |
| 1916 | 106,299 | 20,910 | 59,419 | 8,698 | 89,028 | 17,272 | 68,325 | 51,053* |
| 1917 | 125,902 | 28,789 | 66,060 | 7,853 | 102,702 | 23,200 | 69,002 | 45,802* |
| 1918 | 152,606 | 29,710 | 74,508 | 9,594 | 113,812 | 38,794 | 68,949 | 30,155* |
| 1919 | 196,442 | 29,988 | 85,743 | 11,350 | 127,081 | 69,361 | 69,361 | ..... |

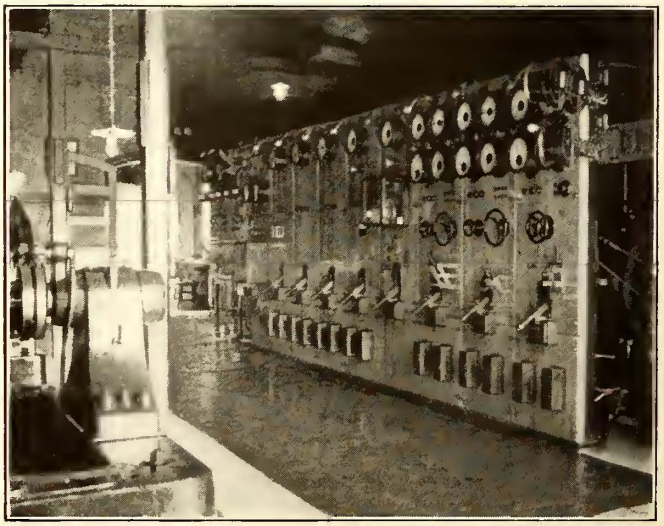
* Deficit.

TABLE III—OPERATING AND CAPITAL CHARGES PER CAR-MILE

| | Operation | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Maintenance | Power | Motormen's and Conductors' Wages | Other Expenses | General | Total Operation | Capital Charges | Grand Total | Car-Miles per Annum |
| | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | |
| 1915..... | 2.60 | 3.49 | 5.04 | 1.42 | 1.75 | 14.30 | 13.26 | 27.56 | 573,403 |
| 1916..... | 3.36 | 3.22 | 4.89 | 1.44 | 1.40 | 14.31 | 10.97 | 25.28 | 622,130 |
| 1917..... | 4.53 | 3.16 | 5.48 | 1.77 | 1.24 | 16.18 | 10.87 | 27.05 | 634,904 |
| 1918..... | 4.59 | 3.09 | 6.15 | 2.24 | 1.48 | 17.55 | 10.63 | 28.18 | 648,369 |
| 1919..... | 4.40 | 3.00 | 7.40 | 2.18 | 1.67 | 18.65 | 10.20 | 28.85 | 680,045 |



THESE VETERANS AT THE CURRENT RIVER PLANT LOOK GOOD AS NEW



SWITCHBOARD IN PORT ARTHUR'S CURRENT RIVER HYDRAULIC PLANT

# Preparing for a Wage Arbitration

**A Dialogue Purporting to Show that a Wage Settlement Involves More than Merely Selecting an Arbitration Committee— A Complete Outline for a Wage Study to Form the Company's Defense Is Presented**

BY E. A. W.

MABEL, please give me Superintendent Jim." A brief waiting period only follows, for, like everything else on this particular utility property, efficiency in telephone service is as close to 100 per cent as anything can be.

"Good morning, Jim. How is everything going? That's fine. When you get your mail out of the way will you come up? I've got a job that's going to require some work and I want your help. Thank you."

Some time later in the morning the amiable and efficient superintendent of transportation smiled his way into the general manager's sanctum.

G. M. "Hello! already? Jim, we have been served notice that the men want another increase in wages. It's not on the cards, but under the terms of our labor contract it will have to go to arbitration."

S. T. "Well, that's easy; let the arbitrators do the work."

G. M. "I wish that was all there was to it. No, James, m'boy, we have got to furnish them with facts and figures—statistics, real and not imaginary. One reason the boys are after more money is that they have been reading a lot of college incubated stuff, 'Vaporings of Veal.' Some silk-shirted, silver-spooned graduate of Yarvard, who never carried a dinner bucket in his life, let alone do a laboring man's work, and never paid labor out of his own pocket, compiles a lot of so-called cost-of-living dope, minimum comfort budgets, basic living wage, or what not, writes a story about it and tells the mysterious stranger in our midst, 'capital,' to dig down and pay a minimum wage of $2,346.71 a year. Why? Because from carefully (?) compiled estimates, $2,346.71 is the least amount a man can live on today and bring up a family of five. In other words, $2,346.71 will only provide the minimum comforts of life as calculated from the cost of food, clothing, rent, movies, an automobile, player-piano, and a provision for old age. Jim, if every employer in the country paid a minimum wage of $2,346.71 today, what would the minimum comfort budget be tomorrow; and what would we have to do to meet it?

"If some of these college professors would devote their attention to methods of increasing production and *decreasing* costs and would realize that there is not and never can be a basic cost-of-living, we would all be better off. Somebody has said that there are as many 'standards of living as there are families.' We know the American standard is the highest of any country in the world. But no one yet has been able to make a man provide for old age unless he wanted to, and no one yet has been able to make Mrs. Brown a thrifty, provident, efficient housewife just because Mrs. Smith is, although the latter lady's husband draws $25 less per month than Mrs. Brown's."

S. T. "Chief, you are right! Take some of our old boys for example; talk to them and they will tell you how they paid for their homes and laid something aside for the winter of life, and they'll also tell you the younger element on the system is the cause of all the agitation and discontent. The young fellow has no responsibilities to speak of. He wants more money to spend, not to save. He wants high wages and short hours to have more to spend and more hours to spend it in around pool halls and jazz parlors."

G. M. "Well, we've got to get busy. I want you to work up an outline of the things we'll need to present the facts properly to the arbitrators. Let's put the matter up in the form of exhibits and cover the main points something like this:

"I. Cost of Living.

"II. Classification of Employees and Their Compensation.

"III. Comparison of Employment with Outside Occupations.

"IV. Service Requirements for the Public.

"V. Ability of the Company to Pay; i.e., Income and Expenses.

"VI. Justice of a Shorter Working Day.

"VII. Chronology of Events Leading Up to Wage Arbitration."

The S. T. copied the above outline on an envelope from his pocket and retired. Several days later he again obtained audience with his chief, and laid before him the details hereinafter enumerated, which the G. M. and S. T. carefully reviewed item by item.

I. *Cost of Living.*
   1. Basic cost of living.
      a. State industrial commission's figures for this city
      b. United States Department of Labor figures for this city
      c. United States Department of Labor for cities of similar size in the United States
   2. Minimum cost of living.
   3. American standard of living (discussion)
   4. United States Department of Labor statistics
      a. Charts showing income groups
      b. Charts showing surpluses and deficits from various income groups
   5. Independent investigation made from study of market conditions and prices in newspaper files, and from prices submitted by various retail and wholesale houses, real estate agencies and from canvass made among employees
      a. Housing; rentals, or taxes and maintenance costs
      b. Carfare
      c. Food
      d. Clothing
      e. Fuel and light
      f. Health, medical attention, recreation
      g. Insurance; life, health, accident, fire, old age
      h. Sundries; charity, church, pleasure
   6. Actual study of size of families from canvass made among employees
   7. Application of values found under Section 5 to the individual members of the average family so as to arrive at values to apply to employees' families

8. Reference in detail to sources of information
9. Chart showing comparison of employees' compensation with basic living costs, pre-war time to present

II. *Classification of Employees and Their Compensation.*
1. Definition of total compensation
   a. Actual wages
   b. Transportation to employees and dependents
   c. Insurance benefits and pensions
   d. Uniforms
2. Each item defined under Section 1 above to be detailed, showing methods and rules surrounding each item of compensation other than wages
3. Above items spread against segregated classification of employees; i.e. employees grouped by departments and further by occupation; where compensation other than wages is paid for length of service, a further segregation into years of service will be made
4. Tabulation showing above spread against each man on the payroll, the headings of the column of this tabulation to be as follows:
   a. Sequence in the order of compensation
   b. Name
   c. Rate of pay
   d. Hours worked per month
   e. Monthly pay
   f. Turn-in allowance
   g. Accident report allowance
   h. Instructing student trainmen
   i. Other miscellaneous cash compensation
   j. Total cash compensation
   k. Addition miscellaneous compensation
   l. Total compensation
   m. Days worked per month
   n. Days failed to work
   o. Maximum number of consecutive days off
5. Charts compiled from above data showing—
   a. Per cent of trainmen in service (abscissae) against length of service in years (ordinates)
   b. Voluntary resignation in per cent of trainmen plotted against length of service in years
   c. Average age of employees in years plotted against length of service in years
   d. The following curves on one chart:
      1. Basic living costs

   Average annual compensation of—
      2. All employees
      3. Regular trainmen
      4. Extra trainmen
      5. Shop employees
      6. Way and structures employees

   In each of these cases besides the general average compensation the compensation of the 10 per cent earning the maximum wages and the 10 per cent earning the lowest wage should be shown.
6. Wages paid for like occupations by other companies (listed by name) showing average rate paid after first year of service, and after the maximum hourly rate is reached; also length of service before reaching maximum rate.
7. Discussion

   Under this heading the desirability of the employment should be shown, its continuity or steadiness; flexibility in train service due to "sign-up" arrangements in effect; labor turnover as compared to other occupations; waiting list of men seeking employment and figures showing walks of life represented. It is a fact that almost every occupation and trade known is found on a street railway system. This is direct evidence of the desirability of employment.

III. *Comparison of Employment with Outside Occupations.*
1. List of outside occupations comparable with street railway work
   a. Federal employees and their compensation
      Mail carriers
      Mail clerks, etc.
   b. State employees and their compensation
      Highway department laborers, foreman, etc.
      Surveyors' assistants
      Janitors
      Clerks, etc.
   c. City employees and their compensation
      Firemen
      Police
      Laborers, etc.
   d. Railroad occupations closely allied
      Truckers
      Gatemen
      Pilots
      Baggage-checkers
      Station masters
      Laborers, etc.

   Employees of:
   e. Moving and storage companies
   f. Office buildings
   g. Hotels
   h. Department stores
   i. Wholesale houses
   j. Retail groceries
   k. Produce houses
   l. Bakeries
   m. Feed and grain establishments
   n. Drug stores
   o. Furniture stores and factories
   p. Clothing stores and factories
   q. Gasoline and lubricant stations
   r. Tire industries
2. Seasonal employment in other industries
3. Tabulation and summaries showing average total compensation
4. Discussion in detail of street car platform and maintenance work and comparison with other occupations closely allied. (Here mincing of words or equivocating must not be resorted to; call a spade a spade. Take up each department and its subdivisions, cover the class of work done and the responsibilities and capabilities involved).
5. Chart showing—
   a. Basic cost of living as in Section II, subdivision 5-d-1.

   Average annual compensation of—
   b. Street railway platform men as in Section II-5-d-3
   c. Street railway shop and car house men as in Section II-5-d-5
   d. Street railway way and structures employees as in Section II-5-d-6
   e. Truck drivers in other industries
   f. Retail grocery clerks
   g. Federal employees
   h. Skilled mechanics
   i. Carpenters
   j. Bricklayers

G. M. "There is a trinity in business the parties to which must be kept in proper relation to each other. It comprises the customer, the employee and the owner. Any unbalanced condition here results in hardship for those at a disadvantage."

IV. *Service Requirements for the Public*
1. Discussion of public needs in way of betterments, attention to deferred maintenance items, etc.
2. Detailed lists of principal items and estimated amounted required for each item segregated between rolling stock, track, overhead lines, power, buildings, etc.

S. T. "The next subdivision you assigned me, Chief, is a hard one—'Ability to Pay.' Labor, as a general proposition, maintains that this is a matter that should not be injected into wage demands. The new claim that the company's ability to pay is up to the company, that this is a condition that must be met by the company and not the men."

G. M. "In some other businesses this contention might be true, but we have our income fixed for us without regard to our expenses, so the argument does not hold. The men would have a good reason to object to this matter being included in our presentation if they could prove that we are not paying a living wage now; in which event we would have to seek relief or else back the cars into the car houses and quit. Any business that cannot pay its men a reasonable compensation is economically water-logged and should be allowed to sink."

S. T. "It seems to me that there is a moral obliga-

tion on the part of the company to the public that the arbitrators cannot lose sight of. If they hand down an award that will require fares away in excess of reason or what the public will pay, then their work will go for naught and will have to be done over, always assuming that the men are being paid above a living wage."

V. *Ability of the Company to Pay.*
1. Income and expense statement
   a. For past year
   b. For current year
   c. Forecast for the ensuing year
2. Investment and valuation figures
3. Discussion of depreciation; need for providing for extraordinary renewals out of earnings
4. Efficiency in operation; charts showing—
   a. Comparison of operating costs on a car-mile and car-hour basis with other cities of similar size
   b. Comparison of operating ratios reduced to an equivalent basis with other cities of similar size
5. Discussion presenting arguments sustaining the contention that, under the circumstances and restrictions and regulations under which the company operates, the arbitrators must give proper weight in their deliberations to the item "Ability of the Company to Pay."

G. M. "This discussion is all right, Jim, unless it is found that the wages being paid are so low that they do not provide a living for the employee, in which case at least a living wage should be awarded and the company take the necessary steps to meet the award."

S. T. "Some of the men talk an eight-hour day. There is no doubt that in some classes of work an eight-hour day is proper and necessary. But I am convinced that our men don't want eight hours work and no more. What they want is a basic eight-hour day and plenty of overtime at one and one-half times their regular rate. Under the next subdivision this matter should be thoroughly discussed and each argument already advanced, and any we can anticipate, answered."

VI. *Justice of a Shorter Working Day.*
1. Discussion of the occupation of the street railway man from a health standpoint.
2. Detailed run-assignment chart showing—
   a. Regular runs
   b. Regular daily extras
   c. Trailers
   d. Scheduled hours of various types of runs
   e. Actual hours worked on various types of runs
   f. Elapsed time on various types of runs
3. Discussion of shorter working day from an increased production standpoint.
4. Discussion of the shorter working day as a means of securing additional compensation at a high hourly rate.
5. A fair working day in train service.

S. T. "In this next section we should work up a résumé of the situation and draw attention clearly, concisely and without bias to the major matter involved. If general dissatisfaction and discontent have been present, let's tell the arbitrators about it. On the other hand, if a few agitators are making all the thunder and are receiving half-hearted support from our men, let's frankly say so."

G. M. "In other words, Jim, we should attempt to prove that harmonious relations have been the usual thing on this property and by presenting a history of events leading up to the demand for increased wages bring this point out. All right, let's see how you have covered this."

VII. *Chronology of Events Leading Up to the Present Wage Arbitration.*
1. Copy of contract with employees
2. Discussion of contracts
3. Regulatory situation; attitude of utility commission and city government
4. Brief summary of other wage awards and reasons therefor
5. General discussion on rates of fare and wage rates and possibilities of increasing both

G. M. "Well, as a starter, Jim, that outline will keep some of us busy around here for a week or so. There is no doubt that when we get into the job of working up detail, a lot of other ideas will pop up. Now, whom shall we put on the job?"

S. T. "If you'll let me handle the detail and you put the finishing touches to the completed report, I'll apportion this program to various heads of departments and follow them up. First, I'd suggest a round-table meeting at which you go over the details and tell the crowd the whys and wherefores."

G. M. "We'll meet here tomorrow morning at nine o'clock."

## Changes in Living Costs

THE following tables show the cost of living in eight cities in the United States in December, 1919. Table I, which gives the percentage that each group of items bears to the total in December, 1920, indicates that food was the cheapest in Seattle, clothing in Baltimore, rents in Philadelphia, fuel and light in Cleveland and furniture and furnishings in New York. The miscellaneous group is less in Detroit.

TABLE 1—PER CENT OF TOTAL EXPENDITURES

| | Baltimore | Cleveland | Chicago | Detroit | New York | Philadelphia | San Francisco and Oakland | Seattle |
|---|---|---|---|---|---|---|---|---|
| Food | 42.0 | 35.6 | 37.8 | 35.2 | 42.0 | 40.2 | 37.9 | 33.5 |
| Clothing | 15.1 | 16.0 | 16.0 | 16.6 | 16.6 | 16.3 | 16.6 | 15.8 |
| Housing | 14.0 | 16.4 | 14.9 | 17.5 | 14.3 | 13.2 | 14.8 | 15.4 |
| Fuel and light | 5.0 | 4.1 | 6.0 | 6.3 | 4.3 | 5.1 | 4.1 | 5.4 |
| Furniture and furnishings | 4.3 | 6.0 | 4.4 | 5.9 | 3.3 | 4.4 | 4.2 | 5.1 |
| Miscellaneous | 19.7 | 21.8 | 20.6 | 18.3 | 18.7 | 20.8 | 22.4 | 24.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

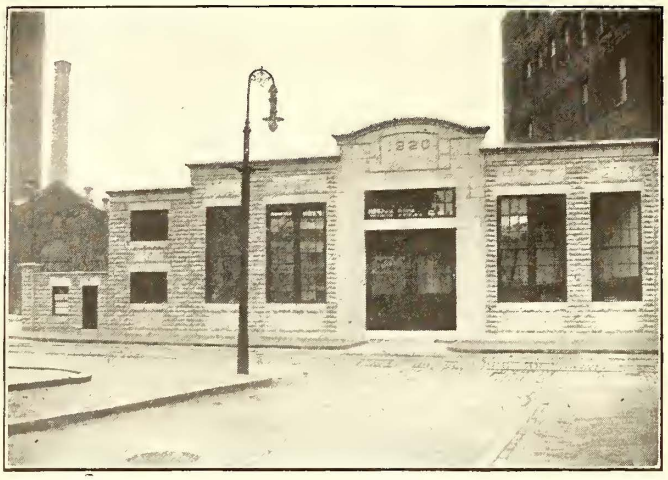
Table II shows how the total cost of living has changed in various cities from December, 1914. An analysis of the table indicates San Francisco and Oakland to be the cheapest places in which to live, with Chicago, Seattle, Baltimore, Philadelphia, New York, Cleveland and Detroit following in the order named.

TABLE II—PERCENTAGE CHANGE IN LIVING COST FROM DECEMBER, 1914

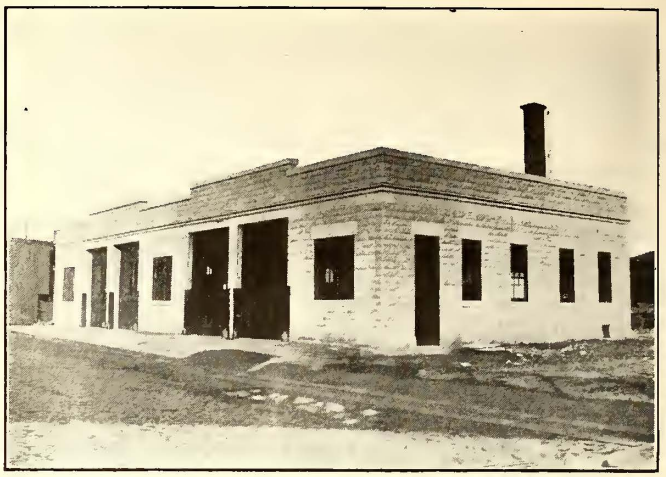
| | Baltimore | Cleveland | Chicago | Detroit | New York | Philadelphia | San Francisco and Oakland | Seattle |
|---|---|---|---|---|---|---|---|---|
| December, 1915 | *1.4* | 1.4 | 3.0 | 3.5 | 2.0 | 1.2 | *1.7* | *1.0* |
| December, 1916 | 18.5 | 19.1 | 19.5 | 22.3 | 14.9 | 14.7 | 8.3 | 7.4 |
| December, 1917 | 51.3 | 42.9 | 41.8 | 49.9 | 44.7 | 43.8 | 28.6 | 31.1 |
| December, 1918 | 84.7 | 71.4 | 72.2 | 78.0 | 77.3 | 73.9 | 57.8 | 69.9 |
| June, 1919 | 84.0 | 77.2 | 74.5 | 84.4 | 79.2 | 76.2 | 65.6 | 76.9 |
| December, 1919 | 98.4 | 95.1 | 100.6 | 107.9 | 103.8 | 96.5 | 87.8 | 97.7 |
| June, 1920 | 114.3 | 116.8 | 114.6 | 136.0 | 119.2 | 113.5 | 96.0 | 110.5 |
| December, 1920 | 96.8 | 104.0 | 93.3 | 118.6 | 101.4 | 100.7 | 85.1 | 94.1 |

Italics indicate a decrease; roman numbers indicate an increase.

The information contained in these tables was prepared and issued as Bulletin 961 by the United States Department of Labor, Bureau of Labor Statistics, Washington.



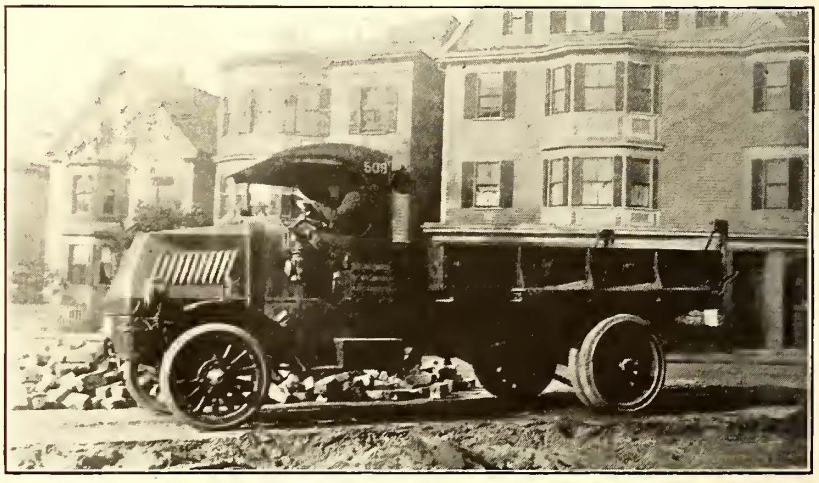
GENERAL APPEARANCE OF CENTRAL GARAGE ON HARRISON AVENUE



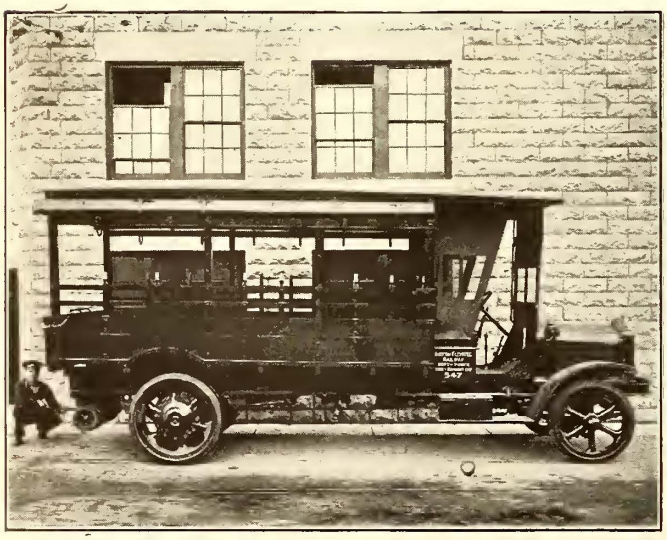
OUTSIDE VIEW OF TYPICAL SUBSTATION GARAGE AT SULLIVAN SQUARE, CHARLESTOWN

## Illustrations of Typical Garage Buildings and Automotive Service Equipment in Use by the Boston Elevated Railway

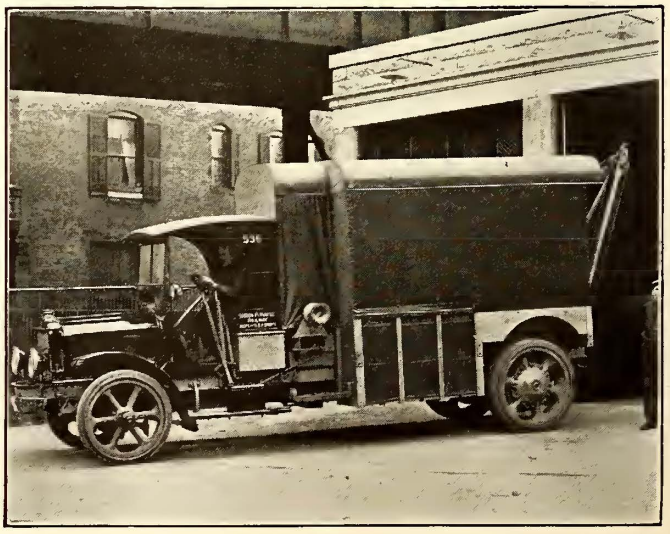
WHITE TYPE OF MOTOR-DRIVEN EMERGENCY TOWER WAGON



FIVE-TON MACK DUMP TRUCK USED BY TRACK DEPARTMENT



WHITE TYPE OF HEAVY LINE WORK TRUCK WITH WINCH AT REAR



WHITE TYPE OF WRECKING TRUCK WITH A 7-TON DERRICK

# Replacing Horses with Motors and Trucks

**The Boston Elevated Railway Saves 25 per Cent in the Operating Cost of Emergency and Trouble Wagons—Purchases Thirty-two Trucks and Builds New Garages—The New Motor Equipment Is so Located as to Be Able to Reach Scenes of Trouble with a Minimum of Delay**

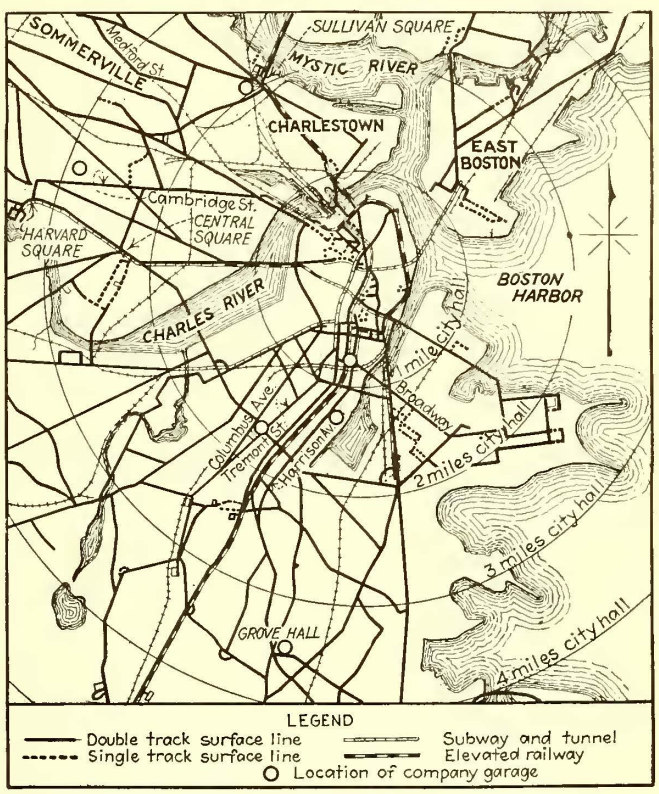
BY EDWARD DANA
General Manager Boston Elevated Railway, Boston, Mass.

DURING the year 1920 the Boston Elevated Railway made substantial progress in replacing horse with motor vehicles in the interest of economy and efficiency. Thirty-two motor vehicles with a total capacity of 25 tons were purchased at a cost of approximately $138,000. The 5-ton trucks were of the Mack type and the balance White trucks. A list follows:

| | |
|---|---|
| Five | 5 -ton dump trucks. |
| Three | 3½-ton wrecking trucks. |
| Two | 3½-ton platform trucks. |
| One | 3½-ton wire department truck. |
| Nine | 2- ton tower trucks. |
| Two | 2 -ton platform trucks. |
| Two | 2 -ton covered express trucks. |
| One | 2 -ton army body truck. |
| Four | ¾-ton express trucks. |
| Three | ¾-ton switch repair trucks. |

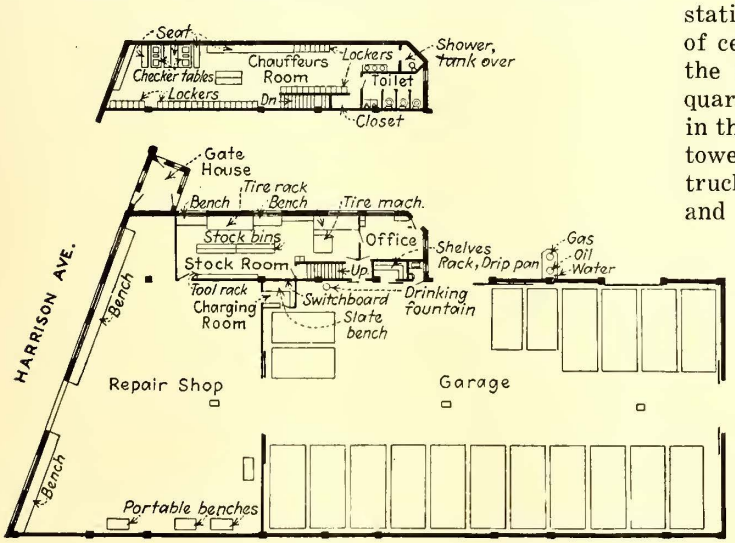
In order to accommodate such a fleet of motor vehicles it was necessary to provide garage facilities. Five modern fireproof buildings were constructed and a section of an existing brick building was also partitioned off as a garage. The construction of these accommodations called for an expenditure of $198,000.

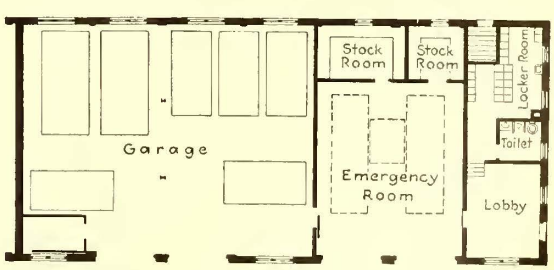
These buildings were located, as shown on the map, at Harrison Avenue, Broadway, Grove Hall-Roxbury, Sullivan Square, Camden Street and Baldwin Street, Cambridge. The central garage, having a storage capacity of forty cars, was located at Harrison Avenue, at which point is located the headquarters of the wire and conduit division and the company's present machine shop. This garage is of modern construction throughout, built of concrete blocks and equipped with repair shop, storeroom and chauffeurs' quarters. The general arrangement is shown on the floor plan. The type of construction is also illustrated. The floor plan and an outside




MAP OF BOSTON ELEVATED RAILWAY, CENTRAL DISTRICT, SHOWING LOCATION OF GARAGES WITH RESPECT TO LOCATION IN THE HEART OF THE SYSTEM

view of the Charlestown Station, a typical so-called substation garage, are also shown. Except for the storage of certain trucks these substation garages are used for the emergency line service and wrecking truck headquarters. The most important types of trucks are shown in the accompanying illustrations and are the emergency tower wagon, heavy line work truck with winch, wreck truck equipped with derrick capable of lifting 7 tons, and 5-ton trucks for construction work in the depart-




AT LEFT, FLOOR PLAN OF CENTRAL GARAGE, 552 HARRISON AVENUE. AT RIGHT, FLOOR PLAN OF TYPICAL SUBSTATION GARAGE IN CHARLESTOWN

TABLE I—SCHEDULE 3337-R—LIST OF TOOLS CARRIED ON WRECKING WAGONS—BOSTON ELEVATED RAILWAY

| | |
|---|---|
| Axe | One |
| Bars | One 60-in. crow |
| Bars | Two 60-in. pinch |
| Bars | One 30-in. cutting |
| Bars | One 30-in. pinch |
| Bolts | One of each size motor and gear case bolts |
| Bolts | One motor eyebolt |
| Bolts | ½-in. M bolts assortment 2 in. to 8 in. long |
| Bolts | ⅝-in. M bolts assortment 2 in. to 8 in. long |
| Bolts | ¾-in. M bolts assortment 2 in. to 8 in. long |
| Bolt cutter | 1¾ in. |
| Blocking | Four 6x6 in. x 2 ft. |
| Blocking | Four 4x6 in. x 2 ft. |
| Blocking | Four 2x6 in. x 2 ft. |
| Blocking | Four 1x6 in. x 2 ft. |
| Blocking | Two 3x8 in. x 2 ft. |
| Blocking | Two 2x4 in. x 6 ft. |
| Blocking | Two 2x4 in. x 12 ft. |
| Blocking | Two 4x4 in. x 12 ft. |
| Blocking | Two 4x6 in. x 12 ft. |
| Blocking | Two 6x6 in. x 12 ft. |
| Blocking | One hardwood cut for broken axle |
| Coupling | Two drawbar couplings for each type of car |
| Chains | 2¾ in. x 6 ft. with ring and grab hook |
| Chains | 1¼ in. x 12 ft. with ring and grab hook |
| Chains | 2½ in. x 10 ft. with ring and grab hook |
| Chains | 2⅝ in. x 6 ft. with ring and grab hook |
| Chains | 1¾ in. x 5 ft. with ring and grab hook |
| Chains | 1¼ in. drag chain |
| Chisels | 2½ in. old chisels |
| Chisels | One blacksmith's cold chisel |
| Connectors | Three No. 6 two-way and three No. 4 two-way |
| Drawbar | One extension |
| Drag rope | 2¾-in. wire, 25 ft. long |
| Flashlight | One large size |
| Fuses | For all types of cars |
| Gloves | One pair rubber gloves |
| Grease | One 5-lb. can of cup grease |
| Hammers | One hand-hammer 2½ lb. |
| Hammers | One sledge-hammer 10 lb. |
| Hawkes device | One for broken wagon axles |
| Hoist | One 2,000-lb. Harrington |
| Jacks | Two 15-ton Simplex or quick-acting jacks |
| Jacks | Two 15-ton and two Simplex No. 310 adjustable base |
| Jacks | Two 25-ton Norton self-lowering |
| Lamp | One extension lamp |
| Lantern | Two inspectors to be maintained ready for service at all times |
| Nails | One assortment of various sizes |
| Oil can | One squirt can filled with oil |
| Planks | One 2x8 in. x 8 ft. |
| Planks | One 4x8 in. x 8 ft. |
| Pliers | One pair gas pliers |
| Pliers | One pair cutting pliers |
| Picks | One |
| Pins | One assortment of all sizes of cotter pins |
| Plates | Three ¾x6x15 in. steel |
| Punches, drift | Three, assorted sizes |
| Punches, drift | One blacksmith's ⅝ in. |
| Replacers | Four Tilden car replacers |
| Rope falls | One with double blocks and 400 ft. 1-in. rope |
| Rope slings | Two 1-in. rope, 4 ft. long |
| Snatch block | One for 1-in. rope |
| Saw | One hand saw—crosscut |
| Shovels | Two |
| Screwdrivers | One each 6-in., 12-in., 18-in. |
| Tripod | One |
| Tape | One roll |
| Twine | 100 ft. heavy twine |
| Trolley wheel | One |
| Trolley wheel spindle | One of each type |
| Trolley cord | One |
| Trolley wire pick-up | One |
| Truck | One for broken wagon axles, to be hung over wrecking wagon with rope falls and dropped onto wagon when responding to calls for broken-down teams |
| Truck | One four-wheel truck for broken-down autos |
| Timber | One 6x8 in. x 10 ft. to be kept near wrecking wagon and taken when call indicates serious car wrecks |
| Waste | 5-lb. clean cotton waste |
| Washers | Assortment 1½-in. down |
| Wheel skid | One cradle for broken wheels and axles |
| Wire | 20-ft. No. 6 wire |
| Wood pry bar | One 10-ft. long |
| Wrenches | One fork, 1½x1⅛ in. |
| Wrenches | One fork, 1x1¼-in. |
| Wrenches | One fork, ¾x⅝ in. |
| Wrenches | One fork, ½x⅜ in. |
| Wrenches, monkey | Two each 6 in., 10 in., 14 in., 18 in. |
| Wrenches, stilson | One each 14 in., 24 in. |

ment of maintenance-of-way. The remaining trucks are of various sizes for transportation of material and supplies.

In addition to economy in the handling of supplies the most important feature is the time saved in handling wire breaks or wrecks which interfere with the operation of the cars. These emergency trucks are so located that the entire system can be easily protected and the proper truck landed at the location of the trouble with a minimum of delay.

The wrecking facilities previously had consisted of old 20-ft. cars equipped with wrecking material, but as these cars could not get close to the scene of trouble they were awkward and inefficient, and while still available in extreme emergency they will rarely if ever be pressed into service. The previous methods were described in the ELECTRIC RAILWAY JOURNAL of May 23, 1914.

The accompanying Table I shows the equipment carried on three large White wrecking trucks, previously illustrated.

The foreman in charge of the trucks is held absolutely responsible for knowing that such tools and equipment are on the wrecking wagons at all times and is held strictly accountable for any negligence in the checking up of the tools after the trucks have been out on duty.

A summary of the complete provision for handling wrecks or other track obstructions on the surface lines is given in Table II. Practically all of this work is now handled by the auto trucks, and the former single-truck trolley wrecking cars are maintained for extreme emergency use only.

By the use of these auto trucks in their present locations it has been possible to reduce the number of men in the wire emergency service from fifty-one to forty-four. The use of the motor-driven vehicles has made it possible to dispose of a large number of vehicles and forty-five horses and to abandon four stables previously used.

These changes alone have made an approximate saving of $85,000 a year in maintenance expenses, equivalent to about 25 per cent on the investment in auto trucks and housing facilities. It has also resulted in a material improvement in the physical condition of the horse-drawn equipment because the horses and vehicles which were selected for disposal were those in the poorest condition.

TABLE II—LOCATION OF WRECKING STATIONS, EQUIPMENT IN EACH AND FORCE NEEDED TO MAN WRECKING TOOLS AND EQUIPMENT—BOSTON ELEVATED RAILWAY

| Location | Type of Wrecking Car or Truck | Wrecking Tools and Equipment | Wrecking Force |
|---|---|---|---|
| Broadway wrecking station | Auto truck | Complete equipment as per schedule 3337-R | Three shifts: two men each: foreman and repairman |
| Charlestown Neck wrecking station | Auto truck | Complete equipment as per schedule 3337-R | Two shifts by truck driver-repairman (6 a.m. to 12 midnight). Wrecking crew from carhouse. |
| Grove Hall wrecking station | Auto truck | Complete equipment as per schedule 3337-R | Two shifts by truck driver-repairman (6 a.m. to 12 midnight). Wrecking crew from carhouse. |
| Park Street | 20-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Milton | 20-ft. box car | Partial equipment | From carhouse force—available all hours. |
| North Point | 20-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Jamaica Plain | 25-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Amory Street | 20-ft. box car | Partial equipment | From carhouse force—available all hours. |
| Reservoir | 25-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Watertown | 20-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| East Boston | 20-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Bennett Street | 25-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Salem Street | 25-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |
| Everett | 20-ft. box car | Partial equipment | From carhouse force—available all hours. |
| Clarendon Hill | 20-ft. box car | Complete equipment as per schedule 3336-R | From carhouse force—available all hours. |

This Is the Fourth of a Series of Articles on the Report of the Federal Electric Railways Commission, Written by a Commissioner

# The Report from a Financial Standpoint

**Suggestions Made as to Clauses Which Must Be Provided in Service-at-Cost Franchises to Commend Them to Investors—Adjustment of Capitalization to Value Discussed—Re-establishment of Credit a Long Process and Accomplished Only as the Average Investor Becomes Reassured of Essential Character of Business Done and Willingness of the Public to Permit a Fair Return**

By CHARLES W. BEALL
Vice-President Harris, Forbes & Company, New York

TWO recommendations of the Federal Electric Railways Commission seem to have attracted more criticism than any of the others. One is the reference to the service-at-cost franchises. The other is that no satisfactory solution of the electric railway problem can be made which does not include a fair valuation of the property employed in the public service and the statement that where this is done the company should voluntarily reduce any excessive capitalization to the basis of such value.

### Service-at-Cost Not Obligatory

Service-at-cost, it should be explained, is not urged upon the companies for immediate adoption. In fact, the report says definitely that such contracts are in the experimental stage, but the commission found that where these contracts have been tried they seem to have secured a fair return upon capital, established credit and effected reasonably satisfactory public service, and the commission believes that such contracts may be safely entered into where the public right eventually to acquire the property is safeguarded.

In my opinion service-at-cost is the most practical system of relation between the city and the company which has yet been offered, but it is not perfect, and as experience with it is continued undoubtedly the plan will be improved in detail. To be satisfactory every service-at-cost plan ought to be an indeterminate permit, and if limited in time the rate of fare and the earnings permitted should be sufficient during the life of the franchise to amortize the investment, and there should be a clause providing for a renewal of the franchise in case the investment is not amortized.

Every service-at-cost plan should also provide sufficient funds to take care of any temporary lack of earnings arising when there is a change from a low fare to a higher fare, and also a proper fund to provide for depreciation and obsolescence of the property. These funds should be provided either out of the income allowed to be earned on the property, or if the original amount of such funds is furnished by outside capital and charged to capital account and represented by securities such funds should be included in the value of the property on which the company is allowed to earn a proper income. Very few service-at-cost plans provide funds of this account in sufficient amount. In some cases the amount so reserved is a specified sum, but it is much better to have this sum bear some definite relation to the earnings, the size of the property and the service performed. Otherwise, with an expanding system, the fund would decrease in its relation to the property.

Another point upon which question has been raised in connection with service-at-cost franchises is whether it is desirable to provide an incentive to the company to give service at the lowest possible cost. In some of the later franchises an attempt has been made to provide for this by means of a sliding scale of return, varying with the rate of fare, a higher percentage of return being permitted on the admitted value of the property when the lower scales of fare are in force. While none of these attempted incentives to economy on the part of the company has been entirely satisfactory, undoubtedly progress has been made toward the solution of this problem.

One definite fact has been determined in regard to service-at-cost franchises. From the standpoint of interesting the investor it is fatal to fix a maximum rate of fare. The future is always shrouded in uncertainty and conditions unforeseen at the time that the franchise was drafted may arise which would make any fixed maximum rate unprofitable for the company.

### Adjustment of Capitalization to Value

The second point mentioned above, the adjustment of the capitalization to accord with the value of the property, is undoubtedly desirable for both the company and the public. This does not mean, however, that it can always be done. It is easy to see that legal difficulties may often arise, especially with companies having a large number of security holders and many classes of securities. If the corporate organization of the company is simple and the security holders few the plan is much more easy of accomplishment. The proportion of assenting security holders necessary to carry out such a plan depends upon the laws of individual states.

### Errors in Financing

The report mentions a number of errors in the early financing of the electric railway properties which contributed to bring about their present plight. These errors had their foundation largely in an exaggerated belief held in the early days of the profits of electric railways and resulted in failure fully to care for depreciation or amortize obsolescence, and in some cases the payment of unearned dividends. During these days extensions were built which economically had no right to exist.

These were undoubtedly serious financial errors, but much can be said in extenuation of the companies.

In the first place, during the early years of electric railway operation neither the management nor the public realized the rapid improvement and changes in the art nor the wear and tear of equipment which would take place in electric railroading. In consequence they did not understand the large amount which would be required for obsolescence and depreciation. Obviously the public profited

by these mistakes because the fares charged were insufficient to pay for the service. Later, as the facts became evident and costs increased while fares remained stationary, efforts on the part of the companies to secure increased compensation were denied. It is only recently that authorities have begun to pay attention to the outstanding needs of the companies. It is safe to say that now no electric railway company can sell its securities unless it has such a rate of return as to cover these charges and pay a fair return on its capitalization.

The electric railway situation at present is in the anomalous position of being an essential utility unable to finance its expansion to keep pace with the development of the community which it serves. As the population of a city grows the demands for urban transportation increase in even greater ratio, but as the capital investment required for this expansion varies between $3 and $6 for each increase of $1 in gross receipts it is obvious that the railway cannot finance its growth without outside help. Yet there has been practically no new financing of electric railways in Wall Street for a long time other than those instances of railways combined with electric lighting and power companies.

The re-establishment of credit will be a long process and it can be accomplished only as the average investor becomes reassured of the essential character of the business done and the willingness of the public to permit the company to earn a fair return. Even then the rate which the company will have to pay for money will be comparatively at least as high as that demanded for other forms of investment.

# San Francisco's Municipal Railway

**Before Pacific Railway Club, M. M. O'Shaughnessy, the Engineer of the City, Traces the Development and Outlines the Problems of the Local Civic System**

ON FEB. 9, 1921, M. M. O'Shaughnessy, city engineer of San Francisco, Cal., addressed the Pacific Railway Club on the local transit situation, with particular reference to the city-owned and operated lines, which he said were the only municipally owned lines in the United States which are operating successfully. Some of his remarks are summarized below.

The people of San Francisco, in the charter of 1900, declared for public ownership of public utilities, the difficulty of successful competitive operation of the railway lines having proved a dominating reason for the decision to dispense with private ownership. After three elections $2,000,000 in bonds were voted for the Geary Street electrification in 1909, but little work was done in the following two years. The speaker's connection with the enterprise began Sept. 1, 1912. The road was opened for operation on Dec. 28, 1912, from Kearny Street as far west as Thirty-third Avenue and to Golden Gate Park. It was gradually extended until in July, 1913, the Geary Street cars were able to go clear to the ferry and out to the ocean. San Francisco then rested on its achievements in municipal ownership until 1914, when the problem of transportation for the Panama-Pacific Exposition came up.

As the United Railroads' franchises were soon to expire the private company was not inclined to make further investments and the task devolved upon the city. Its engineering department attacked the problem and designed an improved type of car which was a ton lighter than the earlier cars and saved the city $125,000 on 125 cars. Construction on Van Ness Avenue was started in the spring of 1914 and the line to the Exposition was completed in five months. The municipal lines, with the help given by the United Railroads, handled the Exposition crowds without discomfort. Out of the $3,500,000 bond issue voted Aug. 26, 1913, three other lines were built, one on California Street to Lincoln Park, another on Potrero Avenue to Twenty-fifth Street and the third to Church Street in the Mission. In 1915 the completion of the Church Street line was proceeded with, after considerable controversy as to route and other details. Next the problem was to get down to Market Street to carry the people home. After considerable litigation with the United Railroads the right of the city to build tracks wherever it chose on the streets was established and the Church Street line was finally continued to the ferry.

The next extension was out Market Street through the Twin Peaks tunnel, which was 12,000 ft. long, had cost $4,000,000 and had been constructed to give rapid transit to residents beyond Twin Peaks. This tunnel had been a possibility because the people beyond the hill were willing to pay an assessment of $3,000,000, or $1,000 per acre, to get direct transportation between the city and their homes. Although a logical solution of the problem would have been to allow the United Railroad to route cars through the tunnel, the people opposed this and the Municipal Railway lines were extended at a cost of $300,000. At first this was a profitless extension, but it is now paying operating expenses.

As to the objection to four tracks on Market Street, if these were not there a subway would be necessary, at a cost (for a two-track subway) of $12,000,000 for the three miles of the street.

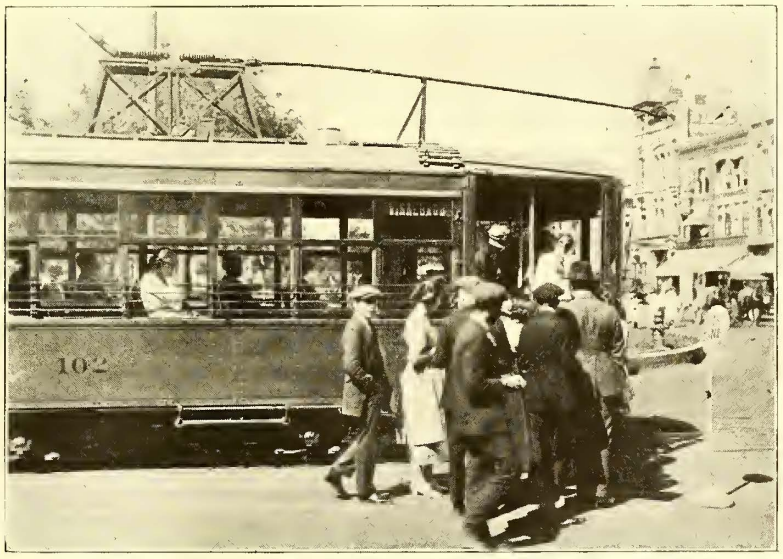
Mr. O'Shaughnessy said in conclusion that the Municipal Railway is on a sound financial basis. Since operations were started in 1913 gross revenues have amounted to $15,078,000 and operating expenditures $9,561,000. From the beginning the total disbursements have been $12,895,000. Interest amounting to $1,642,000 has been paid out of earnings. Of the $5,500,000 in bonds issued $899,300 has been redeemed and extensions and betterments have been made, including 27 miles beyond the original 45 miles, at a cost of $1,188,150. Fourteen per cent of gross receipts is set aside for depreciation and 4 per cent for damages and accidents.

The most harmonious relations exist between the city's operating department and the United Railroads in the way of crossings and other matters. San Francisco is now well supplied with railways, of which 288 miles belong to the United Railroads, 62 miles to the city and 10 miles to the California Street Cable Line. This is a mile of track to each 14,000 people. The combined earnings are $12,100,000 per year, which is a large total for a city of 39,000 acres area and 508,000 population.

# "Selling" the Safety Car in Madison

**Standard One-Man Cars Were Tried, to Which the Public Took a Dislike, and They Were Replaced by Double-Door Cars, Whereby Public Approval Was Gained—Results that Were Obtained Justify the Use of This Type of Car for This Service**

DURING the war the Madison (Wis.) Railway purchased and placed in operation five standard one-man safety cars, in order to try out this type of equipment as a means of improving the service rendered and at the same time to take advantage of the economies thus made available. They were in operation for many months and gave satisfactory service except for the fact that there was manifest a distinct public dislike for the little cars, a dislike which seemed to center in the criticism, applied particularly to the rush-hour congestion, that it was necessary for boarding passengers to await the exit of leaving passengers before they could get on, and that the narrow aisle made it difficult to pass passengers standing in the aisle, and hence they would refuse to go back in the car to make room at the entrance. A glance back at the equipment used in Madison up to this time may serve to explain these criticisms of the riding public. Due to the location of the city on a long, narrow strip of land lying between Lakes Menona and Mendota, giving the city an 8-mile length, with the business district located at about the center of it, the Madison Railway enjoys a volume of patronage unusual for a city of but 40,000 population. Of this, more than half is carried on the cars each day. Unlike most companies operating in the smaller cities, this one had never made the mistake of going to the large, heavy double-truck type of car. So the advent of the safety car presented no appearance of tending back to former practices—a poorly founded criticism that has often been heard in other cities. But while accustomed to single-truck cars, Madison people had been educated to a double-end two-man car with rear entrance and front exit, closed vestibules, roomy platforms, 28-in. aisle and generous seat dimensions and spacing. The seating capacity of these cars was thirty-two and their weight 23,500 lb. Their design was the result of a number of years of study and observation on the part of F. W. and Dudley Montgomery, respectively president and vice-president and operating heads of the property. These cars proved so eminently satisfactory to both the company and the patrons that it was only natural, later on, when the safety car was the subject of special study, that an effort should be made to incorporate some of the desirable features of this car into the new one-man car.



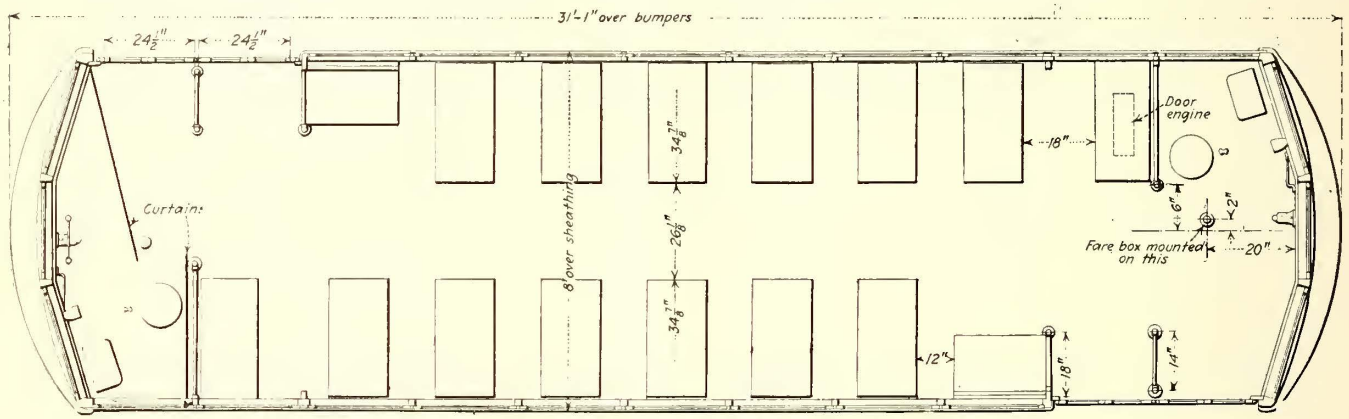
SIMULTANEOUS LOADING AND UNLOADING OF SAFETY CARS IN MADISON, WIS.

The situation was brought to a head in 1919 when the company asked authority of the Wisconsin Railroad Commission to purchase fifteen additional standard safety cars. The Madison City Council thereupon voted eighteen to one against the installation of any more cars of this type, and the commission refused to grant the request. So the company set out to see what could be done toward producing a car that would be acceptable to the public and still retain as many of the features of the standard safety car as possible. In other words, it was the aim to get a design of car manufactured that could be "sold" to the public of Madison as well as to the company. After unsuccessful negotiation with one or two car builders, Dudley Montgomery went to Philadelphia and finally induced the J. G. Brill Company to accommodate him by building eight safety cars according to his specifications. The accompanying floor plan shows the principal dimensions and layout of the cars built. The main points in which the Madison car departs from the standard safety car are that it is 2 ft. 3½ in. longer; 4 in. wider over the side sills, which is utilized to give an aisle 4 in. wider; a separate exit and entrance passageway, each 24½ in. wide, instead of one door 30 in. wide; that it weighs approximately 2,600 lb. more than the original safety cars used in Madison which are similarly equipped and finished, and involves a cost of approximately $600 per car in excess of the then price of the standard car. The exact scale weights on the eight cars upon receipt in Madison on Sept. 1, 1920, were 17,085 lb., 17,165 lb., 17,145 lb., 17,205 lb., 17,105 lb., 17,125 lb., 17,125 lb., and 17,100 lb., to which a slight amount has since been added on account of the exchange of the form-fit springless seats for cushion seats, so that the average weight will now run very close to 17,200 lb. A relative idea of the principal dimensions of the Madison car as compared with those of the standard Birney type of car is readily gleaned from the following data:

| | Madison Car | Standard Car |
|---|---|---|
| Length over all | 30 ft. 1 in. | 27 ft. 9½ in. |
| Length over corner posts | 16 ft. 10½ in. | 17 ft. 9½ in. |
| Length of platform | 5 ft. 11 in. | 4 ft. 4½ in. |
| Width over side girder plates | 8 ft. 0 in. | 7 ft. 8 in. |
| Width of aisle | 26 in. | 22 in. |
| D or opening (clear) | 24½ in. (two) | 30 in. |
| Seating capacity | 31 | 32 |

Aside from these few differences in body design, the Madison car in other respects is the standard car, except for what slight strengthening was necessary in the structural design of the body to provide for the additional width and length. The truck is the standard Brill 79-E type without a change, and the motors are the G. E. 264 type. In other words, Mr. Montgomery adhered to the standard design just as far as was possible and incorporated the double door and wider aisle. He reports that no motor trouble whatever has developed in the first five months of service because of the heavier load carried.

A particular feature claimed for the layout of the car is that the wider aisle and large amount of standing room at the rear induces people to move back in the car and avoids the front end congestion, which seems to have been one of the principal difficulties with the standard car in Madison. As the result of long observation, Mr. Montgomery is satisfied that a 26-in. clear aisle is the minimum that can be used and still secure a not uncomfortable passing of riders in the aisle. This new car will readily handle a standing load equal to the seated load and do it just as expeditiously as the




FLOOR PLAN OF THE DOUBLE-DOOR ONE-MAN SAFETY CAR BUILT FOR MADISON, WIS., AND LANCASTER, PA.

former standard-type single-truck car operated by two men. Mr. Montgomery says that if the safety car is loaded beyond this amount, that is, beyond sixty people, there is a slowing up, and it can be noticed that the two-man roomier car, under such heavy overload conditions, will handle the crowd a little faster.

Certain other features have been included in these latest Madison cars which evidence Mr. Montgomery's ideas. He is very strongly of the opinion that the number of moving parts or fixtures in a car should be kept to the absolute minimum. Consequently, there are no folding seats in the vestibules; there is a permanently mounted operator's stool at each end, the one at the rear being often used by passengers; there are no curtains for side windows; the four ventilators are made with a fixed opening, with no adjustment, leaving no chance for trainmen to close the ventilator. The arrangement of the operator's curtains is also unique, consisting of two roll curtains located as seen in the floor plan of the car. The cars are built with double floors, Agasote side sheathing but no headlining (because Mr. Montgomery contends that this neither improves the heating nor muffles the noise) and Renitent patented brass side posts on account of the wind-proof fit of the windows and the ease of raising and lowering which he attributes to them.

The cars are equipped with twelve heater units, but these are not quite adequate, and a vestibule heater at each end is to be added. The average winter temperature in Madison is 27 deg. F. The aim is to provide heat enough at this outside temperature to give a car temperature of 50 or 51 deg. The trolley bridge is 16 in. higher than on the standard car and a pole 1 ft. longer is used. This combination is said to give better results in keeping the wheel on the wire on account of the smaller angle between pole and wire thus obtaining, which is effective in preventing jumping at points of high wire. Still another idea incorporated into the Madison car was the provision against freezing of the air system under the rather severe climatic conditions encountered. An unusual amount of cooling pipe, totaling 24 ft. to the wet tank and 30 ft. between this and the dry tank, was installed under the car floor. The running of the piping inside the car was thus avoided with apparent success, judging from the operating experience of the first winter.

The entrance and exit doors on the Madison cars are connected to the same door engine and operate simultaneously, as on the standard car. On four cars of the same design put through the Brill plant at the same time as the Madison cars for use in Lancaster, Pa., however, separate door engines were installed to operate the exit doors and controlled by a separate air valve placed within easy reach of the operator.

### Operating Results Very Satisfactory

As to the operating results obtained with the double-door cars, the Madison operating officials are very enthusiastic. In matter of first consideration, the public has not only not criticised these new one-man safety cars with the double doors and wider aisles, but has given plenty of evidence of being pleased with them. A frequent comment made has been to question why the company did not get cars like these in the first place, the five standard cars having been disposed of by sale to another company when delivery of the others was made. There has also been manifest an appreciation of the evidence that the company had tried to give the people what they wanted.

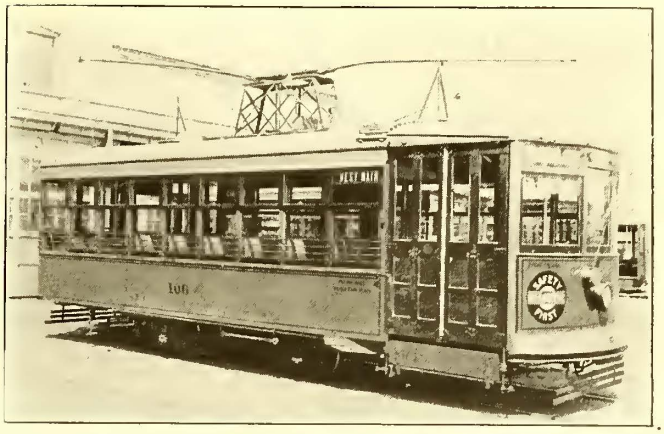
The rush-hour period, of course, affords the best opportunity to observe the merit of the design. When a car pulls up to a corner on the State House Square and there is a group of twenty to thirty people waiting to board the car, it is noticeable how quickly the interchange of leaving and boarding passengers is completed and the car again on its way. Immediately upon the opening of the doors, the ingress of passengers begins through the forward or right-hand door, simultaneously with the egress of passengers through the

left-hand passageway. The operator is thus busy collecting fares while the egress of passengers is taking place instead of standing idle during this period. As soon as all leaving passengers have alighted, the remaining boarding passengers get on at both entrance and exit. Those boarding at the exit door reach over and drop their fare in the box, if they have a ticket or exact change ready, and the speed of service is just that much ahead. Otherwise, they wait until the operator can give them change. No effort is made to prevent boarding at the exit door. Passengers are simply given the advantage of the extra space, and Mr. Montgomery says that the loss of fares from people slipping by without paying is so slight that it may be forgotten altogether. At least the loss attributable to the separate exit and entrance is so slight as compared to the benefits that it is worth little consideration. Passengers entering at the exit side must pass so close to the operator that he is easily able to control, reasonably well, any attempt at free riding. The speed of loading in Madison is also facilitated by a very general use of metal tokens, which sell at nine for 50 cents, while the cash fare is 6 cents.

### Details of Madison Operation

After the seats are filled, the generous amount of standing room at the rear of the car attracts the standees back there, so that the front well and aisle are kept open longer, and even when capacity load is reached, Mr. Montgomery points out, the 4-in. extra width in the aisle and the extra well space at the front make the task of getting through the standees from a point back in the car in order to get off a much easier one than was experienced with the 22-in. aisle cars. This fact is not without appreciation on the part of the public, for while people may not know that there is 4 in. more in the aisle, they do know that for some reason it is not so hard to get through the crowd in these cars when they wish to alight as it was in the former ones.

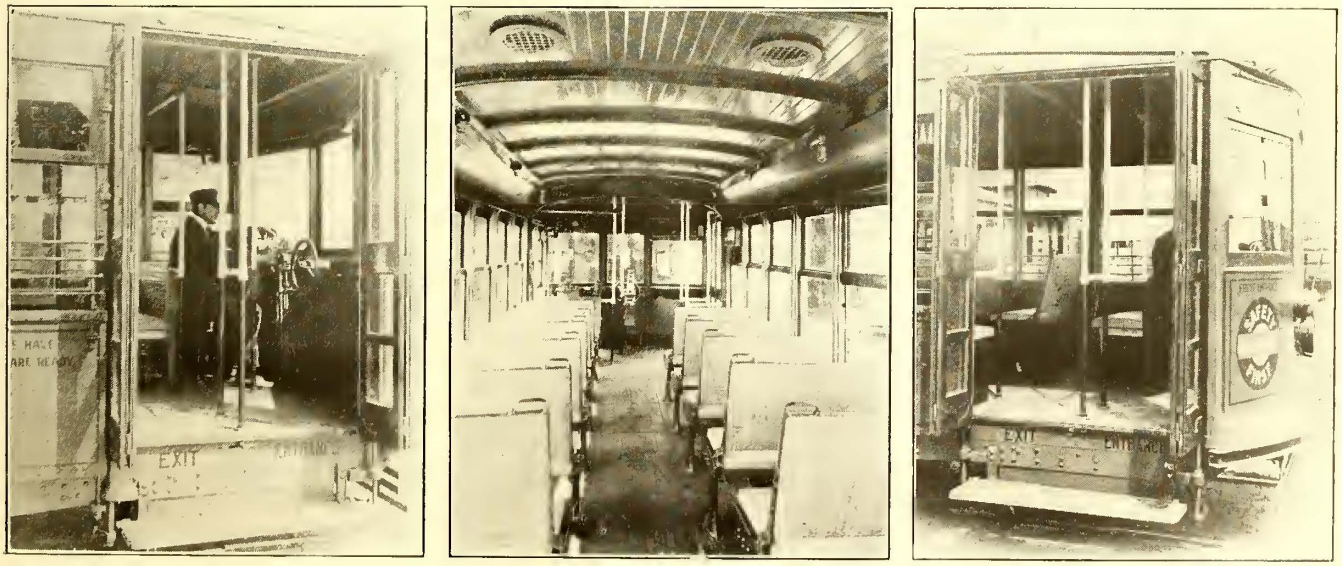
Thus, the two principal criticisms mentioned in the first paragraph are seemingly met and this may explain the favorable reception accorded the latest addition to the rolling stock of the Madison Railway. This is the



THE 17,200-LB. MADISON SAFETY CAR, SHOWING SEPARATE EXIT AND ENTRANCE AND HIGH BRIDGE FOR TROLLEY MOUNTING

answer to the problem with which the officials have had to deal and explains their enthusiastic indorsement of this particular design of one-man safety car.

Just a brief summary of the service given in Madison may help in visualizing the conditions under which the safety cars are operated. They are not severe, in comparison with the requirements faced by many companies. The total system comprises three lines operating over 18 miles of track. All lines extend through the business district, at the center of which is the State Capitol, and into the residential district in both directions. All cars operate over the single-track loop around the State House Square, passing around a portion of the loop in one direction and the remainder on the return trip. The day schedule calls for nineteen cars, and six extra cars are used in the morning run and thirteen extra in the evening. The convergence of all three lines at the square gives a five-minute headway all day over this track, with a closer spacing in rush hours. The one-man cars are operated on any of the lines and interspersed with the two-man cars. Both the standard safety cars and double-door safety cars were installed in Madison on a car-for-car basis in replacing the two-man cars. The headway on all lines is ten minutes, both for two-man and one-man cars.




AT LEFT AND RIGHT, FRONT PLATFORM LAYOUT, SHOWING THE ARRANGEMENT OF STANCHIONS AND POSITION OF OPERATOR RELATIVE TO EXIT PASSAGEWAY. IN CENTER, INTERIOR OF MADISON CAR, SHOWING ABSENCE OF FOLDING PLATFORM SEATS, CURTAINS AND OTHER MOVABLE FIXTURES

# A Symposium on Traffic

**Sales Methods Must Be Followed to Increase Traffic, but They Must Be Accompanied by Good Service Through Close Co-operation Between the Transportation Department and the Traffic Department, so that the Public Will Be Satisfied with What It Buys—The Subject Is Considered from Four Standpoints**

THE greater part of the session on Friday morning, Feb. 25, of the Toledo meeting of the Central Electric Railway Association was devoted to the subject of "Traffic." Four papers on this topic were presented, and there was also oral discussion. Abstracts of these four papers follow:

## The Functions of a Traffic Department

BY BERT WEEDON
Traffic Manager Interstate Public Service Company, Indianapolis, Ind.

ONE of the greatest problems of the world has been traffic and transportation. This problem is yet far from being permanently solved, even with the new methods of transportation being perfected. One of the definitions of the word "traffic" is the business of transportation, as by railroad. It is this phase with which we have to do.

Years of experiment and study have developed highly efficient traffic departments in the transportation companies of this country. Commercial and manufacturing concerns, realizing the value, are also creating traffic departments of their own. The successful traffic man of this day must not only be a "hale fellow well met" but a diplomat, and have a fairly good working knowledge of commercial and transportation law.

The traffic manager of a railroad is the sales manager of that railroad. He is the man who meets the public, the newspapers and the various civic organizations in his territory. He has but one commodity to sell—service. His success depends, first, on his ability as a salesman to sell; second, the quality of the service to be sold; third, the amount he has to sell. He must know his competitors' service as well as his own. He must know that the price of his service is right, or in keeping with the quality of service offered. The public, on whom we depend to buy our service, does not question price as closely as it does the quality of the service.

The success of the traffic man depends on what he is given to sell. Among his many duties is a thorough study of the local situation, its requirements as to transportation service, its relation to the territory reached through connections, and the ability to serve, not only local territory but the region reached by connections.

A thorough study must also be made of operating costs to make rates in keeping with the cost of service maintained. It is an easy matter to build up gross earnings, but if the costs are 90 per cent to handle the business is it good judgment to solicit this class of business?

For the past three years all transportation companies have had all they could care for in all departments of service. We are now returning to a more normal basis and are up against the keenest competition of our lives. Our service must be of the best if we expect to get our share.

One phase of competition at present is the automobile truck as a common carrier. Many theoretical solutions have been offered, but few are of value. Good common horse sense is of the most use.

If the necessary electric railway transportation service to the welfare of a community is rendered and legislation enacted to require truck operators to help maintain the highways used and also to comply with carrier laws, as their electric railway competitors are required to do, there would be little trouble with this class of competition.

Then, too, the traffic and the transportation departments must co-operate to meet competitive service. The principal phases of our business today are passenger and freight transportation. Are we getting all the business along these lines that it is possible to secure?

### More Efficient Service Needed

It would seem that rates and fares have reached their maximum. If so we must increase our volume of passengers and tonnage handled. This can best be done by more intensive development of existing lines in the way of more efficient service that gives: (1) Through passenger trains to more distant points on maintained schedules. A thorough study relative to the establishment of limited, local and suburban trains, to meet the requirements of the territory served. (2) Establishment of efficient local and through freight service package cars to more distant points. Establishment of carload commodity rates with especial solicitation of carload traffic.

Another phase of our business necessary for real success is publicity. Tell the public what is being done for its welfare, and why. Let it know the troubles, and why. Certain things it wants done cannot be done. Tell it why.

As a public servant we have a moral duty to perform. The welfare of the territory we serve is of vast importance and we should be interested in its development in so far as the law permits.

There was a time when a carrier corporation was a hated monster. That time has changed. The public is beginning to think those who have to do with the operation of a carrier company are almost human. Advantage should be taken of such a psychological moment. Publicity should be used to cultivate our patrons. Clear, clean-cut statements of facts concerning the business should educate and enlighten them and eliminate at least a major portion of any antagonistic feeling.

Adverse criticism and antagonism is largely due to ignorance. The American public is fair, and once our problems are known as we know them it will be quick to meet us half way in solving them. Co-operation and co-ordination of all departments means success for all departments. It also means that when the traffic department functions properly there will be black figures on the balance sheet.

## Traffic from an Operating Viewpoint

By L. M. Brown
Superintendent Transportation Interstate Public Service Company

THERE is an evident lack of co-operation between departments when the traffic department agrees to furnish a service which the operating department cannot or does not perform. Such things have been known actually to occur, and if such a shortsighted policy is pursued it will seriously interfere with the reputation and business of any railroad.

To the operating department is assigned the duty of furnishing the service. The traffic department, no matter how competent, cannot succeed unless the operating department can deliver the goods. To give good service trains must be kept on schedule time, operated by employees who are competent and courteous and operated safely. To do this the necessary equipment must be provided. This equipment, together with the roadway and track and power equipment, must be kept in first-class operating condition and the operation must be supervised by some one who is capable of doing the right thing when emergencies arise. Personal attention must also be given by operating men in providing extra sections or trail cars for regular trains on days of heavy traffic.

### Management Must Have the Confidence of Employees to Make Boosters of Them

The traffic manager and the operating man have to deal with a great number of complaints. If these are handled diplomatically and properly corrected friends can be made and the service improved. Most men are reasonable and fair when conditions are explained to them in the right way. The greatest available organization of boosters for any public utility is its own employees, and if the management is made up of men who have the complete confidence of the employees every man is a traffic man or a salesman and a booster for the company he represents.

Traffic men and operating men should be active in the civic bodies in the communities they serve. The value of the personal touch and contact with the leading men of a community is not only of great importance from a public relations standpoint but numerous ideas can be gained for increasing the business and for the betterment of the service.

I agree with the opinion that rates have reached their maximum and that as business returns to a normal basis we are facing keener competition than ever before. This means that the electric railway service must be improved if the interurbans are to get their portion of the business. Out of Indianapolis are now a number of fast limited electric trains. They render a real service, and the establishment of others to more distant points would no doubt attract additional passengers. Chair cars, dining cars and sleepers have been installed on some lines. There is no doubt that the short-haul riders are becoming fewer on interurban lines, due principally to the increased number of automobiles, and the best chances for increasing the passenger revenue seems to be in providing more limited or through trains, with every convenience and comfort provided on the steam lines.

With freight service the clamor now is for quick delivery. People like to buy one day and receive the shipment the morning following. Freight schedules must necessarily be revised to meet new conditions. If the road is large enough there should be local and through freight trains. The necessary equipment should be secured for the handling of large shipments and commodity rates established which will increase the car load business. Where freight stations are congested it may sometimes be possible to have shipments loaded directly in the car and changes or improvements made in schedules.

If we strive to give such service that the traveler will say when he travels, 'Let's go by traction; they are always on time," or when he ships his freight he will specify traction because they give the best service, the balance sheet will be satisfactory and the troubles of the traffic man and the operating man greatly relieved.

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## The Need for Personal Effort

By F. D. Norviel
General Passenger and Freight Agent Union Traction Company of Indiana

"TRANSPORTATION sales department" is a proper term for the traffic department of any electric line and one which is becoming very commonly used. The transportation salesman of a railroad is frequently not allowed the broad scope of initiative that makes for success in the industrial salesman, yet the commodity handled by him is probably one of the most important and necessary articles for the success of the business world.

If we had no competition the making of price marks and the display of our goods for sale could be handled from a clerical department, but unfortunately at the present time the electric lines are faced with probably the strongest competition ever encountered in the history of that service, and it means more than ever before the exploitation of the service that the company has to sell and a greater effort on the part of each individual department.

### Auto Truck Competition Must Be Met by Decisions from a Study of Patrons' Wants

Observation has led me to conclude that rates can go no higher than they now are without a serious curtailment of traffic. There are two reasons for this: One is that other transportation means, such as the motor truck, giving a pick up and delivery service at rates lower than those now offered by the rail carriers, and another is the fact that the dollar is becoming more valuable and people are now counting pennies and nickels where they were thinking of quarters and half dollars just a short time ago.

Too much thought cannot be given to meeting the competition which we now have. The steam roads, with their immense and varied facilities, are very active. And then there is the motor truck, which is, in my opinion, our greatest competitor for the class of l.c.l. freight on which the electric lines have built up the considerable freight traffic they now haul. Thus the traffic man cannot confine himself to the office but must go out and meet his patrons face to face, study their wants and needs and endeavor to make the service he has to sell fit these conditions. He must gain the confidence of his prospective customers by making sure that his customers receive a satisfactory transportation service. This accomplished, the people and the industries will be offered to him in so far as his ability to serve has been perfected.

## How to Increase Ticket Sales

By J. H. CRALL
General Passenger and Freight Agent Terre Haute, Indianapolis & Eastern Traction Company

THE question of encouraging the purchase of tickets at stations instead of paying cash fares to conductors is a question undoubtedly worthy of consideration. This matter has been discussed by the Traffic Association at various times, but no concerted action has been taken to devise some method whereby we may get the money through the ticket windows and into the hands of the ticket agent. I believe there are several methods whereby we may successfully reduce the collection of cash fares on trains and increase the sale of tickets:

First, this may be done by penalizing the passenger 10 cents for each collection made by the conductor, as is done by the steam roads. This might be done by refunding the passenger this excess charge at any ticket office upon surrender of a cash fare receipt, but the plan to increase the sale of tickets would be more effective if the carrier would retain the excess charge. Such a method would be subject to the approval of the public service commission.

Second, a slight reduction may be made in the rate for a round trip. This plan is in effect on some of the interurban lines; the deduction is a certain per cent or a certain amount, usually 5 per cent or 5 cents for amounts from 25 cents to 50 cents and 10 cents for all amounts over 50 cents.

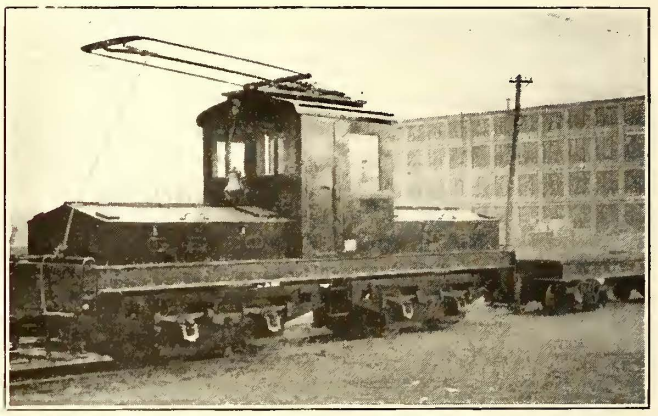
Third, another way of increasing the ticket sales is to appeal to the civic pride of the town served by the railroad. Most municipalities are apt to refer to the amount of business done by the railroad in their own town as a criterion of the prosperity of their community. I believe the traffic man should co-operate with the town boards and civic and commercial organizations in a campaign to encourage the purchase of tickets. A little advertising in the local papers and an attractive sign over the ticket agent's window reading "Boost Your Home Town by Buying Tickets," or "Buy Tickets Before Boarding Car," will help. And then do not fail to get your agent enthused, and see that he takes a pride in increasing the ticket sales and inject a little "pep" into the agent by showing that you have some yourself and you are sure to get results.

## Super-Power Plant Plan for Indiana

FREDERICK L. RAY, superintendent of power plants Union Traction Company of Indiana, Anderson, Ind., recently read a paper before the Indiana Engineering Society in Indianapolis in which he outlined in a broad way the possibilities for economy and convervation of coal which would result from an abandonment of the nineteen small and largely inefficient power plants now operating in central Indiana and the building in their stead of two large modern power stations located at points of immediate coal and water supply and connected with the territory by high-tension lines. His estimate was that this would easily make a saving of nearly 50,000 tons of coal per month, or $150,000 per month. In a table presenting the operating efficiencies of the nineteen plants in this district, it was shown that the most efficient plant consumed coal at the rate of 3.20 lb. per kilowatt-hour, while the other plants ranged above this up to 9.66 lb. The proposed location for both power plants is on the Wabash River along the western boundary of the State, one north of Terre Haute in Vigo County and the other south of Terre Haute in Sullivan County, both of which are in the vicinity of the Indiana coal mines. A loop transmission system extending across the State would transmit the power generated at these plants to the entire central portion of Indiana.

## Combination Storage Battery and Trolley Locomotive

TWO new type combination storage battery and trolley locomotives, made at the Erie plant of the General Electric Company, have been added recently to the equipment of the yard transportation department of the company at Schenectady. The new locomotives, which will be operated from a storage battery except in emergency cases, weigh 30 tons each and are the heaviest yet designed for the 36-in. narrow gage track. They are equipped with four HM-819, 250-volt motors. Braking is done with air, supplied by a motor driven air compressor of 16 cu.ft. per minute displacement. Air also operates the sander, bell and whistle. By the throw of a switch in the cab the locomotive is converted from a trolley to a storage battery type, drawing its power from a 96-cell, type MV-25 plate Exide-Ironclad battery.



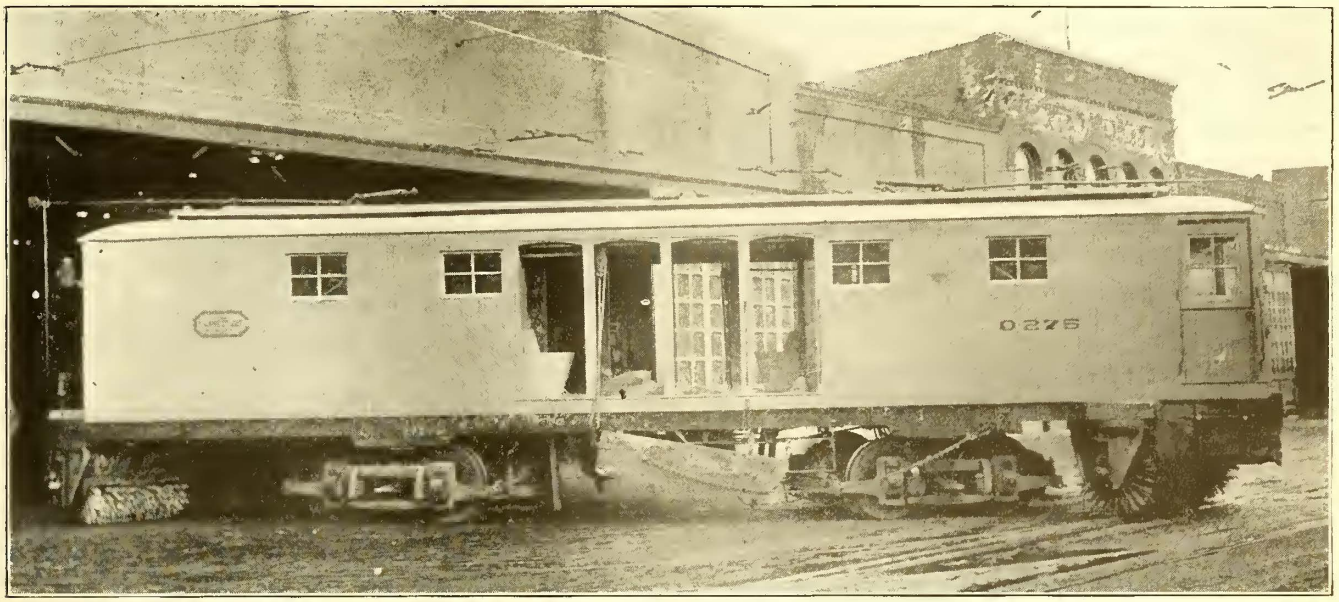
NEW TYPE COMBINATION STORAGE BATTERY AND TROLLEY LOCOMOTIVE FOR YARD TRANSPORTATION AT THE SCHENECTADY WORKS OF THE GENERAL ELECTRIC COMPANY

A big advantage of these locomotives over the straight trolley type is to be found in entering a building wired only to the door. With the old type it has been necessary to run a rope into the shop and attach it to the car or to place a hook with a lead onto the trolley wire and thus have a dangling wire supply the power while the locomotive goes inside. The storage battery type eliminates all this procedure and can operate anywhere the narrow gage tracks are to be found. A mechanical feature is the demountable steel tire. When the tire wears out eight bolts and a ring are removed, the old tire is taken off and a new one replaced.

In the illustration also can be seen a new type dump car being used. It carries standardized parts which eliminate the necessity for a large supply of special parts in making replacements or repairs, and had a 10-yd. capacity as compared with 4 yd. of the smaller type used. The new flat cars have a capacity of 100,000 lb. as compared with 10 tons of the older variety. This makes it possible to move any material manufactured or used within the plant.

# Open Cars Changed to Snow Sweepers

**The Connecticut Company Has Designed and Constructed in Its Own Shop Eight Sweepers from Obsolete Open Cars — Trouble Incident to Chain-Drive Sweepers Eliminated by Use of Gear Drive—Use of Old Material and Equipment Results in Low Cost**




EIGHT OF THESE ON THE CONNECTICUT COMPANY'S LINES MAKE SHORT WORK OF SNOW REMOVAL

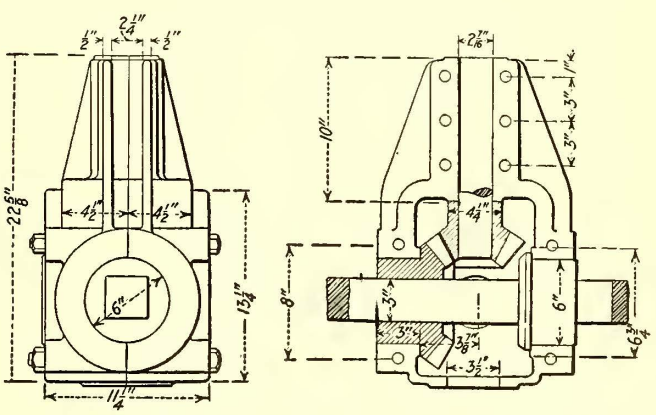
THE Connecticut Company has recently added to its snow-fighting equipment eight double-end rotary snow sweepers which were designed by its own engineers and constructed in its own shops at New Haven. Traffic delays following snowstorms have emphasized the necessity for equipment which would make short work of clearing the tracks, and the trouble experienced with chain-drive sweepers demanded that a more reliable construction be designed. The result has been that a very rugged, powerful and dependable sweeper has been produced. It is expected that these sweepers will be able to clear the tracks of light snow up to 12 in. in depth. For snows heavier than this, of course, a plow will be used, which, if need be, can be followed by a sweeper to complete the cleaning of the tracks.

At the present time sweepers have been allocated to the various parts of the Connecticut Company's system as follows: Three in New Haven, two in Hartford, two in Waterbury and one in Bridgeport.

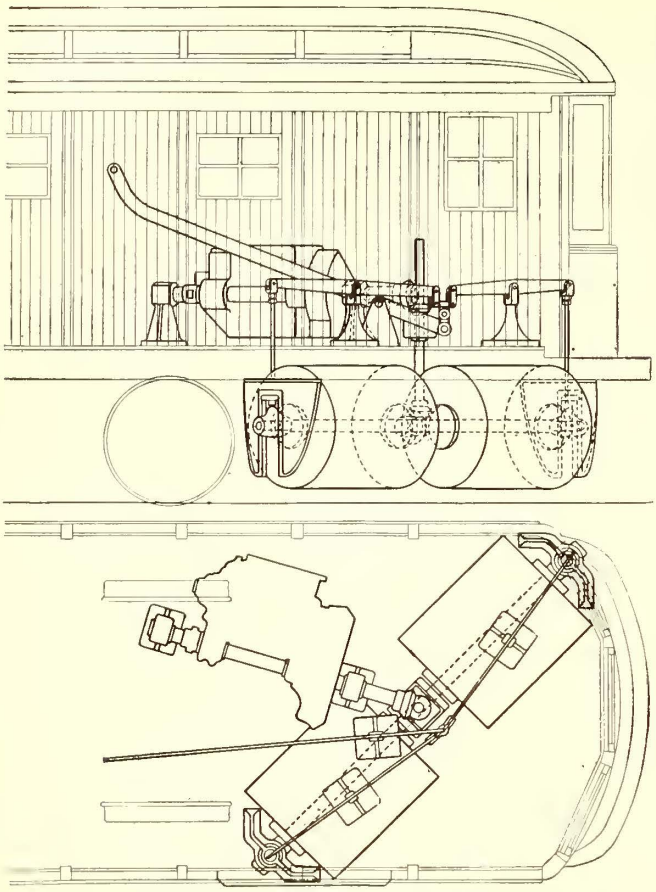
In order to utilize as much as possible the old equipment available, it was decided completely to rebuild eight double-truck, fifteen-bench open cars which survived their usefulness for passenger service. All of the cars were equipped with Brill 27-G trucks; seven of the cars had GE-67, 40-hp. motors with K-6 controllers and one car had GE-80, 45-hp. motors with K-35 controllers. Each piece of this equipment was thoroughly overhauled before being put in service again. All of the brooms are driven by GE-67 motors except one, which is driven by a Westinghouse-101 motor. K-10 controllers are used for the broom motors. All of these motors were also overhauled, some of them having been through a fire. Wherever possible use was made of old material in order to keep the cost to a minimum, and that they were successful in this respect is shown by the total cost of the eight sweepers being but $20,000.

### CARS COMPLETELY REMODELED

To make room for a 34-in. broom at each end it was necessary to raise the body of the car about 10 in. and, at the same time, to shorten the wheelbase of the car from 25 ft. to 19 ft. 6 in. That the car might be able to pass under all bridges the monitor roof was done away with, which decreased overhead clearance by 10 in. The shortened wheelbase gives a long overhang and has made it impossible for the car to pass another on a curve. Both bulkheads have been removed and the ends totally inclosed. A space in the center corresponding to that formerly taken by four benches has been left open so that snow-fighting equipment and materials such as shovels, salt, etc., can be easily loaded and transported.




DETAILS OF BROOM SHAFT DRIVE JOURNALS



AN OUTLINE DIAGRAM SHOWING THE LAYOUT OF THE SWEEPER INSTALLATION

To strengthen the overhanging ends not only have the sills been strengthened but also an overtruss has been added on each side. Each truss is composed of a ¾-in. by 4-in. steel bar running between two queen posts over the bolsters and this strip is connected at each end with a 1-in. steel rod which goes through the ends of the sills. Also all stanchions have been strengthened by the addition of a wooden strip on each side.

Since plenty of space was available within the inclosed portion of the car all auxilliaries except the brake cylinder are removed from the under side of the car and are installed inside. This additional protection does its little bit to help eliminate any chance of failure and is quite essential because of the severe conditions to which everything beneath the car in proximity with a fastly revolving broom is subjected. The air compressor is placed in one corner on the floor; above it on a shelf is the governor, and above that strapped to the roof is the air reservoir. The grid resistors for the car motors are arranged in the corresponding corner of the other end in a vertical position and inclosed to prevent any one accidentally coming in contact with them. All wiring except the leads to the car motors is run along the roofs of the cars and thus protected from all injury.

### Broom-Drive Construction

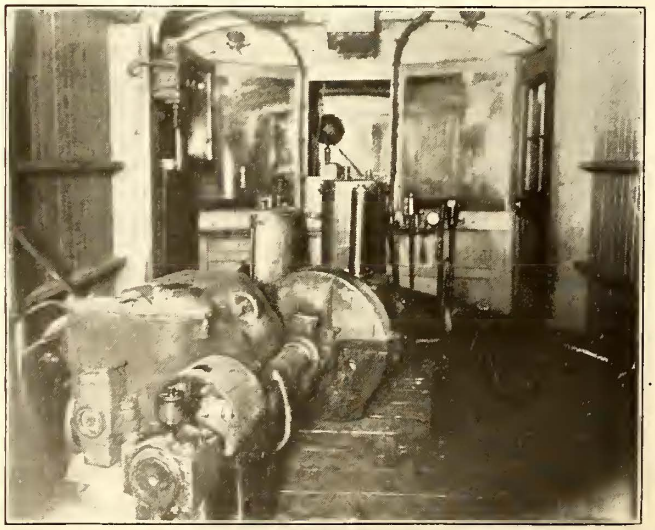
The rattan broom, which is at an angle of 45 deg. with the axis of the car, is supported from two jaws or pedestals. The one nearer the truck is supported from the car body, but the other one, which extends slightly beyond the end of the car, is supported by a channel iron running back into the car about 5 ft. and bolted through to the sill. These jaws act as a guide for the bearings at each end of the broom shaft. Except where the broom shaft enters the journals at the ends it is square and, accordingly, the broom itself is made in four sections and strapped to the shaft.

Now comes the novel part of this design. Instead of having a sprocket on the broom shaft and a chain running back into the car, the broom is driven through bevel gears from a vertical shaft. These gears are entirely inclosed by a cast-iron housing which acts as a case to hold the gears in line. The bevel gear on the broom shaft is made with a collar, which, with a similar collar on the other side of the housing, furnishes the bearing in the housing. On each end of the shaft next to the outside bearing is a thrust washer to take up the force acting along the shaft. The broom shaft is made from forged steel containing from 0.25 to 0.30 per cent carbon. A long bearing in the top of the housing supports the vertical shaft and the gear is held in line on the bottom by a collar on the gear itself and on the top by another collar. This housing is made tight and is completely packed with grease.

The broom motor, through bevel gears in a similar housing within the car, drives the vertical shaft, which is splined to allow the broom to be raised and lowered. Rods screwed into the broom shaft journals and connected within the car to a system of levers furnish the means for raising and lowering the broom. The working of this is shown in the accompanying cut. As originally designed, the two pedestals seen were lower and the toggle connecting the two levers was above instead of below the raising levers. This arrangement was found unsatisfactory, for when an attempt was made to raise the brooms by lifting up on the handle the toggle buckled. By placing a pin through holes in a V-shaped yoke in which the control lever works the broom can be held adjusted to any desired height.

The motor is supported by two pedestals, in which the shaft corresponding to the axle runs. The motor is held at the back by two smaller pedestals. In case it is found necessary to overhaul this motor it is necessary only to remove the bolts from the two rear pedestals and to turn the motor over on the driving shaft. A gear ratio of 22 to 62 is used. The broom runs at the same speed as the axle shaft, since the gear ratio of the upper bevel is 27 to 18 and that of the lower 18 to 27.

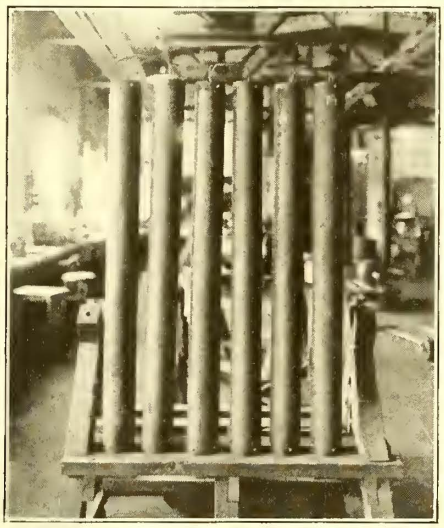
Obviously a very accurate control of the broom motor



INTERIOR VIEW OF CAB, SHOWING POSITION OF BROOM-DRIVE MOTOR, CONTROL, RESISTORS, ETC.

is desired so that it can be regulated according to the depth of snow and the speed of the car. This means that every point on the controller must be a running point. Instead of installing a great deal of capacity in resistors, a very simple method was resorted to. Discarded and wornout carbon brushes from car motors were packed into a fiber conduit tube about 3 in. in diameter and about 4 ft. long. Connection is made through a copper plate at each end, the upper held against the brushes by a spring. Six of these units are arranged vertically along the side of the car opposite the motorman. The controller for the broom motor is placed in the forward end of the car so that the operator has a good view of the roadway ahead.

Up to the present time there has not been a real snowstorm which would test these sweepers to their capacity. However, during a recent light fall of snow one sweeper in New Haven was operated continuously from 10 a.m. to 6 p.m. and performed in a perfectly satisfactory manner. The track and a space 10 in. on each side were swept clean of both snow and sand. It is felt by the designers that ample power has been provided for the brooms, and if there is any limiting feature it is the broom itself.



CARBON-PILE RESISTORS MADE FROM OLD MOTOR BRUSHES

The car is equipped with wings on both sides which can clear the roadway on either side of the car. Each is controlled by a block and tackle, the rope extending into the inclosed part of the car, so the wings can be easily drawn in to make room for passing vehicles and other cars. Sand boxes are provided in both ends of the car with a 3-in. pipe leading to the rail. There is also a salt box in each side in the open space so that no salt will be brought into contact with any of the equipment. Aprons extend down over the front of the car about half the diameter of the broom to prevent the snow from flying in the air too far. That some such precaution is warranted can easily be seen, when it is realized that the speed of the broom is about 350 r.p.m. Every effort has been exerted to have these sweepers as reliable and powerful as possible, for, like fire-fighting apparatus, when they are needed they are needed badly.

The machining of new parts and the overhauling of both the broom and car motors were done in the reclamation shops, while the rebuilding, painting, wiring and installation of the brooms and their driving motors were done in the Grand Avenue repair shops in New Haven, Conn.

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The first order of eleven electric locomotives for the Swedish State Railways has recently been placed with the Motala-Lindholm works. These locomotives, to be delivered in 1922, will be used to haul iron ore on the Lulea-Gelivare line.

# Association News

## Shortage in Accounts Discovered

IN THE audit which was begun last week of the accounts of the American Electric Railway Association for the fiscal year of the association the auditors found some discrepancies in the accounts of William O. Gibson, bookkeeper, and President Gadsden was notified. A special meeting of the executive committee was called by Mr. Gadsden on Tuesday morning of this week, and on Wednesday Gibson was arrested. The audit is said to reveal irregularities in excess of $40,000, of which about one-fifth was in Liberty Bonds and the rest in cash. The alleged misappropriation occurred since the last audit. When Gibson was arraigned in court Mr. Gadsden said that he had made a confession. The particular charge against him was that on Jan. 18, 1921, he cashed an association voucher at the Guaranty Trust Company, stating that it was to pay an efficiency expert in the Washington office, when actually there was no such employee.

To aid in determining the extent of the discrepancy, all members of the association are being asked to advise the association of the date and amount of any remittances made for dues since November, 1919.

An adjourned meeting of the executive committee has been called by President Gadsden for March 15.

## Out to Meet the Public

THE advertising section of the Bureau of Information and Service of the association has already begun to function in accordance with the platform adopted at the Chicago conference. It is now engaged in the preparation of publicity copy for use in selling the suggestions in the report of the Federal Electric Railways Commission to the public in the communities served by the trolley lines. Two cards have been sent out to member companies; one, 8⅝ x 13½ in., displays a summary of the principal findings and recommendations of the commission, and is intended for display in public places, such as waiting rooms, carhouses, office windows and the like. The other is a desk card 4½ x 8½ in., which sets forth the remedies suggested by the commission for the betterment of conditions.

## Loss of Creosote by Evaporation

THE amount of creosote lost through evaporation in open-tank treatments has been shown in experiments at the United States Forest Products Laboratory to be in proportion to the area of the exposed surface and the volatility of the oil.

| Percentage of Oil Distilling Below 270 Deg. C. | Loss in Pounds per Square Foot per Day |
|---|---|
| 20 | 1.0 |
| 30 | 1.4 |
| 40 | 2.0 |
| 50 | 3.0 |
| 60 | 4.3 |
| 70 | 6.3 |
| 80 | 9.3 |

At the treating temperature of 195 deg. F. the loss of creosote in pounds per day per square foot is as shown in the accompanying table.

# Recent Happenings in Great Britain

## Inquiry Into Tramway Wages Under Way—Through Bookings for Tramway and Omnibus in London

*From Our Regular Correspondent*

Much interest attaches to the inquiry which began in the end of January regarding the claim of the tramway employees of the country for an advance in wages of 12s. a week. It is the first inquiry of the sort which has taken place in connection with the industry, and whatever other result it may have it will elicit all the facts on both sides and make them public.

IN PREVIOUS articles I have traced the course of the dispute, in which the employers took up and adhered to the position that they could not pay more, as the industry was already run at a loss. Then the Minister of Labor constituted this Court of Inquiry under the industrial courts act, 1919, with instructions to inquire into the causes and circumstances of the dispute and to report thereon to the Minister. The court is composed of representatives of employers and employed and two outside members. What will happen after it has reported remains to be seen.

### Men's Case Heard First

At the hearings, which began on Jan. 26, parties were represented by prominent men in their own ranks, not by counsel. The case for the employees was taken first and lasted for several days. E. Bevin argued that higher wages were required to meet the high cost of living, and were still needed though the latter had begun to decline. The municipal tramway authorities had made large contributions to relief rates in prosperous times instead of accumulating the profits to meet lean times like the present. A wage to maintain a proper standard of living was insisted on in any circumstances. Mr. Bevin in conclusion referred to growing unemployment in industry and said that unemployment was brought about by the machinations of American and other financiers to enable them to lower the standard of living.

Witnesses representing the trade unions concerned were afterward heard, and subsequently the wives of some tramwaymen were called and testified that the wages of their husbands were insufficient for the proper maintenance of their families.

### Railway Burdens Too Great

H. Gordon, a member of London County Council, was also called as a witness for the employees. He advanced the view that in calculating the commercial value of a tramway the local rates which had to be paid in respect to the track should be placed on the credit side. He considered that if tramways were properly managed and were not charged for street widenings and were freed from local rates on the tracks great prosperity was in store for them. The present condition of street traffic in London he described as chaotic and disgraceful. He said that £200,000 a year was wasted by time that is lost at London tramway dead-ends.

The Court sat for three days a week. It began the case for the employers on Feb. 2. J. H. Beckett, secretary of the Municipal Tramways Association, testified that owing to the financial loss the undertakings could not give the advance of wages asked for. He showed that on the undertakings of sixty-six authorities there had been a drop during the last sixteen weeks of 1920 of 8,000,000 passengers compared with the corresponding period of 1919. That arose from the slump in trade.

As to wages paid by tramways compared with those in other trades, he said that the tramway man could not be compared with a skilled mechanic who had to serve an apprenticeship. If 2½d. per mile run were allowed for renewals, then eighty municipal tramways in the year 1919-20 were carried on at a loss of £1,500,000. The people using the cars would not pay any more for fare than they were paying at present.

Mr. Beckett also mentioned that the forty-five municipal undertakings which had voted against arbitration represented 15,141 employees and the thirty-nine which voted for it represented 29,344. He opposed the suggestion that the voting should be by the number of employees. As to the charge on tramways for street widenings, the amount was small and confined mostly to London. Other witnesses were heard as to the deficit on tramway working, and on Feb. 4 the court adjourned till Feb. 15 in order that additional statistical information might be prepared and handed in.

It is of interest to note that in orders granted by the Minister of Transport to municipalities authorizing higher fares than the statutory maxima it is stipulated that the municipal tramway authority shall not make any payment out of the revenue of the undertaking to the credit of the borough fund or in relief of rates in any year until they have made reasonable provision for the proper repair, maintenance and renewal of the undertaking, and shall keep such accounts of their expenditure on repairs, maintenance and renewals and shall furnish such returns of the provision made by them and of their estimated future liability in respect thereof as the Minister of Transport may from time to time require. These seem very reasonable and proper conditions in the circumstances.

There are quite a good many municipal Tramway undertakings which in the days of prosperity paid large sums for the relief of the local rates. If that money had instead been accumulated, it would now be of much use.

The Glasgow tramway undertaking is beginning an experiment, to be continued till the end of the financial year (May 31), of running all-night cars for the benefit of late workers. The cars are to run on fifteen routes at hourly intervals on the outward journey from 12:30 to 3:30 a.m., and on the inward journey at 2 a.m. and 3 a.m. only. The fares on the average are about 50 per cent higher than the ordinary fares, and the minimum is 1d. for one mile. It is not expected that there will be any profit on these services, but rather a loss. Inquiries at London and Manchester, the only two places in Britain where all-night cars are run, show that these services are run at a loss. The loss, however, is small compared with the main revenue and expenditure. The Glasgow experiment covers more routes that the night cars do in either London or Manchester. In the matter of these night services, Glasgow is very far behind New York, as my recollection is that cable cars ran all night in Broadway at least twenty-five years ago.

### Trackless Trolleys May Be Used

In the stress of post-war conditions I see the possibility, in this country at any rate, of a new, though perhaps temporary application of the trackless trolley system. There is a proposal before Bradford Town Council to substitute trackless electric cars for the tramway cars on certain suburban routes where the rails are worn out. At present prices it would cost an enormous sum to renew the tracks, so it is thought the railless car might be put on for the present at least. The poles and overhead wires are there already, so all that would be required, after getting the cars, would be to put up negative trolley wires for the return. This course would seem preferable to installing the expensive petrol motor omnibus.

The Birmingham Town Council is considering the trackless car and inquiring into the Bradford experiment of using double-deck trackless cars. The Glasgow Town Council is looking into the question of using the trackless trolley system on suburban routes for which tramway extensions have been authorized but are held up owing to the cost of construction.

Application is to be made to Parliament in the ensuing session for sanction to two great water power schemes in the Highlands of Scotland. One, the Lochaber scheme, is for the purpose of producing electricity to be used mainly for the development of the manufacture of aluminum. The other, the Grampian scheme, promises to supply electricity for all purposes over a wide area including Perthshire and Forfarshire. Between the two something like 150,000 hp. will be developed. The water will be derived from locks and rivers situated at high altitudes among the mountains. Should these schemes be sanctioned, they may possibly lead by and by to the electrification of some steam railways.

# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

## Purchase Installment Paid

**City of Seattle Meets Its Obligation, but Suit to Review Purchase Deal Goes Before Courts**

The Puget Sound Power & Light Company has abandoned its motion for a temporary injunction against the city of Seattle and has thus simplified the preliminary proceedings in the United States District Court in the fight to prevent a review of the city's purchase of the Stone & Webster lines. The need for the temporary injunction was removed because the $375,000 due on March 1 on the $15,000,000 of utility bonds issued to Stone & Webster was paid. The company would enjoin the fourteen taxpayers from making Stone & Webster a party to the state court action, or taking action in any but the federal court to seek a review of the city's contract with Stone & Webster.

### Taxpayers Sue City

The taxpayers have sued the city in the Superior Court, and Judge J. T. Ronald of that court, on Feb. 24, signed an order requiring the fourteen taxpayers to make Stone & Webster party defendants with the city if they take further action in the Superior Court. The taxpayers were granted a ten-day extension of time for filing an amended complaint in the suit.

Otto B. Rupp, counsel for the taxpayers, replied to Stone & Webster attorneys with the assertion that the company's move simply was an attempt to enjoin a proceeding in another court, and with the declaration that the taxpayers in no way sought to force a breach of the contract under which the city paid $15,000,000 for the railway system. He asserted the federal court had no power to restrain the Superior Court proceedings, and declared there was absolutely no necessity for bringing the company into the state courts.

### Suit Brought to Restrain City

Attorney James B. Howe, for the Stone & Webster Company, said the taxpayers' suit virtually was an action to restrain the city from complying with a contract upheld by the Supreme Court. He argued that jurisdiction was acquired by the federal court through failure of the taxpayers to make the company a co-defendant, and the case should proceed to final adjudication in the United States court, which could enjoin any action that would prevent it from granting the relief asked. He said the city wanted to fulfill the contract, and denied the right of taxpayers to interfere.

Judges Neterer and Cushman arranged to hear the case together, each applying such part of the argument as concerned his case, and although the motion for a restraining order against the city was dropped, the two judges continued to hear the arguments on the second case against the fourteen taxpayers.

At the close of the arguments on the suit Federal Judges Neterer and Cushman granted permission to the fourteen taxpayers to file an amended complaint in the King County Superior Court. The modification of the federal court's restraining order, made at the request of counsel for the taxpayers, and over the objections of the company, carried the stipulation that the Superior Court proceedings should go no further pending the federal court's decision on the arguments heard to date. The judges indicated they would hand down their rulings on March 14, and ordered the modified restraining order continued until that date.

## No Profits to Share in Virginia

After a six months' trial the profit-sharing plan announced last summer by the Virginia Railway & Power Company, Richmond, Va., has been withdrawn, the operations for the six-month period having demonstrated that there were in fact no profits to share. In announcing the plan on Aug. 15, 1920, Thomas S. Wheelwright, president of the company, said that profit sharing must not be confused with a bonus payment. The operation of the plan was described at that time in the Electric Railway Journal.

The profit-sharing plan was withdrawn by order of the directors as of Jan. 31, 1920, because there was no surplus to divide. The figures for the six months ended Dec. 31, 1920, which would have been the basis for profit sharing during the next six months, showed a deficit of $37,550, instead of a surplus. A decrease in the number of passengers carried as compared with the same period of 1919 is also noted in the report.

In the strict meaning of the term, "profit sharing" includes sharing in any deficits as well, but no such provision having been made in the plan as originally adopted, it is merely withdrawn and the company will "go it" alone on the deficit.

The importance of the closest co-operation for increasing earnings and economizing in expenditures is being urged by company officials. The company points out that the fact that there is no surplus to divide is not due to any defect in the plan, which was dependent upon the closest co-operation for economy, increased business, fewer accidents and more perfect fare collections.

## Relief Recommended

**Committee of Green Bay Citizens Favors Relieving Company of Paving Costs**

A committee of citizens of Green Bay, Wis., has submitted a conclusive report on the traction problem in that city to the City Council. Some eight months ago this committee was created in the hope of promoting improvements and extensions which at a later date were substantially covered in a proposed ordinance presented to the City Council by the Wisconsin Public Service Company, which operates in Green Bay.

The committee in submitting its report, which contains some modifications of the ordinance drafted by the railway, states that its recommendations are offered with a desire to harmonize the interests of the company and the city in order that Green Bay may expand. It believes that better railway service can be brought about through public co-operation which will ultimately mean profitable operation.

The committee favored a service-at-cost arrangement, but the adoption of a grant of this kind for the immediate present was not considered.

### Committee Recommends Relief

The committee and the railway are in accord with respect to improvements which will serve the city's requirements and assist in its growth, such improvements being provided "on conditions which will invite additional investment." Through the Smith & Scheuring Audit Company the committee made an inspection of the company's books and for the six months period audited the Wisconsin Public Service Company failed by $18,000 to earn interest, with nothing provided for dividends.

In view of these facts the committee agrees that some of the concessions asked for by the railway looking toward a reduction in cost should be granted. One important provision of the ordinance dealt with the request of the company to be relieved of the obligation of paving, repaving or repairing any portion of any street in the city. With respect to this matter the committee reports paving obligations have become a real factor in the traction problem.

The committee believes that the attitude of the city toward a public utility question of this kind should be judged in accordance with its effect upon public interest. The committee concludes that as a matter of fairness and for the promotion of sound traction development in Green Bay the company's application to be relieved of paving cost

ought to be granted and the committee would so recommend. With respect to maintenance cost it is the opinion of the committee that the company should continue to pay for repairs to all paving where the tracks of the railway do not rest upon permanent foundations and that where permanent foundations are laid or may be laid in the future it be relieved of maintenance.

## Public Control Act Upheld

The Supreme Court of Massachusetts has sustained the constitutionality of the statute under which the Boston (Mass.) Elevated Railway Company is being operated by a Public Board of Trustees with the return on investment guaranteed by the State for a period of ten years from 1918. The city of Boston brought suit to recover from the trustees $2,905,931 which had been assessed on it, as its share of the Elevated's deficit for the year ended June 30, 1919, in accordance with the terms of the statute. Counsel for the city attacked the law as unconstitutional, but this last decision of the Supreme Court seems to assure the company of comparative security for its investment for the balance of the ten-year period.

The bill filed alleged that in ascertaining the deficit of $4,000,000 the trustees charged for the fiscal year ended June 30, 1919, depreciation of approximately $2,000,000, and $2,300,000 for maintenance and repairs; that the average charged by the Boston Elevated Railway for depreciation for the ten years prior thereto had been about $98,000 each year and was inadequate, in consequence whereof the property had run down and was badly depreciated; that the amounts charged are "excessive, unreasonable and unnecessary," and that if the assessment of the deficit was made according to the act the plaintiff, as one of the cities liable, would be called upon to pay a very large proportion of the sum to be paid by the commonwealth to the railway.

### Act Approved

The Supreme Court in its finding said:

> In essence, this act having been accepted by the railway companies, constitutes an agreement between the Boston Elevated Railway and the Commonwealth, that the latter shall take over the management and operation of the railway and shall pay therefor the amounts specified in way of compensation for the use thereof. The public operation is undertaken by the Commonwealth, not as a source of profit, but solely for the general welfare. The main design of the act is public operation at such rates of fare to be fixed by the trustees from time to time as shall afford revenues sufficient to defray all charges and the dividends established by the act.
>
> There is no distinction in principle between the management and operation of such a transportation system by a public agency established by the Legislature and the taking over by counties, cities and towns of toll bridges and turnpikes, originally private enterprises. It has been held that public ownership and operation of a ferry constructed at public expense for the uses of a street railway of the Boston Subway all are valid under the constitution.

# Both Sides See Victory Ahead

## City of Detroit Elated at Supreme Court Ruling—D. U. R. Sees More Need than Ever for Service-at-Cost

The decision of the United States Supreme Court handed down on Feb. 28 clarifies the street railway situation in Detroit greatly, sustaining the action of Federal Judge Tuttle in denying an injunction asked by the Detroit United Railway restraining construction of the Detroit Municipal Street Railway. In this decision the court considered both the validity of the election in Detroit and also whether the method proposed by the city would be a deprivation of the railway's property rights without due process of law, in violation of the fourteenth amendment of the Constitution.

THE Fort Street decision is reaffirmed wherein it was held that a street railway which is operating under a franchise granted for a definite period and has enjoyed the full term of the grant could be required within a reasonable time to remove its tracks and other property from the streets upon failure of renewal of the grant, and it declares that the so-called day-to-day arrangement or the expenditure by the company of large sums of money on its property with the knowledge and acquiescence of the city did not affect this right.

### Corporation Counsel Expresses View

The charge was made by the company that the city officials were engaged in a scheme to compel the company to part with its property at a sum much less than its fair value, but the court held that the city has the right to acquire the property on the best terms it can make with the company, and an attempt to buy the property at much less than its value would not deprive the company of property without due process of law. Moreover, the court said under the Constitution of Michigan no city or village can grant any public utility franchise which is not subject to revocation at the will of the city or village, unless such proposition shall first have the affirmative vote of three-fifths of the electors, so that the city could not effect any purchase without such approval. In fact there is nothing in the ordinance attacked which undertakes to acquire the property of the complainant without compliance with this charter provision. Finally, the court declared that the form of submission of the question was in substantial compliance with the law. This makes it mandatory for the Street Railway Commission to proceed to acquire a municipal street railway system and as soon as possible make the municipal system exclusive.

According to Corporation Counsel Wilcox the Supreme Court decision answers all the claims of the Detroit United Railway that have crept into the conferences between the city and the company, and also establishes the fact that there is no such thing as a franchise by estoppel as proposed by Charles Evans Hughes in his argument for the Detroit United Railway. The decision, Mr. Wilcox states, meets the primary contentions of the Detroit United Railway in all its other suits against the city filed since April 5, 1920, and also that in the suit of the Clairmount residents, decision in which was for the city. The city officials consider the decision the most important one ever obtained by the city in court and believes that, coming from the highest tribunal in the country, there can be no appeal from it.

Commenting on the Supreme Court's decision Elliott G. Stevenson, attorney for the Detroit United Railway, stated that the people have the matter of settlement in their own hands and can decide to have continued service under what is universally conceded to be the fairest ordinance ever submitted to the people of Detroit or any other city—or they can decide to go without service as far as the company's lines are concerned. It was cited that in 1918 the Council instructed the Corporation Counsel to commence proceedings to oust the company from the streets on which franchises have expired. This question is now before the Michigan Supreme Court.

### Company's Position Outlined

The decision, according to Mr. Stevenson, states that if the people of Detroit desire to have the service of the Detroit United Railway stopped, its tracks torn up and junked, and so express themselves in a proper way—at an election at which the question is submitted—it is within their power to bring about that result. Also that the municipal ownership plan submitted by Mayor Couzens a year ago is valid. Further, that as the city, speaking through the people, has the power to stop service and have the railway company's property removed the company likewise has the right to stop service at any time it sees fit.

That the Detroit United Railway is not making any threats of trying the so-called "Toledo treatment," as has been implied, is best shown, Mr. Stevenson says, by the fact that the company is contending that ouster by resolution is not legal, but that if such proceedings are to be taken and service is to be stopped it must be done by ordinance so that the people themselves, vitally interested in the matter, can have the right to affirm or reject through a vote under an initiative petition. He thinks the situation, now most acute, could readily be settled by the adoption of the proposed service-at-cost ordinance which the company has offered to accept. This ordinance will come up for ratification at the polls in April.

## M. O. a Success

**New York's Commissioner of Plant and Structures Says So Himself of Staten Island Lines**

Grover A. Whalen, Commissioner of Plant and Structures of the city of New York, is claiming success for municipal ownership of the Staten Island trolleys on the basis of the three months of operation from Dec. 1, 1920, to March 1, 1921. He says the figures for the period will show that every expense was covered by receipts during a season when traffic was at its lowest ebb, and that the experiment on Staten Island has vindicated the city's claim that a transit line can be operated successfully on a 5-cent fare.

The city took over the Staten Island Midland Railway Company on Dec. 1, after it had gone into bankruptcy because an increased fare was not allowed, with the provision that the city should pay for all operating expenses and in event of profits being made that they should be divided fifty-fifty with the receivers.

Mr. Whalen is quoted as follows:

By spring the city will be operating not only the Staten Island trolley lines and the Williamsburg Bridge local line but also the New York & North Shore lines, service on which was suspended more than a year ago. The city is now negotiating with Federal Judge Chatfield, who appointed the receiver for the North Shore lines, for an agreement similar to the one entered into with the city regarding the trolley lines of Staten Island. I have every reason to believe that the court will allow the city to operate the North Shore lines on the same conditions.

We have carried 20,000 passengers daily, and that is the lowest average of the year. In the summer we expect to be carrying 100,000 or 150,000 a day. We have given better service than the Staten Island Midland Railway, and that is, I believe, an important reason for our success.

But for the intelligent view which Judge Chatfield took of the hopeless transit situation confronting the people of Staten Island, and his broad-minded co-operation with the city in its endeavor to apply a remedy, municipal operation of the lines in question would have been impossible. He gave the city an opportunity to show that it is capable of operating transit lines and give good service at a 5-cent fare, which our predecessors had declared impossible.

The investment of the city in the Staten Island trolley system for cars amounts to $194,000 up to date, according to Commissioner Whalen, but more cars will have to be purchased in the spring to meet the demand of the summer traffic. Mr. Whalen intends to acquire a number of second-hand cars.

## Merchants at Akron Urge Franchise Revision

The Retail Merchants' Association of Akron, Ohio, has taken a hand in an effort to settle the traction problem in that city. Resolutions have been unanimously adopted and presented to the City Council urging the Council to take immediate action. The Akron Rotary Club, Kiwanis, Gyro, Exchange and Lions Clubs of the city have taken similar action and a concerted movement is on to enforce settlement.

The move to settle the controversy was started by Jerome Dauby, general manager of the M. O'Neil Company, one of the largest department stores in the city.

As pointed out in the ELECTRIC RAILWAY JOURNAL recently, the people of Akron are demanding an extension and development of the city system. The Northern Ohio Traction & Light Company has taken the position that extensions and development cannot be made until the system shows earnings sufficient to borrow the money and that it would be impossible under the proposed franchise to secure the funds necessary for this purpose.

## Conciliatory Attitude Now in Detroit on Crossings

Petitions have been filed by the Detroit United Railway in the Circuit Court asking that six Detroit city officials who are held responsible for the forced crossing on Jan. 9 of the Detroit United Railway's Mack Avenue line by the city's St. Jean line be adjudged in contempt of court and punished for violation of the injunction issued by Judge Dingeman forbidding the crossing.

Announcement was later made by the company in a letter to the Corporation Counsel that the crossing of the D. U. R.'s tracks by the city lines will not be opposed provided the work is properly carried out and that plans therefor are previously approved by the company. The company's action in permitting crossings does not affect the status of the controversy relative to the Mack-St. Jean crossing. The injunction obtained against the city will not be waived and the contempt charges against the city officials will not be withdrawn. It is not the intention of the company to waive any of its legal rights.

It has been intimated by Detroit United Railway officials that permission would have been granted the city to make the crossing at Mack Avenue if plans for the crossing had been submitted to the company and had met with approval. The company's attorney stated that it was not proposed to prevent crossing of the company's tracks by the municipal railway if the city has the right to construct and operate a railway system under the proceedings taken, but it is insisted that the crossings shall be done in an orderly way and only after plans for the work have been considered and approved by both parties concerned.

The company further states it may be that it would prefer when the plan shall have been approved for a crossing, that the installation be made by the Detroit United Railway so that interference to traffic may be reduced as much as possible. This, however, is a detail that can no doubt be arranged satisfactorily. The installation of crossings now sought to be made is to be carried out with the understanding that the company's claims to lawful rights shall not be prejudiced.

The engineers for the Street Railway Commission plan soon to submit blueprints for a number of crossings according to Joseph S. Goodwin, general manager of the municipal lines.

## Loss Is $93,000 a Month

**Service-at-Cost at Toledo Ushered in at Bad Time, but Commissioners Are Hopeful**

Commissioner Wilfred E. Cann has reported to the Board of Control at Toledo, Ohio, that the Community Traction Company is running behind in its operating expenses at a rate of $93,000 a month, considering the payments to be made to various funds for maintenance, betterments, interest and sinking fund.

A full report also showed that nearly 100 jitney buses are carrying 12,000 or more passengers daily in direct competition with the railway on choicest routes and at peak hours.

The board immediately drafted a letter to the Council and recommended drastic regulation of the jitney competition. The matter is now in committee and the law director is working on a bill to be patterned after the Cleveland regulatory legislation.

The railway last year paid in taxes and license fees an amount equal to $800 for each one of the cars which it operates.

The matter of power contracts was also taken up by the Board of Control at its meeting. The members hope to be able to make a contract between the Community Traction Company and the Toledo Railways & Light Company or Acme Power Company which will put city street lighting and railway power on the same basis or make a joint proposition out of all power bought by the city.

A ninety-day period is allowed under the new franchise for making interurban contracts. Mr. Cann favors a contract based upon car mileage while President Coates of the Community Traction Company favors a percentage of the receipts of city fares as a basis.

Mr. Coates told a group of business men recently that the service-at-cost plan was started at a time when factories were closed, men out of work, the buying public on strike and business in general flat, but that he expected in the course of a year the plan would show up very well.

Chairman Henry Truesdall of the Board of Control and other board members have expressed themselves as not at all downhearted at the first report of financial conditions of the railway.

## Plea for Municipal Ownership in Massachusetts

Interesting side lights on the point of view of the public in regard to the problem of electric railway service in Brockton, Mass., were brought out at the hearing recently in Boston on the bill of Representative Frank A. Manning to provide for municipal ownership of such lines by communities that might desire to take over the railways. The statement was made that 70,000 people in Brockton are not members of the local Chamber of Commerce and that the vote of that body recently against

municipal ownership was not truly representative of the opinion of the public. The secretary of that body was quoted to the effect that at the vote only one-third of the membership expressed an opinion on the subject.

The author of the bill said that there was much talk about the investment of the widows and orphans in the securities of the electric railways, but that it was about time more thought was given to the widows and orphans who had to use the cars and to others of small means who desired convenient, comfortable and safe transportation at a reasonable fare.

Mr. Manning also wanted to know why the electric railways were singled out for State aid. He said that if the fact were true that because of their so-called public service the electric railways were entitled to special consideration at the hands of the State, then other businesses, with no less potent a claim, would soon call upon the State to insure them against loss in the operation of their properties.

It was his idea to have the public take over the railway lines, couple up as an operating unit the city of Brockton and the surrounding towns, eliminate unnecessary railway mileage, operate at a basic 5-cent fare and then assess any loss from operation against the respective communities on the basis of miles of track or some other unit fair alike to all places sharing in the service.

## Industrial Court Urged for New Jersey

Fred C. Carstarphen, past-president of the Engineers' Club of Trenton, N. J., gave an illustrated talk before members of that body recently on "The Kansas Court of Industrial Relations and the Denver Street Car Strike." It was his opinion that the only proper method of settling labor disputes was through a court of industrial relations similar to the one now in existence in Kansas.

The Kansas Court of Industrial Relations had legal backing and labor disputes must be settled in a legal way to remain settled. He could not imagine why business men or railway officials in New Jersey did not get busy and have a bill similar to the Kansas measure adopted in that State. Mr. Carstarphen said:

During the time the court has been in existence in Kansas there has never been an appeal made to the higher courts on a decision of the industrial body. If New Jersey adopted such a state measure there would be no future bloodshed, loss of wages or destruction of property in strikes and other disputes. The promises of labor leaders that there will be no trouble are never kept.

Trolley employees in some of the larger cities have asked for ridiculous wages. Operators of electric railway cars who feel they are underpaid ought to seek some other employment. With all fairness to the union man, the labor union is not benefiting him to any great extent.

Mr. Carstarphen is a former resident of Denver. He was acquainted with both officials and employees of the Denver City Tramway and made a study of the strike in that city.

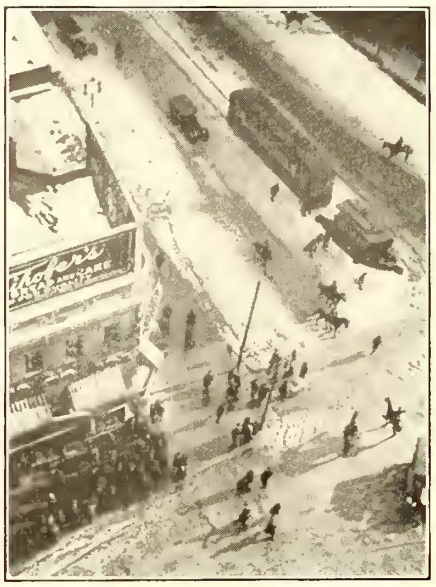
## Newspaper Attack Resented

### Railway at Albany Seeking to Resume Service After Strike Sues for $100,000 in Damages

Harry B. Weatherwax, vice-president of the United Traction Company, Albany, N. Y., has reiterated the stand of the company to the effect that no matter what develops the company will not arbitrate or compromise with the men in any way and that all relations between the company and the union ceased on Jan. 29, when the strike was declared.

Mr. Weatherwax is quoted as follows:

The company receives about $300,000 a month from operation. This company cannot pay 60 cents an hour and make money. To raise fares to meet that cost would be impossible, because residents will not pay it. There is no use in raising wages and then going to the Public Service Commission and asking for an increased fare. That is what it amounts to every time wages are increased.



STATE CONSTABULARY GUARDING ALBANY CARS

We can give a good service at 45 cents an hour, and residents will not be called upon to pay higher fares. We might just as well have this issue settled now.

We have recruited a good force to take the place of the striking employees. They have come to us at 45 cents an hour. We will start regular service within a few days. The men who are operating the cars now will not be retained. The force that is being recruited will be a permanent one.

We are receiving letters every day from all parts of the east from men who are experienced conductors and motormen and are willing to work at 45 cents an hour.

The question of arbitration is closed for all time. There is no use discussing this matter any further. We are going to operate our company on the 45-cent basis, and that's all there is to it.

The company also said it had brought suit against the Albany Evening Union Company, publisher of the *Times-Union*, to recover the sum of $100,000 damages for libel. The complaint states that on or about Jan. 29 substantially all the employees of the railway left its service, thereby stopping the operation of all its cars. Subsequently and on Feb. 4 the Public Service Commission made an order directing the company to resume operation, and in compliance with that order the company began to operate its cars on Feb. 8. Afterward, or about Feb. 18, the company charged, the *Times-Union* printed in large type the following:

"PAY AS YOU ENTER" Was the Sign on the United Traction Cars Before the Strike.

"With the incompetent strike-breaking motormen now running the cars the sign ought to be:

"PRAY AS YOU ENTER."

This notice is said to have been repeated daily in the *Times-Union*. It is further stated that the publication, distribution and circulation of the notice, which the United Traction Company claims to be false and defamatory, was for the purpose of giving public admonition to the company's patrons that it was unsafe to use the cars and become passengers thereon and to prejudice the public against the company and thus injure its business.

## Mr. Mitten Not a Modern Dives

Wide publicity has been given by the daily press of the country to the statement made by T. E. Mitten, president of the Philadelphia Rapid Transit Company, to the effect that having achieved for himself some years ago a money competency which he considers adequate to his needs he has given away since each year all surplus over his expenses for the year. It was an unusual statement, made in an unusual way at an unusual event.

The occasion was a testimonial banquet on March 2 to Mr. Stotesbury and Mr. Mitten by the Co-Operative committees in celebration of the tenth anniversary of the successful operation of the co-operative plan. So many versions of Mr. Mitten's remarks have appeared, however, that the part of his statement outlining the principles that guide him are reproduced direct from the stenographic record of the meeting. Mr. Mitten said:

A great amount of money is a hurtful influence. I tell the Doctor, my son—and I think the thought originated with him—that I will never deprive him of the pleasure of making money. Therefore, I will never leave him any. But he has gone me one better, and since coming back from service overseas he has insisted that I don't give him any money now. And so he is perhaps better able to keep in contact with you in the only way that one can keep in contact with another, that is, by meeting you on even terms, in that he has to figure out his costs as against his pay. Therefore, he has your problem and can better sympathize with you.

Some of us envy the man with money. I have tried for sixteen years—it makes me sad when I have to think how long ago it was since I was forty—but when I was forty, and had accumulated all the money I thought a man needed to live on, I decided I would not follow the example of the men that I saw piling up riches. That gentleman who unfortunately is not with us tonight, and whom you have seen me bring to you at every meeting before, Mr. Robinson, New York, taught me the lesson that it is better to give than to receive.

There is a rich man who has consistently, since 1896, backed me through thick and thin financially, when all other financial interests deserted me, and I have seen him always give and find joy in giving, never planned to receive at all. Following him at forty I determined that life and the struggle was a game, and so while I played it, as many hours of a day and as hard perhaps as any other, at the close of each year for sixteen years I have given away all of my earnings, only trying to hold intact the money that I had at forty. So that I don't have to worry about making money. It is of no interest to me. I am therefore free to enjoy the game, and a great deal of pleasure comes from it.

## Conditions for Blanket Franchise in Richmond Summarized

Thomas S. Wheelwright, president of the Virginia Railway & Power Company, Richmond, Va., on March 2 issued a statement of the underlying principles which the company considers as the sound economic basis on which to base a new blanket franchise for all the Richmond railway lines. He summarized the position of the company as follows:

1. That the city, in granting a new franchise, recognize the value of the railway property now in the service of the public. In arriving at this value a careful inventory has been made of just such property as is now in use, cutting out such as has been abandoned or that is not useful in the service. This value, at the average of pre-war and present prices, is $12,488,841—for the railways, including outlying lines, bridges, viaducts, etc.
2. That the franchise include the obligation to at all times authorize such rates of fare as will earn a just and inviting return upon this investment in order to insure the integrity of the present investment and to induce additional capital to flow into the enterprise for the purpose of extending the service to the needs of the community.
3. That the policy of the city will have to be made plain in this franchise as to whether it includes all lines outside of the city and whether it will assume the obligation to fix such rates of fare as will insure a return on the whole investment, including the outlying lines, having one standard fare prevail throughout the Richmond system, including free viaducts.
4. That it is desirable the fare be as low as possible in order that the railway may perform its proper function of service to the community. To accomplish this the new franchise should relieve the company of all burdens in the way of tax on franchises, paving, etc., which are not proper charges against the car rider, since the company already pays taxes on the assessed value of its property, the same as any other enterprise. Under present conditions the car rider is taxed to the extent of at least one-half a cent for every ride and, in addition, a paving tax is imposed, which is not as legitimate for the car rider to pay as for the person using a private vehicle, since the latter uses the street to a far greater extent than the car rider who, using the rails and riding in groups, uses the street in the most economical manner possible.

# News Notes

**Men Accept Wage Cut.** — The employees of the Charles City (Ia.) Western Railway have offered to accept a 20 per cent reduction in wages in order to assist the company in meeting the present emergency of increased costs.

**Suburban Lines Reduce Wages.**—The New York & Long Island Traction Company and the Long Island Electric Railway recently reduced the wages of the employees 12½ per cent. This applied to all departments, operating, engineering, legal, etc. A similar reduction of 12½ per cent was put in force on March 6 on the lines of the New York & Queens County Railway.

**Steam Service on Electric Line.**—Because of overhauling its turbines in the Westville Power Plant which has resulted in insufficient electric power to handle peak periods, the West Jersey & Seashore Railroad has substituted temporary steam service between Camden and Glassboro and Camden and Millville, New Jersey. During the summer if the repairs are still under way it may be necessary to increase this steam service to take care of service during the peak hours.

**Wages Reduced in Muskegon.**—The Muskegon Traction & Lighting Company, Muskegon, Mich., has reduced the wages of its trainmen 16 per cent, or from 62 to 52 cents. George Steinwedell, president of the company, is quoted as follows: "Something must be done in the present crisis if the railway is to continue to operate. I wish it was possible for this company to obtain the advice and suggestions of citizens of Muskegon. I am sorry that there are some here that still look with suspicion on all statements of the company, after we have tried to adopt a policy of placing the facts before the public at all times. That has been my policy since taking charge of the local company. We desire helpful criticism and suggestion, but we do not believe that this is the time for fault finding."

**Will Study Fresno Finances.**—At a public meeting recently held in the Fresno Council Chamber to consider transportation problems and the service-at-cost system of operation a committee was appointed to look into the finances and service of the Fresno (Cal.) Traction Company and the operation of the plan as proposed for the city. Mayor Toomey and Manager Webster of the Fresno Traction Company addressed the meeting. Mr. Webster mentioned the fact that many eastern cities "had taken their utilities in hand and arranged for a franchise under which the integrity of the investment was guaranteed." The Mayor said that the company was entitled to a fair return on its investment and the public to a fair return in service.

## Programs of Meetings

### New York Railroad Club

The next meeting of the New York Railroad Club will be held in the Engineering Societies Building on March 18. Frank M. Brinkerhoff will present a paper, "Safety of Passengers in Steel Cars," illustrated with lantern slides.

### American Railway Engineering Association

The twenty-second annual convention of the American Railway Engineering Association will be held in the Congress Hotel, Chicago, on March 15-17. After the president's address, on March 15, reports of committee on track, rail, electricity and other subjects will be heard. Among the committees to report on Wednesday, March 16, are those on Economies of Railway Labor, Shops and Locomotive Terminals. **On Thursday** the reading of papers will be heard, followed by the election of new officers. The annual banquet will take place on March 16. Among the speakers scheduled for the dinner are J. F. Wallace, consulting engineer, New York; David Kinley, president University of Illinois.

### Annual Banquet of New England Street Railway Club

John W. Belling, secretary of the New England Street Railway Club, announces the annual meeting and banquet to be held at the Copley Plaza Hotel, Boston, Mass., on Tuesday, March 22. The program includes the annual meeting at 3 p.m. for the election of officers for the ensuing year. At 6 p.m. there will be a general reception followed by the banquet at 6:30.

The committee announces as speakers Hon. Selden Palmer Spencer, United States Senator from Missouri; his Excellency Channing H. Cox, Governor of Massachusetts, and Hon. Andrew J. Peters, Mayor of Boston. Alonzo R. Williams, attorney for the Rhode Island Company, will act as toastmaster.

Tickets for the annual banquet are $6. Secretary Belling is sending out to members a unique desk blotter reminder of the affair. Applications for tickets should be addressed to the club at P. O. Box 2564, Boston.

### Joint Convention of Illinois Utility Associations

The seventeenth annual meeting of the Illinois Gas Association, the twentieth annual meeting of the Illinois State Electric Association and the twelfth annual meeting of the Illinois Electric Railways Association will be held in joint convention at the Hotel Sherman in Chicago on March 15 and 16. On Tuesday, March 15, at the opening session John F. Gilchrist, vice-president of the Commonwealth Edison Company will read a paper "Financing Through Your Customers." At the afternoon session the following papers will be read, "Passenger Traffic Analysis and Control," by M. J. Feron, Chicago Elevated Railroads; "Shop Organization and Maintenance and Inspection of Equipment," by J. M. Bosenbury, Illinois Traction System; "Introducing the Employee to the Job and Following Him Up," by W. R. Helton, Manager Real Estate Department, South Side Elevated Railroad. On Wednesday, March 16, Philip H. Gadsden, president of the American Electric Railways Association, will tell just what his association is doing. The following papers will be read at the afternoon session, "Testing of Instrument Transformers," by F. A. Kartak, professor of Electrical Engineering, School of Engineering of Milwaukee; "Hazards of Faulty Switchboard Construction," by R. M. Bert, electrical superintendent Rockford Electric Company; "Labor Saving Devices of the Maintenance of Way Department and What They Save," by Charles Clark, Cleveland Railway; "Merchandise Service and Its Possibilities," by D. W. Snyder, general superintendent, Bloomington & Normal Railway & Light; "Results of Automatic Substation Operation," by C. H. Jones, Chicago, North Shore & Milwaukee Railroad. In addition to these papers others will be presented of interest to gas and electric light companies.

# Financial and Corporate

## Commissioner Demands Changes

### Cincinnati Official Wants Corporate Structure of Railway Changed and Franchise Modified

Complete financial reorganization of the Cincinnati (Ohio) Traction Company and separation of that company from all other activities except those necessary for the operation of a street railway have been demanded by William C. Culkins, director of street railways, in a letter sent to the Cincinnati Traction Company and the Cincinnati Street Railway. The letter was sent by Mr. Culkins after a conference with Mayor John Galvin and City Solicitor Saul Zielonka.

Mr. Culkins also demands "either the surrender or modification of the present franchise or the acceptance by a new company of a new or modified franchise, which shall include such changes as may be shown by experience in this and other cities to be advantageous to the public including special fares for school children."

VIGOROUS ACTION NECESSARY

In his letter, Mr. Culkins points out that the railway situation has reached a point where the most vigorous and drastic action is essential. The acute conditions are said to be the result of a period of economic stress due to deflation and readjustment which has brought heavy losses of traffic on all lines of the Cincinnati Traction Company because of unemployment and high fares. Mr. Culkins stated that he had the authority under the present franchise to enforce his demands, and that he would do so, if the companies do not voluntarily accede to them. Mr. Culkins' letter to the two companies follows:

So involved has the situation become that the public interests demand the taking of immediate steps for the solution of the present difficulties, which so seriously interfere with the performance of your contractual obligations. I feel, therefore, that it is my duty to require that the following program be carried out:

1. That complete financial reorganization be made of your companies with a divorcement of all other activities from those necessary for railway operation, in order that the city may deal with a single responsible corporation. This should include a scaling down of the present capitalization in order that the burden of fixed charges may be reduced and that the company may be placed on a sound financial basis which will enable it to obtain the necessary funds for carrying out such improvements and betterments as public convenience may require.
2. That accounts be promptly adjusted between the Cincinnati Traction Company and its collateral corporations as ordered by the director of street railroads, upon which suit is now pending; and the discontinuance of the present objectionable interrelations between these or other companies.
3. That the present franchise be surrendered or modified and a new or modified franchise be accepted by a new company which shall include such changes as may be shown by experience in this and other cities to be advantageous to the public, including special fares for school children as desired by the City Council and other amendments which have been suggested.

In reply to Mr. Culkins' demand to reorganize the three companies, W. Kesley Schoepf, president of the Cincinnati Traction Company, said plans are under way for merging the companies which jointly own and operate the railway system of Cincinnati. These companies are the Cincinnati Traction Company, which operates the street railway system; the Ohio Traction Company, which owns stock of the Cincinnati Traction Company, and the Cincinnati Street Railway, which owns property which the Cincinnati Traction Company operates.

While no definite plan has been worked out, the officers of the companies have on numerous occasions expressed their belief that something should be accomplished in the direction of simplifying the inter-corporation relations of the several companies, Mr. Schoepf said. It is expected that some definite recommendations can soon be made to the companies concerned.

## Sacramento Northern Line Sold

The Western Pacific Railway, San Francisco, has elected to purchase the bonds and securities of the Sacramento Northern Railway actually deposited on the terms mentioned in its offer, the time for such deposits having expired at the close of business on Feb. 23.

In addition, the Western Pacific announced that it would purchase on the same terms any other bonds and securities of the Sacramento Northern which might be deposited with the First Federal Trust Company or the Union Trust Company before the close of business on March 5.

The Western Pacific's action in accepting present deposits as sufficient, and extending to remaining holders the privilege to deposit their securities until March 5, closes the matter. Approval of the deal must be obtained from the Railroad Commission and the Interstate Commerce Commission.

## $778,113 Loss in Providence

### Operation Under the Receivers During Year 1920 Improved $255,265 Over that of 1919

The Rhode Island Company, Providence, R. I., was operated by its three receivers during the year 1920 at a loss of $778,113, according to its financial statement for the year filed on Feb. 26 with the Public Utilities Commission. This deficit is $255,265 less than that of 1919 which was $1,033,397.

The statement filed with the commission also shows that the receivers had at the close of the last year a cash balance in the bank of $1,585,188. This balance is due to the fact that the company has not paid rentals of $1,097,208; interest and discount of $318,300, as well as some miscellaneous expenses and certain taxes, all of which have been charged off against the net income and are included in the deficit.

The company carried 127,482,086 passengers during the year, an increase of 5,966,144.

Analysis of the figures reveals the fact that the receivers have made substantial gains in operation during the year. There were only three months in the year, February, March and November, that the operating revenue did not exceed the operating expense. The report also shows an enormous decrease in the number of transfers issued, it being the first full year that the company has charged for the tickets. The number of transfers issued was 12,818,215, a decrease of 1,377,636.

MORE THAN $8,000,000 GROSS EARNINGS

The company's report shows that during 1920 it paid for power fuel $900,042, an increase of $344,389 over the previous year.

The total revenue per car-mile was 57.66 cents, and the total operating expense per total car-mile was 48.03 cents, leaving 9.63 cents as a net income per car-mile. Last year the company spent $262,502 for snow removal, while the report shows that it spent nothing for removing snow in 1919.

The passenger earnings for the year were $634,260 as compared with $636,081 in 1919, a decrease of $1,821. During the same period the company increased its car-miles operated 18,745 miles.

INCOME ACCOUNT OF THE RHODE ISLAND COMPANY FOR DECEMBER, 1920 AND FOR TWELVE MONTHS ENDED DEC. 31, 1920, COMPARED WITH LIKE PERIODS FOR 1919

| | December, 1920 | One Month Increase or Decrease | One Month per Cent | Twelve Months to Dec. 31, 1920 | Twelve Mos. Increase or Decrease | Twelve Months, per Cent |
|---|---|---|---|---|---|---|
| Total operating revenue | $655,365 | *$32,442 | *4.72 | $8,304,146 | $1,333,471 | 19.13 |
| Total operating expenses | 400,705 | *329,596 | *45.13 | 6,916,416 | 988,153 | 16.67 |
| Net operating revenue | $254,659 | $297,154 | 699.28 | $1,387,730 | $345,317 | 33.13 |
| Non-operating income | 4,822 | 2,746 | 132.28 | 36,011 | *1,841 | *4.86 |
| Total net income | $259,482 | $299,900 | 741.99 | $1,423,742 | $343,476 | 31.80 |
| Deductions from income: | | | | | | |
| Taxes | $196,802 | $147,522 | 299.35 | $786,276 | $164,390 | 26.43 |
| Rentals | 87,920 | *9,196 | *9.47 | 1,097,208 | *64,665 | *5.57 |
| Interest and discount | 26,523 | ..... | ..... | 318,300 | *9,954 | *3.03 |
| Miscellaneous | ..... | *5 | *100.00 | 70 | *1,560 | *95.69 |
| Total deductions | $311,246 | $138,320 | 79.99 | $2,201,855 | $88,210 | 4.17 |
| Surplus or deficit | †$51,764 | $161,580 | 75.74 | $778,113 | $255,265 | 24.70 |

* Decrease. † Deficit.

Each month the company set aside a certain amount for claims and other purposes. This amount was not used entirely, and the surplus was applied in the form of an adjustment to the operating expense for the last month of the year.

## Brooklyn Roads Still Running Behind

The Public Service Commission for the First District of New York has tabulated the results of operations of all street railroad companies formerly comprised in the Brooklyn Rapid Transit system for the six months ended Dec. 21, 1920. In the column of operating expenses and taxes, which total $22,077,086, is included the expenses of the strike in September last. The strike cost the companies $2,425,902, the report says. The deficit in operating income of all the companies for the six months is $2,237,690.

The total income deductions for the payment of interest, etc., on obligations of both the corporation and the receiver aggregated $5,138,735. The total deficit after fixed charges of all companies is $6,881,715.

The Brooklyn City Railroad, which began separate operation on Oct. 19, 1919, shows the following figures for the last six months of 1920: Operating revenue, $4,826,445; operating expenses, $5,426,392; operating deficit, $599,946; non-operating income, $40,032; gross income (deficit) $559,914; income deductions, $339,849; net income (deficit) $899,764.

Compared with the corresponding period in 1919, the figures for the last six months of 1920 for all the companies formerly comprised in the B. R. T. system, show a decrease in operating revenue of $103,917, an increase in operating expenses of $4,084,351, a decrease in gross income of $4,158,775, and a decrease in net income of $4,731,343.

## Portland Notes Offered Direct to Public

Employees and customers of the Portland Railway, Light & Power Company, Portland, Ore., and the general public are now being offered for direct sale $1,000,000 of 8 per cent five-year gold bonds of the company. Sales are being made on the partial payment plan. The proceeds are to be used for betterments and improvements.

The earnings and expenses of the company for the twelve months ended Dec. 31, 1920, as made public in connection with the present financing, were:

| | | |
|---|---|---|
| Gross earnings | | $9,564,615 |
| Operating expenses and taxes | $6,031,311 | |
| Depreciation | 717,386 | 6,748,697 |
| Net earnings | | $2,815,918 |
| Fixed charges (bond interest, etc.) | | 2,104,459 |
| Surplus | | $711,459 |

The company explains that the surplus for the year 1920 was nearly nine times the annual interest charge on the $1,000,000 of notes now offered.

## Stock Return Not Earned

### Earnings of $487,027 in Dispute Before Courts May Alter Situation in Buffalo

Notwithstanding the increase in fares granted during 1920 by the New York State Public Service Commission, the International Railway, Buffalo, failed to earn its fixed charges by $149,570 according to the annual report of the company for the calendar year 1920. Bond interest, however, was paid and the deficit made up by reducing the amount set aside for depreciation and renewals.

There is a chance for this deficit to be liquidated, provided the State courts uphold the commission in granting increased fares on the interurban lines. Rebate slips have been issued since the fares were increased. The value of such slips now outstanding amounts to $487,027. Thus, if it were possible to credit this money to income, there would be a balance of $337,458 instead of a liability. This balance is equivalent to $2.09 on each share of the outstanding stock.

In speaking of the reorganization recently effected by which the International Traction Company was eliminated from control of the Buffalo property, the report states that the primary object of the protective committee was to provide for the liquidation of the accumulated debt of the International Railway. This was accomplished by the sale of securities acquired by the protective committee following the foreclosure of the International Traction collateral trust 4 per cent mortgage. After providing for its obligations, the protective committee cancelled $2,070,189 of notes issued by the International Railway to the protective committee. This act by the protective committee represents in effect the contribution of $2,070,189 to the International Railway by the stockholders, which overcomes the impairment of capital amounting to $1,887,504 as shown by the deficit in the balance sheet as of Dec. 31, 1920, and provides a balance of $182,685, applicable to surplus.

#### Voting Trust Agreement

In arranging to raise approximately $2,000,000 for the rehabilitation of the property, the protective committee provided for a voting trust conferring upon voting trustees power to vote the stock of the company for a term of five years, and delivered to these trustees $1,944,000 of railway refunding and improvement 5 per cent bonds and $640,500 of underlying 6 per cent first mortgage bonds. The voting trustees hold these in trust, but with power to sell or otherwise use the bonds and the proceeds thereof for the benefit of the company or the holders of the voting trust certificates.

The Lockport & Olcott Railway mortgage, which amounted to $800,000, became due on July 1, 1920. Failure to pay at maturity the bonds secured by this mortgage would have created a default under the refunding and improvement 5 per cent mortgage of the International Railway. The banks in Buffalo and vicinity developed a plan for the exchange of these maturing bonds for a new issue of $800,000 of International Railway five-year 7 per cent collateral trust bonds secured by $1,200,000 of refunding and improvement 5 per cent bonds. The $400,000 left after payment of the Lockport and Olcott bonds were delivered to the International Railway by the protective committee in order to assist financing the maturing underlying issue. The holders of the $600,000 of Lockport-Olcott bonds accepted this exchange; $195,000 was paid in cash, and $195,000 of the five-year 7 per cent collateral trust bonds are now held in the treasury of the International Railway Company.

INCOME ACCOUNT—INTERNATIONAL RAILWAY, BUFFALO

| Year ended Dec. 31 | 1920 | 1919 | Per Cent Change |
|---|---|---|---|
| Passenger revenue | $10,860,135 | $9,020,790 | +20.39 |
| Other operating revenue | 343,982 | 280,116 | +22.80 |
| Total railway operating revenue | $11,204,117 | $9,300,906 | +20.47 |
| | | | Per Cent Operating Revenue |
| Way and structures and equipment: | | | |
| Maintenance | $1,699,272 | (a) | 15.16 |
| Depreciation and renewals (b) | 866,430 | (a) | 7.73 |
| Power operation | 632,468 | (a) | 5.65 |
| Conducting transportation | 3,882,558 | (a) | 34.65 |
| General and miscellaneous | 1,861,396 | (a) | 16.61 |
| Total railway operating expenses | $8,942,124 | (a) | 79.80 |
| Net operating revenue | 2,261,993 | (a) | 20.20 |
| Taxes | 674,365 | (a) | 6.02 |
| Operating income | 1,587,628 | (a) | 14.18 |
| Non-operating income | 69,579 | (a) | .62 |
| Gross income | $1,657,207 | (a) | $14.80 |
| Interest | $1,541,531 | (a) | $13.76 |
| Rentals, etc. | 47,845 | (a) | .44 |
| Amortization of discount | 67,831 | (a) | .60 |
| Net deductions or fixed charges | $1,657,207 | (a) | $14.80 |
| Net income | $0,000 | (a) | $0.00 |

(a) Not available.
(b) The formula for depreciation and renewals adopted by the P. S. C. when granting increased fares in 1920 requires a total of $1,016,000 annually. The company failed by $149,569.75 to earn enough to set this aside after paying operating expenses, taxes and fixed charges.

## State Aid Imperative

### President Storrs of Connecticut Company Says Paving, Tax and Other Charges Must Be Rescinded

Only $11,381 was earned as operating income by the Connecticut Company during 1920. This figure and others pertaining to the conduct of the business of the railway for the year were made public by L. S. Storrs, president, at the meeting of the Connecticut Company section of the American Electric Railway Association at New Haven on March 3. The figures follow:

COMPARATIVE EARNINGS OF CONNECTICUT COMPANY — NOT INCLUDING NEW LONDON DIVISION

| | 1917 | 1918 | 1919 | 1920 |
|---|---|---|---|---|
| Gross revenue | $10,023,162 | $9,935,750 | $11,043,804 | $12,287,505 |
| Operating expenses | 7,821,005 | 8,150,433 | 9,210,376 | 11,586,439 |
| Net operating revenue | $2,202,157 | $1,785,317 | $1,833,428 | $701,066 |
| Taxes | 594,509 | 575,888 | 619,657 | 689,685 |
| Operating income | $1,607,648 | $1,209,429 | $1,213,771 | $11,381 |

PERCENTAGE OF TOTAL REVENUE OF CONNECTICUT COMPANY APPLICABLE TO EACH ITEM OF EXPENSE

| | 1916 | 1918 | 1919 | 1920 |
|---|---|---|---|---|
| Wages | 37.5 | 47.4 | 50.7 | 59.6 |
| Electric power | 12.0 | 16.4 | 15.5 | 16.5 |
| Maintenance of paving, track, etc. | 8.0 | 4.7 | 5.6 | 4.4 |
| Maintenance of equipment | 3.0 | 5.4 | 4.1 | 5.8 |
| Depreciation of equipment only | 1.0 | 0.7 | 0.6 | 0.6 |
| Miscellaneous and general expenses | 6.0 | 7.4 | 6.9 | 7.7 |
| Taxes | 4.5 | 5.8 | 5.6 | 5.7 |
| Rentals and interest | 10.0 | 10.2 | 10.0 | 10.7 |
| Balance for improvement and return on value | 18.0 | 2.0 | 1.0 | .... |
| Deficit | .... | .... | .... | 11.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

ITEMIZED DIVISION OF OPERATING EXPENSES OF CONNECTICUT COMPANY

| | 1917 | 1918 | 1919 | 1920 |
|---|---|---|---|---|
| Payrolls | $4,344,296 | $5,054,858 | $5,959,332 | $7,796,537 |
| Coal | 847,963 | 902,884 | 676,258 | 1,055,210 |
| Materials | 1,393,294 | 1,463,260 | 1,195,028 | 1,328,973 |
| Accidents | 268,029 | 317,505 | 325,810 | 357,168 |
| Insurance | 48,059 | 63,170 | 65,659 | 70,163 |
| Power purchased | 385,000 | 378,000 | 467,000 | 578,000 |

Mr. Storrs explained that the connecticut Company, like all other electric railways, had experienced extreme difficulty in passing through the period of great advance in costs. As shown in the accompanying table wages of the company increased from a percentage of 37.5 before the United States entered the war to 59.6 per cent at the present time. The most noticeable change other than wages was in the cost of electric power. This item increased from 12 per cent in 1916 to 16.5 per cent in 1920. Since 1917 the payrolls have very nearly doubled, increasing by $3,452,241. The cost of coal has increased $200,000. The lower cost of coal in 1919 than in 1918 is explained by the fact that during the summer months of 1918 all storage capacity was utilized in anticipation of transportation difficulties and reduced output of coal. The value of coal on hand at the close of 1918 was $175,000 more than that on hand at the close of 1919. The decrease in the expense for materials in 1919 as compared with 1918 was due to purchases being made in anticipation of general price increases.

In 1917 fares were increased to 6 cents. For the last ten months under this system, namely, Jan. 1 to Oct. 31, 1919, the receipts increased an average of 9.7 per cent per month, while the expenses increased an average of 14.1 per cent per month over the previous year. The zone system was next tried. Compared with the previous year from November, 1919, to May, 1920, the receipts increased 24.6 per cent per month, while the expenses increased 26 per cent per month. The zone system was then revised and from May, 1920, to August, 1920, the receipts increased over the previous year by 10.9 per cent per month, while the expenses increased 45.7 per cent per month. The original 5-cent fare limit system was then reinstalled except that 7- and 6-cent fares were charged. Under this scheme the receipts averaged 7.9 per cent increase and the expenses increased 28 per cent per month over the previous year. This plan had been in operation only about three months when the 10-cent fare was started. Since Nov. 1, 1920, the receipts have increased an average of 24.7 per cent and the expenses have increased about 28.2 per cent.

Except for a loan of $1,250,000 from the government in connection with war activities, it has been impossible for the company to borrow. In consequence the company has been required to use in the regular course of business money which would otherwise have been used for rentals and taxes. In consequence taxes for 1917, 1918, 1919 and 1920, totaling $1,969,880, stand as a charge against the company. The total amount of deferred paving obligations is $648,000.

Mr. Storrs said that the taxes of railways should be based upon net income and not gross revenue. The State should share in the successes or losses of the utilities by the above-mentioned method of taxation. The companies should not be obliged to pay for paving or bridge construction; in short, it should not be called upon to bear any expense which does not jointly benefit the company and the car rider.

## Indiana Merger Authorized

### $6,000,000 Reduction in Stock Under Commission Ruling Approving Merger of Southern Indiana Lines

The order providing for merger of the Interstate Public Service Company and five other utilities in southern Indiana was issued by the Indiana Public Service Commission on March 4. Ira E. Guthrie, secretary and treasurer of the Interstate Public Service Company, said:

The biggest thing in the decision of the commission is the condition imposed on the Public Service Company, requiring that the capital stock of the five merging concerns be reduced at least $6,000,000.

It always has been the purpose of the Public Service Commission to reduce wherever possible the capital stock of utility companies. In granting the present merger they have required and will obtain a decrease of more than $1,000,000 in each of the merging companies.

The present total capitalization of the five selling companies is $24,792,630. We intend to reduce this amount to $18,866,300, making a reduction in the capital stock alone of $5,926,330. In addition the current indebtedness of the five companies, which totals $1,329,627, will be extinguished by the Interstate Public Service Company. Our assets after the merger will total approximately $17,000,000.

The merger will mean a great deal to the Interstate Public Service Company, not only in increased assets brought about by purchase of the other companies, but in the absolute unity and control of railway facilities between Louisville and Indianapolis and the northern and southern parts of the states which the new system will afford us.

The Interstate Public Service Company is absolutely sound financially. During the last year we spent more than $750,000 on improvements. We will be able to obtain greater credit than any or all of the other companies under separate control, and thus will be able to provide necessary repairs and improvements in many of the plants operated by the selling companies.

Particularly will the merger benefit the railway service between Indianapolis and Louisville, for consolidation will put both the northern and southern ends of the system in absolute control and unity. Better service and improvements will be the natural result.

The five companies to be taken over by the Interstate Public Service Company are the Central Indiana Lighting Company, the Louisville & Northern Railway & Lighting Company, the Louisville & Southern Indiana Traction Company, United Gas & Electric Company and New Albany Water Works.

## Attempt Made to Revive Blue Hill Line

A bill has been introduced in the Massachusetts Legislature to have the State, through the agency of the trustees operating the Boston Elevated Railway, assume the rehabilitation and resumption of service on that part of the old Blue Hill Street Railway which lies between the Mattapan terminus of the Boston Elevated and the Reservation road to Great Blue Hill, a distance of about 3½ miles. This is only a small section of the Blue Hill system.

Operation of the Blue Hill Street Railway was suspended some time ago, and the property was sold as junk in 1920, under foreclosure proceedings. The purchaser, however, has not yet removed the track or overhead line, and it is believed that this portion of it might be put in operating condition at a cost not exceeding $30,000 for purchase and about the same amount for rehabilitation.

## Ten Years' Report

### Results of Stotesbury-Mitten Management Made Public by Philadelphia Rapid Transit Company

The Philadelphia Rapid Transit Company has just issued a small pamphlet entitled "Philadelphia Rapid Transit, Stotesbury-Mitten Management, 1911-1920," giving some of the important results on that property during the past ten years.

It declares that in 1911, when Mr. Stotesbury was asked to rehabilitate the company and invited Mr. Mitten to become active head, the company was in bad condition. Under Mr. Mitten's contract, which was made to cover no specific period, but could be terminated at the close of any fiscal year upon three months' notice from either side, Mr. Mitten assumed responsibility for the company's rehabilitation. In December, 1920, a voting trust agreement, originally for five years and later extended, was dissolved. Today, the pamphlet says, no individual stockholder owns more than 6,400 shares, and three-fourths of the stockholders own 100 shares or less.

During the past ten years car capacity has increased from 67,908 seats in 1911 to 131,393 seats in 1920. The rides per capita have increased 74 per cent. The average speed of all cars has gone up from 7.97 m.p.h. in 1911 to 9.33 m.p.h. in 1920. The average accident costs during the period have been 3.41 per cent of the gross, as compared with a previous 6.08 per cent. The average fire insurance rate has been decreased from 50 cents to 17½ cents per $100 of insurance carried. The number of conductors and motormen has decreased from 7,424 to 6,025, although the receipts have increased from $18,400,000 to $38,000,000. The fixed charges have been reduced from 45.32 per cent of the gross to 24.93 per cent of the gross.

The present fare is 7 cents, with four tickets for 25 cents. Statistics in regard to rates of fare are shown in the accompanying table.

ANALYSIS OF PHILADELPHIA FARES 1910-1920

| Calendar Year | Fare per Passenger, Cents | Total Passengers | 3-Cent Exchange | | | Free Transfer | | |
|---|---|---|---|---|---|---|---|---|
| | | | Points | Passengers | Per Cent Total | Points | Passengers | Per Cent Total |
| 1910 | 4.13 | 445,599,008 | 655 | 21,285,569 | 4.78 | 210 | 67,281,688 | 15.10 |
| 1911 | 4.07 | 520,425,581 | 650 | 24,795,479 | 4.76 | 224 | 84,363,551 | 16.21 |
| 1912 | 4.03 | 553,471,846 | 648 | 25,684,710 | 4.64 | 240 | 93,072,322 | 16.81 |
| 1913 | 4.00 | 584,721,865 | 646 | 26,784,380 | 4.58 | 285 | 101,319,056 | 17.33 |
| 1914 | 3.95 | 585,364,297 | 641 | 27,119,544 | 4.63 | 310 | 107,908,712 | 18.43 |
| 1915 | *3.91 | 598,111,900 | 636 | 27,221,924 | 4.55 | 312 | 114,620,321 | 19.16 |
| 1916 | 3.91 | 672,959,447 | 620 | 31,939,375 | 4.75 | 315 | 127,990,030 | 19.02 |
| 1917 | 3.91 | 731,470,879 | 602 | 36,710,434 | 5.02 | 317 | 136,595,637 | 18.68 |
| 1918 | 3.98 | 767,758,406 | 580 | 43,791,710 | 5.70 | 320 | 130,472,269 | 17,00 |
| 1919 | 3.98 | 872,755,398 | 536 | 51,675,791 | 5.92 | 333 | 149,427,164 | 17.12 |
| 1920 | 4.15 | 913,870,463 | 537 | 55,233,232 | 6.04 | 336 | 154,079,623 | 16.86 |
| 10 yrs. | 3.99 | 6,800,910,082 | | 350,956,579 | 5.16 | | 1,199,848,685 | 17.64 |

*The low rate of 3.91 cents per passenger in 1915 was accomplished through the substitution of free transfers for 3-cent exchange tickets at the several points where they seemed most burdensome to the public, and the establishment of free transfer points at many places to overcome paying double fare; this rate increased to 3.98 cents in 1918 due to the lesser use of free transfers by transient riders during the war-time period.

## Funds Provided for Improvements

The Ohio State Public Utilities Commission has advised William C. Culkins, director of street railways at Cincinnati, Ohio, that it has approved the application of the Cincinnati Traction Company for permission to issue $982,000 of securities for the purpose of providing funds to extend the Warsaw Avenue line and to make other improvements.

## P. R. T. Nets $162,793 for January

The net income of the Philadelphia (Pa.) Rapid Transit Company for the month of January, 1921, as shown in the accompanying table, is $162,793, which is considerably less than the company's showing for the previous month, December, 1920, which was $427,494. However, it shows a marked improvement over the net income of January, 1920, which amounted to $51,163.

After deducting $125,000 to cover the monthly deduction to make a 5 per cent return on the outstanding stock there remains a surplus of $37,793 to credit against accumulated deficit of the year ended Dec. 31, 1920.

STATEMENT OF EARNINGS OF PHILADELPHIA RAPID TRANSIT COMPANY

| Month Ended Jan. 31 | | 1921 | 1920 | Percentage Change over 1920 |
|---|---|---|---|---|
| Operating revenue | | $3,618,349 | $3,043,258 | 18.9 |
| Operation and taxes | | 2,670,905 | 2,215,477 | 20.6 |
| Operating income | | $947,443 | $827,781 | 14.5 |
| Non-operating income | | 37,591 | 39,987 | —6.0 |
| Gross income | | $985,035 | $867,768 | 13.5 |
| Fixed charges | | 822,241 | 816,604 | 0.7 |
| Net income | | $162,793 | $51,163 | 218.0 |
| 5 Per cent return on P. R. T. paid in capital—month of January, 1921 | $125,000.00 | | | |
| Amount by which gross revenues were insufficient to provide for operating expenses, taxes, fixed charges, and the 5 per cent return upon P. R. T. stock for the year ended Dec. 31, 1920 | $1,117,934.77 | | | |
| | | $1,242,934 | | |
| Accumulated deficit for the thirteen-month period to January 31, 1921 | | $1,080,140 | | |

# Financial News Notes

**Another Abandonment Proposed in New York.**—The Belt Line Railway Corporation in Manhattan has served notice of its intention to abandon its 5 miles of line between Forty-second Street and Battery Place, New York City.

**Sale Direct to People of Houston.**—The Houston (Tex.) Electric Company will offer for sale to the people of Houston $250,000 of five-year notes bearing 8 per cent interest. The notes will be in denominations of $100, $500 and $1,000. The money raised by the sale of these notes will be used in construction of a double-track line on Fannin Street as the first step in the proposed removal of the tracks from Main Street. This is the first effort of the Houston traction company to sell its securities to the people of Houston.

**San Francisco Road to Be Sold March 24.**—Foreclosure sale of properties of United Railroads, San Francisco, Cal., is set for March 24. Under plan of reorganization properties are sold under foreclosure on a technical default of interest on one of the underlying bond issues and will be bought in by Market Street Railway. Upon consummation of the sale United Railroads will be merged with Market Street Railway, whose name the reorganized company will take. It is stated that new securities authorized under the plan will be issued immediately after the foreclosure sale has taken place. The plans for the reorganization of the company and the scaling down of present capitalization have been reviewed previously in the ELECTRIC RAILWAY JOURNAL.

**Charter Application Withdrawn.**—The application of the British Columbia Electric Railway, Vancouver, B. C., for a federal charter, thereby bringing the company's railway, light and power lines in Vancouver and Victoria under the Board of Railway Commissioners, has been temporarily withdrawn by the company pending a settlement with the municipalities. The various councils have tentatively agreed to permit the present fares to be charged until July 1, 1922, and not to press for a return to the franchise fares. Provided by-laws to this effect are passed by each city and municipality served, the company agrees to withdraw its application for a federal charter, but within six months new agreements must be entered into with the view of adjusting the company's rates and fares on a stable basis. Failing such agreements, the company may reinstate its application for a federal charter. The plan has been referred to previously in the ELECTRIC RAILWAY JOURNAL.

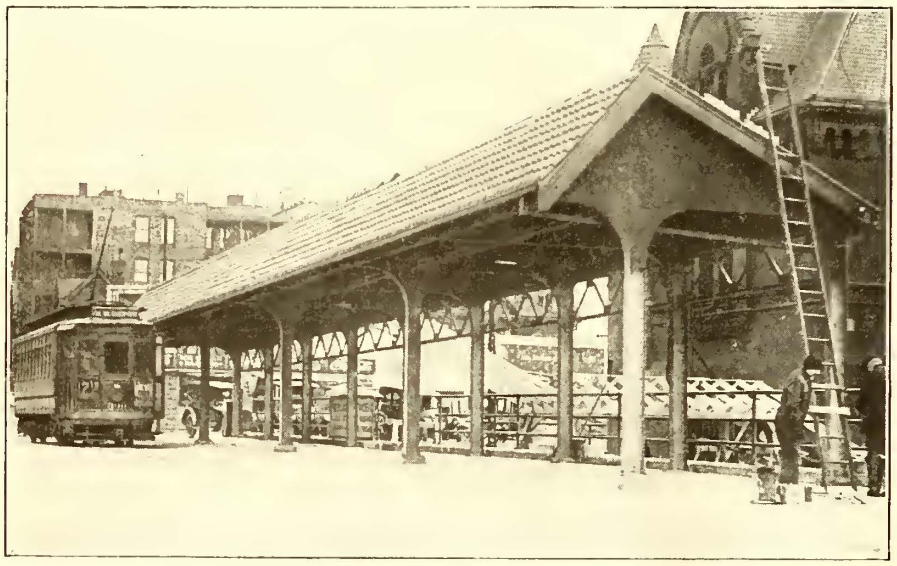
# Traffic and Transportation

## New Railroad Shelter

### Milwaukee Company Takes Advantage of Street Construction to Provide for Its Patrons

In order to afford greater protection to travelers arriving in Milwaukee via the Chicago & Northwestern Railway and using the city cars of the Milwaukee Electric Railway & Light Company the latter company has erected outside the railroad station the shelter shown in the accompanying illustration.

The shelter, of steel with a red tile roof, is approximately 100 ft. long. It covers the width of the sidewalk. It is equipped with electric lights and is connected with the company's dispatching phone system. A covered and lighted passageway has also been erected, leading from the railroad station to the shelter, so that arriving or departing travelers using the street cars can enter or leave the station without being exposed to inclement weather. A supervisor is in attendance at the station familiar with the city to direct travelers who desire to use the street cars.



SHELTER IN MILWAUKEE—NEW FACILITY FOR TRAVELERS

The Northwestern Depot, as it is familiarly known in Milwaukee, is located on the lake front at the corner of Wisconsin and Marshall Streets. It is served by the Twelfth, State and Clyborne Street car lines of the Milwaukee company. All three used to discharge and receive passengers at the end of the line on Wisconsin Street in front of the depot entrance, and passengers had to walk into the middle of the street to reach the street cars. When street reconstruction work was recently performed in the vicinity of the depot the local railway constructed a loop around the block facing the depot and built the shelter on Marshall Street in front of the depot. Now all cars on the eastbound trip circle the loop, stop in front of the shelter to discharge and receive passengers and then turn into Wisconsin Street and proceed westbound into the city.

If permission can be obtained from the railroad it is planned to place one or two illuminated signs in the depot directing the traveler's attention to the street car facilities.

## Co-operation of Public Invited to Keep Fares Down

In a pamphlet distributed to its railway patrons, entitled "Your Carfare" and "Let's Pull Together," the Tacoma Railway & Power Company, Tacoma, Wash., is appealing to the riding public to co-operate with it in solving the transportation problems. The objects to be accomplished, as set forth in the pamphlet, are "to increase the riding on cars," "to eliminate various practices and abuses which mean losses in earnings and increased cost of operating" and "to cut down those charges made against the company for the right to give service" and continue the present fare. The pamphlet says by way of introduction:

> Six months ago the Public Service Commission directed us to put into effect a tariff fixing cash fares at 10 cents and tickets at 8 cents. We had determined after intensive study of the railway situation in Tacoma, that a 10-cent straight fare was essential—but the commission did not see fit to grant such an increase. The result, over a period of six months, shows that a straight 10-cent fare would more nearly have met our financial needs.
>
> There are really two interested parties in this railway problem. You people who ride day after day, and the company itself.
>
> Both of us want to keep fares down.

## Safety Campaign a Success

### Co-operation in Portland, Ore., Has Brought About Material Reduction in Accidents

Splendid results have been achieved by the Portland Railway, Light & Power Company, Portland, Ore., in its intensive "Safety First" campaign, which has been continuously under way since January 7.

The first official check on the results of this test were compiled early in February by Fred Cooper, city superintendent, and show that the total number of traffic accidents of all kinds reported by the five divisions of the railway were reduced from a total of 743 during the month of December to 594 during the month of January, 1921. This is a net decrease of 149. This fine record was achieved through co-operation of the various departments of the railway, each department head being pledged to supervise the "Safety First" activity of his own staff and employees. A prize contest was conducted among the various divisions of the company for the best accident reduction record made day by day.

| Divisions | No. of Accidents December, 1920 | No. of Accidents January, 1921 | Decrease |
|---|---|---|---|
| Piedmont | 243 | 188 | 55 |
| Savier | 161 | 130 | 31 |
| Ankeny | 192 | 150 | 42 |
| Sellwood | 129 | 113 | 16 |
| Interurban | 18 | 13 | 5 |
| Total | 743 | 594 | 149 |

The accompanying table shows the comparative accident records for the months of December and January.

#### SPLENDID CO-OPERATION SHOWN

One of the interesting phases of the campaign lies in the fact that automobile drivers of the city seem to have caught the spirit and exerted greater effort toward making a better record. The company's report shows that during December, 120 automobiles bumped into street cars, while in January the number of accidents of this type dropped off to 97.

Reports kept by the employees of the car company on traffic accidents in which the company's cars were not involved also show that there was a substantial reduction. This class of accidents was reduced from twenty-seven in December to thirteen in the month of January. The schools in Portland have also taken an active interest in this subject and have worked with the railway for clean accident records. A booklet entitled "Course of Study for Safety Education in Oregon Schools" has been adopted by the state for use in all schools. This booklet was compiled by H. H. Herdman, the general manager of the National Safety Council of the Oregon and Columbia Basin Division, located at Portland.

The safety work in Portland is in the hands of men of high standing in the community who have the spirit at heart with the will and financial support behind them to make it a real, practical thing.

# $335,771 Loss in Operation in Davenport

## Rates in Iowa City Go Before Court for Settlement Following the City Council's Refusal to Keep Its Promises

Chance of peaceably settling utility rate problems at Davenport, Iowa, were ruined during the week ended March 5 when the Socialist majority in the City Council voted down a compromise settlement which had been recommended for passage by the city attorney, himself a Socialist, legal counsel specially engaged, and Auditor J. M. McShane of Kansas City.

THIS refusal forces the rate problems into the courts, a proceeding which the Tri-City Railway & Light Company had hoped to avoid. It also caused the withdrawal from the case of Henry Vollmer, the city special legal counsel. In a public announcement Attorney Vollmer declared the traction lines were bankrupt according to the finding of the audit. He held that economies in operation, such as the one-man car and elimination of duplicating trackage, were mandatory. The recommendations of the city's special counsel were based on the comprehensive report of Auditor McShane and appraisal by Burns & McDonnell, Kansas City.

Compilation of these reports has taken six months. The work was undertaken at the order of the Socialist majority in the Council, who wished to have figures for their rate fight against the corporation. When the reports were published it was found that the figures favored the company rather than the city and that higher instead of lower rates were justified.

Some of the figures the Socialists have not yet divulged. These hidden figures are the present day reproduction cost, present day reproduction cost depreciated, and the rates for street car rides, gas, electricity, power and steam based on these valuations.

The valuations which the Socialists did divulge were costs based on the last ten-year average, cost based on ten-year average depreciated and rates based on these valuations. Even these figures indicated the company's rates were too low.

### Court Will Hear Railway Plea

Now that the case is going to the courts the company will plead that rates be fixed on present day reproduction cost depreciated.

Minority members of the Council charged the Socialist majority with bad faith when the compromise rate plan was voted down. They stated that the Socialists had agreed to stand by the figures of the audit, whatever they were.

The present fare is 9 cents, with three tickets for 25 cents, which has averaged 8¼ cents in operation. The auditor's report showed the company had lost $335,771 for the year ended June 1, 1920, and should have had a fare of $0.089 during that period. In that period a 5 and 7-cent fare was in effect. Since that time trainmen's wages have been raised approximately $55,000 a year.

The compromise plan held for a rate of 8 cents, with two tickets for 15 cents, and provided for one-man car operation, elimination of duplicating lines, elimination of jitney bus competition, various operation economies, such as shortening of loops, and also pledged the city not to increase the company's taxes unjustly.

### Company Will Plead for Relief

There has been no official confirmation of this report, but it is now believed that a 10-cent fare, one-man cars, a drastic cut in operation and dead trackage will be the main points of the company's court case. As the company is already in the courts and present fares are in force by injunction sanction the line of action will be making the present injunction permanent and incorporating in the permanent court order provisions for additional relief.

## Company Delays Ten-Cent Fare

The Trenton & Mercer County Traction Corporation, Trenton, N. J., has announced that it will not put into effect the 10-cent fare which it is now privileged to charge in the place of 7 cents. The company applied for an increased rate to the old board of utility commissioners last November. The application was suspended for three months. This period expired several days ago. In the meantime the members of the old utility board were ousted from office. The application of the Trenton corporation automatically became effective at the end of the three months' suspension period.

The protracted wrangle between Governor Edwards and the Senate over the utility board, and the fact that the State has been without a commission since Dec. 27, when the Supreme Court upheld the Governor's right to oust the old board, leaves the company in the peculiar position of deciding for itself whether the 10-cent fare should go into effect. President Rankin Johnson takes the position that the 10-cent fare is absolutely necessary if the company is to continue to operate. The utility law has since been amended and new appointments are expected shortly.

## Louisville Petition to Be Abridged

Judge Walter Evans in the U. S. District Court at Louisville, Ky., has ordered the Louisville Railway to trim down its petition bill in which the company seeks to make permanent the injunction restraining the city from interfering with the railway collecting a 7-cent fare. According to the court opinions contained in the bill, from the Louisville Auto Club, Board of Trade, Engineers and Architects Club and numerous others, as well as a long recitation of fares paid and conditions in other cities, are irrelevant to the case in hand, which should be made to conform with the equity rules. The railway has until March 11 to amend its petition.

### City Will File Brief

The city of Louisville expects to file a brief in the U. S. Court of Appeals at Cincinnati on March 7 with the hope of getting the appeal heard before March 19, on which date the court will adjourn until April 5. An effort is being made by the city to get immediate disposal of the suit and to secure an order from the Cincinnati court, forcing the railway to give receipts for overpayments in fare, until the case is decided.

It is shown that for the first four days under the 7-cent fare the average increase in earnings was 18.49 per cent.

## Longitudinal Seats for Safeties

A few weeks ago the City Commission of Trenton, N. J., called upon Peter Witt to assist in solving the service difficulties of the Trenton & Mercer County Traction Corporation and to recommend improvements. During the investigation the Birney safety car was subjected to criticism. The chief difficulty was found to lie in the time lost in loading and unloading at heavy traffic centers. The narrow aisle in this type of car renders it difficult for passengers to make their way from the rear and alight at the front when the car contained a load of from forty-five to fifty passengers. This difficulty discouraged riders from moving to the rear and resulted in further aggravating the situation by massing large numbers at the front end of the car.

Many suggestions were made for remodeling the one-man car, and one, that of changing the cross seats to longitudinal seats, is being tried. A car has been remodeled and placed in service. All cross seats have been removed and a longitudinal seating running the entire length of the car body has been substituted. The seating capacity remains the same and the aisle width has been increased from 22 in. to 50 in. Six handstraps are attached to the roof ribs on each side of the car for the convenience of standing passengers. A slight relocation of the sanding box hoppers was also necessary.

The remodeled car has now been in service since the first week in February and public opinion is somewhat divided as to its suitability and no definite indorsement or disapproval has been made. From the operating department's point of view, however, this seating arrangement is ideal for the Birney car as it greatly facilitates the loading and unloading at times when the car has its maximum load of fifty passengers. Present indications are that this seating will be adopted for all Trenton cars in this class of service.

## Expert Offers Solution

### Suggests Bus-Trolley System at Bridgeport—New Relationship Would Mean Co-operation

Another solution of the Bridgeport trolley tangle was offered recently by John Bauer, New York, before the Bridgeport Chamber of Commerce. Mr. Bauer's scheme is a bus-trolley system under partially municipal management. He believes that a jitney-trolley combination would be a step toward solving not only the transportation problem in Bridgeport but in practically every city throughout the country. His first step would be a thorough investigation into the finances and operating costs of both the electric railways and jitneys by engineering and financial experts.

PLAN OF REORGANIZATION OUTLINED

In the matter of reorganization he suggested dividing the State of Connecticut into several railway districts with the establishment of a separate Bridgeport district. For this district a new operating company would be organized to lease all the railway lines in the district and to receive an exclusive bus franchise. The company should be directly controlled by a board of five directors consisting of one representative of the existing Connecticut Company, one representing the Public Utilities Commission, two from the city of Bridgeport and one representing other communities adjoining Bridgeport.

Mr. Bauer said that the crucial point in the reorganization would be the valuation on which the rentals were based. This should be determined according to present conditions, recognizing the buses as a factor, and that many existing railways will have to be abandoned or supplemented by buses. The new system would make provision for flexible fares and for any adjustment of fares that may be desired with changing conditions. Special provision of amortization of existing investment would also be made during the period of the lease so that at the termination the property would go free of further cost to the district. In conclusion Mr. Bauer said:

> The proposed system obviates the evils of direct municipal ownership and operation, but does maintain proper municipal control. It avoids also the evils of private ownership and financing and would place the transportation system upon a permanently solvent basis, with sufficient flexibility to provide for future needs of service and for an adjustable rate of fare according to changing conditions. When the proper relation of buses and street railways has been satisfactorily determined, there should not be competition between the two but co-ordination.

## Paterson's Jitney Reply Unsatisfactory to Railway

The city of Paterson, N. J., has met the Public Service Railway's warning of withdrawal of service by declaring that the question of joint use of public streets by trolleys and jitney buses is one for state legislation and Public Utilities Board control.

The reply of Mayor Van Noort was as follows:

> As a result of a conference between the Mayor and the members of the Board of Public Works regarding the trolley-jitney question the following was the unanimous conclusion:
>
> The whole question of the joint use of public streets by the street railway and the jitney buses is a matter for state legislation and the control of the State Board of Public Utility Commissioners. Pending the passage of such legislation, and in order to relieve the present situation to some extent in our city, we propose the following action:
>
> No further jitney licenses shall be issued within the city limits, and any transfers which may be made in the future will involve the removal of the bus from the present lines to streets not directly competing with the railway.
>
> The belief of the Mayor and the members of the Board of Public Works is that this action will prevent any further addition to present congestion, and will, in the course of time, eliminate it.

As noted in the ELECTRIC RAILWAY JOURNAL for Feb. 26, page 423, President McCarter of the railway notified the Mayor that operation of the railway would be terminated unless the destructive competition of the jitneys was eliminated by the city authorities. The railway does not consider the reply of the Mayor to be satisfactory, but in view of legislation pending at Trenton under which a statewide policy of dealing with the jitney may be laid down, the railway company will await the result of action at the state Capitol at Trenton before it makes any further moves.

## Cleveland Still Slashing Expenses in Effort to Break Even

Service on the lines of the Cleveland (Ohio) Railway is being slashed and further reductions in the salaries and wages of all officers and employees are contemplated, because of the fact that the company's interest fund, which is the fare barometer, has been completely wiped out and the company has no means of getting additional revenue as the highest rate of fare permitted under its franchise, 6 cents and 1 cent for transfer, is being charged at the present time.

The company's interest fund on May 1 a year ago contained $603,369. On Jan. 1 of this year, it contained only $39,913, and on Feb. 1 there was a deficit of $3,928 owing to the falling off in the number of passengers being handled by the company.

John J. Stanley, president of the company, and Fielder Sanders, City Street Railway Commissioner, both say that they do not desire any effort to be made at the present time to amend the franchise so as to boost the rate of fare above the 6-cent mark, but prefer to make use of both the alternatives of reducing the expenses and slashing service.

A 10 per cent reduction in wages went into effect on Feb. 1 for all officials and employees of the company, except motormen and conductors, who have an agreement on wages until May 1. The trainmen have already been informed, however, that on that date they will have to accept a 15 per cent reduction in pay.

# Transportation News Notes

**Asks Two Fares.**—Lindley M. Garrison, receiver of the Brooklyn, Queens County & Suburban Railroad, recently applied to the Public Service Commission for permission to collect two fares on the Metropolitan Avenue surface line between Flushing Avenue in Brooklyn and Jamaica Avenue in Queens. The receiver now wants to resume operation on that part of the line between Jamaica Avenue and the Metropolitan Avenue station of the Myrtle Avenue elevated railroad in Ridgewood and to make this a second fare zone.

**Interurban Fares Advanced.**—Upon order of the Public Service Commission increased passenger fares went into effect on March 1 on the Seattle-Renton interurban road operated by the Puget Sound Electric Company. The new schedule of fares increases the round-trip to Renton from 28 to 35 cents, with similar advances to other points on the line. Books of commutation tickets are sold at a reduction from the one-way fare. The new tariffs increase commutation tickets for regular riders 10 per cent and increase trip fares about 25 per cent.

**Would Continue Zone Fares.**—The Yonkers (N. Y.) Railroad has recently applied to the Public Service Commission, Second District, for authority from April 19, 1921, to continue to collect fares on the present basis or zone system. Besides the application of the Yonkers Railroad, similar requests have been made by the Westchester Electric Railroad, and the New York, Westchester & Connecticut Traction Company. With the papers were filed the amounts alleged to be deficits as of Dec. 31, 1920, as follows: Yonkers Railroad, $1,239,143; Westchester Electric Railroad, $1,614,015; New York, Westchester & Connecticut Traction Company, $98,398.

**Seven Cents in Lafayette.**—Fare rates in the city of Lafayette, Ind., were increased on March 3 from 5 cents to 7 cents by order of the Indiana Public Service Commission. The increase of 2 cents went into effect on March 6 at midnight and will remain until further order of the commission. The order also provides that four tickets should be sold for 25 cents. The Lafayette Service Company, which operates the street car system in Lafayette, had asked for a cash fare of 10 cents. The company further is ordered to file with the commission and the city officials of Lafayette, every sixty days, a report of its receipts. The Lafayette petition for increased rates was referred to in the ELECTRIC RAILWAY JOURNAL issue of March 5.

# Personal Mention

## Mr. Kipp Succeeds Mr. Beason on Utah Road

Ross Beason, traffic manager of the Salt Lake & Utah Railroad Company, Salt Lake City, Utah, which is generally known as the Orem electric line, resigned his position with that company on March 1 to engage in the investment banking business. He will head the newly organized firm of Ross Beason & Company, with offices in Salt Lake City and New York. The new firm will confine its activities to the purchase and sale of railroad, utility and government bonds. Mr. Beason, however, will continue to be identified with the Orem electric railroad, as vice-president and a director.

Mr. Beason has been with the Orem lines for seven years. He is a native of Birmingham, Ala., and went to Salt Lake City in 1912. He was at first connected with the Denver & Rio Grande freight department in Salt Lake, and after a few months became traveling freight agent of the Rock Island lines. After a year with this road he became identified with the organization of the traffic service bureau of Utah. He was manager of this bureau until 1914, when he went with the Orem lines.

Mr. Beason has been succeeded as traffic manager of the Orem lines by A. V. Kipp, formerly general freight and passenger agent. The position which Mr. Kipp vacates has been abolished.

J. F. Keate, who has been chief clerk for the railroad company in the traffic department for some time, has been promoted to commercial agent.

## Mr. Whitley Succeeded by Banker

C. W. Whitley, who recently resigned as president of the Utah Light & Traction Company, Salt Lake City, Utah, has been succeeded by E. O. Howard. Mr. Whitley, who was formerly general manager of the American Smelting & Refining Company, a Guggenheim property, has left the railway field and has recently been promoted to a broader field of activity with the head offices of the Guggenheim interests in New York.

Mr. Howard is president of Walker Brothers, bankers of Salt Lake City, who have one of the largest and oldest banks in the West. He has been connected with this bank for a great many years and is one of Salt Lake City's most prominent business men. Mr. Howard's part in the administration of the traction company's affairs will probably not be very active, but he will serve in a more or less advisory capacity.

The Utah Light & Traction Company is a consolidation of the Utah Light & Railway Company and the Salt Lake City Light & Traction Company. The road operates about 146 miles of track and connects Salt Lake City with Murray, Sandy, Midvale and several other suburban towns.

## Mr. Kelsey Wins Doherty Prize

E. R. Kelsey of the Toledo Railways & Light Company, Toledo, Ohio, recently received a pair of cuff buttons engraved with the Doherty emblem as the first prize from the Doherty Company for the best five-minute talk on thrift. Mr. Kelsey, himself an investor in Doherty securities, expresses his confidence in the following paragraph:

> The present is an especially favorable time for public utility stock investment, because of the new confidence people have in such business as shown by the favorable treatment accorded public utility companies almost everywhere by public service commissions and the general public. There can be no doubt but that an era of fair play for our public service companies is dawning and that for the first time the people are beginning to realize the great worth of such companies.

**Charles Lentz**, chief dispatcher, succeeds Mr. Smith as trainmaster of the Indiana Service Corporation, Fort Wayne, Ind. David Overholtz of Logansport, for some time dispatcher on the Lafayette division, goes to Fort Wayne as chief dispatcher.

**E. B. Harris**, formerly clerk of the Riverside County (Cal.) board of supervisors, has joined the Los Angeles Railway as investigator of litigated cases. He succeeds J. H. Sheridan, who has been with the claim department for four years, and who is now transferred to the operating department to take charge of the employment and instruction work.

**Karl B. Crawford**, formerly superintendent of the Ohio Gas & Electric Company, Leetonia, Ohio, has been appointed superintendent of the Camaguey Electric Company, Camaguey, Cuba, which owns and operates the Camaguey Tramways Company. Previous to his service with the Ohio Gas & Electric Company, he was connected with the Electric Railway Improvement Company, Cleveland, Ohio, and the Westinghouse Electric & Manufacturing Company, East Pittsburg, Pa.

**Frank A. Heermans** of Mattoon, Ill., has been appointed assistant secretary of the Public Utilities Commission of Illinois to succeed G. E. Doying of Jacksonville, Ill. The resignation of Mr. Doying was made necessary following the organization of the Peoria-Springfield Motor Transit Company, in which he took a leading part. The Illinois public utility law prohibits any member or employee of the commission from holding at the same time a position with a public utility company.

**Charles F. Muller**, for the past four years assistant general manager of the Utah-Idaho Central Railroad, Ogden, Utah, has resigned. Mr. Muller has accepted a position with the Bee Hive Advertising Company at Salt Lake City as assistant general manager. Mr. Muller will be succeeded by David S. Romney, formerly traveling freight and passenger agent of the Bamberger Electric Railroad at Salt Lake City. Mr. Romney has been connected with the Bamberger road for the past seven years.

# Obituary

**Peter Buss**, for many years supervising head of the buildings department of the Brooklyn Rapid Transit Company, died on Feb. 15, following an operation. Mr. Buss was born in 1860 in Emden, Germany, and formerly lived in Richmond, Staten Island, where he was a carpenter and builder. He entered the service of the Nassau Electric Railroad, Brooklyn, before its lease to the Brooklyn Rapid Transit Company.

**Morton D. Dawson**, one of the men who organized the Broad Ripple Traction Company, Indianapolis, Ind., died recently at his home in that city after an illness of several months. Mr. Dawson was for a number of years superintendent of the Broad Ripple Traction Company, a property now jointly operated by the Indianapolis Street Railway Company and the Union Traction Company. During the war Mr. Dawson served as an official on one of the draft boards in Marion County, Indiana. He was fifty-seven years old.

**Dr. Charles H. Lemon**, for more than twenty-five years chief surgeon of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., died suddenly on Feb. 22. Death was caused by a stroke of apoplexy which occurred while Dr. Lemon was being prepared for an operation for appendicitis. Dr. Lemon was born in Philadelphia in 1863. He attended the University of Pennsylvania and later studied medicine and surgery at the Rush Medical College, Chicago. Soon afterward he became connected with the Milwaukee Electric Railway & Light Company as chief surgeon. About ten years ago when the employees of the company organized the Employees' Mutual Benefit Association or the E. M. B. A., as it is familiarly known in Milwaukee, Dr. Lemon was chosen its medical director. Under his guidance and supervision this association achieved a foremost position with respect to the medical and surgical benefits given its members and their families. At present the staff of doctors and nurses cares for about twelve thousand persons. Dr. Lemon's work in industrial medicine and surgery had been largely along original lines and had served as a model for others.

# Manufactures and the Markets

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

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

## Lower Prices on High-Tension Insulators

**Although Buying Is Rather Light Stocks Do Not Exist and Shipments Rule Quite Long**

Since the middle of February four of the large manufacturers of high-tension porcelain insulators have reduced prices on their product approximately 10 per cent. Not all insulators are included in the drop, however, nor has every manufacturer fallen in line with this reduction as yet. The lower price applies to all suspension units and to all multi-part pin-type insulators. Single-piece pin-type units and strain insulators are not included in the price revision. The first manufacturer to announce a price reduction made the drop effective Feb. 15. Cuts by other producers followed at intervals of from four to six days until the last decrease to be announced thus far took effect on March 1. Other manufacturers are expected to take similar action before long.

### Deliveries Show Improvement

Present buying in this field throughout the country, on the whole, is light. Deliveries as a consequence are improving, though but slowly. Stocks of the finished product apparently do not exist anywhere, and nearly all the manufacturers still have such a large volume of back orders hanging over from the previous period of strong demand that shipments will very probably continue to rule long for some time to come. In general, manufacturers are quoting deliveries of high-voltage pin-type insulators on an average of four to five months. Suspension units, on the whole, are in a little better shape as regards delivery. There are, of course, variations both considerably above and below this average with some manufacturers.

## Boston Elevated Loses 49 Cars in Second Disastrous Fire

Following the destruction of 40 cars in the Neponsit carhouse fire of the Boston Elevated Railway on Feb. 21, the latter company has again suffered a disastrous loss by fire which destroyed forty-nine cars and two-thirds of the Amory Street carhouse in Roxbury, Mass., on March 4. The burned rolling stock included twelve 25-ft. motor cars, three 20-ft. and fourteen 25-ft. articulated cars, ten center-entrance motor cars of the latest type, six one-man cars, two sprinkler and two sand cars. A brick fire-wall saved a portion of the structure covering about one-third of the total area. Precautionary measures such as fire drills and special bulletins which had been instituted by the company following the Neponsit fire proved their value in the good work performed by employees in saving the newest and most valuable cars. Only a small percentage of the later types of cars assigned to the Amory Street carhouse were burned. By the drafting of cars from other divisions service was maintained with little inconvenience to the public. The total loss is variously estimated between $300,000 and $400,000, while the loss in the previous fire, it is now stated, totaled about $650,000.

## Little Activity in Pole Buying for Spring

**Winter Production Below Normal Because of Little Snow, Large Stock and Light Demand**

Producers of Western red and Northern white cedar poles report that the market remains quiet. Spring buying has not yet been in evidence to any extent, though central stations are taking more interest, it is true. Their needs as yet have not advanced beyond the estimating stage, however, while electric railways have given no intention at all of buying. Despite this rather dilatory action of consumers in covering their needs for spring construction work, producers are confident that the year as a whole will show good sales. Expectation of price decreases, it is said in some quarters, is one factor in delaying buying as present quotations of poles represent their peak price.

### Fewer Poles Cut This Winter

Production of poles this present winter has not been so large as in other seasons. For one thing, there has been a comparatively light snowfall in the regions where dependence is placed upon snow for hauling; and in the second place sizable stocks, light demand and the possibility of a price decrease are said to have operated against a heavy cut of poles.

Good stocks are held at distribution points at present so that shipments are made from stock. An Eastern consumer can therefore count on obtaining poles in from two to three weeks from the date of his order. Representative producers' prices for Western red cedar poles are as follows: 30-ft., 7-in. top, f.o.b. Chicago, $10.90, New York, $12.20; 35-ft., 8-in. top, Chicago, $16.25, New York, $18.30; 40-ft., 8-in. top, Chicago, $19.80, New York, $22.40. Northern white cedar prices are as follows: 30-ft., 7-in. top, f.o.b. Chicago, $11.60, New York, $12.50; 35-ft., 8-in. top, Chicago, $19.05, New York, $20.75; 40-ft., 8-in. top, Chicago, $23.95, New York, $26.15.

## Production Off Under Lower Steel Prices

**Independent Mills Widening Spread Between Their Prices and Corporation Prices to Stimulate Buying**

In an endeavor to provide employment for their workers and to work off inventories which have been marked down many independent mills have marked down steel and iron prices so that the spread of prices between corporation and independent producers is becoming more marked. None the less, this cutting has had little stimulating effect on buying. Large and small producers alike are feeling the effect of the buying decline. Even the ordinary run of business that comes from regular channels is being held up.

In virtually every section of the steel country furnace and mill operations are being reduced. Here and there are reports of an improvement in operations, but they are entirely local. At the same time, some independent mills are piling up stocks of iron for reserve. Sheet production is very low and tube production is rapidly declining. The latter fact may have some effect on electrical conduit, as at least one company has just put through a reduction on tubular goods of from $8 to $10 per ton. It is the hope of this producer that the reduction will bring in orders sufficient to run the plant at a little better rate than the existing one, which is lower than ever before.

### Prices Not Always Definite

These price reductions in the independent mills have brought iron bars to from 2.70 cents to 3 cents, Pittsburgh, as against a former quotation of 3.06 cents. A cut of $5 a ton under the minimum price of two weeks ago offered on galvanized sheets brings this quotation to 5.10 cents. The upper price is 5.70 cents. Black sheets can be had at 4.00 cents, a slight recession only from a former minimum of 4.15 cents. But the whole industry is so anxious for trade that it would not be surprising to find recessions even from these prices. Bar, shape and plate prices have held quite level for the last week, the minimum on bars being 2 cents, on shapes 2.20 cents and on plates 2.10 cents. These, it is believed, could also be shaded.

According to Judge E. H. Gary's statement at the February meeting of the American Iron and Steel Institute, steel prices will not be reduced at present, nor is a cut in wages in the steel industry being considered at this time by the United States Steel Corporation. Even in view of the above it would not be surprising to find not only a reduc-

tion in wages but also in steel prices by the corporation in the near future.

Wages, it is generally known, have been very generally reduced throughout the independent steel industry, following which the mills reduced their prices. Consequently any reduction in corporation wages would be expected to presage a reduction in price of finished and semi-finished products.

## Crossarm Prices Again Reduced

**Reductions of 9 to 15 per Cent Effective March 1—Demand Light and Supply Good**

Price decreases on Rainier fir and longleaf yellow pine crossarms varying from 9 to 15 per cent are announced by representative producers effective March 1. This is the second decrease within a month, the first amounting to 15 per cent and becoming effective on Feb. 1 as stated in the Feb. 5 issue of ELECTRIC RAILWAY JOURNAL. The supply of arms both with jobbers and at distributing yards is reported good, with stock shipments prevailing. Demand remains uneven in different sections of the country and among different producers. On the one hand buying is said to be slow with only a few straggling orders coming in. Some producers, however, state that sales have picked up recently with more inquiries and greater interest being shown in the market by consumers who are looking forward to their spring needs.

PRICES ON REPRESENTATIVE ARMS

Representative prices now in effect on fir arms per 100 delivered, are as follows: Electric light arms, 3¼ in. x 4¼ in. x 3 feet, two pins, less than 1,000 lineal feet, New York $56.99, Chicago $52.57, and 1,000 to 3,000 lineal feet, New York $50.66, Chicago $46.73; 3¼ in. x 4¼ in. x 6 feet, six pins, less than 1,000 lineal feet, New York $113.99, Chicago $105.13, and 1,000 to 3,000 lineal feet, New York $101.33, Chicago $93.45. N. E. L. A. arms, 3½ in. x 4½ in. x 5 feet 7 in., four pins, less than 1,000 lineal feet lots, in New York cost $128.92, Chicago $118.90, and 1,000 to 3,000 lineal feet, New York $114.59, Chicago $105.69. New England arms, 3¼ in. x 4¼ in. x 5 feet 6 in., four pins, lots of less than 1,000 lineal feet in New York cost $113.99, Chicago $105.13, and 1,000 to 3,000 lineal feet lots, New York $101.33, Chicago $93.45.

Locust pins have been extremely scarce for some time past due to insufficient supply of the wood itself. Stocks are now building up, however, under general light demand, and though one or two distributers have none in stock others report as high as 200,000 on hand. Some producers are advising their customers to place orders for pins as soon as possible for present stocks might not last long if demand, which is reported to be on the increase, should mount to large proportions. Current prices of 1½ in. x 9 in. locust pins average from $35 to $40 per 1,000 f.o.b., New York.

## Favorable Development of Low-Head Water Powers

**During Past Year Many Small Capacity Turbines Sold—With High Fuel Costs Outlook Here Favorable**

With the volume of orders for waterwheels and generators placed last year it is interesting to note the large number of small units—from 625 kva. and below—that were sold. In the past small water-power sites have been neglected, it seems, because the larger and more spectacular developments attracted most of the attention. The development of these small projects is now being looked upon more favorably than ever before. This is particularly true among industrial concerns which have available low-head water powers.

The high fuel and transportation costs and the attention that is being given to water-power developments in general, it is felt, will have a great effect on turning public interest on the many little falls that could be developed for lighting, power and railway purposes in small towns.

Machine developments are rapidly tending toward this end. From a financial point of view it is much easier at this time to promote several of these small developments than one of the large ones.

The hydro-electric outlook in general for the coming year seems to be favorable. Although licenses for many large undertakings have been applied for through the Federal Power Commission it is doubtful at this time that many of them, if their applications are approved, can get their finances in shape to go on with the ordering of apparatus.

## Spanish Northern Railway to Electrify

The Spanish Northern Railway, Commercial Attaché Cunningham of Madrid reports, will buy through the Spanish Government machinery and equipment for the electrification of part of its line. The government, it is stated, on March 16 will accept bids for the electrification of the municipal railway at Oviedo, at a cost of 7,000,000 pesetas. Bids are also to be opened on April 22 on a contract for a railway extension from Soria to Castejon, the cost of which is estimated at 390,000,000 pesetas. More locomotives and cars, Mr. Cunningham advises, will be purchased soon.

## Tenders for Electrification of Railway in South Africa

American Trade Commissioner Stevenson of Johannesburg, South Africa, states that tenders are being invited covering the electrification of the railway from Cape Town to Simonstown and also the section of the Natal main line from Durban to Pietermaritzburg. The project includes substations, boiler house equipment and condensing plant, together with electric locomotives for freight, passenger and shunting services. Bids for these projects are to close May 3. The suburban line, according to present plans, is to be operated on the multiple-unit system, while on the main line large electric locomotives are to be used. Specifications may be obtained from the South African High Commissioner, 32 Victoria Street, S. W., London, England. The cost for the Cape Town-Simonstown line is estimated at £1,464,000, and the Durban-Pietermaritzburg line at £2,921,400.

## Rolling Stock

**The Peoria (Ill.) Railway Company** has received five rebuilt cars from the Decatur shops of the Illinois Traction System for use during the rush hours on the East Peoria line.

**Eastern Wisconsin Electric Company, Sheboygan, Wis.,** has purchased six standard safety cars from the National Safety Car & Equipment Company, St. Louis, Mo., for use in Fond du Lac, Wis.

**Springfield (Mass.) Street Railway Company** advises that it does not contemplate replacing the 4 snowplows, three double-truck passenger cars and 1 work car destroyed by fire on its Palmer Division last December.

**Georgia Railway & Power Company.,** Atlanta, Ga., has just placed three new pay-as-you-enter cars in service. They embody many improvements over the old type cars, including signal buttons in place of a bell rope, a plunger in the floor for registering fares, wider aisle spaces and narrower platforms. Additional cars will be added later.

**The Chicago (Ill.) Surface Lines,** mentioned in the Feb. 5 issue as calling for bids on 50 trailers in addition to the fifty other trailers being built in the company's shops, has specified the following equipment on these cars:

| | |
|---|---|
| Number of cars ordered | Fifty |
| Date order was placed | Feb. 26, 1921 |
| Date of delivery | In four months |
| Builder | J. G. Brill Company |
| Type | Double-truck, closed, center entrance, double-end trailers |
| Seating capacity | Sixty-two |
| Weight, total | 26,000 lb. |
| Length over all | 47 ft. 6 in. |
| Width over all | 8 ft. 4½ in. |
| Height, rail to trolley base | 10 ft. 9½ in. |
| Interior trim | Cherry |
| Headlining | Agasote |
| Roof | Arch |
| Bumpers | Channel |
| Buzzers | Consolidated Car Heating Company |
| Car trimmings | Statuary bronze |
| Conduits and junction boxes | Duraduct |
| Curtain fixtures | Curtain Supply Company |
| Curtain material | O'Bannon |
| Designation signs | Hunter |
| Door operating mechanism | National Pneumatic Company |
| Heater equipment | Consolidated Car Heating Company |
| Registers | International, type R-7 |
| Sash fixtures | O. M. Edwards Company |
| Seats | 20 crossover longitudinal, 2 circular |
| Seating material | Rattan |
| Slack adjuster | Gould |
| Springs | Brill |
| Step treads | Kass |
| Trucks | Brill 67-F |
| Ventilators | Railway Utility natural ventilation equipment |
| Wheels | 22-in. solid rolled steel |

**Boston (Mass.) Elevated Railway Company** states that practically all of the forty cars lost in the Neponsit carhouse fire of Feb. 21 were of the older types, and the company does not antici-

pate purchasing any new ones to take their place. The company has not as yet decided whether it will be necessary to purchase any cars to replace those lost in the fire of March 4, described elsewhere this issue.

The United Railways of St. Louis, Mo., has not yet ordered new cars specifically to replace the 16 cars which were destroyed in the Debaliviere carhouse fire on Jan. 3. Indirectly, however, the place of the burned rolling stock is being taken by new cars which have for some time been turned out of the company's shops at the rate of about two a week.

## Power Houses, Shops and Buildings

**Harrisburg (Pa.) Railways.**—The report of the Harrisburg Railways recently submitted at the stockholders' annual meeting outlined some necessary improvements and additions. It was suggested that two new boilers of not less than 600 hp. each be installed with a new generating unit of not less than 3,000 kw. capacity. It was also suggested that additional carhouse space be provided as the present facilities were not adequate to house all the company's cars.

## Track and Roadway

**Alabama Power Company, Attala, Ala.**—The Alabama Power Company is making improvements on its Attala car line. Seventy-pound rails are replacing the old 40-lb. ones that were laid when the line was first built.

**Meriden, New Britain & Hartford Street Railway, Hartford, Conn.**—Since no one appeared in behalf of the Meriden, New Britain & Hartford Street Railway at a legislative hearing recently the charter for this proposed line from New Britain to Meriden through Kensington and the Cat Hold gap route will be permitted to lapse. The charter was first sought from the General Assembly about ten years ago.

**Los Angeles (Cal.) Railway.**—The Los Angeles Railway will soon begin relaying of tracks with heavier steel and new ties on Central Avenue between Fifth and Fourteenth Streets.

**Los Angeles (Cal.) Railway.**—A temporary track at one side of the street will be used by the Los Angeles (Cal.) Railway on Hoover Street from Slauson to Sixty-first Street during improvement and change of grade on the main double track. The emergency rail will be used to prevent delay.

**Brooklyn, Queens County & Suburban Railroad, New York.**—The Public Service Commission has issued an order to the receiver of the Brooklyn, Queens County & Suburban Railroad directing that the tracks of the company on Jamaica Avenue between Rockaway Avenue and Van Wyck Avenue in Queens be rebuilt with new rails. The work must be begun not later than April 1.

## Professional Note

John F. Layng, for many years connected with the Railway & Traction Engineering Department of the General Electric Company, Schenectady, N. Y., is leaving manufacturing work to enter the consulting engineering field. His new connection, just announced, is as a partner in the firm of Hemphill & Wells, consulting engineers, New York City. Mr. Layng has been engaged in the electric railway business since 1889, having been at various times connected with operating companies, as well as with the General Electric Company and Westinghouse Electric & Manufacturing Company. During the past five years he has devoted his time to general electric railway analyses and the results of some of his work along these lines have been published in this paper. During the war he was engineer with the United States Fuel Administration in Washington, D. C., in charge of the electric railway fuel saving for the entire country. It was largely due to his efforts that the skip stop was so generally used.

## Trade Notes

**The Combustion Engineering Corporation, 11 Broadway, New York City,** has established a branch office at 521 Candler Building, Atlanta, Ga., in charge of A. A. Hutchinson.

**Thomas H. S. Andrews, M. E.,** until recently on the engineering staff of the J. G. White Engineering Corporation, is now identified with E. G. Long Company as its secretary.

**The Maring Wire Company, Muskegon, Mich.,** manufacturer of cotton-covered and enameled magnet wire, announces the appointment of the Beedle Equipment Company as its representative. The Cincinnati office, at 1309-10 Union Trust Building, is in charge of A. L. Beedle. The Indianapolis office, at 509-10 Lemcke Building, is in charge of F. T. Miles.

**Heywood Brothers & Wakefield Company of New Jersey,** manufacturer of car seats, has reorganized under Massachusetts laws under the name of Heywood-Wakefield Company, with a capitalization of $13,000,000. The reorganization represents a merger with the Lloyd Manufacturing Company of Menominee, Mich., which manufactures baby carriages. Officers and directors of the company remain unchanged except that Henry Hornblower succeeds John D. Walsh, deceased, as director, and Marshall B. Lloyd is added to the board.

**The Chicago Pneumatic Tool Company, New York City,** announces the appointment, Jan. 1, 1921, of R. F. Eissler as assistant to the vice-president, with headquarters in the company's new office building at 6 East Forty-fourth Street, New York. W. C. Straub, formerly district manager of the New Orleans branch, has been appointed district manager of the Pittsburgh branch to succeed Mr. Eissler, and Ross Wyeth, formerly attached to the Pittsburgh branch, has been appointed district manager of the New Orleans office in place of Mr. Straub.

**The International Clay Products Company, 31 Union Square, New York City,** has recently purchased the entire properties, plant, equipment, coal, clay and shale mines of the Clermont Sewer Pipe Company of Pennsylvania and the Kesco Clay Products Company of New Jersey. The Clermont plant covers 400 acres of land and has an annual capacity of 10,000,000 duct feet of clay conduit. Both plants are reported to be operating at full capacity, and complete stocks are carried for prompt shipment. In addition the company carries cable hangers, conduit coupling rods and pick-up tools.

**The Westinghouse Air Brake Company, Wilmerding, Pa.,** announces the appointment of Alexander England as chief engineer to succeed S. W. Dudley, who resigned Feb. 1, to join the faculty of Yale University as professor of mechanical engineering. Mr. England came to the Westinghouse Air Brake Company in the year 1898. He was made chief draughtsman in 1905 and remained in that capacity until his appointment as assistant to Mr. Dudley in 1914. Other changes occurring as a result of Mr. Dudley's resignation and the promotion of Mr. England have been announced as follows: R. E. Miller, engineer of tests and inspection, promoted to superintendent of tests and inspection; W. E. Dean, assistant engineer of tests, promoted to engineer of tests, and A. A. Mackert, chief inspector, promoted to engineer of inspection.

## New Advertising Literature

**Valves.** — The Yarnall-Waring Company, Chestnut Hill, Philadelphia, is distributing a leaflet describing its "Yarway" junior seatless valve.

**Battery Test Chart.** — The Allen-Bradley Company, Milwaukee, has published a new battery test chart, 14 in. x 31 in., to be used exclusively with the Allen-Bradley rate discharge test set.

**Lightning Arresters.**—Electric Service Supplies Company, Philadelphia, has issued bulletin No. 175, dated Feb. 15, a catalog of "Garton-Daniels and Keystone Lighting Protective Apparatus."

**Portable Electric Grinders and Drills.** —The Cincinnati Electrical Tool Company, Cincinnati, has issued catalog No. 14, covering its complete line of portable electrical drills, grinders and buffers.

**Insulating Material.** — The Boonton Rubber Manufacturing Company, Boonton, N. J., has published a forty-eight-page booklet entitled "Boonton Bakelite," in which it describes and illustrates the method of manufacturing bakelite and its uses.