

# Electric Railway Journal

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## The Next Convention of the American Electric Railway Association will be held at Atlantic City, N.J., on Oct. 11-15, 1920.

*The American Electric Railway Association announced this week the time and place of its next convention, as given above. Atlantic City has become the logical place for national conventions, especially for those with ex-hibits, and the selection will give general satisfaction.*

### Edward Hungerford Will Talk About Electric Railways in This Paper

WE COMMENCE this week the publication of a series of articles by Edward Hungerford on the electric railway situation of today in several cities. This paper has had in the past many accounts on the properties in these cities and on the industry in general from what might be called the "electric railway side." We have thought that it would be interesting, therefore, to our readers for us to publish the viewpoint of some one not closely allied with the industry, and we have selected a well-known magazine writer, who, not being so near to the problem, could see it in a perspective not possible to one daily engaged in electric railway work.

Our understanding with Mr. Hungerford was that in these articles he would have entire freedom to express his opinions on conditions as he saw them. With this understanding he was glad to accept the commission. Obviously, for the reason just given, Mr. Hungerford is responsible for the opinions expressed in the articles and not the editors.

In conclusion, we need only add that each article is based on a special visit and personal study of the transportation system in question by Mr. Hungerford. These visits were made during the past three months for the purpose of collecting material for this series of articles.

### Fareless Passengers vs. Wageless Trainmen

ACCORDING to the latest news from Soviet Russia 'most everybody is an employee of the government, and as government employees don't have to pay fare the operation of the street railways has been reduced to the simplest terms. Life for the conductor is now one round of joy, for while his work has been reduced enormously his nominal wages at least have also been increased enormously.

How different is this picture from that presented to us by conditions on the Norton & Taunton Street Railway Company, which, in spite of its name, is now jointly owned by the cities of Taunton, Attleboro, Mansfield and Norton. On this line the proletariat, the salariat and the bourgeoisie must pay fare as of yore.

But what about the trainmen? They, poor fellows, are reported in an April 5 despatch to the *Boston Herald* as being prepared to quit after failing to see the pay-day ghost walk in three successive weeks. It is true that one conductor is said to have organized a little Soviet of his own by borrowing \$10 from his traffic receipts as a draft on his pay, but most of the men have advised the management that they can't extend credit much longer; that while they are in a most entertaining kind of social welfare work, which brings them into contact with all sorts of the best people, they are not immune to the demands of Nature.

It looks to us as if the Russian comrades have a more desirable form of government ownership than their American brethren. No fare collection and more pay certainly sounds better than more fare collection and no pay.

### How to Write an Ad for Platform Men

AN ADVERTISEMENT, like a word, often conveys to the reader a meaning or an impression very different from what the writer intended. This thought was thrust upon us as we read a recent car poster which asks that men whose "records can stand investigation" apply for platform jobs. Probably the writer of this card did not intend to hurt any one's feelings, but isn't it rather tactless to assume gratuitously that some of the men who might apply would have records that will not bear investigation? Why bring up this aspect at all, inasmuch as the very first thing an applicant is asked to do is to furnish satisfactory references? Every job seeker knows that. Now, how much better it would be if the writer of this advertisement had seized upon the man shortage of his company as a means of bettering relations with riders and employees. Assume that the wording was something like this:

"We have the cars but not enough men to give you the service to which you are entitled. If you know any high-grade men to whom platform work might appeal, or if you are desirous of entering such service yourself, please get into touch with us."

The foregoing need not be the exact words, but it is believed that they would have the twofold effect of making the public more patient with shortcomings and of making the present employees have a higher respect for their calling. Splendid examples of "help wanted" advertisements that do have such influence are offered by those of the Bell telephone companies. Also, in the very same town where our railway is located is a laundry which carries right on the wagons a statement of its exceptionally attractive labor conditions: "Girls, why not work under the pleasant conditions of the ——— Laundry? The hours are so and so, minimum wage so and so, etc." If this does not get ideal help, it surely does accomplish something toward mollifying



the bachelor who finds that he is expected to wear a brassiere instead of a boiled shirt for that dinner of the Grape Juice Improvement Association. Verily, there are indirect as well as direct ways of selling through creating a better atmosphere for the product.

### What Is a Safe

#### Light Rail for Safety Cars?

THE increasing use of the safety car continually calls attention to the question of rails of lesser weight which may possibly be used under such cars. There is considerable talk, but little data, to the effect that lightweight safety cars cause less rail wear and lessen track maintenance costs. Logically these desirable features may be present where these cars are in use but the cars have not been in service long enough to warrant any assumption as to what the savings may amount to. Furthermore, the cars are usually sandwiched in between heavier cars on most systems which have adopted them and the lessening in track wear is difficult to determine. It is also a well-known fact that our accounting methods seldom have permitted us to determine with any reasonable degree of accuracy what track maintenance costs are upon particular lines or sections thereof. Until some road has operated a line solely with these cars for a period of several years and has kept some comparative track maintenance data covering the "before and after using," as the patent medicine "ads" have it, we are unlikely to know much about the maintenance cost and wear-and-tear phase.

Meanwhile it is reasonable to assume that some tracks may need rebuilding soon where safety cars are operated. The selection of the new rails for the tracks then becomes a problem worth consideration. Some calculations show that an 8.5-ton safety car with a 60-passenger load would have a static wheel load of 6,500 lb. and a dynamic augment (addition of 0.70 of the static load) of 4,500 lb., giving a total dynamic wheel load of 11,050 lb., and that it would require a rail weighing about 50 lb. per yd. under the Baldwin Locomotive Works rule for safe weights of rails. But a 50-lb. rail is altogether too small for use in pavements and would be out of the question for use under almost any other cars which are still in service. The matters of adaptability of the rail to varying pavement conditions, adequacy of rail joints and need for allowance against corrosion with provision for reasonable wear before renewal also enter into the conditions to be met in the rail selection.

These items all tend toward the selection of a rail weighing not less than 70 lb. per yd. with a height of not less than 6 in. We have the 6-in. 72-lb., the 7-in. 70-lb. and the 7-in. 80-lb. rails in the plain girders from which to make a choice. The 5-in. 80-lb. A. S. C. E. rail is probably the lightest weight and least depth of rail which should be used with the few modern pavements which can be adapted to it. Our choice then would range, as determined by paving conditions, other car traffic and ordinances, between rails weighing from 72 to 80 lb. per yard. In view of the good service which ancient 7-in. 70- and 80-lb. rails have given in the past, it appears that we shall hardly need to go above 80 lb., but with an increase in safety cars to practical exclusion of other and heavier types we might safely go to the lower limit of about 70 lb.

The available groove girder rails do not offer such advantages in rails of appropriate weight. The groove necessarily adds weight in any case. While there are

four groove girders weighing from 90 to 100 lb. and five weighing 103 to 105 lb., most of them have certain poor features of design. Those under 100 lb. all seem to have the gage line too close to the center line of the web. If the selection of these rails for safety car tracks becomes insistent, some attention should be given toward a betterment and standardization of design. Past experience cautions against the use of rails of too light a weight and it must not be forgotten that weight adds salvage value at the end of service life. A reasonably high weight over bare necessity is always a form of insurance against the future.

Another feature of the track construction with reference to suitability for safety cars is that of ballast. We believe that most track engineers are agreed that a ballasted track construction is the best for average soil conditions prevailing over the country. The lessening of car weight should not be used as an argument in favor of lessening the depth of ballast to be used under a safety-car track. The depth under the ties should certainly not be decreased below the quite generally used 6 in., because this is 25 per cent less than the 8-in. depth recommended by the committee on way matters in its report on ballast.

### British Experience Shows More Riding Follows More Leisure

AMONG the select few operating on pre-war rates of fare calls attention to one of the interesting reasons for this happy condition, namely, the radical shortening of the workday in his country. Before the effort to "make Britain fit for heroes to live in" the manual worker had to be on the job at 6 a.m. or earlier, leaving a hiatus of one hour or more between the manual and clerical loads. There was a certain amount of "breakfast riding" in some cities, but generally speaking the morning peaks came at two widely separated periods. With the arrival of the eight or nine-hour day many British managers feared that their peaks would assume the highly concentrated form characteristic of America, inasmuch as all classes of workers would be going and returning within the same hours. It may well be that such will prove the case in some cities. In others, however, this undesirable shift has not occurred for two reasons at least.

In the first place, the introduction of the eight-hour day in shipbuilding and other mechanic arts has led to the two-platoon and three-platoon system, especially because of the great need for technical equipment. This change naturally has improved the load factor by giving quite as good rush-hour traffic in one direction as in the other. In the second place, the shortening of the workday has given the laborer an opportunity for leisure, whereas a twelve-hour day left him too fagged out for anything but to eat and sleep. As the result of this leisure, he and his family go a-visiting or to amusement resorts on a much more liberal scale than before. One point which our British friend did not mention, because it is doubtless so matter of course with him, is that this leisure riding is really neighborhood riding, and that this neighborhood riding is the logical result of years of development of the principle of a short ride for a short fare. The fact that nearly all of this extra riding is within an average of less than 1 mile per passenger shows how the flexibility of a zone fare aids in taking advantage of conditions that would mean little or no change on a flat-fare system.



### "Here a Little, There a Little" in Steam Road Electrification

HERE will be no avalanche of steam railroad electrification until finances become stabilized and credit is restored. But the process will go on gradually with increasing satisfaction to all concerned. Every few days there is an announcement of some new order or project, such as that regarding the Paulista Railway in this issue of the JOURNAL, another regarding the Hershey Cuban Railway two weeks ago, etc. Such straws as these show the direction of the wind. At the coming Pasadena meeting of the National Electric Light Association there will be a special symposium on railway electrification, indicating that electric power producers sense the importance of this coming field for their output. Herbert Hoover, president of the American Institute of Mining and Metallurgical Engineers, this week gave out a report, made after a conference with representatives of the American Railroad Association, in which electrification of railroads is urged and the "super-power" plan of power generation and distribution is indorsed.

The proponents of conservation and transportation improvement by electrification have every reason to be encouraged by the present prospects. The change to electric motive power is bound to come in a substantial part of the heavy traction field. In the programs for needed rehabilitation to be carried out during the next few years it must have a conspicuous place.

### The Wonders of Modern Urban Transportation

THE rapid transit trains of the Interborough Rapid Transit Company of New York City recently carried a very effective issue of the *Elevated Express* and *Subway Sun* showing graphically the distances to which New Yorkers can be carried on the subway lines for a nickel and also the comparative fares for steam railroad suburban service in the same territory. The *Express* and *Sun* are familiar to the readers of this paper through the copies which have been reproduced in its columns from time to time. One of the particular issues referred to was reproduced in the April 3 ELECTRIC RAILWAY JOURNAL, page 694.

If the impression made by this poster upon other patrons of the "L" and subway lines was as vivid as it was in the case of the writer, the general sense of appreciation of the quantity of service which one gets in New York for a nickel was considerably intensified. The one-way fare per mile on the steam roads was shown to be from ten to thirteen times that on the subway lines. In justice to the steam roads it must be allowed that they do much better for regular commuters, who pay from a fourth to a third of the single-fare rates if they utilize their privileges fully. It is the regular rider on the subway, also, who utilizes most fully his long-distance-travel privilege. But even with this allowance there is still a marvelous difference between the fares in the two cases, a difference which is much larger than that in the investment necessary to permit the service to be given.

The discrepancy between these two classes of fare is due to a number of factors. Of course, to begin with, the nickel is too low a fare for even the average ride in the subway, to say nothing of the maximum ride. But even if a reasonable fare were permitted to be charged, it would be low compared with the

steam road fares, because a well-operated electric road can furnish transportation more efficiently than the steam road, at least under conditions such as obtain in New York. And the occasional rider is especially well treated by the electric road. He gets the same rate as the regular patron, whereas he is heavily penalized by the steam road. But whatever the causes which enable the Interborough to give the service it does at the fare it charges, a comparison with steam road suburban service and charges ought to be fruitful in fostering a reasonable attitude on the part of the public toward the need of the utility for a reasonable fare.

### Detroit Embarks on Tempestuous Seas

THE political tumult and shouting have died in Detroit. The city now faces the stern realities of what it means to enter upon the program for municipal ownership approved at the recent election. An initial fund of \$100,000 out of the total authorization of \$15,000,000 was quickly made available with which to begin work on the municipal railway. The first move was the "starting" of construction on April 6, when the Mayor, spade in hand, began digging at Connors Road and Charlevoix Street. The election was held on April 5. This was quick work and good politics. That one spade of earth, however, appears to have uncovered a lot of trouble for the city.

With the abstract question of municipal ownership and operation we are not here concerned. The fact is that Detroit has decided upon the piecemeal construction policy, with an implied if not actual threat to order the Detroit United Railway off certain streets upon which it is now operating under its expired franchise rights.

Detroit must first prepare for the actual construction of its new lines. Then it must build the lines, and finally set up the machinery for their operation. The program which has been laid down is fairly comprehensive. It remains to be seen how far the \$15,000,000 approved at the election will carry the city toward the consummation of that program. But before the city even starts on its program it is faced with very grave difficulties. The Detroit United Railway appears to have a strong case in its favor against some of the proposals of the city. In addition to this, the east side of the city is organizing against the plan of the Mayor because it feels it has been left out in the cold. Detroit's troubles, great as they may have seemed to some in the past, really are only starting if the city sticks to its program, announced or implied, and the company seeks redress from imposition in the courts.

At the election a year ago the city rejected the purchase of the local lines. More recently the city decided against the service-at-cost proposal. During the recent municipal ownership campaign the city failed to respond to the direct offer of a program of extensions and improvements made by the Detroit United Railway. This last proposal, it seems to us, was most advantageous to the city. It would have put all the incubus on the company. Detroit, however, has made its choice. It now remains to be seen how well the city will fare in carrying out a program deliberately adopted in the face of experience elsewhere which should have served as a warning. The examples in San Francisco and Seattle meant nothing to Detroit. Of these two it chose to follow the least desirable.



This Is Number One of a Series of Articles on Salient Phases of the Electric Railway Situation

# The Trolley Car and the City Man

By Edward Hungerford

Said Doherty to Coates:  
"Will you do it?"  
Said Coates to Doherty:  
"I will."

Coates did it. That was the evening of Nov. 8 last. The two men had been in conference in an upper room of the Secor Hotel, Toledo, for long hours that afternoon. The dinner hour had hardly passed before the trolley cars of Toledo began moving silently toward the state line—some twenty miles away. By a little after midnight they were all gone from the deserted town—300 of them; everything on wheels of the Toledo Railways & Light Company except twenty hopeless cripples, which were in the company's repair shops and totally incapable of being moved. The 300 trolley cars—placed tightly end to end they would stretch for more than 5 miles—were interned on convenient sidings of the interurban lines in the adjacent sections of Michigan, and for twenty-seven days thereafter there remained, while that large portion of the population of Toledo which was not able to own its automobiles either paid outrageous toll to jitneys or walked.

No one could accuse Coates, the president of the road, or Doherty, its chief owner, of a lack of courage. Theirs was a genuine *coup d'état*—a stroke so swift and so sure that one is instantly reminded of D'Annunzio conquering Fiume, while great powers slept.

And not alone a swift and sure stroke but one that succeeded—absolutely succeeded. For Toledo, which had quarreled at and with its traction company, suddenly had a bitter taste of the value of a utility to it that until the ninth day of November, 1919, had seemed as much a part of its ordinary work-a-day life as its electric light or its gas, or its police or fire protection, or its food or its water, or even almost the air it breathed.

**E**DWARD HUNGERFORD is writing a series of articles on the traction situation for the *Electric Railway Journal*. They are based on intimate, first-hand and recent information obtained on visits to cities in different parts of the country. His keen powers of observation are well recognized, and the editors of this paper are confident that the series will not only prove notable as to interest and readability, but will be of reference value both inside and outside the industry. Mr. Hungerford is well qualified to prepare this series because of his extended newspaper experience as well as because of his acquaintance with electric railway matters from the operator's point of view. After a service of some eighteen years on the editorial staffs of daily papers in Rochester and New York City, Mr. Hungerford joined the Brooklyn Rapid Transit Company in 1904 as its press representative, and this connection continued seven years. Since resuming his work as a writer he has been a free lance in the newspaper field. His contributions have appeared in a number of the popular magazines and many of them have been on railway subjects. In this, the first article in his series for the *Electric Railway Journal* on salient phases of the industry, Mr. Hungerford draws some lessons from recent events in Toledo, New York and other cities. Later articles will take up situations elsewhere. The next article will be on Kansas City.

Suddenly it saw city transport in a new light—saw it as a real fundamental of life itself in a closely huddled urban community—realized the hopeless dependence of a city of 275,000 or more upon the trolley cars which morning, noon and night for more than a quarter of a century had been almost part and parcel of its important streets. A few weeks later the important suburban district of Staten Island, in the city of New York, was to come with an equally bitter experience to the same understanding; a few weeks after that practically that entire metropolitan community, foundering and paralyzed under a sudden and unexpected heavy snowfall, was to undergo the same experience, while somewhere between these episodes certain im-

portant industrial cities in the eastern portions of Massachusetts were to have totally different but equally enlightening instances as to the genuine value of the humble trolley car to them.

Of these other experiences, more in an instant. For the moment come back to Toledo; consider in some little detail its interregnum of transport. For the proper background—scenic investiture, as the French would say—understand the almost continuous struggle for many years past between various Ohio communities, as well as some of neighboring Michigan, and their trolley companies. The spirits of the late Tom L. Johnson and the late Allen W. Pingree still live, and from time to time mix things up a good bit. Yet some of these communities have made a distinct progress in this situation along permanent and economic lines. Cleveland has one of the very best service-at-cost plans, which has stood successfully the hard test of ten years of operation. Youngstown recently took the Cleveland plan and bettered it, as a permanent solution of its own difficult traction problem. Detroit seemingly is both obdurate and obstinate. And so was Toledo—until recently and the coming of the *coup d'état*. Now it seems as if the very air had been cleared for her; as if she was on the way to a genuine solution of her own traction problem.

"The trouble with Toledo is that she is a cheap town," said a man in a rival Ohio community who had made a considerable study of this whole traction question in the Great Lakes district, "and therefore seeks to solve a pretty big problem in a small, cheap way. There are two different pathways for her. One is to give her trolley company a decent and an equitable rate of fare and the other is for the city to buy its property and run it as an out-and-out municipal enterprise; running into deficit,



certainly, but assuming that deficit for the public weal, as she would the cost of the operation of her schools or her police or her fire department."

Discounting for the moment the Ohio gentleman's description of Toledo as "cheap"—I am inclined to think, after cursory glances at two of her wonderful new high schools, her wonderful city club and her surprising art museums, that she is anything rather than "cheap"—I do believe that he has hit the nail on the head as regards the two paths open to the men who are trying to guide

taxes, also varying in number according to the number of cities in which he might be living or doing business.

So it would seem that Toledo's only way out was in the readjustment of its trolley fares. In fact it is this very step toward solution that has embroiled the City Hall with the trolley company's headquarters for nearly nine or ten years past.

For a good many years the Toledo Railway stuck by the 5-cent fare with universal free transfers just like most of the other city tractions all the way across the land. In addition it sold six tickets for a quarter and,

Hall crowd, anyway? Figures lie—when Aldermen rule that they shall lie. And so it was that as far back as March, 1914, the Toledo City Council suddenly passed an ordinance fixing the local fares at 3 cents and advised Toledoans to pay no more. In fact the Council went so far as to promise police protection to folk who were threatened with ejection from the cars after tendering the 3 cents which it had blandly declared legal fare.

Now what did the company do in this situation? Did it try to fill its rear platforms with thugs or



her destinies. I further believe that the second of these would appeal to most of them. But, fortunately or unfortunately, Toledo, like a good many other American communities, is dangerously near bankruptcy. And the purchase of an extensive electric railway company, which while nominally a return bringer in actuality would probably be a deficit accumulator, is at this moment, beyond all doubt, completely out of the question. The most of our American cities today are having hard work maintaining a credit sufficient for them to operate their most imminent necessities. When I was in Ohio a number of its municipalities were besieging the Legislature down at Columbus with demands for city income taxes. Which leaves the average man with the interesting possibility of contemplating not only federal taxes of this sort, and one or more state income taxes heaped above the first comer, but also city income

Behind the smiles of Frank R. Coates and Henry L. Doherty is a serious desire to give Toledo fine railway service.

for a short time only, workingmen's tickets at 3 cents each. These last were good for only two hours in the morning and two in the evening, and the practical operating difficulties in holding their use to the four specified hours was a large factor in their discontinuance.

But the 3-cent idea had been bred in the minds of the city politicians. They began more and more to insist that this be made the standard figure throughout the city, at all hours and with the universal free transfers continued as part of the system. This despite the fact that the figures of their own experts showed that the actual operating expenses of the road, to say nothing of the necessities of its stockholders, even then precluded even the faint possibilities of 3-cent fares.

But what are statistics to a City

threaten then to suspend its service entirely? It might have done either, and still have been entirely human. But it did neither. It merely put the case squarely up to its patrons in a series of posters and newspaper advertisements that if they did not wish to pay 5 cents they could tender 3 cents—and then ride free.

And what did the patrons do? Let me haste to record the answer, lest you gain the impression that the Ohio man who called Toledo a "cheap town" was right:

Eighty per cent of the company's patrons paid their 5-cent fares and rode—in company with the satisfaction of their consciences. The other twenty per cent tendered 3 cents, which was promptly refused, and rode free—also in company with their consciences. Which, I think, of itself is something of a commentary on American individualism in actual day-by-day practice, and a fair to middling test as well of the real



recognition by the individual man of the value of the trolley car to him. The politicians do not always accurately interpret his real state of mind.

### The Federal Courts Step In

For some weeks this anomalous situation, where conscience was the fare register, continued. Then the United States courts upheld the trolley company, which had applied to them for relief, and 5 cents became a matter of regulation and not of individual decision. But the clamor

velopes. But the large increases in the pay envelopes of employees made a sizable deficit in the company's daily operating balances. And it quickly moved to a readjustment of its fare schedules to keep pace, in part at least, with the large readjustments of its payrolls. It raised its local fares to 6 cents, with an additional charge of 2 cents for each transfer.

Close upon the heels of this step the Toledo City Hall moved. It passed an ordinance to remove the Toledo Railways & Light Company

almost always have the wisdom of super-Solomons.

The intelligent electorate of Toledo on Tuesday, Nov. 4 last, approved the "ouster" ordinance by a decisive vote—I might easily add, "of course." Why did they do it? Search me. Why did the intelligent electorate of metropolitan New York turn down John Purroy Mitchel and elect John F. Hylan their Mayor? Or Milwaukee reindorse Berger? Or—

But this is not a treatise on municipal politics. This is merely a statement of some rather vital dramatic facts in regard to the traction situation across the land. And as such a related fact comes the decisive vote of the citizens of Toledo on Tuesday, the fourth day of November, 1919. And Henry L. Doherty, the oil and traction man of New York, who numbers this railroad among many other properties, closed his desk in a small but very busy street in downtown Manhattan and hurried out to Toledo. There he sat with his Man Friday—Coates, the big framed and big minded president of the company—for three days more and awaited the formal receipt of the election return.

It came—with pomp and gusto from the City Hall, which forwarded it at once to the trolley company's headquarters. Coates hurried it to Doherty, in the hotel across the way. Doherty read it slowly; read it twice. Then the corners of a naturally humorous mouth began to rise.

"Will you do it?" he asked.

And the lieutenant replied with the remark quoted in the first part of this article.

Toledo, with all her great growth, has not yet progressed so far toward metropolitanism that Saturday night downtown has ceased to be a locally beloved institution. And a Saturday evening early in November, with the weather still holding a little of the mildness of autumn, sees the busy length of Jefferson street and other important downtown thoroughfares well crowded with shoppers, theater patrons and the like. The second Saturday of November last was no exception to the rule. The trolley cars—Cherry and Long Belt and Short Belt and all the rest of them—were working their way homeward well laden with tired folk. And there must have been another of those fall-time dances down at the Yacht Club. The folk who lived down on the road to Toledo Beach saw a pretty steady bound procession passing them toward that popular resort.

As the evening crept on there were



A reminiscence of Toledo's eventful carless days when the railway rolling stock reposed peacefully in Michigan.

of the City Hall was by no means appeased or silenced. No matter what decisions the federal courts might bring forth, it held a trump card in the fact that the term franchises originally granted to the Toledo Railway expired very early in that same year of 1914. Since that time it has operated the streets of its community purely on the basis of public necessity and without franchise rights of any sort whatsoever—a day-to-day agreement it is called—but the so-called agreement is hardly worth the paper upon which it is written.

Last June ex-President Taft's War Labor Board expired after making numerous and sweeping raises in the pay of street railway men across the land. Toledo shared in these increases; the platform men of its street railway, in particular, receiving large, and for the most part justified, increases in their pay en-

from its streets—to end abruptly the informal day-by-day agreement—and having passed the measure in its council chamber sent it to the electorate at the November election, in accordance with the workings of the initiative and referendum law of Ohio.

The local politicians had no intention of actually removing the trolley company from the streets. Oh, no, they were far too shrewd for that. They anticipated just what a storm such a radical step would bring, those politically wise old boys of the city by the broad Maumee. They would get the ordinance approved on the referendum—that would be easy—and with that approval sealed and certified they would have some little big stick to hold over the trolley folks. If they were not good, down would come the stick. But the trolley folks would be good. The Councilmen knew that. Councilmen



fewer of the cars. The runs became further and further apart. Gone into the barns for the night, you surmise. On any ordinary night—yes. But this was an extraordinary night in Toledo's history. The crews whose runs ended in the early evening and who reported with their cars at the barns to turn them in and get their time found that the day's work was not yet over. There were special runs on that night—at least so it seemed. Orders were curt and unexplanatory.

"Take no passengers and report to inspector at Cherry Corners," read half of them. The other half were equally unsatisfactory save that they sent the empty cars to the inspector at the corner of Cherry and West Central. Both of these men were veteran employees of the company—accurate and close mouthed. They had verbal orders as to what to do with the cars which began reporting at intervals of five or ten or fifteen minutes.

An empty trolley car marked "Special" in the streets of any large city is not a particularly noticeable thing. But a long string of them begins to be. And late that evening the telephone began ringing in the offices of the Toledo morning papers. The curiosity of the folk down on the road to the beach had been aroused. What sort of an affair was that going on down at the Yacht Club, anyway? Judging from the number of the cars that had gone down there to bring the crowd home, it could hardly be anything smaller than a state political convention. The city editors consulted their little news calendars, confirmed their suspicions by their telephones. There was nothing on that evening at the Yacht Club. The place had been closed for the season more than a fortnight.

The city editors swore great editorial oaths and speeded their nimblest reporters over to the trolley company's offices. The big street doors of the building were closed, and when a sleepy watchman answered to their pounding he said that they could come at eight o'clock on Monday morning and pay their light bills. More oaths. Desperation. Then reportorial ingenuity. Then reportorial eyes fell upon an ancient hotel the windows of whose upper floors looked into the lighted windows of a single floor of the darkened trolley building, windows which the news getters knew gave to the offices of the president and the general manager of its energies. Up to the fourth floor of the old hotel—

rent those rooms, for a night, for a week if necessary, shrieked reportorial ingenuity. One of the Toledo scribes had taken his wife to a show earlier that evening and made the lucky find of opera glasses in his overcoat pocket, which came into quick use.

It needed no opera glasses, however, to show Coates in his office—big of body and brawn, shirt sleeved, an unlighted cigar in his teeth—at his desk and telephone, tremendously busy about—something. And taking no notice whatsoever of the wild ges-

Toledo & Western tracks. Orders had been veiled and most secret. Few chances were taken as to the thing leaking. And the cars, having hit these two interurban tracks leading out from the town, were already safe in Michigan—and would stay there until the people of Toledo who had ordered them out asked them back again.

As a matter of recorded fact it was just 1:40 o'clock that Sunday morning when the final bunch of cars pulled into the Toledo Beach terminals, had the trolley poles carefully



When Toledo's cars went "on vacation" every other type of vehicle was pressed into service.

tulations of his newspaper friends in the hotel window across the way. After a time Coates did seem to see them. He came to his window and beckoned to the street door of his building. There he met them. It was just a very few minutes past midnight.

"I think that we will call it a day's work," said Coates.

"What as a day's work?" asked one of the scribes.

"We have taken the people of Toledo at their word," was the reply. "There is not an able-bodied trolley car left in this city."

Then he fell to telling them of the evening's work, of the careful plans that had made so daring a *coup d'état* possible, without a single soul becoming aware of it; how the cars that had been sent to Cherry Corners had been ordered on by the inspector there to Toledo Beach; those to Cherry and West Central on to the

removed and hidden—Coates proposed to take no chances with a mob movement of the citizenry of Toledo going out there and bringing the cars back by main force—with the drawbridge that crossed a small creek between them and the town opened and spiked open. The crews had to be brought back on work trains. And it was 6 o'clock on the Sabbath morning—dawn in trolleyless Toledo—before it was really a day's work ended for Coates and the big president of the trolley company went home to a well-earned rest.

### Jitneys Try to Do the Service

Toledo had little rest out of the situation. The city authorities who had put it into such a mess made strenuous efforts to replace the trolley service with jitneys of every sort and description, but with pitiful results. They appointed a traffic manager for jitneys and abolished the



charge for licenses for these, practically all traffic regulations as well. In response to these appeals, some 1,500 cars, of every style, vintage and description, appeared. They advertised routes—and then did not stick by them. On the contrary, they showed no disposition whatsoever to leave the “good streets,” where traffic awaited in large and profitable volume, for “lean” ones, which needed transportation service and in the days of the trolleys had it. They ran in routes and hours such as pleased their drivers, and for this vastly inferior service Toledoans were glad to pay anywhere from a dime upward.

In the meantime the federal courts, acting under the inspiration and keen judgment of Judge John M. Killits, were working to end the intolerable situation. The cry of “over-capitalization” was raised by the local newspapers. The trolley company suggested a valuation of its property. But the City Hall whined a protest that it lacked the money to take this step. The trolley company offered to put up the \$25,000 for it. But still the City Hall declined. Yet Killits persisted—the situation daily grew worse rather than better—and Toledoans faced a holiday season of vast trade losses, as a direct result of their own stupidity and shortsightedness.

Finally the truce was struck. Toledo had learned her lesson. Like a good sport she took her medicine. With Judge Killits as doctor and nurse she gave the trolley company its increased fare—6 cents, with a charge of 2 cents for transfers—and today is preparing a permanent agreement based on that which has worked so successfully in Cleveland and some other Ohio cities, and realizes, as perhaps some less-favored communities fail to realize, the value of the trolley car to her householders. If she really does that, perhaps the lesson has been well worth all that it has cost.

### Condition Is Serious in New York Also

If I have treated a really dramatic incident in our American municipal history with the journalistic touch, please do not think that I am for a moment overlooking its tremendously serious aspects. There was not a day in the following twenty-seven that the average thinking Toledoan did not come to realize just what the trolley car meant to his health, his happiness, his comfort—and his pocketbook. I think that here is a

thing that a good many of us Americans completely overlook. In the long years that I owned a house in an outlying district of Brooklyn it used to be a simple enough matter to step over to Flatbush Avenue for the morning trolley car into town and to curse out our own trolley system on those unfortunate winter days when the cars came all too rarely, in bunches, or, for hours, not at all. Then came a winter's day when they came not at all—all day long. A severe and unanticipated storm had caught the Brooklyn Rapid Transit napping and had completely covered its rails with several inches of ice and hard-packed snow, with the result that for forty-eight hours we had no trolley service whatsoever, and would have fared badly indeed if it had not been for the neighboring elevated railroad, which picked up a huge burden of overload traffic, ordinarily carried by the trolley cars.

On a day early in February I went from New York to a small city on the west bank of the Hudson River. It is reached by the West Shore Railroad, but in winter is not easily accessible by the New York Central. So therefore I had a small trunk and the necessity of reaching the West Forty-second Street ferry from the Hotel McAlpin, at Thirty-fourth Street and Broadway. The trip, hardly two miles, took nearly two hours. The severe storm of Feb. 5 had found an inefficient city administration sound asleep and so had all but completely paralyzed the street traffic of the largest city of the Americas. When one traveled one rode in taxicabs if one was lucky to find them, and paid fearfully high prices for bumping over ice-clad streets. The street railways? Alas, they were not available even for folk without trunks. They had made little headway against the storm—although in other years I had seen them conquer even greater ones—and after a few feeble attempts to battle against it gave up completely and suffered their rails to be covered and their trolley slots to be filled and clogged with ice which could not be removed, save by hard hand labor.

In those other years, however, the surface railways of Manhattan were still “going organizations.” They had pride and pep in their service; the sort of thing that in the days of the war we learned to call morale. Three years of bickering and conflict with a city administration without any constructive policy of its own, but merely a desire to make political capital at every turn by the

simple, and not original, processes of swinging big clubs and emitting great shriekings, had robbed our surface roads in New York of their last vestige of morale. They had lost heart and hope. They no longer cared. It was easier to quit than to struggle. And quit they did. While a great metropolitan city could thank each and every one of its lucky stars that it possessed a fairly complete subway and elevated railroad system. Without these it would have had to shut up shop completely.

As it was it has had to pay a great price for its own neglect and stupidity—according to the amateur statisticians some five million dollars a day—and is not yet done paying the bitter price. I rode from the McAlpin to the West Forty-second Street ferry, which boasts no subway or elevated railroad connections, in a taxicab and paid \$5 for the ride. The taxi driver earned every cent of his fare. We swerved through ruts and sank into deep holes. Second speed was the best that we could do. Once, in order to get around a truck blockade that had lasted for almost three hours, we rode for a space upon the sidewalk, and reached the ferryhouse in time to miss the train. It had taken us more than an hour and a half to traverse less than two miles of city streets.

Yet my loss, time and disposition and taxi fare, was as nothing compared with those of the business houses of New York. The repair bills alone to trucks of every sort in New York during February, 1920, must have come to astounding totals. Every garage in the community ran its shops night and day continuously and then found itself far behind the work offered to it. There was a shortage of spare parts, of tires, of gasoline. I do not believe the five million dollar guess the least bit of an exaggeration—not when one comes to consider the aggregate of loss in time to a whole cityfull of folk.

Yet, as I have just said, Manhattan Island had the benefit of a complete subway and elevated railroad system which never ceased to function for a moment, either during the storm or after it. Staten Island is not equally fortunate in her rapid transit facilities, and when, a few weeks before, the Midland Railway Company, which renders almost the sole transport service to a large and well-populated section in the center of that small borough, found its appeals for fare relief utterly ignored by the city authorities and so was



forced to suspend its service completely the commuters who had builded their homes along its lines in the hope and promise of at least adequate transportation facilities were left stranded. Apparently that hope and promise have meant little or nothing to the New York City Hall. Mayor Hylan sent a few of his trolley-breaking motor buses down to Staten Island, but the attempts at service that these rendered were so pathetic as to have been laughable were they not so tragic. The jitney drivers not only commanded such prices as the traffic would bear but, in the face of one of New York's heavy winters, ran when or where it pleased them, while the Staten Islanders begged for a return of their trolley cars—at a 10-cent fare if need be. The company had only asked for 7 cents.

### What Massachusetts Has Done

One other group of instances of what the trolley car means to the city man—and I shall try to draw one or two definite conclusions: Down in New England, where for a long time past living and wage conditions have been exceptionally high, the lines of the Eastern Massachusetts system—formerly the Bay State Street Railway—have had hard sledding indeed. In fact if it had not been for the action of the commonwealth in stepping in and practically guaranteeing the operating costs of the road, in a fashion similar to that of the city lines of Boston, I doubt if this system would have been able to keep its cars moving at all on a good part of its lines. It matters little that a good many of these were badly planned and placed; should never have been built at all. The kernel of the nut is that they have been built and operated continuously for a goodly term of years. And upon the predication of the continuation of such service men and women have gone out upon these lines and there built their homes. The question of fares is a secondary matter with most of these. The Eastern Massachusetts lines are today charging 10-cent fares, which seems to be regarded as a sort of maximum possibility for street railways, even in these extravagant days. And there has been comparatively little protest from folk who have had any real understanding of the situation.

The vital factor with these home owners is the continuance of the service; they feel that with efficient state regulation the fares will be held to a basis of decency at least. Jit-

neys will not do. Not only are there the service uncertainties of an unorganized business but the New England winters are ill suited for the operation of automobiles, particularly through the roads of the open country.

Yet upon jitneys the Mayors of at least four important industrial cities of eastern Massachusetts began to pin their faiths. Not that they had any particular love for this form of transportation, but, like the ouster ordinance of Toledo, it formed an admirable big stick to hang on the

case they suffered almost equally great inconvenience. For during both days it rained steadily and heavily. And within forty-eight hours the City Council was brought to the passage of a stiff ordinance regulating jitneys; classifying and limiting them to streets or routes not used by existing trolley lines. Upon the assurance of the passage of this ordinance the trolleys resumed operations and Lawrence breathed more easily.

Salem was a more refractory subject. On December 18, a fear-



Transportation under some difficulty on a Massachusetts electric railway last winter

wall and, school-teacher fashion, to be pointed at from time to time. So it was in Salem, in Lawrence, in Lynn and in Brockton—some other nearby towns as well—the jitneys, winked at by the politicians and taking a keen commercial advantage of the raised trolley fares, began multiplying in great numbers.

The trolley folk watched this situation with an ill-disguised impatience, and in the case of Lawrence took a decisive step on the day before Thanksgiving, 1919. Whether there was any significance in choosing such a holiday time I do not really know, but the fact remains that for that day and Thanksgiving Day itself the many lines of the Eastern Massachusetts in and through Lawrence suspended service entirely. And like the motorless Toledoans the motorless Laurentians either rode in a miserably inadequate jitney service—or walked. In either

fully cold day, with the average temperature at a bare 4 deg. above zero, she, too, in company with the adjoining communities of Peabody and Beverly, either walked or shivered in her beloved, and unheated, jitneys. The trolleys were completely withdrawn from the streets of all three towns, while their retail merchants, fearful of the almost total ruination of their Christmas shopping trade, besieged the Salem City Hall, with the definite result that before night the municipal authorities promised the enactment of a fair but restrictive jitney ordinance, and at once began the revoking of existing jitney licenses, which, in turn, meant the resumption of trolley service upon the morrow.

But Salem did not keep her promise. She juggled with it, politically. She toyed with a referendum election, stood politically first upon one foot and then upon the other.



The City Hall powers seemed to look with kindly eye upon the jitney drivers, until the exasperated trolley folk again were forced to suspend their service—this time in Salem alone, but for three bitter, stormy January days, the fifteenth, the sixteenth and the seventeenth. Heaven seemed to be in league with the Eastern Massachusetts in its fight for the square deal in each of its *coups d'état*. On the last of these three grinding days the Mayor of Salem took a train and went into Boston—went straight to the State House and into the office of the Governor. With a fine show of enterprise he demanded that the trolley cars be started—forthwith. The street railway company—remember, if you will, that under its system of trusteeship it has become to all intents and purposes a state-operated concern—put forth a few facts in rebuttal in regard to the jitneys.

The Attorney-General of the commonwealth sat close to the Governor's elbow. To him the chief executive turned:

"Are those jitneys in Salem running legally or illegally?" he asked.

The Attorney-General did not hesitate.

"Illegally," was his instant reply.

The Governor's jaw snapped shut. He is Coolidge—the same Governor Coolidge who occupied a fairly important role in the settlement of the Boston police strike last autumn.

"If Salem can't stop them, I can," said he quietly.

And, turning to his telephone, he ordered the chief of the state police into Salem on the next day. The troopers moved in there promptly. They found the trolleys all in normal operation again—in accordance with a request of the Governor—and the jitneys up to their old practices, running along the street car routes and underbidding them in fares. But only for a short time. Without fuss or feathers or any commotion whatsoever the state troopers moved. They cleared the Salem streets of these buses. They have not since returned.

Service has not been suspended either in Lynn or in Brockton. In the latter city a mere posted notice saying that continued refusal of the city authorities to co-operate would bring about a total cessation of service on a certain designated day was quite sufficient of itself. The Brockton City Hall co-operated—at once—as finally the Salem and the Lawrence City Halls had come to the same sage decision. But one shudders to think what might have happened if the

Eastern Massachusetts had been just a plain old grubbing private traction system, instead of a state guaranteed—and protected—service institution. I think, myself, that each of these towns would have had Toledo all over once again, with the probabilities that the combination of sullenness, misunderstanding and the hardest winter that New England has known in thirty-six years would have brought a suspension of trolley service for nearer forty-seven days than twenty-seven and with all the consequences that would certainly come with such a complete breakdown.

### Montreal's Development Promoted by Electric Transit

When the Canadian Northern Railway audaciously accomplished the impossible—a railroad entrance into the very heart of Montreal, by piercing a 2-mile tunnel under Mount Royal—it anticipated some future possibilities of its step by buying some thousands of acres on the north side of the mountain, directly across from the closely builded city side. These acres showed, mutely but unmistakably, what transportation means to the modern city. They were open acres indeed—fine fat truck farms and orchards, with here and there a 200-year-old cottage of a habitant showing itself—yet within 2 miles of the very heart of the greatest city of imperial Canada. In every other direction Montreal stretched herself, 4, 5, 6 and 7 miles. In that one the mountain stood, a seemingly impassable barrier to further development.

The Canadian Northern Railway folk, deciding to undertake the herculean task of tunneling Mount Royal because they needed downtown freight and passenger terminals in Montreal for their through traffic, foresaw the inevitable results of transportation through the mountain upon those self-same truck farm acres. Overnight they would rise in value, might double and redouble and redouble again. While the railroad itself would merely have the cost burden of the tunnel on its hand, to be distributed as best it might be upon its long-distance traffic. With that foresight as a guide it reached out and bought those truck farms and orchards, and decided that the benefits that would accrue to them, by reason of direct high-speed transportation, should be translated into dollars that would repay the greater part if not the entire cost of the tunnel and the terminals.

I wonder, myself, why there have

not been more instances in this country of a more direct connection between city transportation development and the certain development of real estate values that follows in its train. There have been isolated instances where this has been done—in a more or less indirect way. But on the other hand all too many instances where the trolley road or its big brother, the steam railroad, has starved while the real estate operators and the land-owning public generally have grown fat and rich at its expense. These are matters of record. They are indisputable. And it is just as indisputable that it is the expert real estate operator who realizes the most keenly the real value of the trolley car to the city man, who generally is the most active in trying to bring about co-operation with it, as well as a constant extension of its facilities. It is he who most quickly translates trolley service into assessed, or real, valuations.

### Transit Is a Necessity to the City Dweller

I bear no briefs or cudgels for the trolley companies across the land. I know where some of them have sinned, and have sinned grievously, but I feel today that there are more of them that are sinned against than sinning. From wine and cakes they have come to stale water and to husks. They have lived to repent most seriously of earlier sins, of omission as well as of commission. While the opprobrium which they have brought upon their right-minded and right-actioned fellows of the traction world is not to be counted as the least of their shortcomings.

But this is not the hour for re-cremations. The point that I am trying to make is that the soul or the conscience of a street railway has nothing to do whatsoever with the dependence of the householder upon its service. It may be the blackest of organisms. But to the man who lives upon its line it is a daily necessity—almost as his light or his water or his food or air itself. His health, his comfort, his happiness—the daily ordering of his life as well as the mere commercial value of his house and home—are vitally dependent upon it. Here is the rub. Here, it seems to me, is the pre-eminent and vital guiding principle that the City Halls of Toledo or New York or Salem or Lawrence or any other widespread and well-built American community can hardly fail to ignore.



# The Place of the Bus—III

## American Conditions, Under Which the Bus Is Preferable to the Car Despite Higher Cost of Operation and Consequently Higher Rate of Fare

By WALTER JACKSON  
Consulting Engineer

IN opening this study attention was directed to the extensive development of motor bus services by British tramways in co-ordination with their transportation on rails. No such extensive development exists as yet in this country, although the pioneer installation of buses by electric railways for the feeding of interurban lines was made as early as 1915 by Stone & Webster interests in the State of Washington, and even before that by certain city railways which wanted to obtain a first-hand idea of the cost of jitney bus operation. At first thought one would suppose that the thousands of individually operated jitney automobiles and jitney buses, which became so unpleasantly prominent about 1914, would have demonstrated where the superiority of the trackless vehicle does lie. However, as has already been shown, it is a lot easier for jitney drivers to travel in the old railway rut and to steal traffic than it is to break a new path and to create traffic. It is the exception to find a jitney operator habitually taking a short cut or driving around instead of through a congested district. Far be it from him to keep away from the thoroughfares where traffic is heaviest and to persuade the public to walk one or two blocks to patronize him.

Yet there is more than abundant proof that the one way to use the motor bus in the manner most beneficial to the public is to operate it in conjunction with the car service, but with as little duplication and overlapping of routes as possible. Necessarily, this implies operation under one management if not one ownership.

### WASHINGTON BUSES AVOIDED NEEDLESS INTERURBAN FEEDER TRACK

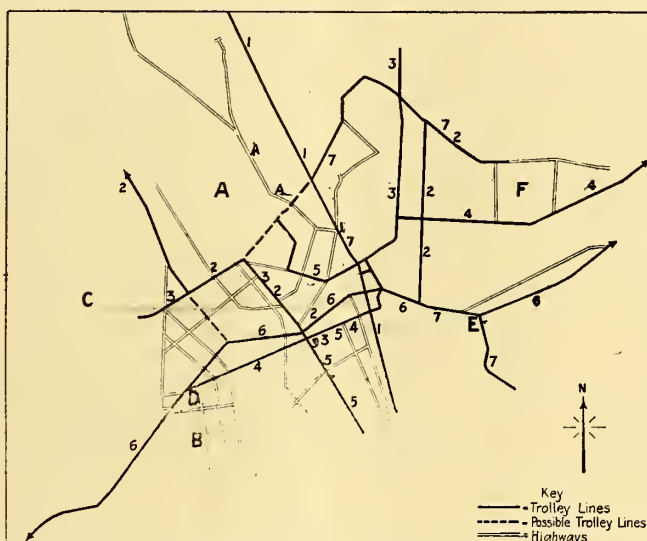
The experiment of Stone & Webster and the results thereof may be summarized as follows:

**Edmonds—Seattle Heights route**, 3 miles long over unpaved highway and steep grades. Population of Edmonds, 1,600. Object: To connect with Pacific Northwestern Traction Company. This line had to compete with a private bus service giving direct service between Seattle and Edmonds, and with the Great Northern, giving through service between Edmonds and Everett, also on the Pacific Northwestern. Service was discontinued after sixteen months. During the operating period of June, 1915, to September, 1916, there were operated 33,657 bus-miles with gross earnings of \$1,272.43, which gave the hopelessly low intake of 3.78 cents per bus-mile.

**Auburn—Enumclaw route**, 21 miles over a route unpaved at first and which included steep grades. Population of Enumclaw and intermediate town of Buckley, 3,000. Ob-

ject: To connect with electric trains at Auburn, such connections not being provided by the independent operators. Service discontinued after seventeen months. Monthly earnings of \$661 to \$1,177 failed to meet the cost of service.

**Puyallup—Orting route**, 10 miles long over paved highway with moderate grades. The company operated with buses withdrawn from the Auburn-Enumclaw route. Object: To connect Orting with the interurban railway at Puyallup, but in competition with through bus service to Tacoma, the destination of many riders from Orting. Competition and the small amount of traffic made profitable operation impossible. During the eight months of service there were operated 59,879 bus-miles whose takings averaged only 6.24 cents per bus-mile.



THIS IS A MAP OF THE CITY CITED AS CASE 3 AND SHOWS EXISTING CAR LINES AND ROUTES PROPOSED FOR BUS AND RAILWAY EXTENSIONS

The lesson to be drawn from these unsuccessful efforts to tie bus and interurban together obviously is that no such form of transportation can be successful if there are not enough customers to go around, if competition is unrestricted and if the direct bus service is preferable (whether from a time, money or comfort standpoint) to the use of two kinds of transportation. The amount of traffic carried did not justify the service, even after the bus is credited with bringing some patrons to the interurban. At the same time,

if the bus did not make any money for the railway it had the important, though negative, virtue of preventing it from losing far more on the construction of a track and line for the distance under consideration.

It is also clear from these experiments that so long as irresponsible, free-for-all competition is permitted the public will not enjoy that reliability of service and liability for accidents which are possible only through an established transportation undertaking.

The fourth, and surviving, route served by Stone & Webster interests is of entirely different character, its purpose being to afford a through bus service between Seattle and Bothell, a distance of 16 miles over well-paved highways. This line was opened in November, 1915. Up to June 26, 1916, it had to compete with a five-car company, but by Oct. 10, 1916, the last jitney operator had disappeared. The Seattle-Bothell route is an example of a clean-cut bus line from a large city to rather distant outlying communities which have no electric railway service.

A significant fact is that few users of this route took advantage of the 5-cent fare and free transfer privilege which would have enabled them to save money on the 5 miles (Cowen Park and city depot at Fifth and Pine Streets) within Seattle. Consequently, the



inter-line arrangement with the Seattle electric railway, then under Stone & Webster management, was canceled Aug. 1, 1917.

This is in accord with much British experience. Most of such passengers from outlying communities desire to reach the heart of the city as quickly and as conveniently as possible rather than go through the bother of transferring from one vehicle to another at the terminus of the trolley line. Where a higher rate of fare is charged on the bus than on the car—a procedure necessary in any case—the bus will not be slowed down too much within the city through use by short-ride passengers, while the facilities remain available for the out-of-town riders for whom the buses were specifically installed.

#### CALIFORNIA BUSES IN BOTH CITY AND INTERURBAN WORK

In 1917 the question arose whether the San Francisco Municipal Railway should build certain track extensions into sparsely settled territory or go to less expense by developing these districts through bus extensions. It was decided to install buses, of which six White nineteen-seaters were purchased for the following services:

Route No. 1, two buses, for transfer to and from "A" line, twelve-minute headway across Golden Gate Park for which a trackway was quite inconceivable in any case. Maximum ride possible for 5 cents 6.88 miles, made up of 4.8 miles on trolley and 2.08 miles on bus. Passengers carried April, 1918, were 632,664 on car and 34,654 on bus, a ratio of 1:0.054; bus riders during 1918, 367,751.

Route No. 2, one bus, for transfer to and from "B" line along Great Highway (ocean shore), fifteen-minute headway. Maximum ride possible for 5 cents 8.18 miles, made up of 7.06 miles on car and 1.12 miles on bus. Passengers carried April, 1918, 754,245 on car and 14,346 on bus, a ratio of 1:0.019; bus riders during 1918, 159,511.

Routes Nos. 3 and 4, three buses connecting with "K" line on Ingleside and Parkside routes (which had been combined to reduce losses), ten-minute headway. Maximum possible ride for 5 cents 7.74 miles, made up of 6.04 miles on car and 1.70 miles on bus. Passengers carried April, 1918, were 165,741 on car and 50,089 on bus, a ratio of 1:0.31; bus riders all of 1918, 496,036. (Discontinued April 12, 1919. Later figures will be given in the article on costs.)

The comparative speeds of cars and buses were: For nineteen-seat buses operating in sparsely settled territory 12.5 m.p.h.; for cars of more than twice the seating capacity, operating through the congested district in part, 9.4 m.p.h., including layovers. The writer figured at the time that each bus rider was subsidized to the extent of 2.1 cents per month, a loss which naturally has risen since. However, it is perfectly plain that the loss would have been greater if this thin traffic had been handled by means of a trackway. A bus service like this can be made self-supporting only by a transfer charge or modified zone fare.

Late in 1916 the Pacific Gas & Electric Company installed some twelve-seat buses on 1 and 2-mile extensions in Sacramento purely as an accommodation, as there was no profit in serving the sparsely settled districts that had asked for transportation.

The Pacific Electric Railway, operating in a state which has had a tremendous development in long-distance busing, has given thought to the motor bus as an auxiliary for both its city and interurban railways. Thus in 1916 it built at its Los Angeles shops two thirteen-seat one-man pay-leave buses with 30-hp. automobile engines to serve Arlington Heights, a Fresno suburb of 3,000 population. In this instance, also, passengers are carried in buses only from the terminus of the railway routes. In 1917 it was announced that the

company was building thirty-seat buses for the same service. Permits were also received to operate buses in San Bernardino County. In a recent statement the president of the company declared that its bus operation had not proved financially successful. Detail figures bearing out this statement will appear in a later article.

#### BRIDGE CONNECTION AT DUBUQUE AND CROSSTOWN LINK AT FT. WAYNE

Coming eastward, we find that on Sept. 4, 1914, the Union Electric Company, Dubuque, Iowa, installed a bus service over a 2200-ft. bridge to East Dubuque, Ill. (then "wet" territory), a community of 1,500 population. The round trip is about 3.5 miles. The fare is now 7 cents, or four tickets for 25 cents, and the service is entirely independent of the local street railway system as regards transfer privileges and the like. The fare includes a bridge toll of 1 cent per passenger. Two fifteen-seat gasoline buses are now used on a fifteen-mile headway, with one as spare, for since prohibition came July 1, 1919, traffic has dropped from 85,000 to 38,000 a month!

The crosstown link bus service installed by the Ft. Wayne & Northern Traction Company at Ft. Wayne early in 1917 was the result of a request from residents in the Bloomingdale district for connections to electric lines which were only 1 mile apart. This bus route was established, therefore, partly to please the patrons of the company and partly to determine the best route for an eventual crosstown trackway. The route connects the two railway lines at points about 1.5 miles from their respective suburban terminals. Four sixteen-passenger buses were purchased, but only two were used regularly, the others being kept as reserve. Operation was conducted for eighteen hours a day. The fare was the same as on the cars, namely, at that time, six tickets for 25 cents, including the transfer privilege. Ft. Wayne's present rate of fare is 6 cents. During the last ten months of 1917 the buses ran 93,012 miles at a cost per bus-mile of 12.084 cents.

A somewhat similar bus service was inaugurated in 1918 by the Winnipeg Street Railway for 1.2 miles on Westminster Avenue, between the terminal of one line and a feeder connection of another. (See *ELECTRIC RAILWAY JOURNAL*, May 1, 1918.)

#### BALTIMORE'S BUS SERVICE INDICATES POSSIBILITIES OF CONGESTION RELIEF

The University Parkway-Charles Street (2.63 miles) bus service of the United Railways & Electric Company of Baltimore has been discussed so extensively and competently by L. H. Palmer, assistant to the president of that company, in his paper before the 1919 convention of the American Electric Railway Association (*ELECTRIC RAILWAY JOURNAL*, Oct. 11, 1919) and in the *ELECTRIC RAILWAY JOURNAL* for Jan. 3, 1920, that it is necessary only to remind the reader that because this service is run by the railway itself (through the Baltimore Transit Company) overlapping can be reduced to a minimum. Furthermore, with the assurance that jitneys would not follow the car tracks this and future bus service could be routed from the viewpoint of affording alternative routes to and shorter routes than the street railway. At present both the cars and buses are operated at a 7-cent fare. Experience abroad, and here as well, indicates, however, that people will pay a higher fare on the buses if the latter can offer noteworthy advantages in speed because of long non-stop runs. This is not yet



the case in Baltimore, but doubtless will be when the company can treat its problem as a whole without worry as to jitney interlopers.

Within the limits of this article it is not practicable or desirable to list all the cases where electric railways have instituted bus services either directly or in co-operation with realty development companies, manufacturers and other parties, but one may say confidently that to-day both roads and vehicles have improved to the point where requests for service to thinly peopled districts can be best and most cheaply satisfied by the installation of the motor bus. From an account of what electric railways have done it is now logical to pass to a review of some of the things that they have not done but ought to do in this field. As examples, the writer will discuss three different situations with which he has been personally connected:

#### FORCING THE PUBLIC TO IMPROVISED MOTOR-TRUCK BUSES

In City No. 1 the electric railway had asked for an increased fare. The prevailing rate of fare was actually below 5 cents and one would have been inclined to recommend an increase out of hand. Unfortunately, the company could not show that it had been trying very hard to reduce its operating expenses or to pick up a lot of traffic that was literally begging to be carried. With a population of less than 100,000 it could not show a single safety car, and its general attitude on that subject might be summed up by the phrase, "Give us the increased fare now, and then we'll see if there's anything in this kind of operation."

The city had been growing beyond the terminals of the city railway for distances varying from  $\frac{3}{4}$  to 2 miles, largely through the establishment of big factories. The company could not raise the money to build extensions to serve these districts, as its operating figures showed a loss on the average length of ride already being given. Nevertheless, the employees of these new plants had to have some form of transportation. To meet this need, several of the factories started an auxiliary service for employees, using motor trucks fitted with benches, which were removed when the trucks were used for their other job of carrying material. Because of the inadequacy of this service the workers have little temptation to settle in cottages on the cheap land near the factories. They naturally prefer to live in town in order to be near the stores and center of amusement life.

As one result, the community had reached the point where it was quite ready to install a bus system indiscriminately and to let the railway die with all its imperfections and antiquated cars. The writer's investigation disclosed that an all-bus system would be far too expensive. What this community did need primarily was safety car operation for almost all the mileage, except that some of the big cars could be retained for rush-hour service after automatization with pneumatic door and step control, and, secondarily, it needed a few modest bus routes until the building up of the factory suburbs would justify track extensions. For this particular situation through bus routes into the city at a special fare were not desirable because the extensions were so short that the greater part of the run would be in direct competition with an underloaded street railway. Also when the bus services were confined to the comparatively short extensions fewer buses would be required; nor would it be necessary to use an elaborately equipped vehicle for ten-minute rides.

The proper plan appeared to be to charge an increment of say 2 or 3 cents for the ride between the street railway and bus terminals. This increment might be paid by manufacturers because of their being relieved of the costly and unsatisfactory use of motor trucks for passenger service. Similar arrangements covering car rides are actually in practice at Racine, Wis., and also on the Connecticut Company's line, since the coming of the zone fare. At Racine a factory on the outskirts pays directly to the railway 1 cent extra for every employee passenger entering or leaving via the turnstile station at the plant. In Connecticut a number of employers are making up for six months anyway the difference between the old 6-cent fare and the new 8-cent, 10-cent, etc., zone fares.

City No. 2 represents one of the growing number of cases where the congestion of certain car routes offers a tempting morsel to the bus promoter. In this instance, while the bus promoter was rather grieved that he was not permitted to run on the busiest street of the city he had the faith that there were enough good sports in the community to pay a double fare for the sake of enjoying a seat and more ozone. Here was an example of failure on the part of the electric railway to institute a bus service itself for the sake of relieving some lines and rerouting others. There must be necessarily a great difference between the policy of an independent and of a co-ordinating bus system. The independent company naturally wants to lap the cream of the railway traffic without regard to how such lapping will affect the finances or traffic currents of the railway, whereas operation of the buses by the railway can be helpful to the railway from the twofold standpoint of putting off the construction of costly extensions and of shunting away from overcrowded trolleys enough riders to make practicable an increase in the schedule speed, and therefore a decrease in the operating cost, of the electric railway routes.

#### WHERE SAFETY CARS, TRAINS AND BUSES WOULD MAKE AN IDEAL SYSTEM

City No. 3 offered the most interesting case of all. Here was a community of high industrial character and so compactly developed that jitney bus service on the heavy routes can be conducted for 5 cents at a fair profit against 6, 8 and even 10-cent fares on the electric railway. As a consequence, about half the traffic is carried by the jitneymen in buses averaging no more than sixteen seats. Aside from the lower fare, the jitenies appeal to the public because of immensely better headway and somewhat better speed between terminals.

In analyzing this situation with the view of determining whether the 5-cent fare could be restored to the greater portion of the city, the writer was struck by the fact that outlying factories and isolated localities were getting practically none of the service which the motor bus can handle so well. Several attempts to secure direct jitney service had been made by isolated plants, but a guaranteed return plus a premium for punctuality was not sufficient to tempt the jitney operators for any length of time. They were likely to disappear any time that bigger profits were to be had in the heart of the city with its short rides and sardine packing. Of the tens of thousands of workers, only a few hundred were found to be enjoying direct bus service for which they paid some 30 to 50 per cent more than for street car fare—and gladly.



So far as the isolated home area communities were concerned the jitney bus paid no attention to them at all. It is true that police regulations compel them to follow the car tracks, but this rule was made merely to prevent cut-backs and would not apply to a created route over trackless or partially trackless thoroughfares. The remarkable point about the chief isolated area is that it begins within a mile of the center of the city. It is on high ground of most desirable character for residential development. In fact, the trolley lines which flank this area are banked by the best houses in the city. However, because of the hilly country between, each trolley line represents a shoestring development hardly two or three blocks wide. The fare on one of them from city center to a terminus in another township is 8 cents for say 3 miles, while equally good city territory much closer in is almost untouched. The fact that nearly all the highways in this area are well paved in Warrenite asphalt seems to be no inducement to the jitney operator to create a traffic which could not be injured by any car route for years to come!

The solution proposed for City No. 3 contemplates a co-ordinated service that will give ample scope to both car and bus operation. By means of safety car operation it will be possible to cut present headways in half with little increase in operating expenses. This more frequent service will certainly wipe out the jitney operator's margin of profit. It will not pay him to come out only during the rush hours (when he is welcome) because of the heavy overhead which he must now meet in bonding liability, licenses, etc. Deprived of this skimmer of its non-paying rush traffic the railway will have to go to peak-hour train operation, which, of course, will also give higher platform economy. The combination of short-headway safety cars for most of the time and of train operation for part of the time will not only put the jitney out of business automatically, but will also make possible a greater length of ride for 5 cents than is now given for 6 cents. The return to a 5-cent instead of a 6-cent basis would also help to raise the schedule speed and please the public.

However, it is clear from the accompanying map that conditions in City No. 3 do call for a certain amount of bus service. Such service would not pay in itself and therefore would not attract independent operators. On the other hand, if operated by the electric railway in conjunction with the car routes two interesting and valuable results would ensue: First, the isolated areas would be opened up as feeders for the trolleys at an investment which grows only as the amount of business to be handled grows; second, direct routes between factory and home could be installed to shunt via shorter by-paths a lot of people who must now use roundabout trolley routes. These conditions may be referred to more specifically as follows:

Locality "A" is the area close to the business and social center of the city whose growth is hindered by lack of transportation. It is bifurcated by a road which lies between the two trolley lines "1" and "2" and farther on this road branches out most conveniently. In developing a bus service for this section it would not be necessary to run the buses all the way out at once, but simply to keep on extending and extending as the territory was built up. Then in the fullness of time the density of traffic would reach the point where the cost of rail operation would be cheaper. In this particular case conditions favor running the buses directly

into the center of the city, especially as the greater part of the run would be by bus.

Localities "B" and "C" may be considered together for a rather unusual reason. Locality "B" is an isolated peninsula which eventually will be all factory, but which is now part factory and part foreign settlement. The overflow from this settlement has, in large part, settled at "C," just outside the city limits. Many of the workers of locality "C" work either in "B" or in locality "D," which is shown on the way from "B" to "C." Unfortunately, the means of travel between all three districts are very poor. People living in "C" who want to find a way to patronize the car line have to walk a mile or so to the terminus of trolley route "3," on which the headways are not particularly good. At that cars of route "3" do not bring them anywhere near "B" or "C." They have to ride downtown to transfer to trolley route "4" and then return in the general direction from which they came. It goes without saying that most of the people prefer to walk in the comparatively straight lines offered by the highways than to take the roundabout rides by trolley. For this public a bus line is needed between "B," "D" and "C," including a connection to trolley route "3" at its terminus.

The purpose of showing three of the streets in peninsula "B" is to disclose the possibility of running the buses on each street in turn until experience has determined which routing will serve the greatest number. The choice of route is not obvious because most of the plants are off on the eastern side. In recommending a bus route to tie "B," "C" and "D" together the writer considered the saying, "Birds of a feather flock together." In other words, areas of like nationality have in common many social and business interests that will produce riding other than that between factory and home. Also in these times when so much is said about Americanization (it should be "humanization") it is a real service in patriotism to draw foreign communities out of their status of isolation. Transportation in this case means more mingling with the rest of the community, better attendance at night schools, theaters, and so forth.

The question of special bus services for factories assumes importance in this city owing to the radial character of the trolley system. North and south cross-town travel is out of the question unless one rides to the most congested part of the city first. Thousands of people who work in locality "D" are obliged to ride into town along one rib before they can ride out of town along another. The irony of this situation is that these riders do not patronize the transfer-less jitneys, but take longer rides on the cars than any one else. If handled by buses many of them would have a ride of but 1 to 2 miles instead of 3 to 4 miles, they would be home within fifteen to twenty minutes instead of thirty to forty-five, and they would have to pay only a very slight additional fare.

In like manner people working in locality "E" but living at "A" would be the gainers by a bus service that would either save them from transferring or would eliminate long walks.

The operator will naturally ask how a special-hour service can be made to pay even if a fare 50 to 100 per cent in excess of 5 cents were to be charged, according to distance. That this service should pay in itself, however, is hardly to be expected, but it can and should be made to pay from the standpoint of traffic relief as a



whole. For example, if this diversion of traffic can speed up the rush-hour car schedules by 1 m.p.h., the company would save daily a substantial sum which should be credited to the account of the bus.

It so happens that the hours of going to work and return from work in this city are spread sufficiently to permit two and possibly three to four loads morning and evening. In addition, the home-luncheon habit encouraged, let us admit, by the short-headway jitney will assure at least two loads in the middle of the day. Another favorable factor is that on several routes there is as much rush-hour traffic in one direction as in the other, owing to the commingling of factories and homes in almost all but the northern or "A" district and vicinity.

Now, to take a leaf from the trick-book of the jitneur, it will be unnecessary to have the buses lie idle when they are not in home-factory service. Many of them can be diverted to the sections serving the isolated com-

munities, aside from specialized livery operation. For example, part of the buses running between "A" and "D" can be shifted during the morning shopping and afternoon hours to the right-hand branch of bus-route "A," which leads into the business and social center. This would merely be doing in a large way what a two or three-route jitneyman does in a small way. As a matter of fact, no concern does this sort of thing better than the great London General Omnibus Company.

The dotted lines on the map on page 849 represent possible trolley links for special rush-hour routes to be built only after the bus has developed a sufficient density of traffic to insure profitable operation.

The foregoing examples by no means exhaust the ways of co-ordinating car and bus operation, but they are adequate to prove that there are possibilities under almost any conditions. In the next article to appear on this subject a discussion of some competitive and some *de luxe* bus services will be presented.

## A Massachusetts Company Starts Buses

Takes Over Operation of Jitney Route and Substitutes Up-to-Date Buses—Experimental Period Proved Service Justified Higher Fare Than on Trolley

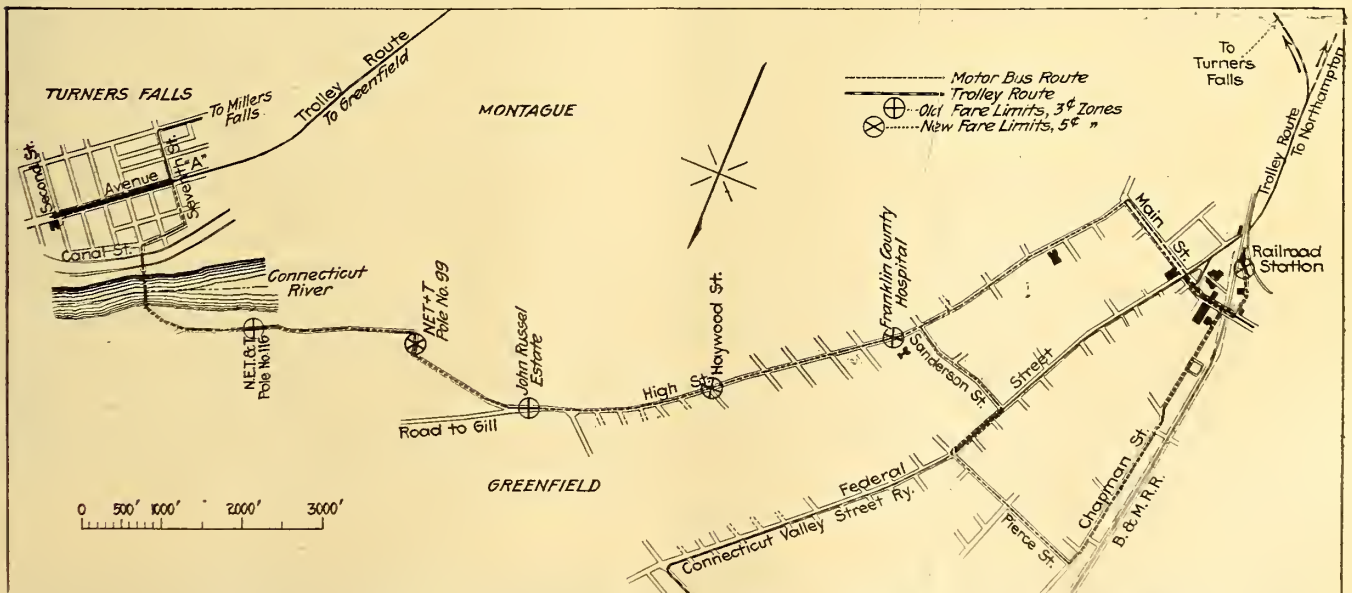
THAT an electric railway company can render high-class motor bus service at a reasonable fare has been demonstrated since Nov. 4, 1919, by the Connecticut Valley Street Railway Company. The public feels assured of the company's good will, for sufficient liability insurance is carried to protect both the passengers and the public.

For the last five years many Massachusetts electric railway companies have had more or less jitney competition, with the result in most cases that what had heretofore been paid out in dividends went into the jitney drivers' pockets. In 1915 independent jitneys began operating between Greenfield and Turners Falls in competition with the Connecticut Valley Street Railway Company. While the two routes did not cover the same intermediate territory, the revenues of the buses were derived very largely at the expense of the railway

company, as not enough new traffic was created to offset the railway losses. After the buses had been in operation about two years their revenue was estimated at not less than \$25,000 per annum, equivalent to about one-third of the trolley company's gross revenue received prior to competition.

The railway company naturally took various steps to regain the lost traffic, one of which was to cut the running time between Greenfield and Turners Falls from thirty to twenty minutes and to operate cars on a forty-minute headway. This change in schedule, while it slightly increased the revenue, failed to curb the jitney, which seemed to flourish, through lack of any regulations, until seventeen buses of various types were in operation between the two cities.

In 1916 the first of the present regulations under which buses are permitted to operate was enacted. The



PLAN SHOWING MOTOR BUS ROUTE OF CONNECTICUT VALLEY STREET RAILWAY BETWEEN GREENFIELD AND TURNERS FALLS WITH FARE LIMITS UNDER EACH ZONE SYSTEM



State Legislature that year granted all cities and towns of Massachusetts the right to regulate local motor bus service, but required that all buses be operated on a fixed schedule and under a liability bond to protect the patrons. In 1918 additional legislation was enacted, allowing electric street railway companies to own and operate buses, and in the following year all motor bus regulation and operation was made subject to review after April 1, 1920, by the State Department of Public Utilities.

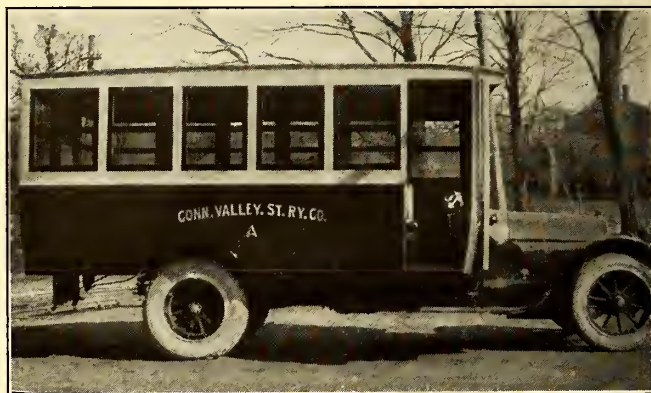
The Connecticut Valley Street Railway had long realized that its round-about trolley route of 4.8 miles could not compete with the shorter 3.14 miles motor bus route and retain the greater bulk of the traffic, nor could the single trolley line properly serve the intermediate territory along the bus route. Rights were therefore obtained under the recent legislation to operate buses over the 3.14 mile route heretofore utilized by the jitneys, as shown on the accompanying map. Service was inaugurated on Nov. 4, 1919, with half-hourly headways between Greenfield railroad station and Turners Falls. The bus route was divided into four zones,

tickets are good during the hours of 5 and 8 in both morning and evening and each ticket entitles the holder to ride from one terminal to the other.

#### SCHEDULES AND EQUIPMENT

The first bus leaves Greenfield railroad station at 6:15 a.m. and thereafter on a half-hourly headway until 10:15 p.m. In Greenfield, as will be noticed on the diagram, there are two alternate bus routes. The buses leaving the railroad station at fifteen minutes after each hour follow one route on both inbound and outbound trips, while the buses that are scheduled to leave at forty-five minutes past the hour follow the alternate route, thus giving hourly service in either direction over each route.

The running time between the termini on the bus is less than fifteen minutes as against twenty minutes on the trolleys. Two buses only are required to maintain this schedule, the third being held in reserve for inspection, repairs or emergency. The passenger-carrying capacity of the buses is limited strictly to their seating capacity. The bus operators receive the



TYPE OF NINETEEN-SEAT CADILLAC MOTOR BUS USED. AT LEFT, SHOWING HOW BUSES ARE SIGNED. AT RIGHT, SHOWING ONE-MAN ENTRANCE AND EXIT

each approximately 0.8 miles in length, and the fare was fixed on the mileage basis at 3 cents per zone, with the through rate fixed at 12 cents and the minimum fare at 6 cents for two zones or less. Free transfers were exchanged with the trolleys and vice versa and were accepted either on the buses or trolleys to the limit of the first zone. The fare on the round-about trolley line between the same two points is likewise based on the mileage basis. The through fare is 15 cents.

The company believed from its three months' experimental operation that the superior bus service justified a higher rate of fare than on the trolley cars and on March 15, 1920, the fare was increased to 4.75 cents per mile, with the minimum fare at 10 cents. Transfer arrangements between the buses and the trolleys were entirely eliminated. The Rooke automatic register is used on the buses for making all fare collections.

Under this plan the bus route was divided into three 5-cent fare zones, each zone being slightly more than a mile in length. The 10-cent minimum fare entitled passengers to a continuous two-zone ride and for each additional zone or fraction thereof ridden 5 cents was collected.

For the convenience of the regular rider since the fares were increased on March 15 workingmen's tickets, so called, are sold in lots of twenty-five for \$3. These

maximum rate of wages paid the motormen and conductors on the trolley cars.

The automotive equipment to furnish the motor bus service consists of the 1919 model 57-B Cadillac chassis, embodying several changes by the makers to cover the heavier service requirements, namely, the chassis was lengthened 10 in. to permit mounting a 14-ft. body, having an outside width of 7 ft.; larger springs were substituted and the gear ratio was modified to reduce the maximum speed. Larger and heavier pneumatic tires are used throughout, 35 in. x 5 in. being used on the front wheels and 37 in. x 7 in. on the rear wheels. All bus bodies were built by the Unit Manufacturing Company of Amesbury, Mass., and have the entrance and exit through a front right-hand door which is interlocked with the step and manually controlled by the bus operator. An emergency rear door can also be operated in a similar way. Heywood Brothers & Wakefield cross rattan seats are provided for the nineteen passengers. The buses are also electrically lighted, have push button signals to the operator, drop windows and heavy rubber mats on the floor.

#### COST OF OPERATION

Two buses were placed in service on Nov. 4, 1919, and for a period of ninety-four days earned \$5,458.66, or an average of \$29.01 per day per bus. The mileage



INCOME STATEMENT

|   | Total      | Per Bus-Mile (Cents) |
|---|------------|----------------------|
| Operating revenues.....   | \$5,458.66 | 21.56                |
| Operating expenses:   |            |                      |
| Wages of bus operators and repairmen.....                               | 2,162.00   | 8.53                 |
| Gasoline—3,625 gal. at 26 cents.....                                    | 942.50     | 3.72                 |
| Oil—188 qts. at 20 cents.....   | 37.60      | 0.16                 |
| Tire allowance.....   | 761.40     | 3.00                 |
| Insurance.....  | 282.00     | 1.13                 |
| Depreciation.....   | 2,030.40   | 8.00                 |
| Total operating expenses.....   | \$6,215.90 | 24.54                |
| Deficit from operation.....   | \$757.24   | 2.98                 |
| Taxes.....  | 100.00     | 0.40                 |
| Interest.....   | 225.00     | 0.89                 |
| Net loss from bus operation.....  | \$1,082.24 | 4.27                 |
| Saving on trolley car operation, 140 miles per day at \$35 per day..... | 3,290.00   | *25.00               |
| Net revenue from operating buses.....                                   | 2,207.76   | 8.72                 |
| Bus-miles operated.....   | 25,385     | .....                |
| Average miles per gallon of gasoline.....                               | 7.0        | .....                |
| Miles per quart of oil.....   | 135.0      | .....                |

operating costs. The accompanying income statement shows the results in total and per bus-mile operated for ninety-four days' operation commencing Nov. 4, 1919.

Paulista Railway Electrification

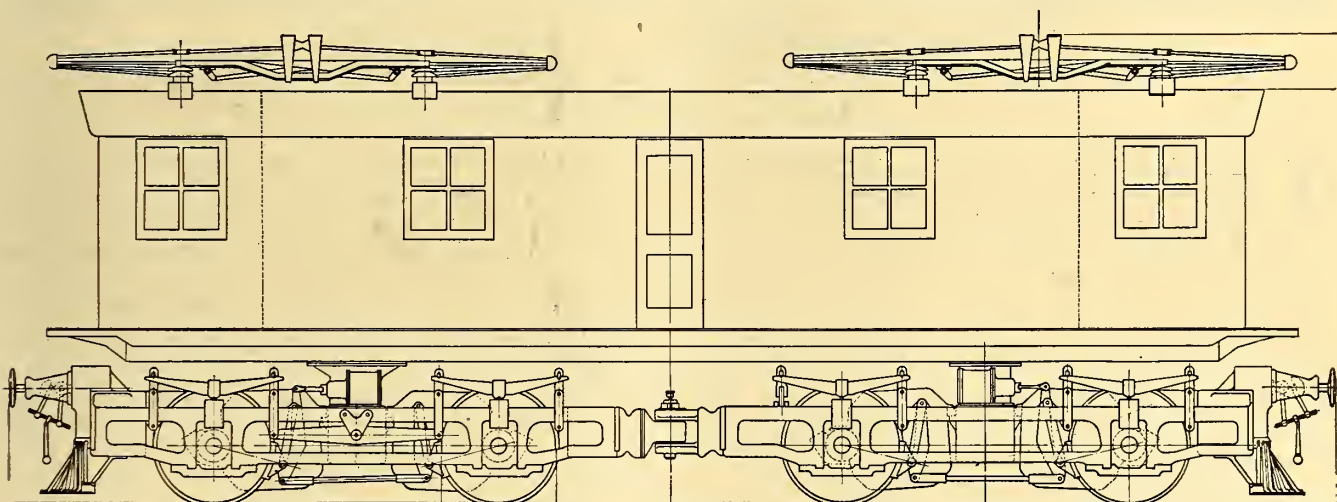
Line in Brazil Having 28 Route Miles Will Be Equipped for Operation at 3,000 Volts, Direct Current

THE double-track line of the Paulista (Brazil) Railway, between Jundiahy and Campinas, will be electrified at once, on the 3000-volt, direct-current system. The route mileage is 28, the total length of single track involved being 76 miles. A later 100-mile extension from Jundiahy to San Carlos is contemplated.

The locomotives will be of the geared type and these and the overhead construction will be designed after the models furnished by the Butte, Anaconda & Pacific and Chicago, Milwaukee & St. Paul Railways. The locomotives will be similar to those used on the former, as will be seen from the accompanying illustration, but they will be furnished with regenerative braking control. There will be eight freight locomotives weighing

operated was 25,385, equivalent to 135 miles per bus per day. The earnings per bus-mile thus average 21.56 cents.

The cost of operation of the service rendered for the same period, which covers not only the wages of repairmen and operators, gas, oil, etc., but overhead



SIDE ELEVATION OF 100-TON ELECTRIC FREIGHT LOCOMOTIVE FOR BRAZIL

expenses, including really a larger depreciation reserve than necessary, indicates that the buses were run at 25.73 cents per bus-mile. In these costs depreciation is figured at 8 cents per bus-mile, which would extinguish their initial cost of \$4,800 at approximately 60,000 miles. It is fair to say that this rate of depreciation is high and does not consider the scrap value of the bus, nor does it take into account the fact that the automotive power plant depreciates faster than the rest of the equipment.

Another factor to be considered by the company is the net cost of operation of the property as a whole, for as the result of the bus operation there was a saving of 140 trolley car-miles per day between Greenfield and Turners Falls. If only the actual cash expenditures of \$35 per day to provide this car mileage is considered, added to the net income from the bus operation, the result would be then a fair surplus instead of a deficit, as would be the case if the bus operation was considered as standing alone. Then too, the daily bus earnings show an upward tendency, and it must also be remembered that for a part of the period of operation heavy snows materially increased

100-tons each, with all weight on the drivers, and four 120-ton passenger machines with two guiding axles at each end.

The locomotives, overhead contact and transmission line material and substation equipment will be furnished by the General Electric Company. Power for operation will be furnished at 88,000 volts, 60 cycles by the Sao Paulo Light & Power Company.

Accident Fatalities in Cleveland

IN commending the work of the local Safety Council, Dr. H. L. Lockwood, Health Commissioner of Cleveland, Ohio, has given to the council the following data (see *National Safety News*, March 22):

ACCIDENTAL FATALITIES OCCURRING IN CLEVELAND DURING 1918 AND 1919

|                     | Jan. 1 to June 30, 1918 | Jan. 1 to June 30, 1919 | July 1 to Dec. 31, 1918 | July 1 to Dec. 31, 1919 |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Railroads.....      | 30                      | 22                      | 29                      | 27                      |
| Street cars.....    | 16                      | 9                       | 22                      | 23                      |
| Automobiles.....    | 46                      | 63                      | 143                     | 73                      |
| Other vehicles..... | 7                       | 4                       | 8                       | 10                      |
| Other causes.....   | 18                      | 11                      | 27                      | 12                      |
| Total.....          | 117                     | 109                     | 229                     | 145                     |





CLEVELAND'S PUBLIC SQUARE, UNDER WHICH COMMISSION PROPOSES THE LOCATION OF LOOP SUBWAY STATIONS

## Rapid Transit for Cleveland

April 27 People Will Vote on Plan for Relieving Street Congestion, Involving Subway with Loop Stations Under the Public Square

BY HENRY M. BRINCKERHOFF

Of Parsons, Klapp, Brinckerhoff & Douglas, Consulting Engineers, New York City

**T**HE PLANS of the Rapid Transit Commission of Cleveland for a group of short terminal subways for street cars, leading to loop stations under the Public Square, are now before the people of that city for consideration and will be voted upon at the election April 27. These plans\* call for a bond issue by the city of \$15,000,000, most of the interest on which is to be spread upon the general tax levy. The Cleveland Railway is to operate the car service in the subways under an agreement with the city, which is essentially the Tayler plan, enlarged to cover this new service. The company will pay the interest on the tracks and electrical and other equipment in the subway, while the city will own the structures themselves, pay the interest thereon and control the train and car service under the Tayler plan of regulation.

An interesting question arises in this connection as to the principle underlying the construction of short sections of subways in the center of the city as a "first step toward rapid transit," as is stated in the commission's announcements. In the following the writer presents a brief statement of the basis of the plan and the warrant for the phrase just quoted:

### DUPLICATION OF TRANSIT FACILITIES IS COSTLY

Cleveland has just reached the point where its metropolitan district houses 1,000,000 people. Cities which have passed this mark, such as Philadelphia, Chicago, Boston and Brooklyn, commenced the development of rapid transit systems when they were at or near 1,000,000 in population. The general public demand for a rapid transit service is therefore normal as viewed from the standpoint of experience and the development of cities which in population and area have grown to perhaps twice the size of Cleveland today.

\*See issue of ELECTRIC RAILWAY JOURNAL for July 12, 1919, page 71.

In studying the larger cities from whose traction history and present condition certain valuable lessons can be learned, we must remember that their surface and rapid transit lines were built under private initiative and on a competitive basis. Much of the trouble lying at the bottom of the present public complaints of inadequate service is due to the practical financial difficulties of earning fixed charges upon the investment in duplicated and competing lines. This, coupled with a natural public demand for a low rate of fare, exaggerates the effect of the economic waste of two competing systems as against one unified consolidated set of transportation lines.

From the viewpoint of the car riders the ideal system in a large city would be one giving the freest possible use of all lines, surface and rapid transit, by universal transfer of passengers and the arrangement and co-ordination of each class of service completely to cover and serve the constantly broadening city area.

An effort to produce such a co-ordinated system in the larger cities today develops at once the fact that there is a considerable duplication both of physical structures and investment, as the tracks and equipment are in places in duplicate and often parallel, due to their competitive origin. If these tracks and systems could be completely wiped out and a carefully planned, unified system substituted the rapid transit trunk lines could be used for the congested and long-haul business and the surface cars run as feeders to these trunks to accommodate the strictly short-haul traffic. Thus, much better accommodations could be afforded the public at less original cost and at a lower operating expense.

Given a city like Cleveland, therefore, without any rapid transit development, and looking to a future city of perhaps twice its present size, it is reasonable to propose so to plan the initial steps of the rapid transit lines as to avoid the obvious shortcomings seen in the



dual competitive systems found in our larger cities. The fact that Cleveland has controlled its street car service for the past ten years under the direction of a city commissioner makes easy the task of dealing with the practical operating questions of such a combined service.

With the present high cost of materials and labor in all construction and with the proposal to expend public money upon permanent structures without thought of profit the obligation lies heavily upon the engineer to plan the system so as to make each dollar build the maximum of facilities and the design provide for the greatest economy in running costs.

SOME DETAILS OF THE COMMISSION'S PLANS

The plan proposed by the Cleveland commission attacks the problem by first bringing the surface car lines to their maximum capacity and usefulness.

The principal difficulty with the existing Cleveland surface car lines lies in the congested condition of all traffic in the central business district. Forty-five per cent of the passengers riding on the street car lines entering this district ride to or through the Public Square or its immediate vicinity. The greatest volume of long-haul traffic in the city is east and west, parallel with the lake shore, and passes through the Public Square.

The principal surface car lines entering this central district will under the proposed plan be run down into the subways before reaching the congested area. The result will be that with the wide streets comparatively unobstructed in the outlying sections and with the cars in the subway in the congested districts a very much more regular and higher speed service will be rendered than at present.

The elimination of congestion in the Public Square district during rush hours will not only save a certain amount of time for the rider, but make it possible to load fully for the outlying tracks, which now have greater capacity for car movement than can be passed through and loaded in the Public Square and congested delivery district. This will therefore result in making it possible to run many additional cars, with consequent greater comfort to the public and greater earning capacity for the system.

The arrangement of the subway tracks in the Public Square is such that the radiating street car lines can be operated independently from this point in various directions or can be connected up and run through across the city. The loading platforms, switches, loops, etc., are so designed in this central subway transfer station as to permit through routing of a part of any of the surface lines and the turning back of the unbalanced portion. In this way the usual practical objection of through routing is avoided, as no idle car mileage need be run, but the through cars can be proportioned to the actual demand for through service and the heavier end of the line fully supplied with cars without running useless mileage on the lighter side of the city. It will be admitted that this should produce a street car system operating under the most favorable conditions for the rendering of regular, uninterrupted and high-speed service to the traveling public.

The question of rapid transit is answered by designing the sections of the subway, the loading platforms, curves, loops and all clearances so that trains of standard rapid transit cars can be run through these subways. The development of separate rapid transit train

service on any one of these lines can then be accomplished by extending any one of the five radiating subway sections far enough to warrant such service.

It is contemplated that it may be possible to connect the present short subway sections to elevated lines or to lines on private rights of way or even to use some of the steam railway lines to reach the outlying districts. The present subway construction is therefore literally a *first step in rapid transit*.

If one of the present short sections is extended, as for instance the Euclid Avenue section, for several miles train service can be placed in this subway and a limited number of street cars continued to be operated upon the street car tracks directly above. As this plan contemplates a unified system, operated by the same company and under city control, transfers can be given from the rapid transit line to the street cars by vertical transfer at station points. The subway trains will then perform



OUTLINE MAP SHOWING PROPOSED RAPID TRANSIT DEVELOPMENT FOR CLEVELAND

the function of express service and the street cars on the surface tracks above will operate as local service, making frequent street corner stops. The subway trains will stop only at stations spaced at about one-third-mile intervals. In the building of further street car lines or in the rerouting of the existing lines further development of this idea can be obtained by running cars directly to certain stations on the extended subways where transfers can be given to the trunk or rapid transit subway trains.

Thus it is planned to develop a system which will produce a thoroughly co-ordinated development of surface and rapid transit lines.

COMMISSION ESTIMATES A RAPID TRANSIT INVESTMENT COST OF BUT \$75 PER CAPITA

It is interesting to note in this connection that cities such as Chicago, Boston, Brooklyn and Philadelphia have from \$95 to \$110 per capita invested in their combined surface and rapid transit lines. A study of a plan for a city such as Greater Cleveland when it shall have grown to a population of 2,000,000 indicates the possibility of developing a satisfactory trunk line rapid transit system giving transfers to a surface system with



radiating or crosstown street car lines at from \$70 to \$75 per capita.

The economic value of locating and building the rapid transit lines so as to utilize effectively the street car lines to their maximum capacity as feeders and for local hauls is obvious. This will avoid the evil of competing lines and effect a great saving in investment, while at the same time keeping the whole system under one management and city control.

The objection made by those familiar with the transportation system of Boston that a similar plan in that city resulted in high rates of fare and excessive investment per capita misses the very essence of the proposed Cleveland rapid transit plan. The Boston system started with street car subways in the downtown district, but the subsequent development has been allowed to run into the excessive building of expensive rapid transit subways and tunnels. The high cost is partly due to the separation of the various parts of metropolitan Boston by waterways requiring long subaqueous tunnels. Narrow and crooked streets have made difficult the full development of surface car lines. In Boston also the interest charges are all carried by the car riders.

In Cleveland, with its wide streets and with only its single river and valley separating its principal metropolitan area, no excuse arises for such great expenditures in subway and tunnel construction. The commission's plans also provide for relieving the car rider by spreading the fixed charges largely on the tax roll.

#### "THE FIRST STEP IN RAPID TRANSIT" FOR CLEVELAND

The Rapid Transit Commission's plan in Cleveland will in this first step create a hub with radiating spokes, any one of which can be developed by extension into the outlying districts of the city. The extension of any one line must depend upon the traffic development in the district such as to warrant the extended building of the permanent rapid transit structures and the operation of trains.

"The First Step in Rapid Transit" is therefore a justified expression as the development of this system is planned. It is proposed to attack first the most vital difficulty confronting the city, namely, that of congestion and delays to the existing service. Outlying rapid transit lines not traversing this downtown district and leaving the street car lines choked and throttled by vehicle traffic would not be a justifiable first step. More of Cleveland's own citizens will be benefited by the present proposed first step than by the expenditure of an equal amount of money in a single competing rapid transit line in any one of the various radiating directions followed by its main thoroughfares.

#### A. L. A. to Help Industries

The American Library Association, which during the war supplied the men here and overseas with more than 7,000,000 books, is undertaking an enlarged program through which it hopes to create a far wider reading interest throughout the nation. Through librarians, library trustees and friends of libraries it is now creating a fund of \$2,000,000 to aid in a general campaign for Americanization. In this direction the association will encourage the establishment of technical libraries in plants and factories; will further the county library system, etc.

## Rezoning Effective on May 9

### Connecticut Company to Appeal from Commission's Decision on Reduced Rates for Zone and Commutation Tickets

PRESIDENT LUCIUS S. STORRS of the Connecticut Company on April 21 issued a statement that the company would appeal to the Superior Court of Hartford County from the recent decision on the zone system of the Connecticut Public Utilities Commission, in so far as that decision affects its "fundamental rights," the specific complaint being that in allowing commutation tickets the commission virtually confiscates the property of the company. The appeal, however, will have no effect on the new rates ordered in effect for May 9 by the commission. The company is hard at work rezoning its system on the mile-zone basis.

The statement sets forth that it is the belief of the company that the commission exceeded its powers in suggesting the installation of reduced rate tickets. It also contains a warning that it may be necessary to increase fares further or eliminate service on some lines altogether in case the proposed rates do not produce sufficient revenue. Reduction of revenue can be prevented only by a greater use of the service.

Mr. Storrs' statement follows:

#### COMPANY WILL APPEAL

The directors of the Connecticut Company have made a careful study of the finding and order of the Public Utilities Commission regarding the system of fare collection and rates installed by this company in November 1919.

In adopting this system our primary object was to preserve to the communities served the extensive fabric of street railway facilities which had been developed during a period of many years and upon which the social, business and industrial life of so large a portion of the state depends.

We regret that the commission did not see its way clear to permit a longer trial of the system which we had adopted after such careful consideration and comprehensive survey of the riding characteristics on all lines, but it is our intention to place the new schedules in effect as proposed, using our best endeavors to make the plan a thorough success.

It is gratifying that the commission so fully approves the method of collecting fares based upon the distance traveled and we appreciate that the commission has been most desirous of affording a just and proper solution of the many difficulties inherent in the situation. Both the commission and the company are endeavoring to obtain the same results, but, as is pointed out in the finding, full co-operation of the public is necessary to enable the company to maintain adequate service. It is, of course, essential that our revenues are not reduced and this can only be accomplished by a greater use of the service under the proposed rates of fare. We think that the theory upon which all street railway fares should be based—that of giving the maximum of safe and convenient service at a minimum charge—does not justify the making of any reduction from established cash rates for any class of riders.

It is to be hoped that such use will be made of the service under the proposed rates as will produce sufficient revenue in order that it may not be necessary further to increase the rates or materially reduce the service which on some lines would result in the entire elimination of the street cars.

There is a legal question involved and we are advised by our counsel that it is probable the commission has exceeded its powers in suggesting the sale of tickets at reduced rates and the installation of commutation tickets. In view of this fact the company has felt constrained to file an appeal with the Superior Court, but with the definite desire of not contesting any further than is necessary to preserve our fundamental rights at this time.

Until the rezoning, which is now in progress, is completed no estimates can be made as to the effect of the proposed rates upon any particular fares.

An interview with the commission prior to the time the company decided to appeal the case brought out



that it was its intention to increase the income as a whole and to establish lower rates for the regular rider. It believed that the casual patrons, including those that rode only when other forms of competitive transportation were not available, should pay a higher rate and for that reason made the cash rate per zone 3 cents. With the new zone rates established and good merchandising methods on the part of the company, the commission said that it hoped that a larger income would be derived from the passenger business without discriminating wholly against the suburban rider. The increase in revenue under the plan should keep pace with the increased cost of rendering service. To reduce expenses and taxes, the commission urges that the company be relieved of paving charges, bridge assessments and other forms of indirect taxation that it is now required to pay at the expense of the car rider.

In pushing out the minimum fare limit a half mile from the traffic centers the commission also hoped to decrease the travel on jitneys, providing the company rendered adequate short-line service out to this fare limit.

The commission believes in up-to-date merchandising methods in the way of advertising in the cars, to bring to the attention of the car rider the unnecessary burdens that are now imposed upon him because he rides upon the cars, and what these burdens mean not only to the local company but to the street railway industry as a whole.

Commutation and zone tickets were established because the evidence at the hearings showed that the existing zone fares were discriminatory against the suburban rider. The commission also held that the use of such tickets would speed up the fare collection on the cars as it would eliminate a large percentage of the change making at the unloading points. The principle of pay-leave as the best system of fare collection under a distance tariff was indorsed.

The commission retains jurisdiction over the zone system established, not only as to the location of the zone limits but as to the rates themselves, and should it prove after a fair trial that the system does not earn sufficient revenue to pay a reasonable return, the ticket rates will be increased gradually until they reach the cash fare rate of 3 cents per zone.

WHAT SOME NEWSPAPER MEN THINK

When the finding was discussed with several daily newspaper men, one stated that he believed that the decision would simply reduce the trolley income without lessening expenses and that the cost of operation would very likely be increased because the trainmen might ask for additional wages due to claims of extra work. While it is true that the commission urges a reduction in taxes, both direct and indirect, and the elimination of unfair competition, this cannot be accomplished until the next legislative session, which does not meet until 1921.

The commuter, he said, is the only one who can rejoice over the finding, for he is favored with a lower rate. For a little more than half the amount of fare the casual must pay, the commuter can make his daily journeys. The city rider who buys the new zone tickets will ride for two-thirds of what the casual rider will pay. The unearned increment of the suburban land owner is safeguarded, and the rural dweller's property values are increased at the expense

of the trolley company, which is made a public benefactor without a chance of getting any reward.

Having established new rates, the commission assumes responsibility for the financial future of the company. If they result in further deficits the fault will rest with the commission, for the company under its own plan has been receiving a material increase over that earned with the 6-cent fare. Any criticism of the Legislature for failure to grant the relief suggested will under these circumstances avail nothing. The commission should consider conditions, not possibilities, and if the conditions it is creating are to make the trolley situation worse than it now is, instead of better, its obvious desire to placate complainants must bring a reaction.

Bridgeport is particularly displeased with the result, for an element there sought to have the lines in that city segregated and operated under a nickel fare with safety cars. While the commission has properly denied the segregation claim, nevertheless the city is greatly agitated over the high cash fare and the discrimination in favor of the rural dweller. One editor says, "the more one studies the zone fare order the more ridiculous, impractical and harmful it appears. It is full of high-sounding phrases such as 'inequalities of fares,' which it promises to adjust, yet the actual effect of its adjustment is to make them more unequal than ever."

At the hearings several cities and towns indorsed the company's plan and believed that it entirely safeguarded the public welfare, but now Waterbury and New Haven show no great pleasure over the finding.

Careless Drivers and Reckless Boys

THE accompanying illustrations are reproductions from current bulletins issued by the National Safety Council. The one at the left is accompanied by an appropriate illustration of the accident described, a hazard to passengers and rolling stock that is growing more serious each day. A circular letter accompanying the bulletin directs attention to the fact that while the motorman cannot always foresee possible accidents, such a bulletin as this will serve as a reminder to him

Watch Out When Passing Loaded Wagons and Trucks

This careless driver turned to the right as the car was passing and the protruding ladders broke several windows. Broken glass causes painful injuries.

Go Carefully As You Never Can Tell What a Driver May Do

You Know He Is In Danger Do Not Scare Him

If you do, it may cost the lad his life or limb.

STOP THE CAR

Go out to him—explain that he might be killed—if a persistent offender he should be arrested.

THE TEXT OF TWO RECENT BULLETINS ISSUED BY THE NATIONAL SAFETY COUNCIL

to be constantly on the lookout for this specific hazard. In such accidents the burden of responsibility is placed first on the motorman, notwithstanding the fact that investigations usually show that the driver of the wagon or truck was at fault.

The bulletin at the right is accompanied by an illustration showing a small boy "flipping" a car. An accompanying letter states that conductors should be instructed to handle the boy problem tactfully and especially to avoid frightening boys, for it is while frightened that they are most likely to be injured or killed. It may be advisable to station supervisors at certain points where boys are especially troublesome.



# American Association News

THE ANNUAL CONVENTION OF THE A. E. R. A. WILL BE HELD IN ATLANTIC CITY, OCTOBER 11 TO 15. WAY COMMITTEE HOLDS TWO-DAY SESSION. MERCHANDISING TRANSPORTATION DISCUSSED AT COMMITTEE MEETING IN NEW YORK

## Convention at Atlantic City, Oct. 11 to 15

THE thirty-ninth annual convention of the American and affiliated associations will be held at Atlantic City, N. J., from Oct. 11 to 15, inclusive. Announcement of this decision has just been made, following a meeting of the committee on location held at Atlantic City on March 24 and after the committee had considered a number of other locations.

A committee on exhibits and other convention committees will soon be appointed to begin active preparations for what is expected to be the largest and most successful annual convention ever held by the association.

Work on the program of the American Association meeting is already under way and the programs for the affiliated associations have been practically completed. From the interest already shown by the manufacturer members this year's exhibit of apparatus and devices promises to surpass anything held in previous years.

Contracts have been entered into with the management of Young's Million-Dollar Pier, where the convention and exhibit will be held; with the Atlantic City Hotel Men's Association, with C. M. Koury & Company, for furniture, rugs and furnishing; with J. J. Habermehl's Sons, for floral decorations, and with the Eldredge Express Company, for hauling exhibitors' materials.

The members of the committee on location are George Keegan, chairman; Martin Schreiber, John M. High, W. R. Hulbert, Thomas Casey and E. B. Burritt, secretary.

## Two-Day Session of Way Committee

THE committee on way matters met at association headquarters in New York on April 15 and 16. Those members in attendance were: R. C. Cram, Brooklyn, chairman; A. E. Harvey, Kansas City, Mo.; H. A. Abell, Rochester, N. Y.; C. A. Alden, Steelton, Pa.; Victor Angerer, Easton, Pa.; E. B. Entwisle, Johnstown, Pa.; E. M. T. Ryder, New York City, and H. Fort Flowers, New York City.

On the subject of standard specifications for track spirals, a system of spirals as prepared by the subcommittee was recommended for adoption as "recommended practice" and plans were made for an early subcommittee meeting to work out suggestions of application of the system of spirals suggested. It was stated that for use in consideration of the subject of standard sections for curved rail heads a questionnaire was sent out to the member companies, but up to the time of the meeting only five replies had been received. Three of these indicated no use for the rail in question, while the two others indicated satisfaction with this design. One of the latter submitted blueprints of standard rails in use and worn wheels and rails. Those showing rail wear indicated close agreement with the general outline of

the curved-head rail shown in the Lorain Steel Company drawing No. 122-491. It was decided that the committee should recommend a change in the association's recommended design for 7-in. and 9-in. grooved girder rails to eliminate the flat or plane head and substitute a curved head to agree with the Lorain Steel Company's drawing mentioned above. The equipment committee, represented at the discussion of this subject by F. W. Sargent, concurred in this recommendation. It was also decided not to recommend a change in the designs now recommended for girder guard rail. This latter subject is held open for final decision.

In the discussion of the assigned subject of progress in rail joints the committee raised the question as to whether the arc-welded joint is good practice and what happens when it is applied. It was decided to consult the Bureau of Standards to determine what arrangements can be made for a thorough investigation of joints, including all types of welded joints. The subject of revised specifications for plain bolted special trackwork was discussed, and it was decided that Section Ws 8a of the Manual needs complete revision. It was suggested that there should be incorporated in this section a paragraph on plain bolted crossings and something additional on insert work.

The subject of specifications for wood-block paving was discussed at some length. One member of the committee expressed the opinion that a granite flangeway should be retained inside the rail whenever wood block is used as a pavement. It was agreed that the use of wood block should be limited to new construction and to absolutely first-class track. It was brought out that in answer to a questionnaire sent out by another association 51 per cent of the electric railways answering said that with modern, properly constructed track wood block can be used with satisfaction, 23 per cent said they had no use for it and 26 per cent failed to answer the question. The committee will review this subject as reported by the American Wood Preservers' Association.

In the discussion of the subject of revision of the Manual, it was decided that some form of concrete slab construction substantially like type C, formerly suggested, should be recommended for use under special conditions. This is a revision of section Wf 1a. Some plans for new designs of track construction are to be formulated and the use of steel ties is to be reviewed and some recommendations suggested. In section Wm 1a it was decided to change the phrase "special work" to read "special trackwork," using trackwork as one word. It was also decided to change the definition of special work to read "switches, mates, frogs, crossings, guarded curves and parts of track other than plain straight track and plain unguarded curves."

On section Wm 3a there was considerable discussion in regard to the elimination of the word "T-rail" from the specification for splice bars for girder and high T-rails. The change recommended is for reasons of policy and not on account of engineering considerations,



and is due to the aversion of city engineers to the use of T-rail. The recommendation adopted was that the recommended specifications should read "Specifications for splice bars for girder rails of plain, grooved and guard types." In a discussion of section Wm 7a it was brought out that from tests made by the American Railway Engineering Association it had been determined that six-hole drilling of rail joints was not necessary and did not add any strength to the joint. It was decided to eliminate the drawing showing the six-hole drilling and to show instead the four-hole drilling.

It was recommended that the recommended design for plain girder rails for use in paved streets shown in section Wr 1b be brought to the attention of the ensuing committee with the suggestion that these designs be changed to conform to general usage. The suggestion is based on the belief that the 80-lb. rail has never been used, that the 90-lb. rail has never been rolled and that the 100-lb. rail has had practically no use by either steam or electric railways. A report will be made on this subject at the next meeting of the committee.

At a discussion of the recommended specifications for the manufacture of open-hearth girder and high T-rails, section Wr 2c, it was recommended that the title be revised to read "Specification for the manufacture of open-hearth steel girder rails of plain, grooved and guard rail types for use in paved streets." Under this section the matter of the modified Brinell or impression test was thoroughly discussed. The consensus of opinion seemed to be not to abolish the drop test until more was known of the Brinell test, in spite of the fact that the American Society for Testing Materials has specifically adopted the latter tentatively until 1921. The matter was referred to a sub-committee for a report on the merits of the proposition and recommendations as to what it is believed the committee should recommend in its report.

On the subject of safe limit of wear on rails, it was stated that some data have been obtained and that additional data will be prepared on this subject. On the subject of safe limit of wear on special trackwork, it was suggested that the safe limit and the economic limit coincide for all practical purposes and that the economic limit of wear depends on many conditions such as the effect on rolling stock, on surrounding pavement, on the nerves of trainmen, passengers and surrounding inhabitants, etc. It was decided to send out a questionnaire to assist in the compilation of data on this subject.

It is expected that another meeting of the committee will be held some time during June.

### City Engineer Praises Connecticut Company

THE thirty-fourth monthly meeting of the Connecticut Company, section No. 7, was held at the Hotel Garde, New Haven, on April 8. Sixty members and guests attended a seven o'clock dinner preceding the addresses.

President W. R. Dunham, Jr., first presented Robert A. Cairns, city engineer of Waterbury, Conn., who referred to the pleasant business relations between his office and the Connecticut Company. He made special reference to the service which the Connecticut Company performed during the storm period of February and March, not only in providing service but in clearing the streets for other vehicles. On account of his using an

automobile for his own transportation, he had judged service only by hearsay until a memorable trip from New Haven to Waterbury showed him a sort of service satisfactory in every way, which indicated that some one must have planned the operation with a view to making it satisfactory. He commenced to believe that railway officials are really working efficiently on the job, and not loafing.

The other speaker of the evening was A. R. Williams of Providence, R. I., attorney for the Rhode Island Company. Mr. Williams took as his text "Leninetrotzkitis, the bug; where it came from and where it is going," and analyzed from the historical viewpoint the present social unrest. His talk was full of sound encouragement for sane American thought and action in the present crisis.

### Merchandising Transportation

ON APRIL 12 a preliminary meeting of the committee on merchandising transportation was held at the association headquarters in New York. Due to the railroad strike, the only members of the committee who could attend were F. G. Buffe, Kansas City, Mo., chairman, and W. H. Boyce, New Brighton, Pa. It was thought best, in order to get the work started, to attempt an analysis of the subject and to assign to members of the committee different divisions of the subject upon which to prepare a report for a meeting to be held some time during the latter part of May.

The subject of merchandising transportation was subdivided as follows:

1. Scope of the subject; report to be confined strictly to merchandising methods and not to enter the field of public relations or to include much general matter.
2. Bibliography of the subject and brief synopsis of work along similar lines by previous committees.
3. Direct methods of merchandising transportation:
  - (a) Advertising—Billboards, "movies," newspapers, letters, publications.
  - (b) Service—Extent to which proper service adds to the salability of transportation. This will include headways, proper schedule regulations, use of loading platforms, rearrangement of congested district stops, etc.
  - (c) Employees—Means of educating employees along the line of salesmanship. Necessity of securing co-operation of transportation service employees and means to arouse their interest.
  - (d) Ticket fares—Method of selling, agencies, selling by mail, etc.
  - (e) Merchandising of transportation, with particular reference to meeting jitney competition.
  - (f) Merchandising of transportation, with particular reference to the operation of safety cars.
4. Indirect methods of merchandising transportation:
  - (a) Co-operation of public bodies—This subject will deal with the opportunities of awakening Chambers of Commerce, Public Service Commissions, etc., to the necessity of helping to increase the business.
5. Recommendations.

The thought expressed by the committee was that urban transportation today, due to jitneys and the rapidly increasing use of private automobiles for business purposes, is more than ever a competitive business. It is subject to the law of supply and demand and will respond to advertising. It is dependent upon salesmanship methods, and within certain limits will react to the stimulus of merchandising methods. The subject is to be considered only from this point. While merchandising is dependent upon public relations, which in the



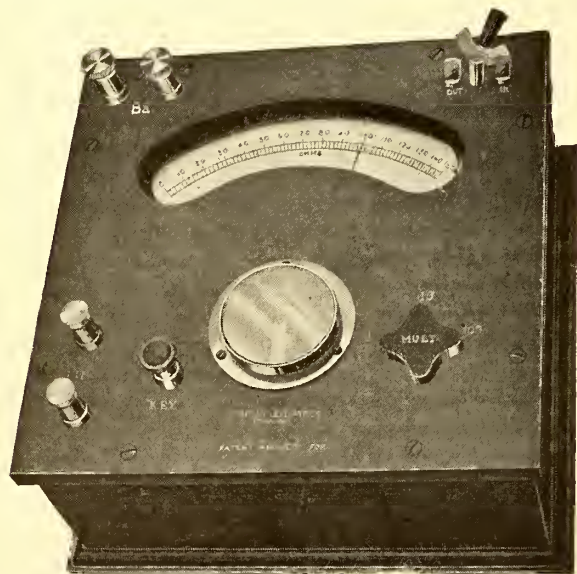
last analysis constitute "good will," the report of the committee will not attempt to go into this side of the question, but will confine itself to the means and methods whereby the service to be sold can be made more attractive; to the education of employees so that they may represent their company more in the capacity of salesmen than heretofore; to the mediums of advertising, and the appeal that will most quickly attract business; to the help that it is possible to obtain from public and civic bodies, and to the advantages offered by the widespread use of tickets.

### Electric Railway Address at Chamber of Commerce Meeting

THE program for the general session on Wednesday morning of the United States Chamber of Commerce convention next week has been changed to admit of an address on electric railways. The speaker will be John H. Pardee, president American Electric Railway Association, and the subject will be electric railways in relation to increased production. The session on Wednesday morning will be devoted entirely to the subject of transportation in relation to increased production, and the address on electric railways will be preceded by others on steam railroads and followed by others on highways and the merchant marine.

### New Type of Indicating Ohmmeter

THE Thompson-Levering Company, Philadelphia, is marketing a new type of indicating instrument called the Vawter Ohmmeter. This is an aperiodic or dead-beat instrument and does not require any preliminary adjustment calibration. Some eight different types



INDICATING OHMMETER

of the instrument are being manufactured in order to meet every requirement of resistance measurements from microhms up to megohms and for any degree of accuracy to one involving an error as small as 0.1 of 1 per cent. One application of this instrument is to measure the resistance of a section of electric rail containing a bond in terms of 1 ft. of the solid rail that is bonded. Another low-resistance type of this instrument, used in conjunction with ordinary current-carrying shunts, indicates the resistance of transformer, armature or field coils of low resistance.

### Insull Speaks at W. S. E. Luncheon Points to Duty of Engineers to Know the Facts and Pass Knowledge Along to Public

AS THE speaker of the day before the first regular monthly luncheon of the Western Society of Engineers, Chicago, Samuel Insull talked about the influence of engineers in connection with the public utility industries. He said that they should be the leaders of thought in utility problems; that they should make it their duty to post themselves on the facts and apply their powers of reasoning and exact statement to the work of enlightening the public in utility matters, and in public questions in general involving engineering thought. He criticised the engineers as a group for their tendency to react against new, broad utility developments and to point to the difficulties rather than to post themselves and advocate the great possibilities.

Speaking of the incessant talk about "home rule" of public utilities, Mr. Insull remarked that the whole tendency of public utility control is irresistibly more than an urban problem and that it could only be settled on a state or interstate basis. This was one example of where the engineer might exert his influence advantageously. Another situation in which the engineers could help toward sound progress was in connection with the broad assertions which are made about the water-power resources of the country. He stated that if all the water powers of the United States could be used the total energy thus made available would not be sufficient to take care of more than half of the present demand for electrical energy. He said also that the possibilities for using oil or gas for fuel in any extensive way was out of the question. This pointed to the fact that the future wealth and well being of the country depend on the coal supply, thus emphasizing the imperative need for securing the utmost economy in coal consumption through interconnection of power systems, electrification of railroads, etc. He declared that the known supply of coal in the United States was great enough, if proper economy were exercised, to support an infinitely greater population than the present one into the very distant future. As indicating the possibilities for economy through efficient engineering sales work, proper construction and design of equipment, Mr. Insull pointed to the results which have been obtained by the Commonwealth Edison Company, which supplies all the energy requirements of all the local transportation companies in Chicago, as well as all lighting and power requirements. Chicago has between 2½ and 3 per cent of the total population of the country, while the energy generated there is more than 5 per cent of the total electrical energy produced in the United States. The generation results in 6 per cent of the gross income from the sale of electrical energy in the country and it is done on an investment which is only 3 per cent of the capitalization in the central station industry in the country.

Mr. Insull referred to the starving process to which many of the utility companies have been subjected and asserted that this could not go on with the expectation that the utilities could continue properly to function. The effect of such a policy was far greater upon a community than upon the company which is being crucified. Under such conditions great industrial efficiency is impossible.



# News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION  
PERSONAL MENTION

## Toledo Commission Active

Rushing Work on the Cost-of-Service Measure So Early Vote May Be Had

Members of the cost-of-service commission at Toledo, Ohio, have been busy adjusting their draft on an ordinance for the settlement of the Toledo railway difficulties to meet the objections pointed out recently by Henry L. Doherty on behalf of the Toledo Railways & Light Company, owning the lines.

### MR. DOHERTY'S SUGGESTIONS ACCEPTED

The commission has determined that whatever is submitted to the people for ratification must satisfy the Doherty interests first or be useless if adopted by the people. They are rushing the work so that an early vote on the terms of settlement may be had. In many sections of the ordinance the objections of Mr. Doherty have been found to be well taken and changes have been incorporated in the ordinance.

By the provisions of the latest turn in the Toledo situation, in which Judge Killits of the District Court granted a fare increase to the company so that a wage advance to the men might be allowed in order to restore railway service after a strike had been called, the company and city were granted the privilege of making application for investigation by the court to determine whether the fare now being charged is excessive or enough for a proper return on the investment.

The court set April 22 as the day for making such a request for investigation. Neither the company nor the city has shown any inclination to make a move in that direction. Whichever party asked for the hearing would have to furnish the bulk of proof.

### JUST SUSTAINING LIFE

It appears that the company, while not claiming to make a fair return on its investment, is obtaining revenues which maintain it in a living condition. The recent fare increase provided for the wage advances in a large measure and as long as these terms continue it is doubtful whether the company would aggravate the situation by asking for higher fares.

The city, on the other hand, while its Mayor and law director have been contending that the company is making excessive charges for power and other items, so that operation is not economical, has not seen fit to take unto itself the burden of proving these claims.

The court promised a thorough in-

vestigation which would be based on a valuation of the physical properties and investment of the company. The city officials fear that such an investigation of the court might set a basis for a valuation in the future which would be detrimental to the efforts of the city providing condemnation proceedings were brought in an attempt to buy the lines for municipal control.

The municipal ownership commission, which has been investigating a proposition to submit to the people at the same time a cost-of-service plan is put before them, is now considering the feasibility of a bond issue of about \$2,000,000 for a motor bus system. Some members of the commission fear that the unsettled condition resulting from the ouster ordinance of last fall will be carried through the coming winter and that Toledo may again suffer a tie-up of transportation without any adequate relief. The bus system could, of course, be used as an auxiliary to the railway.

The commission has not yet submitted a report to the federal court.

## 130-Mile Interurban Project Approved

The Dallas (Tex.) Railway will build an interurban line from Dallas to Wichita Falls, a distance of 130 miles, in lieu of two lines, each at least 30 miles long, which the company contracted to build under terms of the franchise granted this company in 1917. The proposition was voted upon favorably in the municipal election in Dallas on April 6.

The Dallas-Wichita Falls line has been promoted by committees of Dallas and Wichita Falls business men, who have had surveys made by the Fred A. Jones Company, Dallas, and estimates covering cost of construction prepared. These committees have agreed to carry through the financing details of the proposition, which are already well advanced, and then turn over to the railway the uncompleted project, which the traction company agrees to have in operation by July, 1922. It is estimated that the completed line and its equipment will cost \$9,500,000.

The line will run northwest from Dallas, touching Denton, Krum, Bowie, Henryetta, Wichita Falls and numerous smaller towns. The line would penetrate a zone of 2,400 square miles, with a population of 150,000 people now practically without railroad facilities. It would also connect with several trans-continental railway lines not now easily accessible to Dallas.

## Subway Campaign Opened

Considerable Opposition Seems to Have Developed to Putting Through the Cleveland Plan Now

The subway bond campaign has been opened at Cleveland, Ohio, and members of the Rapid Transit Commission are addressing various organizations and bodies of business men on the subject. For some time the Cleveland *Plain Dealer* has been running a series of articles, detailing both the arguments in favor of the project and those against it. Up to this time they have dealt mostly with those favoring it.

### WILL INCREASE TAXES

The greatest objections yet advanced are the increase in taxes that will be required to take care of bond interest and the excessive cost of materials and labor at this time. Current loaning rates are 7 per cent and only recently it was found impossible to sell 5 per cent city bonds. This is the rate the subway bonds were expected to bear.

No action has been taken by the Cleveland Chamber of Commerce upon the adverse report made to it by the special subway committee. Because of a division of opinion among the members, it is said that the report may not be put before the body for its decision.

An adverse report was made to the Rapid Transit Commission by the Cleveland Association of Building Owners and Managers on April 14. The reason assigned for this step is that it is an inopportune time for the construction of such an improvement.

The Cleveland Building Trades Council has approved the construction of the subway as mapped out by the engineers. Business Agent Charles Smith said that the subway is needed for the development of home building outside of the high-rent district and to insure the employment to those people who are attracted to the city by the home building program.

### RAILWAY COMMISSIONER EXPLAINS

Fielder Sanders, Street Railway Commissioner, has taken issue with a statement published recently to the effect that only twenty-five cars have been purchased by the Cleveland Railway during his administration. He shows that a total of 181 cars has been added during the years 1916, 1917 and 1918. No cars were purchased in 1919, because of the existence of war conditions. During the period mentioned 145 cars were scrapped, leaving a net gain of thirty-six. All the new cars and trailers, however, are of the largest size and contain the latest improvements.



## Electrification Urged

Canadian Government Asked to Electrify Main Lines as Offset to Proposed Radial Systems

Electrification of the Ontario lines of the Grand Trunk and the Canadian Northern Railway systems now owned by the Dominion government was advocated in the Canadian Senate at Ottawa recently by Senator E. D. Smith, who declared such action to be necessary to avoid "frightful losses" which would otherwise result from duplication of existing railways by a system of Hydro-Electric Power Commission radials.

### A \$200,000,000 PROJECT

Forty-seven municipalities have now voted in favor of the construction of 1,600 miles of hydro radials, the estimated cost of which is \$200,000,000. One line to be constructed is between Toronto and Bowmanville, a 40-mile stretch already served by six railways, several of which are owned by the Dominion government. The cost of that section is estimated at \$200,000 a mile.

Senator Smith argued that the people of Ontario are determined to have electric railway service, because of the advantages of speed and frequency, and unless the government is prepared to accept heavy losses on the federal system, he declared existing steam roads should be forthwith electrified.

Sir Adam Beck, chairman of the Hydro-Electric Power Commission of Ontario, at whose behest the people have declared in favor of the radial scheme, at a recent conference with the Minister of Railways at Ottawa proposed a plan for co-operation between hydro radials and the Canadian National Railways system. He asked that Hydro be permitted to purchase the Niagara, St. Catharines & Toronto Railway, the Toronto & Eastern Railway, which runs to Bowmanville, and the Toronto & Suburban line to Guelph, thus to avoid construction authorized by the people, which would entail duplication.

### SIR ADAM SATISFIED

Sir Adam also proposed the electrification of certain branch lines of the old Grand Trunk and the Canadian Northern Railway systems and the electrification of city terminals and their operation by the Hydro system. He urged that the hydro radials and electrified branch lines would serve as feeders to the main lines of the government system. Sir Adam Beck afterward announced that the results of the conference were "wholly satisfactory."

### Substation Destroyed by Fire

Service on two railway lines at Toledo, Ohio, was held up for six hours on March 10 by the destruction of the Casino substation north of the city by fire of unknown origin. The loss to the Toledo Railways & Light Company is estimated by officials to be \$50,000,

about 90 per cent covered by insurance. The substation was located in a building that was once a hotel. Help from the city fire department arrived too late to save anything.

F. J. Derge, assistant general manager of the company, declared that the station would be rebuilt immediately and probably at a new location. The present site of the destroyed station may be again used for hotel purposes. The substation supplies all the power for the Toledo, Ottawa Beach & Northern lines and also the Point Place and Summit Street lines. It also served lighting customers in the northern section of the city and beyond the city limits.

## Wages Increased in Appleton

Voluntary Wage Advance Provokes Favorable Comment by Daily Press on Railway Management

The Wisconsin Traction, Light, Heat & Power Company, Appleton, Wis., on March 8 voluntarily increased the wages of motormen and conductors on both the city and interurban lines and other employees directly connected with the operation of the cars 5 cents an hour. The increase dates from March 1. This makes the present scale 48 cents to 50 cents an hour. The action of the company came as a surprise to the men, inasmuch as they had received a substantial increase less than six months ago.

The issue of the Appleton *Post* for the day prior to that on which the increase in wages was announced contained an editorial which bespeaks the public attitude which good service begets. It reads in part as follows:

Not the least of Appleton's assets is the Wisconsin Traction Light, Heat & Power Company. In making this favorable comment we refer in this instance particularly to the interurban line which it operates between Kaukauna and Neenah. We do not believe there will be found anywhere in the State of Wisconsin an electric railway operated with greater efficiency and with greater fidelity to the service of the public than this property. When other interurban lines throw up their hands in the face of storms and cold this company works ceaselessly to keep its road open, and actually does keep it open. The record of the Wisconsin Traction, Light, Heat & Power Company is one to be proud of. The city and communities served by it are fortunate. It gives service in the best sense of the word—service that is dependable and accommodating.

### New York Bills Defeated

The Jenks service-at-cost bills referred to previously in the *ELECTRIC RAILWAY JOURNAL* were defeated in the Assembly on April 22. The most important of the measures lacked ten votes of the required majority of seventy-six. The bills can, however, be brought up again for reconsideration on motion of their sponsor, Assemblyman Jenks. The vote on the first Jenks bill stood sixty-six for and seventy-seven against passage. On the second Jenks bill and the third, of relatively slight importance, the vote stood sixty-five for and seventy-eight against. The opinion seems to prevail at Albany that the defeat the bills sustained on April 22 is final.

## Preparing Houston Grant

Service-at-Cost Measure, Growing Out of Fare Case, Being Drafted for Submission to Voters

The new franchise for the Houston (Tex.) Electric Company is expected to be ready for submission to the people for ratification in a few weeks. This franchise will be granted in line with the findings of Special Master Otis K. Hamblen and Judge Hutcheson of the United States District Court, holding that the present fares permitted the company are confiscatory and that the company should be permitted to earn a return of 8 per cent on its valuation of \$6,000,000 as fixed by the special master. The company is charging a 7-cent fare for adults with 3½ cents for children and students. This fare went into effect on April 4 and will continue until the new franchise takes effect.

### DALLAS BEING COPIED

The new franchise is being patterned somewhat after the Dallas grant of 1917. Co-operation of the company and city officials will be one of the chief features of the new franchise. A commission of four, two city officials and two company officials, is proposed to audit the books and control the sliding scale of fare charges and earnings and supervise expenditures.

The fares charged are to be on a sliding scale and bear a definite and fixed relation to earnings. The company will be permitted to earn 8 per cent net on the \$6,000,000 investment, to which will be added the cost of all improvements and betterments ordered by the board of control. There will be a stabilizing and reserve fund of \$200,000 to which is to be added all earnings above the authorized 8 per cent on the property valuation and the 4½ per cent allowance for depreciation and upkeep, until this fund reaches \$300,000. Any time earnings exceed these allowances fares are to be revised downward and any time the earnings fail to provide these allowances fares are to be increased. The fare adjustments are to be made quarterly by the board of control.

### PAVING REQUIREMENTS MODIFIED

The company is not to be compelled to pave the space between its tracks in the residential sections of the city, but is to fill such space with gravel or similar material that will enable vehicles to turn or cross thereon, but which will not invite drivers to drive thereon.

### Municipal Ownership Bill Advanced

The bill of the city of Toronto, Ont., for the acquisition of the Toronto Railway and the operation of the road by a commission was approved by the private bills committee of the Legislature on April 8 with only one important change. The change gives the City Council power to pay the members of the commission a salary if it sees fit.



## New Welfare Association at Louisville

### Objects Are Collective Bargaining and Co-operative Welfare with Adequate Service to the Public

To attain the threefold object of adequate service to the public, welfare of the company and welfare of the employees, the Louisville Railway and the Louisville & Interurban Railroad and the employees of both companies will, on April 1, enter into a co-operative agreement. The organization is to be known as the Co-operative Welfare Association. Its purposes, as defined by the constitution, are collective bargaining and co-operative welfare. A clause under this heading provides that for the purpose of collective bargaining the companies will deal with no organization of its employees other than the Co-operative Welfare Association.

**M**EMBERSHIP in the organization is not to be compulsory and it is specifically stated that any member of the organization may join any union or other organization. Two classes of membership are provided, limited and active. The limited membership extends only to the participation in co-operative benefits, while active membership extends to all of the activities of the organization. Eligibility to membership requires that an employee shall have been with the company four months. It also provides that to be an active member, a man may not be an officer of the company, which is defined as follows:

1. In the transportation department: the chief despatcher, trainmaster, regular inspector, regular assistant carhouse foreman, carhouse foreman, or above.
2. In the maintenance of equipment department: the chief motor inspector, foreman of the interurban repair shop, foreman of the machine, carpenter, or paint shop, or above.
3. In the motive-power department: watch engineer, line foreman, or above.
4. In the maintenance of way and structures department: assistant foreman, foreman, or above.
5. In the clerical department: cashier, auditor, paymaster, superintendent of change and transfer room, chief adjuster of claims, or above.

#### SCHEME OF ORGANIZATION

The organization may take cognizance of wages, hours of service, conditions of service, through a series of committees, but all other activities of the transportation enterprise are outside the scope of the organization. All committees are to be composed of equal numbers of active members of the welfare association and persons appointed by the company, who need not be members. There will be local committees, departmental committees, and a general committee. Any matter on which a local committee cannot reach a decision will be referred to the proper departmental committee, and from this to the general committee.

If the general committee cannot reach a decision the matter must be submitted to arbitration. Any decision of a local or departmental committee is to be final except that the general committee by a majority vote of either side may call up for review any decision of a local or departmental committee. To reach a decision, a majority of company committeemen must concur with a majority of those representing the men, a majority meaning more than half of those present and absent. A quorum of any committee to do business is to be a majority present on each side.

The local committees will be composed of two active members from the welfare organization and two persons appointed by the company. Local committees will be organized as follows:

Transportation department: one at each carhouse.

Motive-power department: one at each power house, one representing substations of which one committeeman shall be a city operator and the other interurban, and one representing linemen.

Maintenance of equipment department: one for each of the following: paint shop, carpenter shop, machine shop, motor inspection, interurban repair shop.

Maintenance of way and structures department: one representing city trackmen and one representing interurban.

Clerical department: one from all of the various city offices and one from interurban clerks and agents.

At the first election all active members will be eligible for the office of local committeeman. Thereafter only those who shall have been continuously in the employ of the company twelve months and, in the transportation department, who, in addition, are assigned as trainmen to a regular run. The employees' representatives on the departmental committee are to be made up of the committeemen from each local committee who is elected by the highest number of votes, and an equal number of company appointees. The general committee is to be composed of delegates elected by the departmental committees from their own number, and an equal number of company appointees.

Meetings of the general committee are to be held at least monthly, for the consideration of adjustments, complaints and grievances, general welfare of the men and of the company, expenditure of the funds of the organization and all other business within the scope of the organization.

The constitution provides that in the event the general committee cannot reach a decision, the matter must be arbitrated. In this case the company will appoint one arbitrator, the Welfare Association members of the general committee another, and these two are to elect a referee, the decision of the majority of the three being final.

Funds for conducting the organization are to be provided by contributions from the company and dues of the members. The amount of dues is to be determined by the Welfare Association members of the general committee and the amount of the company contributions is to be determined through negotiation of the general committee with the board of directors of the company.

The idea behind the movement in

Louisville is to create an industrial democracy in the electric railway industry of the city. With this in mind, the concluding provisions of the constitution are interesting:

This constitution proposes an industrial experiment. We, its framers, believe in the success of our undertaking. But we realize that we are not infallible, and we are conscious of a lack of experience in dealing with industrial democracy.

The only way that we can suggest to obtain a workable form of industrial democratic government is to try something: if it works, well and good—if it doesn't work, try something else. Therefore, it is provided:

1. If, at any time within three years, either side is dissatisfied with this constitution, it may withdraw therefrom by giving six months' notice of such withdrawal to the other side; after three years, by giving twelve months' notice.

2. In considering withdrawal, the company acts by a majority of all its directors, the men act by a majority of all their committeemen, held at a joint meeting of general, departmental and local committees.

### Detroit United Stands Its Ground

The Street Railway Commission of Detroit, Mich., has addressed a letter to the Detroit United Railway asking its intentions relative to the St. Jean Avenue extension. Although the Mayor's opinion was that the Detroit United Railway would not be interfered with until the city lines were well under way, the letter to the company at this time is expected to bring a statement as to the company's attitude relative to the city's acquiring the lines built or being built on the day-to-day plan.

The proposed St. Jean extension was approved by the Council in May, 1919, but has not been completed. It is one of the much needed east side lines. The resolution of the Council giving the company the right to construct the line states that the Council or the people of Detroit may revoke the permit thereby granted and that the company must forthwith remove from the streets the property placed therein.

According to the agreement, the company is required to sell the lines to the city at cost of construction less depreciation, upon request by the city. It is the belief of the commission that the company will sell rather than remove its tracks from the streets where the work is already completed. In case the price to be paid by the city cannot be agreed upon with the company, the agreement provides for a board of arbitrators composed of three members, one chosen by the company, one by the city and one by the first two.

The Detroit United Railway maintains that it is the bounden duty of its management to direct its efforts in behalf of the continuation of uninterrupted service and that service to be the best possible at the lowest possible price. A purchase of the properties as a unified city system with the proper continuation of the interurban service represents an honest course which the company officials have always been willing to have carried out, but they state that "blackjacking first one line and then another, that the investors may in the end be robbed of their property, shall never receive their consent."



## Strike Threatened in Pittsburgh

A strike of trainmen in Pittsburgh, Pa., seems almost inevitable. The receivers for the Pittsburgh Railways declare that they cannot possibly grant the demands for a 75 per cent wage increase, and the trainmen declare they will quit work on May 1.

The present agreement between the men and the receivers expires on April 30. Under this agreement the trainmen are receiving 49, 52 and 54 cents an hour, according to length of service. The new demands, which the men want made effective on May 1, include wages of 86, 89 and 91 cents an hour, with an eight-hour day. The company granted an increase of 10 per cent voluntarily, effective on April 1. This was made possible by the approval of the 7½-cent fare by the Public Service Commission of Pennsylvania. To meet the new rate of pay demanded by the trainmen an increased fare amounting to 12½ or 15 cents will be necessary, according to the receivers. They are reluctant to raise the fare.

The question whether the demands of the trainmen should be granted was put up to the public on April 17 by the receivers in a letter to Mayor E. V. Babcock and the City Council. The letter states that under the present fare charged on the lines of the Pittsburgh Railways it would be impossible to grant the demands of the trainmen, and that the receivers are prepared to receive and consider the suggestions of the public as to the wisdom and advisability of acceding to demands that would entail an increase of from 75 per cent to 100 per cent in fare.

In reply to this, the trainmen accused the receivers of "passing the buck" to the public.

Mayor Babcock replied to the receivers on April 20 that he had nothing to do with the controversy between the receivers and the men; that the matter rested with them, the United States District Court and the employees who operate the cars. He voiced opposition to an increased fare, and said a strike would be calamitous. Mayor Babcock decided to take this attitude after a conference with the Council.

## Thirty-five Cents Advance Asked in Chicago

Two thousand trainmen of the Chicago Surface Lines attended a meeting of their union on April 19 and approved the report of their committee asking an increase of 35 cents an hour in the wage scale and no changes in working conditions or hours. This means that their demand will call for the payment of 95 cents an hour for men three months in service, 98 cents for the next nine months, and \$1 for those in service over one year. Night car men, who now receive 67 cents, would be entitled to \$1.02 on this new scale.

The agreement now in force was effected after a strike last August. Members of the Public Utilities Com-

mission acted as arbitrators and established a wage scale of 60, 63 and 65 cents an hour. Sixty per cent of the runs were put on a straight eight-hour basis, the balance to be completed within fourteen consecutive hours and no run to pay less than eight hours' time. Payment for overtime is at the rate of time and a half.

The present contract expires June 1 and the union was required to notify the company of any proposed change before May 1. Following the establishment of the 65-cent maximum wage last year, the Public Utilities Commission allowed the companies to charge a 7-cent fare, which was subsequently reduced to 6 cents. Hearings on the valuation which is to be the basis for a permanent rate of fare are still in progress. All the companies' figures have been on the basis of cost to reproduce new, while the city's lawyers have been seeking to prove a depreciated value.

## International Railway Rejects Men's Demands

After a series of conferences with representatives of its employees, the International Railway, Buffalo, N. Y., has rejected the demands of the union employees for a wage advance of approximately 100 per cent. Other demands of the union were also turned down. The company offered the men an increase of 12 cents an hour. This would increase the payroll about \$1,000,000 a year.

The railway refused the demand for a closed shop and refused to grant an eight-hour workday and other concessions asked by representatives of the employees who are members of the Amalgamated Association. Negotiations, however, will be continued by the company and its employees. The present agreement expires on May 1.

In a statement announcing the company's attitude and the offer to increase the wages 12 cents an hour, Herbert G. Tulley, president of the railway, says that the company's employees must always retain their freedom of action and "themselves elect whether or not they become members of your association. Your request for a closed shop is, therefore, denied."

Continuing, the statement of President Tulley says:

The eight-hour day with time and a half for overtime, payment for time not worked and the other suggested changes which increase costs cannot at this time be considered. Wage increases requested and other requested allowances would increase the company's payroll more than \$4,000,000 per annum. Wages so increased would then alone consume the entire gross earnings of the company. The wage increase of 12 cents an hour allowed by the company will approximate \$1,000,000 a year. This is the amount of increased revenue expected from the 7-cent fare, and consequently represents the maximum increase possible of payment.

The rates of pay for motormen and conductors shall be as follows from May 1, 1920, until May 1, 1921: First three months, 83 cents an hour; for the next nine months, 86 cents, and after one year, 88 cents an hour.

Rates of pay for engineers, conductors and brakemen in freight service; motormen and conductors in flat car service, and motormen and conductors in package ex-

press service shall be as follows: Engineers and motormen, first three months, 88 cents an hour; next nine months, 91 cents, and after one year, 93 cents. Conductors, first three months, 88 cents; next nine months, 91 cents; after one year, 93 cents. Brakemen, first three months, 84 cents; next nine months, 87 cents; after one year, 90 cents.

The complete schedule of wages asked by International employees follows:

Rates of pay for shopmen, carhouse men, power house men, bridge and building department men, curve cleaners, baggagemen, watchmen, ticket agents, agents of the Buffalo, Lockport & Olcott division, freight handlers, emergency men and all others covered by this agreement, and others who are members of the association in the employment of the company, shall be increased at the rate of 40 cents an hour, effective May 1, 1920, and to last until May 1, 1921.

## New York-New Jersey Tube Service Resumed

During the general transportation strike in New York there was considerable talk about the possibility of the employees of the city railways in the metropolitan district joining the strikers. None of these men, however, went out. Among the heavy traction roads affected by the strike was the Hudson & Manhattan Railroad, operating under the Hudson River between New York and New Jersey and to Newark. Operation of the tubes, however, was resumed on April 19 almost simultaneously with an announcement from the officials that they had put into effect the increased fares authorized by the Interstate Commerce Commission.

Oren Root, president of the company, in announcing service resumption, said:

Up to this time we have not had sufficient men properly qualified to operate our trains and we have, therefore, been unable to re-establish our service. As previously stated, we did not think it safe to operate our service with inexperienced men.

We have already been granted an increase of fares by the Interstate Commerce Commission, and I do not see how that question can be brought into the present situation. We have no intention of making application for any additional increases.

President Root estimated that 500 trainmen had walked out, and asserted that approximately seventy-five of the strikers had returned to their jobs. The motormen had not joined the strikers, consequently the company, with the new men, the seventy-five who have returned and those who remained at their posts, had been able to resume a partial operation of trains.

The new fares are 6 cents from points in New Jersey to the Hudson terminal in downtown New York and 10 cents to stations above the Hudson Terminal.

## Change in Magazine Name

The *Em-an-Ess Electric News* will hereafter be known as the *Penn-Ohio Electric News*. The paper is published by the Pennsylvania-Ohio Electric Company, formerly the Mahoning & Shenango Railway & Light Company, and the change in name of the paper was considered desirable on account of the change in name of the company itself. A first prize of \$10 was offered for the best suggestion. The award was made to Donald S. Jones, night ticket agent at the Boardman Street office.



## Arbitrators Chosen in Boston

### Both Eastern Massachusetts and Boston Elevated Wage Disputes Are Being Prepared for Arbitration

Hugh Ogden has been selected as the third arbitrator and chairman of the board to which has been referred the wage increase demands of the employees of the Eastern Massachusetts Street Railway, Boston, Mass. The other arbitrators are James H. Vahey, counsel for the union, representing the employees, and Philip G. Carleton, counsel for the company, and its representative on the board. Mr. Ogden is a well-known Boston attorney.

The arbitrators will devote their entire attention practically to the question of wages, the trustees of the company being opposed to granting the full demands of the employees for an increase from the present maximum of 51 cents an hour to 75 cents an hour. Both sides have agreed to abide by the board's decision.

All of the other matters included in the employees' demands, such as wage schedules, etc., will be denied, it is expected, by conferences between the joint board of the men's unions and R. B. Stearns, vice-president and general manager, and other officials of the company, which are now being held daily. Such items as cannot be decided by them will be referred to the arbitrators.

#### COUNSEL BARNUM TO REPRESENT "L"

The board of trustees of the Boston (Mass.) Elevated Railway has appointed H. W. Barnum, counsel for the company, as arbitrator for the conference to be held this month called for the purpose of establishing a new wage schedule.

James H. Vahey, counsel for the carmen's union, will act for the men.

The board of trustees has decided to settle as far as possible by means of direct negotiations all questions coming up for discussion. Several conferences have been held to date, with W. D. Mahon, president of the Amalgamated, presenting the case for the men. Each item will be taken up and discussed and settled if possible. If an agreement cannot be reached, the case will be submitted to the arbitration board.

The two members selected will meet shortly to choose a third member, who will act as chairman of the board.

### Little Progress in Cleveland Dispute

A conference between representatives of the platform men and officers of the Cleveland (Ohio) Railway took place on April 16. It was called at the request of the men, who desire to arrive at an understanding with the company on the demands made by both sides. The men want to reopen the contract, which is subject to change after May 1. In his reply to the demands submitted recently, J. J. Stanley, president of the company, ques-

tioned the wisdom of reopening the contract at this time and said that the demands made by the men are unfair to the public.

After the meeting, officials of the local branch of the union stated that they still had hopes of arriving at some conclusion that would make arbitration unnecessary. It is probable that another conference will take place this week.

C. Loomis Allen has been selected to represent the Cleveland Railway in the arbitration of the wage question.

### Mr. Mahon Appeals for Loyalty

In an open letter to the officers and members of the local divisions of the association, International President Mahon, of the Amalgamated Association of Street Electric Railway Employees of America, has appealed for the exercise of good judgment and sound reason and the fulfillment of their promises during these times of "outlaw" strikes and general unrest. President Mahon's letter is as follows:

I take this means of appealing to you to ask that you be not misled by the present agitation for a general or sympathetic strike.

This is the hour when good, sound judgment and good reason must prevail. You have contracts that have been established after years of hard and patient labor by the officers of your association, and these conditions must not be foolishly cast aside or lost by following false promises from irresponsible persons who know nothing of your conditions.

I therefore appeal to you to remain loyal to your contracts, uphold the laws of your association and be in a position to march forward in the future as you have been in the past, securing better positions and upholding the true standard of American labor.

## News Notes

**Carhouse Destroyed in Ohio.**—The carhouse and eleven cars of the Dayton & Troy Electric Railway, Tipppecanoy City, Ohio, were destroyed by fire on April 14. The loss was placed unofficially at \$150,000.

**Non-Union Employees Insured.**—The British Columbia Electric Railway, Ltd., Victoria, B. C., has insured all its male office employees who have been a year in the service and who are eighteen years of age or more. The amount of the benefit is \$1,000. The insurance does not cover any one who is a member of a railway, light and power or gas union.

**Coinage of 8 and 7-Cent Pieces.**—A bill has been introduced in the United States Senate by Senator Frelinghuysen of New Jersey, directing the coinage of 7-cent pieces and 8-cent pieces. One of the arguments which has been used in favor of the production of such coin is that they will simplify the payment of railway fares in these denominations.

**Jim Crow Law Upheld.**—The Supreme Court of the United States on April 19 sustained the Kentucky separate coach act requiring the separation of white and negro passengers and holding that it applies to the South Covington & Cincinnati Street Railway and the Cincinnati, Covington & Erlanger Railway while operating between points in Kentucky.

**Wage Demands Made in New Hampshire.**—The Manchester (N. H.) Traction Company employees and the trainmen in the employ of the Concord Electric Railway are asking for an increase of 10 cents an hour and a 25 per cent increase for shopmen and trackmen. The trainmen at Concord were increased last September from a scale of 36 cents and 43 cents to a scale ranging from 45 cents to 55 cents.

**Demands of Interurban Men Rejected.**—J. F. Collins, general manager of the Michigan Railway, is reported to have stated that it is impossible for the company to meet demands made upon it by the men engaged on the interurban lines operating out of Grand Rapids. Among these demands are a closed shop, 85 cents an hour for the first six months for motormen and conductors after June 1 and 90 cents an hour after the first six months.

**No Intention to Electrify.**—C. E. Ingersoll, president of the Midland Valley Railroad, which extends from Wichita, Kan., to Ft. Smith, Ark., denies that there is any intention on the part of the management to electrify the road. He explained that the Midland Valley is primarily a coal road. In addition to serving a rich coal region in eastern Oklahoma and western Arkansas, the railroad owns some of the very best coal producing properties in the district which it serves.

**New Wage Scale Presented at Wheeling.**—The electric railway employees of the Ohio Valley submitted their new wage scale to the companies at Wheeling, W. Va., on March 30, the new scale to go into effect on May 1. It is understood that the new scale calls for an approximate increase in wages of 25 per cent, with changes in working conditions. The new scale affects the motormen and conductors, the electric linemen, trackmen, barnmen and others. It is understood that a counter proposition is to be submitted by the companies.

**Toledo Lines Kept Running.**—Judge Killits again kept the cars of the Toledo Railways & Light Company, Toledo, Ohio, running when a shortage of coal due to the "vacation" of switchmen and yard employees, tying up all of Toledo's twenty-three railroad lines, nearly closed the powerhouse. The court issued an order allowing the company to confiscate up to forty cars daily of coal, in yards at Toledo, destined to northern points. The Toledo Railways & Light Company provided its own engine for switching the coal.



**Publicity Campaign at Little Rock.**—The Little Rock Railway & Electric Company, Little Rock, Ark., through the daily press is running a publicity campaign on the merits of electric traction. "Daring Not Always an Admirable Quality" is the caption of one of the discourses on travel. The distinction is made between daring for a good cause and purpose and the reckless pest who menaces his own and others' safety.

**"Jack" Dempsey Acquitted in Wreck Trial.**—John J. Dempsey, formerly vice-president of the Brooklyn (N. Y.) Rapid Transit Company, was acquitted by a jury in the Supreme Court at Mineola, Long Island, on April 14 on an indictment charging him with manslaughter in connection with the death of Thomas Gilfeather in the Malbone Street, Brooklyn, tunnel wreck on the night of Nov. 1, 1918. The jury in the first trial failed to agree on a verdict. The accident followed a strike on the road. More than ninety persons were killed in the wreck.

**Preparing for M. O. Charter Amendment.**—In accordance with the declared intention of Mayor Rolph of San Francisco, Cal., in his election platform to submit the purchase of the United Railroads to the people City Attorney George Lull has begun the consideration of a charter amendment to this end. Unless a charter amendment is submitted at the coming election in November the whole matter will have to go over for two years. The Mayor is desirous, if possible, of disposing of the acquisition of the United Railroads during his present term of office.

**Commissioners Will Contest Removal.**—The members of the Board of Public Utility Commissioners of New Jersey have decided to go into the courts to prevent, if possible, an investigation of the board by Governor Edwards. Notice to this effect was served upon the Governor by Utility Commissioner Andrew Gaul, Jr., who applied to the Supreme Court for a writ to review the record and proceedings in the complaint of Jersey City against the commission. The city asks that the commission be removed from office for alleged misconduct and neglect of duty.

**Ottawa Wages Being Negotiated.**—Negotiations are under way between the Ottawa (Ont.) Railway and its employees, in connection with a request by the latter for an increased schedule of wages to come into effect on May 1. While the executives of the union have given out no official information, it is learned that the company is being asked to grant a maximum wage of 65 cents an hour. The present maximum, granted following the trouble and consequent disastrous strike last summer, is 45 cents an hour. It is said that both sides believe a satisfactory arrangement will shortly be reached.

**No Demands by Montreal Men.**—The present working agreement between the Montreal (Que.) Tramway and its employees does not expire until June

30. So far there has been no application on the part of the men to the company for higher wages. Applications would go to the company in the first instance, but a study of the contract between the company and the city of Montreal, as approved by the Legislature and creating the Tramways Commission, shows that in the end it would be the commission which would have the say, for it is this body which makes the allowances to the company as to the various amounts to be expended for each account.

**Arbitration Decided Upon in Washington.**—There will be no strike of the union employees of the Washington Railway & Electric Company and Potomac Power Company, Washington, D. C., at this time. The differences between the men and the companies will be submitted to arbitration. This decision was made on April 17 at a meeting of the Amalgamated Association. The vote followed presentation of a letter from William F. Ham, president of the companies, to Secretary of Labor Wilson offering to arbitrate. The next step is a conference between President Ham and a committee from the association. It is probable that a board of arbitration will be selected by May 1.

**Wage Agreement at San Antonio.**—An agreement has been reached between officials of the Public Service Corporation, San Antonio, Tex., and its trainmen, whereby the wage scale for conductors and motormen who have been in the service of the company for one year or longer will be 51 cents an hour and the pay of men in the service less than a year will be 49 cents an hour. This is an increase of a little more than 20 per cent. Employees in the sheds, carhouses and elsewhere receive substantially the same percentage of increase. Nine hours, under the agreement, will constitute a day's work. Time and a half will be paid for overtime.

**Electrification of Jamaica Railways.**—The Westinghouse Electric International Company has submitted to the Government of Jamaica an estimate of the proposed electrification of the railways on the island and the proposal to provide electrical power for industrial purposes. It is estimated that power plants would cost \$349,000, substations \$333,000, overhead construction \$1,850,000 and electric locomotives and other motor equipment \$357,000, a total of \$3,489,000. The cost of operating the railway would be about \$260,000 yearly, or about 7.7 per cent of cost of electrification. The sale of current to outside consumers could probably be conducted at a profit which would increase the return on the investment to about 10 per cent.

**Change in New Arlington Station Plans.**—The board of trustees of the Boston (Mass.) Elevated Railway has approved the change in plans providing for a second entrance to the new Arlington Street station. The new plans call for an entrance at Berkeley Street, which will require the construction of

a passage about 350 ft. long. The advantage gained by this addition is to provide a more convenient entrance for the district now fast developing in the neighborhood of Stuart and James Streets. The contract for the construction of the station has been awarded to the Hugh Nawn Construction Company, Boston. It is not expected that the change in plans will delay the opening of the new station, which is scheduled to take place at the beginning of next year.

**Will Remain True to His Trust.**—Sydney L. Wright, Philadelphia, president of the New Jersey & Pennsylvania Traction Company, Trenton, N. J., was summoned to Trenton recently to confer with J. H. Twitchell of New York and representatives of the union in an attempt to adjust the wage question. President Wright said: "We are under obligation to the public to maintain our franchise. We carry the United States mails and about 10,000 quarts of milk daily for Trenton families. We are not going to betray our trust to the public and we are not going to increase wages. If we paid the increase we would have to increase the fares to 10 cents and this we are unwilling to do." The men are asking for a 25 per cent increase.

**\$1 an Hour Asked at Detroit.**—New demands by the trainmen of the Detroit (Mich.) United Railway will be presented to the company on or before May 1 according to action taken by the men at their meeting on April 17. The employees instructed a committee to present a request to the company for an eight-hour day with time and a half for overtime and all Sunday and holiday work. The following wage scale will be demanded: 95 cents an hour for the first three months; 98 cents an hour for the next nine months and \$1 an hour thereafter. No statement was made regarding the company's attitude in the matter as it was maintained that no opinion could be expressed until the demands of the men had been officially presented to the company.

**Cost of Pasadena-Los Angeles Line Reduced.**—The proposed municipal electric railway between Pasadena and Los Angeles, Cal., can be built for \$1,000,000 less than the estimate recently made by R. V. Orbison, former city engineer. This is the finding of the board of engineers appointed by the City Commission to pass on Mr. Orbison's estimate. The report of the engineering experts was filed with the City Commission by Commissioner John J. Hamilton. Instead of costing \$3,919,689, as estimated by Mr. Orbison, the board of engineers report that the line can be built and constructed exclusive of the right-of-way for \$3,465,867, or a saving of \$453,822. The principal saving in construction in this proposed line is made by changing the right-of-way so as to avoid two costly tunnels. The report as filed by Commissioner John J. Hamilton was referred to the committee of the whole without any comment.



# Financial and Corporate

## Holds Normal Gain in Net

**Hawaiian Company Still Meeting Cost of Service Without Increase in Rate of Fare**

That the Honolulu Rapid Transit & Land Company, Honolulu, Hawaii, had a fairly prosperous year is reflected in the very complete annual report recently issued covering operations for 1919. The revenue from passenger transportation was 95.2 per cent of the gross earnings. It showed a 6.53 per cent increase for the year, although the

### INCOME STATEMENT OF HONOLULU COMPANY

| Year Ended Dec. 31                      | 1919             | 1918             | Per Cent Change, + Inc. - Dec. |
|---|------------------|------------------|--------------------------------|
| Passenger revenue...                    | \$742,275        | \$697,278        | + 6.45                         |
| Special car revenue...                  | 1,655            | 966              | + 7.14                         |
| Mail car revenue...                     | 225              | 220              | + 2.27                         |
| Freight revenue...                      | 10,465           | 8,212            | +26.75                         |
| <b>Total railway operating revenue.</b> | <b>\$754,620</b> | <b>\$706,676</b> | <b>+ 6.71</b>                  |
| Way and structures...                   | \$54,291         | \$67,802         | -19.80                         |
| Equipment...                            | 48,933           | 38,639           | +26.60                         |
| Depreciation...                         | 67,437           | 67,285           | + 0.23                         |
| Power...                                | 77,605           | 59,172           | +31.30                         |
| Conducting transportation...            | 212,269          | 193,777          | + 9.54                         |
| Traffic...                              | 7,048            | 10,361           | + 3.19                         |
| General and miscellaneous...            | 55,549           | 52,833           | + 5.14                         |
| <b>Total operating expenses</b> .....   | <b>\$523,132</b> | <b>\$489,869</b> | <b>+ 6.80</b>                  |
| <b>Net operating revenue</b> .....      | <b>\$231,488</b> | <b>\$216,807</b> | <b>+ 6.76</b>                  |
| Taxes and car licenses                  | 64,152           | 61,818           | + 3.76                         |
| <b>Operating income</b> .....           | <b>\$167,336</b> | <b>\$154,989</b> | <b>+ 7.96</b>                  |
| Non-operating income.....               | 26,326           | 28,475           | - 7.57                         |
| <b>Gross income</b> .....               | <b>\$193,662</b> | <b>\$183,464</b> | <b>+ 5.56</b>                  |
| Interest—bills payable.....             | 8,400            | 6,695            | +25.48                         |
| <b>Net corporate revenue</b> .....      | <b>\$185,262</b> | <b>\$176,769</b> | <b>+ 4.81</b>                  |
| Dividends.....                          | \$160,000        | \$160,000        | .....                          |
| Sinking fund reserve.                   | 107,314          | 93,426           | +14.86                         |
| Loss and gain.....                      | .....            | 2,929            | .....                          |
| <b>Deficit for year</b> ....            | <b>\$82,052</b>  | <b>\$79,586</b>  | <b>- 3.86</b>                  |

months of January and February were lean owing to the "flu" epidemic.

The number of passengers carried increased 6.43 per cent, or slightly more than 900,000. The average number of passengers carried daily approximated 42,000, of which 24 per cent used transfers. The increase in revenue on the various routes ranged from 4.57 to 12.63 per cent.

Freight tonnage increased 27.2 per cent for the year but the revenue failed to hold the increase. This would indicate that the average rate for the increased business was below the average heretofore handled, this causing a decrease of 0.305 per cent in the average rate per ton.

The operating ratio did not increase materially, but the cost of power and conducting transportation increased sufficiently to offset the saving made in maintaining way and structures.

### STATISTICAL INFORMATION

|  | 1919              | 1918              | Per Cent Change + Inc. - Dec. |
|--|-------------------|-------------------|-------------------------------|
| Average total miles operated.....          | 30                | 30                | .....                         |
| Car-miles.....                             | 2,115,575         | 2,082,133         | + 1.605                       |
| Car-hours.....                             | 222,369           | 218,920           | + 1.572                       |
| Rev. passengers (a).....                   | 15,225,168        | 14,304,489        | + 6.43                        |
| Transfer passengers.....                   | 3,703,350         | 3,407,229         | + 8.68                        |
| Free fares.....                            | 158,268           | 177,219           | -10.68                        |
| <b>Total traffic</b> .....                 | <b>19,086,786</b> | <b>17,888,937</b> | <b>+ 5.67</b>                 |
| <b>Gross passenger revenue</b> .....       | <b>\$743,931</b>  | <b>\$698,244</b>  | <b>+6.54</b>                  |
| Average fare:                              |                   |                   |                               |
| Per revenue passenger (cents)...           | 4.88              | 4.88              | .....                         |
| Per total passenger (cents).....           | 3.905             | 3.91              | .....                         |
| Operating ratio (per cent).....            | 69.39             | 69.35             | .....                         |
| Car-mile statistics:                       |                   |                   |                               |
| Operating revenue (cents).....             | 35.67             | 33.94             | + 5.1                         |
| Operating expenses (cents).....            | 24.75             | 23.50             | + 5.3                         |
| Net income (cents).....                    | 8.75              | 8.46              | + 3.43                        |
| Passenger traffic.....                     | 9.015             | 8.57              | + 5.24                        |
| Car-hour statistics:                       |                   |                   |                               |
| Operating revenue.....                     | \$3,510           | \$3,358           | + 4.53                        |
| Operating expenses.....                    | \$2,355           | \$2,235           | + 5.37                        |
| Net income.....                            | \$0,833           | \$0,806           | + 3.34                        |
| Passenger traffic.....                     | \$85.7            | \$81.6            | + 5.03                        |
| Ratio car-miles to car-hours (m.p.h.)..... | 9.52              | 9.52              | .....                         |
| Taxes—per cent of gross revenue.....       | 8.22              | 8.41              | -2.26                         |
| Freight traffic:                           |                   |                   |                               |
| Tonnage handled.....                       | 33,331            | 26,213            | +27.20                        |
| Revenue.....                               | \$10,689          | \$8,432           | +26.75                        |
| Revenue per ton (cents).....               | 32.069            | 32.167            | - 0.305                       |
| Wages paid conductors and motormen.....    | \$197,677         | \$180,776         | + 9.37                        |
| Per car-mile (cents).....                  | 9.34              | 8.65              | + 7.98                        |
| Per car-hour (cents).....                  | 89.00             | 82.40             | + 8.02                        |

(a) Full fares, half fares and chartered cars.

Increased power cost was due principally to the higher contract price for fuel oil, which advanced from \$1.60 to \$2 per barrel. The following table shows the increase in fuel cost in the last two years:

|  | 1919            | 1918            |
|--|-----------------|-----------------|
| Wages.....                                     | \$13,492        | \$11,817        |
| Fuel.....                                      | 61,585          | 43,754          |
| Lubricants and waste.....                      | 747             | 949             |
| Miscellaneous repairs.....                     | 1,781           | 2,653           |
| <b>Total</b> .....                             | <b>\$77,605</b> | <b>\$59,172</b> |
| Kilowatt-hours produced.....                   | 5,122,527       | 4,910,921       |
| Average cost per kw.-hr. (cents).....          | 1.515           | 1.205           |
| Barrels of fuel oil consumed.....              | 30,351          | 28,105          |
| Kilowatt-hours per barrel of oil consumed..... | 168.78          | 174.73          |

Details of the cost of track and paving maintenance together with similar figures for the distribution system follow:

| OVERHEAD DISTRIBUTION SYSTEM                       |                 |                 |  |
|--|-----------------|-----------------|--|
|  | 1919            | 1918            |  |
| Maintenance and rehabilitation:                    |                 |                 |  |
| Labor.....   | \$4,730         | \$4,375         |  |
| Material.....                                      | 2,379           | 3,432           |  |
| Poles—Maintenance:                                 |                 |                 |  |
| Labor.....   | 1,355           | 818             |  |
| Material.....                                      | 2,864           | 1,982           |  |
| <b>Total maintenance distribution system</b> ..... | <b>\$11,328</b> | <b>\$10,607</b> |  |
| Feet of trolley wire replaced....                  | 6,747           | 5,000           |  |
| WAY AND STRUCTURE COSTS                            |                 |                 |  |
|  | 1919            | 1918            |  |
| Track maintenance and rehabilitation:              |                 |                 |  |
| Labor.....   | \$12,833        | \$14,952        |  |
| Material.....                                      | 5,991           | 14,301          |  |
| Paving maintenance and rehabilitation:             |                 |                 |  |
| Labor.....   | 5,907           | 5,629           |  |
| Material.....                                      | 6,439           | 8,129           |  |
| Superintendence of way and structures.....         | 5,358           | 6,239           |  |
| Cleaning and sanding track....                     | 4,495           | 4,131           |  |
| Storm work.....                                    | 64              | 1,110           |  |
| <b>Total—Track and paving maintenance</b> .....    | <b>\$41,087</b> | <b>\$54,490</b> |  |

## Conference on Ways and Means of Financing

The Public Utilities Commission of Illinois realizes that unless the utilities of the State are able to raise money promptly to finance indispensable extensions and enlargements to plant and equipment, the public will be put to serious loss and inconvenience. In order to find out what remedies the utilities and others have to suggest, the commission has issued an order for hearings in Chicago on April 29 and in Springfield on May 3, at which the question is to be discussed. These hearings were requested by utilities which have been unable to finance extensions ordered by the commission and also at the request of other utilities which have been unable to raise the money to finance additions and improvements which they consider necessary in order to keep up with the needs of the communities served.

In discussing this situation with a representative of the ELECTRIC RAILWAY JOURNAL, James H. Wilkerson, chairman of the commission, said:

The financial problems of the utilities of the State are independent of questions of their financial stability or of the rates charged for service. The companies say they are unable to get money by the sale of securities on any reasonable terms and the commission must consider how far the utilities are to be required to make extensions under such financial conditions. The difficulties of the companies as presented to the commission are twofold. One is due to the general financial condition of the entire country. The other is local and has to do with the credit of this State where the misuse of public utility questions for political purposes has made people with capital afraid to invest in the securities of the utilities.

In other words, the utilities which serve the public of this State are drifting into the conditions of the railroads when they were unable to meet the demands of the public for adequate service. Very little new construction was undertaken by utility companies during the war, and additional equipment is needed to meet the greatly increased demands for all kinds of public utility service. Unless something is done promptly, the public will suffer severely, as the companies cannot respond to the public demand without money. Notices of the two hearings have been sent to all interested utilities, civic associations and municipalities so that every one concerned will have an opportunity to present complaints, submit evidence and make suggestions to the commission.

## \$91,076 Profit in Boston for March

The statement of the board of trustees of the Boston (Mass.) Elevated Railway for the month of March shows a net profit of \$91,076. Applying this amount to the accumulated deficit, there remained on March 31 an accumulated deficit of \$661,266. This, it is expected, will be wiped out by the beginning of the fall period.

The total cost of operation for the month of March was \$2,142,208. Of this amount, \$1,399,766 represents wages, \$118,115 was required for the removal of snow, \$294,697 was required for the maintenance of track and line equipment, \$277,405 for power and the remainder for general expenses incurred in operation.

The total receipts were \$2,927,022, and the total cost of service \$2,835,946. The cost per passenger was 9.723 cents, of which 4.799 cents was for labor.

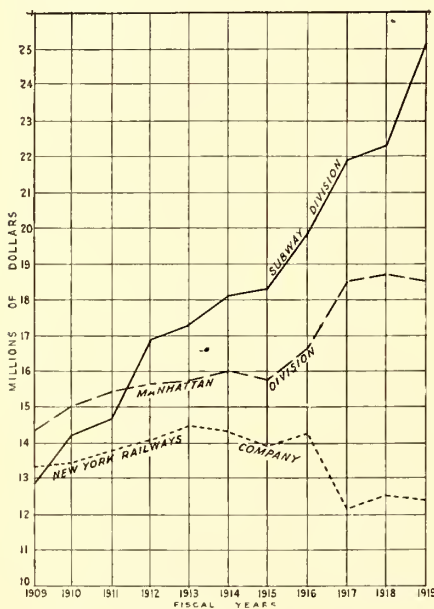


## One-Man Cars Proposed for New York City

Stone & Webster Report on New York Railways Suggests One-Man Cars for Entire Base Load of Company—Flat Fare with Free Transfers Recommended—Interborough Upheld

Stone & Webster have submitted a report, under date of Jan. 1, 1920, to Job E. Hedges, receiver, New York Railways, which analyzes the present condition, operating methods and financial situation of the New York Railways and makes recommendations looking toward financial relief and increased operating efficiency. The outstanding features are an increase of fare to be made with the retention of the flat fare and with free transfers, a service-at-cost franchise basis, and the adoption of one-man cars to carry the base load of the system. The report is made in compliance with a request from Mr. Hedges, under date of May 31, 1919, since which time there have been numerous changes in the situation of the New York Railways arising out of the partial disintegration of the system, and it has been impracticable to amend the report in all respects in accordance with these changes. Consequently, the report is based upon conditions as of June 30, 1919, and none of the changes that has occurred since that time has been taken into account except the general 25 per cent increase in wages effective on Aug. 17, 1919, and the 2-cent charge for transfers.

**T**HE report is introduced by a summary of the findings and principal recommendations and contains extended arguments and discussions, with supporting data, on the various points which the report includes



GROSS REVENUES—1909-1919

and upon which recommendations are made. A large number of charts, maps and diagrams are included in the report to complete the analysis.

A detailed examination of the physical property of the company and its subsidiaries shows the entire property in fair operating condition except the 96th Street power station, which, however, has not been operated for four years. It appears inadvisable to expend \$500,000 to put this plant in operating condition, particularly as it could not even then produce power as cheaply as it can be purchased. The engineers do find, however, that the condition of the track is such as to demand large amounts for renewal jobs for which the company has not heretofore been able to accrue any cash reserves whatever. In other words, there is a deferred maintenance on track of ap-

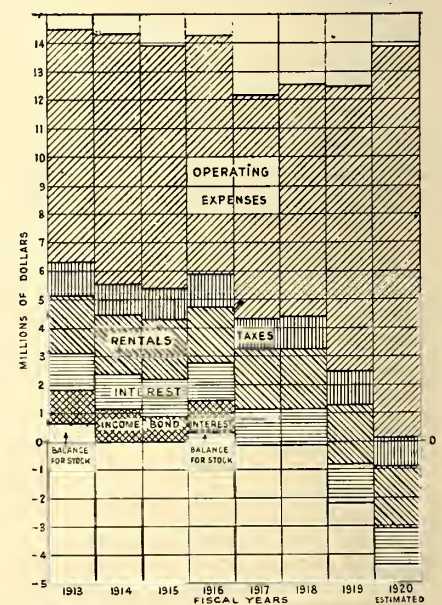
proximately \$13,000,000, which should be expended by 1926. The maintenance standard of the system as carried out up to four years ago is expressed as good, but the maintenance standard has apparently dropped off due to the necessity of retrenchment until it can now be expressed as only fair. One of the reasons given for the present condition of track over subway is that after subway construction, the track has never been left in fairly satisfactory condition.

Since 1916, the gross earnings have gone down steadily until within a few months, due to rapid transit competition, wartime, labor troubles, and the like, the car-miles have been cut so as to increase steadily the gross revenue per car-mile. The Third Avenue system has made a more drastic cut, but it is not evident that the New York Railways could have cut any further than it did. The gross passenger revenue per car-mile increased from 1916 to 1919 from 38.94 cents to 45.58 cents, while the increase for the corresponding period on the Third Avenue system was from 38.6 cents to 53.9 cents. The average cost per revenue passenger has risen from 5.88 cents to 7.58 cents in the same period, while the average gross earnings per revenue passenger have changed only from 4.87 cents to 4.88 cents.

As a means of increasing gross revenue until it exceeds gross operating expense, the engineers suggest several steps, the principal one of which is the adoption of the one-man safety car to carry the twenty-four-hour base load of the system. An immediate purchase of 110 of these cars is suggested, with an ultimate purchase of at least 550. There is an estimated annual saving of more than \$400,000 in operating expenses which should result from the use of these one-man cars. Sufficient additional two-man cars would, of course, have to be provided during rush hours to compensate for the amount by which the aggregate and maximum capacity of the safety cars is less than that of the two-man cars which they would replace.

There is an extended argument in

support of the recommendation for the adoption of the one-man car, data being given to show the saving in power cost, the saving in platform expense, the saving in car maintenance, and an argument indicating that there would be an increase in gross. Double-end one-man cars are recommended. Assuming the favorable financial showing, the cars must be "proved in," so to speak, to New York traffic conditions. Extended traffic studies were made and typical busy corners in New York were compared with typical busy corners in other cities in which one-man cars are already operating, notably Seattle, Wash.; Kansas City, Kan., and Bridgeport, Conn. At the intersection of Main and Fairfield Streets in Bridgeport, for example, a total of 1,261 vehicles, including street cars, pass in one hour. The intersection at this point is only 38 x 33 ft. Safety cars operate over this intersection satisfactorily and are handled more easily than the double-truck cars that operate over the same tracks. At Broadway and Forty-second Street in New York only 1,173 vehicles, including street cars, pass



DISTRIBUTION OF GROSS INCOME, 1913-1920

during the busy hour of the day, the intersection at this point being 55 x 50 ft. This and other data seem to indicate that the one-man cars can navigate in traffic as congested as found in New York.

That the one-man car is adaptable to the underground trolley system is attested by J. S. Doyle, superintendent of car equipment of the New York Railways. That the public will like the car is indicated by testimony from other companies, the questionnaire results of the American Electric Railway Transportation and Traffic Association showing 96 per cent of the communities in favor of it being quoted. As to the attitude of trainmen, results of the canvass under the same questionnaire show 89.2 per cent favorable. The fact that one-man cars climb successfully



the steep hills in Seattle and in Bangor, Me., indicates no difficulty on such grades as are found in New York.

As to other operating economies, the report finds that the company is already doing what it can in power saving by coasting recorders, by using the turnback, and by accident prevention. It finds the skip-stop inapplicable to New York conditions and suggests that a part of the special taxes should be remitted by the city. Information is quoted showing that the New York Railways pays in taxes 4.92 cents per car-mile as compared with 2.19 cents for the Philadelphia Rapid Transit Company and 1.86 cents for the United Railroads of San Francisco.

#### NEW CAPITAL NEEDED FOR CARS

There is no apparent immediate necessity for new capital, except for the purchase of one-man cars. These, it is suggested, should be financed through equipment trust certificates and paid for out of earnings from the savings in operation. It is pointed out, however, that the present rate of fare is insufficient to furnish funds required for track rehabilitation work of large magnitude during the coming five or seven years.

The analysis of the traffic business of the company shows an average haul of 1½ miles, thus confining the field of the surface railway to the short-haul business. From 1914 to 1919 the annual gross earnings of the company fell from \$14,295,000 to \$12,418,000, while the Interborough gross earnings, subway and elevated, during the same period increased from \$34,128,000 to \$43,814,000. While, since July 1, 1919, there has been a partial return of the surface line earnings, any further marked increase in surface line earnings is too problematical to count on with confidence. Headways are now close enough to get all the business available in the inner part of the system, and it is doubtful if any further business might be obtained in outlying sections from more frequent headways using safety cars.

The only relief possible to increase gross earnings, therefore, seems to be in an increase in fares. An analysis of the fare situation and the traffic on the road leads the engineers to the conclusion that the answer cannot be found in a 5-cent fare with a 1, 2, 3, or even 5-cent transfer charge, but that the most simple and effective way is to inaugurate a flat increase in rate with free transfers. The same analysis of the traffic leads the engineers to the conclusion that the surface lines are of no particular importance as feeders to the rapid transit system, but that the surface lines' usefulness will continue to be confined to the crosstown and short-haul business.

#### SERVICE AT COST RECOMMENDED

The report calls the arrangement between the New York Railways and the Interborough Rapid Transit Company advantageous for the former. The surface lines, at a cost of one-fifth the total general management cost of the

entire system, Interborough and surface combined, get the benefit of the service and judgment of an organization of great ability and experience. This applies as well to purchasing, maintenance of equipment, and power, and the cumulative effect of these factors is of undoubted advantage to the New York Railways. A detailed analysis of power rates and the relation from a power standpoint between the New York Railways and the Interborough Rapid Transit Company is given in the discussion of the report. It is of interest to note that for the year 1919 the power costs of the New York Railways were 3.38 cents per car-mile as compared with 5.40 cents per car-mile for the Philadelphia Rapid Transit Company.

Under the discussion of the franchise situation in New York, the engineers recommend that the New York Railways and the city work out a plan providing for a service-at-cost franchise. A short analysis of what is meant by this term is given and reference is made to other cities in which such a plan is in successful operation.

## Financial News Notes

**Valuation Commission Created.**—The bill creating a commission to value the public utility properties in New Jersey and especially the Public Service Railway has been passed by the New Jersey Legislature. The commission, under whose direction the work will be carried out, consists of the Governor, State Comptroller and State Treasurer.

**Receiver Discharged.**—J. D. Whittemore was discharged as receiver for the West Virginia Traction & Electric Company, Wheeling, W. Va., on April 14. As announced in the *ELECTRIC RAILWAY JOURNAL* for April 10, page 772, the line will be transferred to the Wheeling Public Service Company, details of the capitalization of which were given at that time.

**Will Seek Permission to Abandon Lines.**—The Steubenville, East Liverpool & Beaver Valley Traction Company, East Liverpool, Ohio, notified the Mayors of East Liverpool, Wellsville and Steubenville on April 16 that it would apply on or about May 1 to the State Public Utilities Commission for permission to abandon three lines in East Liverpool, two in Steubenville and make changes in its service at Wellsville because of a loss of \$167,513 last year. The company appeals for additional revenue. The present city fare is 5 cents.

**Receiver for Road at Olean.**—William A. Dusenbury, Olean, N. Y., has been appointed receiver for the Western New York & Pennsylvania Traction Com-

pany, Olean, by Justice Cole in the Supreme Court in Buffalo. The appointment was made on behalf of a judgment creditor. The action was not opposed by the company. Wilson R. Page resigned recently from the presidency of the company and the management and operation of the line were taken over by Day & Zimmerman, Philadelphia, Pa. Mr. Dusenbury will continue as receiver under bond of \$100,000.

**Three-Year Notes Sold by Milwaukee Company.**—Spencer Trask & Company, New York, N. Y., are offering for subscription \$2,000,000 of three-year 7 per cent secured gold notes of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., due on May 1, 1923. The offering price is 97½ and interest to yield full 8 per cent. Interest is payable on May 1 and Nov. 1. The notes, in addition to being a direct obligation of the company, will be secured by the pledge of \$3,000,000 of general and refunding mortgage 5 per cent bonds, due in 1951. This is presumably a refunding operation as the company has \$2,000,000 of two-year 7 per cent notes coming due on May 1.

**Preferred Stock Dividend Passed.**—The dividend on the preferred stock of the Nashville Railway & Light Company, Nashville, Tenn., payable ordinarily on April 1, 1920, was passed because of an action of the Public Utilities Commission of the State of Tennessee in connection with the application of the company for an increase in fare. This increase was granted on certain conditions, one of which was that "until such time as the commission shall establish rates on the permanent basis of the amount invested in the property of the company, and upon which it is entitled to a proper return," the company not pay dividends. The \$274,000 of Nashville & Edgefield bonds due on Jan. 1 were paid at maturity. Refunding and extension bonds of a like amount were issued by the Nashville Railway & Light Company.

**Call for Deposits.**—A committee has asked the holders of the first mortgage 5 per cent bonds of the Ft. Wayne, Van Wert & Lima Traction Company, Springfield, Ohio, on which interest was defaulted on Jan. 1, 1920, to deposit their bonds, with all unpaid coupons, including that of Jan. 1, 1920, attached, with either the Fidelity Trust Company, Philadelphia, Pa., or the People's Savings & Trust Company, Pittsburgh, depositaries. The committee is composed of J. C. Neff, chairman, Fidelity Trust Company, Philadelphia; George K. Johnson, Penn Mutual Life Insurance Company, Philadelphia; George deB. Greene, and Thomas J. Walsh, E. H. Rollins & Sons, New York; A. C. Robinson, People's Savings & Trust Company, Pittsburgh, with T. H. Atherton, secretary, 325 Chestnut Street, Philadelphia, Pa. The company is included in the system of the Ohio Electric Railway, the operating management of which has passed to Day & Zimmerman, Philadelphia, under conditions outlined recently in the *ELECTRIC RAILWAY JOURNAL*.



# Traffic and Transportation

## St. Louis Fare Reduced

Commission Orders 7-Cent Flat Rate—  
Finds Return Under 8-Cent  
Fare Excessive

Declaring revenues resulting from an 8-cent cash fare to be excessive, the Missouri Public Service Commission on April 2 ordered the United Railways of St. Louis to reduce its rate to 7 cents straight. The company was directed to lower the rate for children from 4 cents to 3 cents. Improvements in the service were also specified. The commission's order became effective on April 10. The new rates are to continue operative until Jan. 1, 1921.

In reaching an estimate of the value of the company's property, the commission accepted two valuations, one of \$50,000,000, and the other of \$60,000,000, for the entire physical properties in St. Louis city and county. This was done in the absence of the true valuation of the property, which the commission announced will be completed by its engineers and accountants within a short time.

### \$950,000 REDUCTION

Basing its conclusions on figures submitted for the period from November to February, the commission decided that, under the existing fares, the United Railways would show an approximate return of 7.45 per cent for the entire year if the valuation were placed at \$60,000,000, and 8.95 per cent if the \$50,000,000 valuation were to be accepted.

This rate of return, the report states, would be excessive, and a reduction in fares was therefore authorized. The saving to the public by the reduction is estimated at \$950,000 a year, according to J. L. Harrop, chief engineer for the commission.

The decision was made following an application of the receiver for an extension of the present fares for the ensuing year. Attorneys for the city, who opposed the extension, declared that the annual revenue of the company was more than 50 per cent greater than under the 5-cent fare, and that the revenue was increasing each month. Since Nov. 1, 1919, the fare has been 7 cents for tokens in quantities of fifty or more, 7½ cents when purchased in pairs from conductors, seven fares for 50 cents, and 8 cents for single fares. Children's fares have been two for 7 cents, or 4 cents for single fares.

### MORE TRAILERS ORDERED

The decision was reached by the unanimous vote of the entire commission, sitting in Jefferson City. The order directed the receiver for the company to place in operation fifty additional trailers. The company is per-

mitted to furnish the extra cars at the rate of two a week.

According to the findings of the commission, the company is expected to transport 284,000,000 passengers in 1920. The number of passengers in November was 21,931,788; in December it rose to 22,984,394. The revenues for the two months were \$1,606,585 and \$1,683,258, respectively. For the same months in 1917, when the flat 5-cent fare was operative, the revenues were \$1,063,446 for November and \$1,088,440 for December.

### TRAFFIC INCREASE SHOWN

Increases in revenue and the number of passengers carried during January and February, 1920, corresponding to those shown in November and December, were shown. The commission based its estimate of the increasing number of passengers on the fact that more persons ride in the summer.

The new rates are effective from April 10 to Jan. 1, 1921, with the commission retaining jurisdiction to again fix the rates upon the definite appraisal of the company property.

The city has applied to the commission for a rehearing of its order, asking that the rate be further reduced to 6½ cents. In its motion for rehearing the city alleges that the commission's allowance of 6 per cent of the company's gross revenue for injury and damage reserve is excessive. The motion also objects to the setting aside annually of \$1,500,000 for the depreciation reserve and claims that \$900,000 would be adequate for this purpose.

## Atlanta Company Wants 8-Cent Fare

A petition for increase in rates which the Georgia Railway & Power Company, Atlanta, Ga., has announced it will file with the Railroad Commission contemplates an advance of 33½ per cent in all classes of service, including gas, electric and railway service. In the case of gas the rate would be increased from \$1.25 per 1,000 cubic feet to \$1.66 per 1,000 cubic feet, the maximum rates subject to 10 per cent discount.

The maximum rate for electric service is now 8 cents per kilowatt hour. The new rate would be 10.6 per kilowatt hour. The increase proposed in railway fares would raise the fare from 6 cents to 8 cents.

The request for rate increases will be based on the increased cost of operation of the company, included in which is the recent award of a 15 per cent increase to motormen and conductors of the company. This increase was granted through arbitration.

## Auto Deadline Does It

Anti-Parking Rules Reduce Congestion  
and Speed Up Railway Traffic  
in Los Angeles

Restrictions on the parking of vehicles within the congested district of Los Angeles, Cal., are having a marked effect in improving electric railway service in that city. Although the "no-parking" regulations have been in force for only two weeks, they have already accomplished results which, according to H. Z. Osborne, Jr., chief engineer of the city's public utilities department, fully justify their existence. The operation of cars has been speeded up by the cutting down of headway, and, for the first time in years, schedules are being maintained.

The so-called "no-parking" ordinance went into effect on April 10. Under it the city's business district is divided into three sections, a "congested" zone, a semi-restricted section, and an unrestricted area. Within the first of these, the parking of vehicles is prohibited between the hours of 11 a.m. and 6:15 p.m. Outside of this "congested" area, but still within the business district proper, is a zone within which automobiles may be parked for a period of two hours without police interference. Beyond the boundaries of this area, unrestricted parking is permitted. The use of the "left-hand turn" is also prohibited within the no-parking hours.

### DRASTIC MEASURES NEEDED

The ordinance was passed by the City Council some time ago as a means of relieving a condition of congestion declared by competent observers to have few parallels in the United States. Drastic regulations to control the movement of vehicular traffic were recommended by the State Railroad Commission as offering the best hope of remedying the situation. The no-parking plan was described in detail in the ELECTRIC RAILWAY JOURNAL for March 20, page 623.

The speeding up of rush-hour traffic has been the most striking result of the enforcement of the new rules. Electric railway cars, both local and inter-urban, are moving through the city streets without delay. Schedules are being maintained without the interruptions which have been frequent in the past.

Car riders are arriving home in the evening from ten to fifteen minutes earlier than formerly. In the past it has been a common occurrence for cars to be delayed from forty minutes to one hour or more. These delays, which resulted from congestion in the business district, have been reduced to a minimum.

Pedestrian traffic, also, has been speeded up and has been placed on a basis of greater safety. At the busiest corner of the central district a check of persons crossing the street between the hours of 5 and 6 p.m. shows an increase in foot-travel of 30 per cent.



## Washington Increase Granted

### Commission Allows Eight-Cent Cash Fare on All Lines of District— Tax Readjustment Urged

Cash fares on all the electric railway lines of Washington, D. C., will advance from 7 cents to 8 cents on May 1 under the terms of an order issued on April 15 by the Public Utilities Commission of the District of Columbia. The increase affects the lines of the Washington Railway & Electric Company, the Capital Traction Company, the Washington-Virginia Railway, the East Washington Heights Traction Railroad and their subsidiaries. Four tickets will be sold for 30 cents. The 2-cent charge for inter-company transfers will continue, there being no charge for transfers between the lines of the same company. The new rates will remain in effect until Jan. 1, 1921.

THE commission based its order upon the application of the Washington Railway & Electric Company for relief beyond that afforded by the 7-cent cash fare with four tickets for 25 cents, which was put into effect Nov. 1, 1919. Early last January the company requested the commission to sanction a further increase in fare, stating that it could not long continue to operate at the 7-cent rate. At subsequent hearings William F. Ham, president of the road, testified that during the preceding twenty months the company had operated at a loss of more than \$1,100,000.

#### \$625,000 ESTIMATED INCREASE

The new rate will, it is estimated by the commission, increase the company's revenue by \$625,000 annually. This is less than the amount declared by the company to be necessary to assure a return of 6 per cent upon the investment. Under the new rates the return on the railway investment of the District taken as a whole will, it is believed, be slightly in excess of 7 per cent.

The Capital Traction Company had not applied for an increase, but the commission deemed it advisable to order a uniform rate for both roads. The two systems are highly competitive in the central section of the city, and the commission feared the demoralizing effect of a disparity in rates. Further adjustment of revenue to give both systems approximately the 6 per cent return declared by the commission to be just should, in that body's opinion, come from Congress in the shape of regulation of the tax rate. On this point the commission said:

The commission is of the opinion that only a part of the relief asked for should be secured by an increase in rates of fare and that in fixing a rate the commission should assume that Congress will also grant relief through a modified form of taxation.

The commission is faced, therefore, with the necessity of granting an increase to both systems, but it believes that the Congress should readjust the method of taxation so that the Washington Railway & Electric Company will be relieved of a portion of its present tax burden. The revenues of the district thus diminished would be recouped by increasing the tax on the other system, and this increased tax would in turn offset the fare increase granted to that company solely to protect the public from the evil consequences of different rates of fare for the several companies.

The proposed increased fare will under existing law unduly increase the revenues of the Capital Traction Company, but if the street railway lines of the District of Columbia be considered as a whole the new rate will yield a return only slightly in excess of 7 per cent on the combined fair value of all the street railway property used and useful for street railway purposes in

the District of Columbia as heretofore determined by this commission.

A proposal to establish a zone-fare system was considered by the commission, but was rejected as impracticable under existing conditions. The order referred to the proposal as follows:

At the request of the commission, the Washington Railway & Electric Company presented information through its expert, Prof. Albert S. Richey, of the application of a zone system to its lines. Decided opposition was manifested by individual citizens and by representatives of various civic bodies to the adoption of any form of measured service, and while the commission believes that it is right and just in principle that the users of a public service should pay for that service as far as possible in proportion to the cost of furnishing it to them, it is of the opinion that under present conditions it is inadvisable to adopt a zone system of street car fares or any other form of measured street railway service.

### Wants Jitney Menace Removed

As a means of reducing the deficit in the operation of the Seattle (Wash.) Municipal Railway, Mayor Hugh M. Caldwell, in a communication to the City Council, asks for more stringent regulation of the jitneys. D. W. Henderson, general superintendent of railways, estimates that curtailment of the jitney competition would result in an additional revenue of approximately \$200,000 annually for the railway. Mayor Caldwell wants the jitneys to operate on schedule and the equipment to be subject to city inspection. The operation of jitneys in Seattle began in 1915, when 1,500 buses entered the service. At present about 215 jitneys are operating in the city.

Mayor Caldwell urges that the Council consider first of all the fact that the municipal railway should be so operated as to pay expenses. He points out the injustice of permitting the jitneys to scoop up the cream of the business, leaving the railway to maintain its schedule throughout the day, regardless of whether or not it is profitable to do so. Mr. Caldwell concurs in the recommendation of the superintendent of railways that legislation should be passed by the city requiring the operators of jitney buses to:

(a) Secure a license to operate a motor bus (and this should include inspection with the right of suspension or revocation).

(b) To operate according to schedule between the terminals of route applied for and at fixed rates of fare.

(c) All vehicles used in motor bus service to be subject to inspection as to equipment.

Mayor Caldwell also submitted a report of E. A. Mitchell, transportation inspector, declaring that city lines can take care of 40 per cent more business

than is now being carried. Mr. Mitchell, in his report, calls attention to the unfair methods used by jitney drivers to secure business.

A report submitted by the weights and measures division indicates that the personnel of the jitney organization is far from satisfactory and is not subject to proper supervision.

The utilities committee of the Council has asked W. F. Meier, Corporation Counsel, to prepare an ordinance providing for the regulation of the jitneys.

### Local Regulation Proposed

#### People of St. Paul Will Vote on May 4 on Putting Fare Control in Hands of Council

At the general city election on May 4, the people of St. Paul, Minn., will vote upon a proposed amendment to the charter of the St. Paul City Railway authorizing the City Council to regulate the fares to be charged by the company, providing, however, a maximum of 7 cents with free transfer. The ordinance has been passed by the City Council and accepted by the company. It now awaits action by the people. The original ordinance was approved on Sept. 20, 1889. It has nineteen years to run.

It is prescribed in the amendment that in no event shall the company be entitled to more than the present 5-cent fare until it shall have built and put in service sufficient cars, or is furnishing car service as prescribed by the city ordinance. The company is specifically relieved from any 5 per cent gross earnings tax because such a tax tends to increase the fares. The company does not now pay any such gross earnings tax.

While some doubt exists in the minds of city officials as to whether this ordinance will be approved at the election there is still pending in the Federal Court a suit brought by the company to restrain the city from enforcing the service feature of the ordinance now in force. The injunction is in the form of a temporary restraining order. The hearing as to whether this shall be made permanent may be called at any time.

The ordinance will in effect do four things if approved:

It will grant to the City Council the power to regulate and fix fares.

It will prohibit the Council from ever fixing the rate higher than 7 cents, but will not establish a minimum.

It will prohibit the company from ever receiving any increase unless and until it provides cars sufficient to furnish the service prescribed by the city ordinances.

It will place the company under all restrictions and regulations contained in the city charter relating to public utilities, excepting only that it will specifically exempt the company from paying the gross earnings tax.

The controversy over service by the railway originated two years ago. The company pleaded that it was operating at a loss and asked relief from the Council in the way of larger fares than those prescribed in the ordinance. The Council had this under consideration for a long time and in 1918 made an audit of the company's books through



a certified accountant. The result indicated that the company was operating at a loss, the finding based on the understanding that the figures it furnished the city were correct. In August, 1919, F. L. Powers succeeded Commissioner Oscar Keller in charge of public utilities and he took an immediate interest in the question.

Mr. Powers had another examination made, by the chief accountant of the department, and, excepting an amount set aside by the company for depreciation, a matter upon which authorities might disagree, it was found that the company was operated at a loss in 1919. After the cost-of-service franchise failed of approval at a special election last fall in Minneapolis the plan was proposed to the St. Paul company that the city regulate the fares, the advance and decline to be left to the judgment of the Council. This amendment to the ordinance was prepared by Commissioner Powers and submitted to the company. In due time the company filed its acceptance of the ordinance. The matter will now go before the people.

## City's Appeal Denied

**New York Commission Rules Rochester Lines Are Fulfilling Requirements Under Present Conditions**

The application made by the city of Rochester to the Public Service Commission for the Second District of New York for an order directing the New York State Railways to increase the railway service in Rochester was denied on April 16. In the opinion the commission said:

It appearing from the evidence that orders heretofore made by this commission with regard to equipment and service in the city of Rochester have not been disobeyed by said railway company, except for a short period during a time of emergency; and that the revenues of the company are not sufficient to enable said company to furnish adequate, sufficient and proper service within the city of Rochester; and the commission being of the opinion that under the facts disclosed in the record, the making of an order requiring the large additions to service which are found to be necessary would be an arbitrary and unreasonable exercise of the power possessed by it under subdivision 2 of section 49 of the Public Service Commission's law.

In consequence the commission ruled that the order to show cause in the case be discharged and the case closed on the books of the commission.

Commissioner Barhite wrote the prevailing opinion. He is sustained by Chairman Hill and Commissioner Irvin. Commissioner Kellogg dissented. Commissioner Van Namee, recently appointed, was excused from voting. In dissenting, Commissioner Kellogg favored the issuing of an order directing the respondent to furnish service "which shall be adequate as required by sections 26 and 49, subdivision 2, of the Public Service Commission law."

Commissioner Barhite found that the railway obeyed the commission's order to reroute the Monroe Avenue line and also to increase its service in non-rush hours up to Jan. 16 last, which sick-

ness of employees and severe weather prevented. Commissioner Barhite also recited that the company set up the claim that the commission had no authority in law to confiscate its property. This is what the company alleged would be brought about by an order to increase service with an increase in fare.

The law of New York State provides that where the Public Service Commission fixes rates it shall have due regard among other things to a reasonable average return upon the value of the property actually used in the public service and to the necessity of making reservations out of income for surplus and contingencies. Mr. Barhite said:

If it be contended that if a rate when fixed is fair and reasonable, that such rate is fair for all the time does not follow. While it is true that these cases deal with rates of fare as fixed by statute, as distinguished from the Rochester contract, it cannot be said that the distinction takes away from the company the protection of the Constitution, which is the supreme authority in the land. Even if it be urged that the State Constitution, Article III, section 18, takes away the protection guaranteed by the United States Constitution, then the only result would be that that particular section of the State Constitution, to which reference is made, is itself unconstitutional.

Mr. Barhite finds that in view of the legal right which the New York State Railways has to demand a proper compensation for its services, the commission might make some "other" order with regard to service if it appears that its present rate of fare will not furnish such service.

The commissioner refers to the record showing the deficit for operation in 1919 in the 5-cent zone in Rochester, which was \$643,171, and on the suburban lines \$80,443, and that no estimated deficit for a future twelve-month period with an increased proper service in the 5-cent zone would amount to \$835,974. He asks, therefore, whether the present fare in Rochester is just and reasonable for the company. In this connection the commissioner said:

It is evident from the authorities to which attention has been called, that the New York State Railways has an absolute right to an income which will pay not alone its necessary expenses of operation, and its proper fixed charges, but will produce a fund sufficient to provide a surplus for contingencies and a proper and reasonable return upon the value of the property used in its business. It is further apparent that if the present rate fixed by the contract is not sufficient to furnish the amount of money necessary to provide for the purposes to which attention has been called, the State cannot, and if it can, should not attempt to force the company to perform services beyond its power.

## City Has Power Over Rates

Four of the five judges of the Appellate Division of the Supreme Court of Ontario have ruled in a suit respecting the London Street Railway that the city of London has power to alter a contract covering fares incorporated in a franchise agreement, without a vote of the citizens or the consent of the provincial Legislature or the Hydro Electric Power Commission of Ontario. The City Council to end a strike last July passed a municipal by-law permitting an increase in fares from seven and nine tickets for a quarter to six

and eight tickets. A judge of the Supreme Court quashed the by-law and restored the old rates. The corporation counsel had given his opinion that the Council of an Ontario municipality was debarred from altering a franchise agreement by provincial legislation.

The street railway company's legal advisers obtained the Council's permission to appeal in the name of the city of London and established the City Council's rights and the by-law's validity, only one of the five Appellate Division judges dissenting.

The platform men of the London Street Railway at present receive a maximum rate of 44 cents an hour. They now want 65 cents an hour. This demand the company has announced it is unable to satisfy and another strike is threatened for May 1.

## Orders City to Cease Bus Operation

Operation of buses under the direction of Grover A. Whalen as Commissioner of Plant and Structures of New York City is in violation of the law, according to a ruling made recently by Justice Cropsey of the Supreme Court. The Justice ordered a suspension of the bus service. Justice Cropsey held that there had been no emergency which justified the operation of the buses. He said that the operation of the buses was a flagrant violation of the law and held that the city had no more right to violate the law than any citizen. The suit was brought by the Brooklyn City Railroad against Mr. Whalen individually and as commissioner. On application of counsel for the city, the Appellate Division of the Supreme Court has granted a temporary stay of Justice Cropsey's order until April 29.

Justice Edward J. Gavegan of the New York Supreme Court on April 9 signed an order directing the city to show cause why a temporary injunction should not be issued suspending operation of all bus routes competing with the surface lines of the New York Railways. Job E. Hedges, receiver for the traction company, had previously obtained from Federal Judge Julius M. Mayer an order directing him to bring suit to have the operation of the buses halted.

The State Senate on April 20 passed a bill which, if it becomes law, will give the city of New York power to operate bus lines. The measure, the passage of which was urged by Commissioner Whalen, would legalize the purchase and maintenance of motor buses by the city. As originally introduced by Senator Lynch, it authorized the establishment of bus routes in competition with electric railway lines. The bill was later amended to prohibit said competition, and in amended form was passed by the Senate. It is now under consideration by the Assembly, which is expected to take favorable action on the measure.



## Transportation News Notes

**Fares Up on Municipal Line.**—The board of directors of the municipally owned Norton, Taunton & Attleboro Street Railway, Attleboro, Mass., has voted to increase the single fare from 7 cents to 10 cents, the increase to become effective at once. A ticket good for fourteen rides will be sold for \$1.

**Wants More in Knoxville.**—The Knoxville Railway & Light Company, Knoxville, Tenn., has applied to the State Railroad & Public Utilities Commission for permission to charge a 7-cent fare with 2 cents for each transfer. In its petition, the company states that it operated at a loss of \$25,000 in 1919.

**Seven Cents in Attleboro.**—Fares on the lines of the Interstate Consolidated Street Railway, Attleboro, Mass., were raised from 6 cents to 7 cents on April 18 under a temporary order of the Massachusetts Department of Public Utilities. The department will hold a hearing on May 5 for the purpose of fixing a permanent rate.

**Zone Changes in Worcester.**—The Worcester (Mass.) Consolidated Street Railway has made several changes in the zone limits on its lines in Worcester at the direction of the Massachusetts Department of Public Utilities. The latter, which has had the company's case under consideration, has intimated that it will order the retention of the two-zone system with a 7-cent fare in each zone, as at present.

**Side and Terminal Service Discontinued.**—The transportation of mails by the Kansas City (Mo.) Railways between the Kansas City postal substations and the Union Station has been discontinued. The mail cars have been replaced by forty-three motor trucks. The increase in mail, especially in parcel post matter, owing to many new mail order houses being opened in Kansas City, made the change imperative.

**Raises Commutation Rates.**—Commutation rates on the lines of the Washington-Virginia Railway, Washington, D. C., were raised on April 16 under authority granted by Interstate Commerce Commission. The price of twenty-trip tickets, good for a period of two weeks, was increased from \$2.70 to \$4, an advance of \$1.30 on each ticket. Last December the price of monthly commutation tickets was raised from \$4.05 to \$4.45.

**Municipal Line Increases Fares.**—The St. Thomas (Ont.) Municipal Railway has increased fares from eight for a quarter to six for a quarter to cover the extra cost of wage advances. The old wage rate of 40 to 45 cents an hour has been increased 5 cents. Fares of

5 cents, 6 cents, 7 cents and 10 cents on different lines of the Peterboro (Ont.) Street Railway (Hydro Electric Power Commission) will be adopted at an early date to cover increased operating costs and the costs of extensions.

**Upholds Michigan Rate Law.**—The constitutionality of the State law granting to roads earning less than \$8,000 a mile the right to charge fares of 2½ cents a mile on their interurban lines was upheld in an opinion recently handed down by the Michigan Supreme Court. The court reaffirmed its finding in another case that the State, through its Legislature, has the right to set aside franchise agreements between public service corporations and municipalities.

**Ten Cents on Hudson Tubes.**—The Hudson & Manhattan Railroad, New York, N. Y., raised its rates on April 19, when it resumed operations after the strike of its trainmen. The company, which operates the Hudson River tubes, now charges a 6-cent fare from New Jersey to the Hudson Terminal, Manhattan, and a 10-cent fare to uptown New York. The rates were formerly 5 and 7 cents, respectively. The Interstate Commerce Commission has refused to suspend the new rates.

**Would Retain 6-Cent Fare.**—The Winnipeg (Man.) Electric Railway has applied to the Public Utilities Commission of Manitoba for a permanent increase in fare to 6 cents. The commission several months ago allowed the company to install a 6-cent fare temporarily. At a recent hearing on the company's application witnesses testified that the average cost per passenger in order to cover all operating costs and provide a return of 6 per cent on the investment was 6.14 cents.

**One-Man Cars Approved.**—Speeding up of service and reduction in costs through one-man car operation on its lines in Elgin are advocated as a partial solution of the financial difficulties of the Aurora, Elgin & Chicago Railroad, Aurora, Ill., by Joseph K. Choate, receiver of the company. Mr. Choate has submitted to the State Public Utilities Commission a report in which he recommends the use of safety cars and other changes in the road's equipment. Twenty-one "safeties" would be required to give adequate service in Elgin.

**Will Reopen Staten Island Lines.**—Federal Judge Chatfield has authorized the city of New York to enter into an agreement with Jacob Brenner, receiver for the Staten Island Midland Railway, Richmond Borough, for the operation of the company's lines. The company suspended service on Jan. 16 last, after futile efforts to secure financial relief from the city. All attempts on the part of the city to force the road to resume operation have failed. Judge Chatfield on April 9 authorized the city and the receiver to unite in working out a plan for the resumption of service. Cars will be leased by the city from the company.

**Reject Higher-Fare Proposal.**—A proposition to allow the Michigan Railway, Kalamazoo, Mich., to charge a 7-cent fare on its lines in Kalamazoo was defeated by the voters of that city at a special election on April 5. The City Council had previously agreed to waive the 5-cent fare provision of the company's franchise provided such a course were approved by the voters. Although the proposition received a majority of 78 votes at the polls, City Attorney Shaberg ruled that the city charter and the State Constitution required a two-thirds vote to carry the proposal. The company will appeal the case to the courts.

**Tokens for Toledo.**—The Toledo Railways & Light Company, Toledo, Ohio, will use metal tokens on its lines beginning about May 1. The present scale of fares, set by the Federal Court at 7 cents, with three tickets for 20 cents, made necessary the issuance of paper tickets, the first used in more than three years. Fare boxes installed this year necessitate the use of tokens. The court ruled that passengers may ride for 6 cents cash if the conductor cannot furnish tickets. Bus fare in Toledo, set at 10 cents with 25-cent owl service during the transportation tie-up, dropped to 5 cents on most lines as soon as cars began operating at the 7-cent fare.

**Penalty for Non-Payment.**—The New Jersey Legislature has passed a law which places electric railways on the same basis as steam roads in the matter of protection in the collection of fares. The measure provides that "Any person who shall travel on any street railway car without having paid his fare, and with intent to avoid payment thereof, or any person who, having paid his fare, and having traveled on such car to a point where, under the rule of the company operating such car, as announced by the conductor of said car, an additional fare is due, shall on demand refuse or fail to pay such additional fare or leave such car, shall be deemed and adjudged to be a disorderly person." The act has already gone into effect.

**Seven-Cent Fare in Mobile.**—A 7-cent fare became effective April 14 on the lines of the Mobile Light & Railroad Company, Mobile, Ala. The City Commission on April 6 voted unanimously to allow the company to raise the rate from 5 cents to 7 cents for a period of two years. The company was directed to sell four tickets for 25 cents and five for 30 cents. The skip-stop is to be abandoned within sixty days. An audit of the company's books showed that the company earned approximately \$87,000 between October, 1918, and October, 1919. Later a second audit was made covering the years between 1912 and 1918 which showed that the company had made a net annual earning during this period of more than \$100,000, or a total of \$670,000 in the six-year period. This amounted to a return of 4.97 per cent on the investment.



## Personal Mention

### A. L. Kempster Goes South

Appointed General Manager of New Orleans Railway Company, Succeeding John S. Bleecker

A. L. Kempster, manager of the Seattle division of the Puget Sound Traction, Light & Power Company until the railway property in that city was acquired by the city of Seattle a year ago, has been appointed general manager of the New Orleans Railway & Light Company, New Orleans, La. Mr. Kempster succeeds John S. Bleecker, whose resignation as general

Traction Company, he became secretary and auditor, continuing in these capacities until the merger of the city's utilities under the name of the Seattle Electric Company. Entering the operating department at that time, he was made trainmaster of the system.

In 1902 he was advanced to the position of superintendent of transportation, retaining this title for eight years. He was then appointed superintendent of the railway department. Still later he was again promoted, becoming general manager of the Seattle properties. He served in this capacity until early in 1919, when the system was taken over by the city.



A. L. KEMPSTER

manager of the New Orleans system was announced in last week's issue.

By virtue of his present appointment Mr. Kempster becomes the operating head of one of the most important public utilities of the South. The New Orleans Railway & Light Company, a subsidiary of the American Cities Company, operates 218 miles of track. The property is now in the hands of J. D. O'Keefe, receiver, for whom Mr. Kempster will direct the system.

Since leaving Seattle Mr. Kempster has been engaged in the conduct of investigations into public utilities for Stone & Webster. The survey of the lines of the Brooklyn Rapid Transit Company and the New York Railways, recently completed, was made largely under his direction. For several months he assisted Frederick P. Royce, then general manager for the receiver of the Brooklyn Rapid Transit Company, and later took part in the appraisal of the Manhattan surface lines.

Mr. Kempster was born in Canfield, Ill., in 1872. Entering the employ of the Seattle Consolidated Railway as a clerk at the age of nineteen, he was subsequently made bookkeeper and auditor.

When the Seattle Consolidated Railway was reorganized as the Seattle

Alexander Shapiro, formerly statistician for the American Electric Railway Association, has become connected with the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., as a member of its statistical staff.

Alfred D. Blake, superintendent of the Derby division of the Connecticut Company, New Haven, Conn., has been appointed superintendent of transportation of the lines formerly included within the system of the Shore Line Electric Railway, Norwich, Conn. These lines recently reverted to the Connecticut Company under a court order.

H. B. Flowers, general manager of the United Railways & Electric Company, Baltimore, Md., was elected second vice-president of the company at the annual meeting on April 14. Mr. Flowers will continue to discharge the functions of general manager. He assumed that office several months ago. A biography of Mr. Flowers was published in the ELECTRIC RAILWAY JOURNAL at that time.

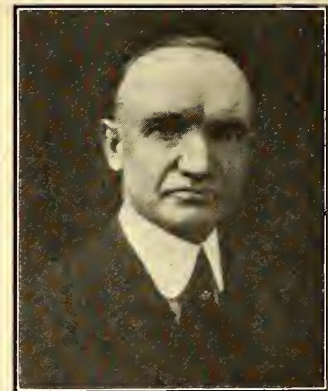
Arthur H. Mann, resident engineer of the Empresas Electricas Asociadas, operating the city and suburban railways at Lima, Peru, South America, expects to sail for Lima from New York on April 28. For several years Mr. Mann was electrical engineer for the city railway in Evansville, Ind., and the Evansville & Princeton Traction Company. Later he was division manager of the city and suburban lines of the Michigan United Railways at Lansing, Mich. Before going to South America five years ago he was general superintendent of the Jersey Central Traction Company and the Middlesex & Monmouth Electric, Heat & Power Company at Keyport, N. J. During the world war the company was unable to get cars and other equipment from the United States or any other foreign country and Mr. Mann made several cars in Lima that are all American in style.

### Mr. McCauley at St. John

Manager of Municipal System Appointed to Important Post with Private Enterprise

Thomas H. McCauley, formerly superintendent of the Calgary (Alta.) Municipal Railway, has assumed the duties of general manager of the New Brunswick Power Company, St. John, N. B. The system of which he is now in charge includes railway, power and light properties serving a community of more than 40,000 persons.

Mr. McCauley's management of the Calgary Municipal Railway was attended by marked success both from an operating and an engineering standpoint. This is indicated by the fact that, when the city contained between 65,000 and 70,000 persons, the railway carried in the neighborhood of 45,000 riders daily. These results were ac-



T. H. McCAULEY

complished largely through a liberal ticket policy. In 1918 it was estimated that the proportion of riders carried on tickets was at least 80 per cent.

Realization of the possibilities contained in the one-man car was largely responsible for Mr. McCauley's success at Calgary. He early conceived the idea of rebuilding two-man cars of the older types to require the services of only one operator. As a result, the wages per car-mile to motormen and conductors decreased from 7.641 cents in 1913 to 5.688 cents in 1918, and in the interim wages had been largely increased.

Mr. McCauley has had a varied career as a utility operator. He was born in Peel County, Ont., in 1872. Entering the employ of the Bell Telephone Company at Port Arthur in 1889, he served as a lineman until 1891, when he was made local manager for Port Arthur and Fort William. Three years later he was made superintendent of the Port Arthur Street Railway & Electric Light Company. In 1909 he was appointed general superintendent of construction of the Calgary Municipal Railway. Upon the completion of the line he became superintendent, continuing in that capacity until his appointment at St. John.



## New Manager for Doherty Interurban

J. Franklin Johnson has been appointed general manager of the Toledo & Western Railroad. With the appointment came the announcement that the general offices of the company would be moved from Toledo to Sylvania, Ohio, where the operating offices are located. The road operates between Toledo and Pioneer, Ohio, with a branch to Adrian, Mich.

A. P. Nicolet has been appointed secretary-treasurer, auditor and purchasing agent of the company, with offices at Sylvania.

Frank Coates, president of the Toledo Railways & Light Company, has been acting as general manager of the railroad for several years. Albert Swartz, also of the staff of the Toledo Railways & Light Company, resigns as vice-president of the Toledo & Western.

Mr. Johnson, the new manager, is a product of the Doherty training system. He joined the "cadet school" at Toledo, in February, 1916, after graduating from the University of Wisconsin as an electrical engineer. From Toledo he went to Durham, N. C., and later was transferred to Bartlesville, Okla. He comes to the Toledo & Western directly from the railroad department of Henry L. Doherty & Company, at New York.

The Toledo & Western has been in a difficult financial position for the last few years due to the increasing costs of operation and the decrease of revenues largely caused by good roads and automobile competition. The Adrian branch passenger business has been paying, but all other portions of the lines have been operated at a loss during the last year.

President Frank Coates and members of his staff have been attempting to put the road on a paying basis by acquainting the several communities served by it with the actual financial difficulties of present-day operation. They have held meetings at Morenci, Fayette and some other points on the railroad and have been promised co-operation by the people along the route.

It is expected that the establishment of the offices at Sylvania will bring the administration more directly in contact with the problems of the system.

A. B. Cole, general passenger and freight agent of the Monongahela Valley Traction Company, Fairmont, W. Va., has tendered his resignation. Mr. Cole has not yet announced his plans for the future.

J. O. Weigel has resigned as general superintendent of the International Railway, Buffalo, N. Y. Mr. Weigel succeeded Nelson H. Brown at Buffalo three years ago. He has not announced his plans for the future.

W. M. Casey, former superintendent of transportation of the Denver (Col.) Tramway, has been appointed general

superintendent of the International Railway, Buffalo, N. Y., to succeed J. O. Weigel, resigned.

Thomas W. Connette, superintendent of transportation of the International Railway, Buffalo, N. Y., has resigned. He is the son of Edward G. Connette, former president of the company. Thomas W. Connette has gone into business for himself, organizing the Railway & Industrial Service Corporation.

Reuben B. Ladd has been made chief inspector of lines of the Connecticut Company, New Haven, Conn., formerly included within the system of the Shore Line Electric Railway. These lines have reverted to the Connecticut Company as the result of the abrogation of the lease under which they were operated by the Shore Line.

W. H. Smaw has resigned as purchasing agent of the Georgia Railway & Power Company, Atlanta, Ga., to accept the position as southern sales representative of the Electric Service Supplies Company, Philadelphia, Pa. Mr. Smaw had a very wide knowledge of the needs of the industry of which he was a part and established an enviable reputation in the work which he did for the company at Atlanta. He was born in Atlanta on Aug. 11, 1873, and was educated in the public schools of that city. He entered business with a large wholesale house and served successively as shipping clerk, assistant cashier, and traffic manager. He resigned this position in January, 1903, to become connected with the purchasing department of the Georgia Railway & Power Company. For two years prior to 1910 he acted intermittently as purchasing agent owing to the ill health of G. B. Graves, who then occupied that position. He succeeded Mr. Graves in December, 1910. Mr. Smaw has contributed occasionally to the *ELECTRIC RAILWAY JOURNAL*. Actively interested himself in the affairs of the American Electric Railway Association, Mr. Smaw has long urged more active participation in the work of the association by the purchasing agents of the industry as a group.

## Obituary

Colonel John N. Partridge, formerly Police Commissioner of New York City, died at South Norwalk, Conn., on April 8. He was 83 years of age. Colonel Partridge was born in Massachusetts. He enlisted in the army in 1861 and fought through the Civil War. After the war he moved to Brooklyn, where he joined the old Twenty-Third Regiment, National Guard. In 1880 he became colonel of the regiment. From 1886 to 1897 Colonel Partridge was president of the Brooklyn City & Newtown Railway, afterward included in the system of the Coney Island & Brooklyn Railroad, which is now a part of the Brooklyn Rapid Transit System.

## New Publications

### Inventions, Their Development, Purchase and Sale.

By William W. Baff, patent attorney 230 pages. D. Van Nostrand Company New York City.

This is a practical manual for the inventor, prepared with the aim of assisting in the commercialization of inventions. A few of the twenty-four chapter headings will give an idea of the scope and contents of the book, as follows: Value and price of patents, types of inventions from the commercial side, developing inventions, patents as property, methods of making sales, elementary contract law, mistakes of inventors, etc.

### Armature Winding and Motor Repair

By Daniel H. Braymer, A.B., E.E. 514 pages. McGraw-Hill Company, Inc., New York. Price \$3.

This book discusses the subject of armature winding, repair shop methods and testing of armatures from a practical standpoint and no attempt has been made to include theoretical calculations. It is a compilation of practical methods that are used by repairmen and armature winders and includes details of those methods which have been found by actual experience to represent the best practice in a repair shop of average size. A handbook of useful information is thus provided which can be readily understood by practical men engaged in shop work.

### Effective House Organs

By Robert E. Ramsay. D. Appleton & Company, New York, N. Y. 361 pages. 5 x 7½ in. Price, \$3.50.

Mr. Ramsay has written a very readable book. It should appeal to all the men in the public utility field and in manufacturing who have to do with the conduct of house organs and should also be of considerable interest to the executives in public utility work who are charged with the responsibility of fostering better public relations. Mr. Ramsay's book is all inclusive, so that only a small part of it treats of public utility publications. House organ costs are given in detail. There are also valuable hints on typographical display. There are some public utility publications which are very attractively dressed typographically, but others could be considerably improved. Editors can find valuable hints along these lines in what Mr. Ramsay has written. The first part of the book sets forth the principles and practical methods for successfully conducting house organs. The second part presents the "how and why" of such publications. Of particular interest to all public utility publicity men is the chapter "How Public Service Companies Have Used House Organs Successfully."



# Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

## N. O. T. Orders 111 New Cars

Three Types of Cars Costing a Total of Almost \$1,500,000 Placed with J. G. Brill Company

Northern Ohio Traction & Light Company, Akron, Ohio, has placed an order with the J. G. Brill Company, Philadelphia, Pa., for 111 cars. The order is reported to include twenty interurban cars at \$22,000 each, fifty-six Peter Witt cars at \$13,500 each, twenty-five safety cars at \$6,500 each and ten trailers at \$7,000 each, making a total of \$1,428,500.

Twenty-five of the large cars and ten trailers are expected to be placed in the Akron city service. Service on the Akron-Kent-Ravenna, the Canton-Massillon and the Springfield Lake divisions also will be improved, according to reports. The safety cars will be similar to those now being operated in Canton. The interurbans are said to seat fifty-eight persons, the Peter Witt cars fifty-four, the safety cars thirty-five and the trailers fifty-eight.

It is believed that a considerable number of the cars will be built in the G. C. Kuhlman Car Company's plant at Cleveland, Ohio. This is one of the four Brill plants.

Delivery on all of the equipment is expected to be made in the fall.

## Window-Glass Scarce

Some Leading Interests Have Withdrawn from Market—Longer Production Schedules Planned

Car window glass stocks are low and car builders are having great difficulty in obtaining enough stock for present needs. The present railroad tie-up has interfered with shipments principally of raw materials billed to the glass factories and has caused a material curtailment in production.

Several leading interests have withdrawn from the market entirely and some had to close their books more than two months ago. One company expects to be in a position to open its books for orders in about three weeks to a month.

It is impossible to obtain polished plate glass in sizes that are used for car windows and railways must be content with heavier glass in from 32 to 39-ounce sizes.

Window glass manufacturers are operating in two periods on account of difficulty in securing skilled labor. About half the manufacturers who were supplied with coal and other materials have been running since about Dec. 10, 1919, and will continue until early in June. The factories operating at a later

period will commence in August and will probably operate up to Dec. 1, unless by special agreement with the men they can be influenced to continue working beyond that date provided the need for glass is pressing at that time.

## Electrification in South America

\$2,000,000 Contract Placed with International G. E. for Locomotives, Line Material and Substation

Electrification of the Paulista Railway between Jundiáhy and Campinas, Brazil, has been assured by the placing of a contract amounting to almost \$2,000,000 with the International General Electric Company.

Equipment to be supplied consists of twelve locomotives, eight freight and four passenger engines and material for the transmission line, substation and 3,000-volt overhead. The locomotives will be built at the Erie Works of the General Electric Company.

The project anticipates further extensions amounting to 100 additional miles of route, which may eventually bring the total electrification up to 128 miles extending between Jundiáhy and San Carlos. The new line is expected to be in operation by July, 1921. It is one of the largest railway contracts awarded since the Chicago, Milwaukee & St. Paul electrification. An elevation drawing of the freight, low motive and friction technical details of its construction will be found on page 855 of this issue.

## Railway Signal Business Outlook Better

Deliveries Range from Several Days to Three Weeks—Prices \$550 to \$600 per Block—Sales Show Improvement for First Quarter

Although nothing like a boom in electric railway signal orders characterizes today's business, inquiries among representative manufacturers show that the outlook is improving for larger sales. One concern reports 15 per cent larger sales in equipment during the first quarter of 1920, as compared with the corresponding period last year, and another active competitor declares that while his sales are not much above those of 1919, a healthier tone can be noted in the market. Inquiries are coming in at a faster rate and maintenance orders are helping to keep this branch of the industry occupied. The total volume of business is still far below the productive capacity of the various plants engaged in manufacturing and the prospects of getting upon a "mass production" basis are remote at present. The type of signal apparatus used in standard makes is favorable to large scale production, the most important obstacle to this being the slowness of many operating companies to realize the value of the insurance afforded by the latest designs of equipment.

It is true that the cost of signal apparatus has increased since 1914 about 60 to 70 per cent and that the factory price of higher grade equipment is today of the order of \$550 to \$600 per block. The cost of accidents, however, expressed merely in money, is relatively greater than before the war, and the demands of the public for service are capitalizable as probably never

before. It is a fair statement that the cost of signal installations will be met by the traveling public if the issue is made clear by the operating companies.

In one factory shipment of complete blocks can be made within two or three days, assuming an order for ten or a dozen sets. Another manufacturer would probably require three to four weeks on account of a local shortage of materials. Stocks of glass, wire and brass are reported in good shape, but steel parts and malleable iron castings are very hard to obtain. Labor conditions in the foundries are very unsatisfactory, wages being so high that many employees work only part time each week. The labor turn-over is also heavy. It is doubtful if malleable iron castings ordered in eastern New England today, for example, would be delivered before August 1, and the lack of such supplies, accentuated by the recent railroad strike and embargoes, is holding back some shipments of completed signal apparatus. At 35 cents per pound, some malleable castings exceed the cost of copper.

Price tendencies have been upward in view of recent labor advances, 10 per cent in a representative case a few weeks ago. One maker advanced his prices about 10 per cent in March, and another is uncertain as to his ability to maintain present quotations. No immediate advance appears in contemplation, and if the volume of business should increase it might be possible to



go no higher than present figures this summer. Equipment is becoming well standardized as a result of development work now practically completed. Some manufacturing interests are making a modest profit after several lean years, and as a whole the outlook is for gradually improving conditions predicated upon the recognition by the public that the cost of safe service must be met out of revenue.

## Shipments Lengthen on Copper Products

### Lack of Raw Materials and Coal Causing Hardships—Stocks Are Piling Up

In the face of a heavier buying movement than heretofore on the part of the railways which have commenced rehabilitation of rolling stock and equipment, and which have recently made large purchases of new equipment, the copper and brass mills are having their own troubles filling their orders. Several mills in the New England and New York territories are in whole or in part shut down because of labor troubles and shortage of raw materials and coal, while many mills which are running have only enough operatives to run one shift, with sufficient work on hand to run night shifts, too. One mill in particular is working four nights a week at full capacity until 9 o'clock and has not enough labor available to run a regular night shift. Productive capacity is in general booked up to a heavy excess.

### MOTOR TRUCKS TO RELIEVE TRANSPORTATION DIFFICULTIES

Shipments are long. If transportation were available now, the mills, of course, could begin moving much of the material that is piling up in their warehouses. Motor trucks are moving quantities of it, but this method is merely taking the edge off the stocks piling up and is taking care of only rather local traffic. The mills that are running are quoting from six to twelve weeks for shipments, while at least one of those shut down is not quoting any shipping date. Copper sheets and brass shapes are in a condition somewhat analogous to that of the steel industry. Hot copper sheets are in heavy demand and are carrying a six weeks' shipping date. Cold-rolled copper sheets can be turned out in about double the time.

There does not seem to be any immediate prospect of relief for the situation outside of a resumption of rail traffic. This, of course, will release pent-up finished stocks, but it will in no wise increase the supply of labor which is necessary if more business is to be handled. Except in finished products, it is reported that little or no brass is being exported, the New England mills supplying domestic trade only. The electrical industry is taking more and more copper and brass tube, rod, wire and sheet, and it is expected that mill conditions and shipments will become increasingly more unsatisfactory as the summer advances. In connection with

the export trade there is reported a heavy demand from India for sheet copper and brass.

### LITTLE FLUCTUATION IN COPPER PRICES

Prices of finished and semi-finished materials have held quite steady for several weeks. Copper itself has been holding within a cent of 19 cents all this year and so has had little effect in changing prices of its products. The price of copper is not likely to advance materially unless a heavy foreign buying movement sets in. It would not be surprising, however, to see a slight advance in the raw metal when domestic buying for the third quarter opens up. This would probably be reflected in higher prices of copper and brass products. At any rate, production costs, in particular in the mills where strikes are on if labor obtains an increase, are liable to have a greater effect in increasing prices of brass and copper products than advances in raw materials. Prices have been withdrawn where strikes are holding up production because of the uncertainty of future producing costs.

## Rolling Stock

Cumberland County Power & Light Company, Portland, Me., has purchased three snow-plows and one snow-sweeper.

Cloyd M. Chapman has resigned from Westinghouse Church Kerr & Company, Inc., and has opened an office at 171 Madison Avenue for the practice of consulting engineering.

Combustion Engineering Corporation, New York, N. Y., announces with regret the resignation of its vice-president in charge of sales, E. P. Moritz, on account of ill health. No successor to Mr. Moritz has been named.

Paulista Railway, Campinas, Brazil, has placed an order with the International General Electric Company for twelve electric locomotives. The eight freight locomotives will weigh 100 tons each and the four passenger type 120 tons each.

Public Service Railway, Newark, N. J., has purchased 100 trailers from the Osgood-Bradley Car Company similar to the type now in use at Cleveland, Ohio. Delivery will be made commencing in September and will be completed by December.

Northern Ohio Traction & Light Company, Akron, Ohio, has placed an order for 111 cars with the J. G. Brill Company. The order includes fifty-six Peter Witt cars, twenty interurbans, twenty-five safeties and ten trailers. Delivery will be made in the fall.

Pittsburgh (Pa.) Railways, noted in the Feb. 7 issue of the ELECTRIC RAILWAY JOURNAL as considering the purchase of a large number of cars, through its receivers, have asked the United States Court for permission to purchase 150 cars to cost approximately \$2,000,000.

## Track and Roadway

Los Angeles (Cal.) Railway.—It is proposed to extend the Western Avenue, Heliotrope Drive and Temple Street lines of the Los Angeles Railway.

Los Angeles, Cal.—The Los Angeles City Council has ordered that bids be advertised for a franchise to build and operate a double-track line in Temple Street, Los Angeles.

Los Angeles (Cal.) Railway.—The Los Angeles Department of Public Utilities has directed the Los Angeles Railway to extend its Western Avenue line from its present terminus at Melrose and Western Avenues to Santa Monica Boulevard and Western Avenue.

Pacific Electric Railway, Los Angeles, Cal.—It is proposed to extend the Spadra line of the Pacific Electric Railway through Corona to connect with the main line near Pomona.

Connecticut Company, New Haven, Conn.—The Connecticut Company plans to make extensive repairs to its East Avenue line, Norwalk, Conn.

Connecticut Company, New Haven, Conn.—The Connecticut Company will rebuild the roadbed of its Berlin-New Britain line and will install new rails.

Danbury & Bethel Street Railway, Danbury, Conn.—The Danbury & Bethel Street Railway will build an extension from West Street to Lake Avenue, Danbury, connecting its West Street and Lake Avenue lines.

Petersburg, Ill.—It is reported that 76 per cent of the right-of-way of a new interurban line between Springfield and Beardstown, Ill., has been secured. With the exception of three miles leading into Springfield the right-of-way is pledged from that city to Chandlerville, Ill., by way of Salisbury, Petersburg and Oakford. The three-mile entrance into the city of Springfield, Ill., is yet to be secured.

Milford & Uxbridge Street Railway, Milford, Mass.—It is proposed to repair the loop line of the Grafton & Upton Railroad, a subsidiary of the Milford & Uxbridge Street Railway, at a cost of \$10,000.

Lincoln (Neb.) Traction Company.—The Lincoln Traction Company will repave its right-of-way in Twenty-seventh Street, Lincoln.

Hershey (Pa.) Transit Company.—The Hershey Transit Company is surveying the route of its proposed extension from Lebanon to Fredericksburg, Pa.

Montreal (Que.) Tramways.—The Montreal Tramways will shortly begin the construction of a line from Ahuntic station to Boulevard Gouin. The line will be 2½ miles long.

Piedmont & Northern Railway, Charlotte, S. C.—The Piedmont & Northern Railway will rebuild the roadbed of its Anderson (S. C.) line.



### Power Houses, Shops and Buildings

**Kansas City-Western Railway, Kansas City, Kan.**—The Wolcott car shops of the Kansas City-Western Railway were destroyed by fire on April 15. The blaze resulted from the explosion of an acetylene torch. The loss is estimated at \$150,000.

**Trenton & Mercer County Traction Corporation, Trenton, N. J.**—The Trenton & Mercer County Traction Corporation plans to build a terminal in the center of the city of Trenton.

**Dayton & Troy Electric Railway, Dayton, Ohio.**—The carhouse of Dayton & Troy Electric Railway at Tippecanoe City, Ohio, was destroyed by fire on April 14. The company will rebuild at once.

### Trade Notes

**The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.**, has opened an office and warehouse at Jacksonville, Fla.

**Norton Company, Worcester, Mass.**, is building a large six-story addition to its plant which will contain 60,000 sq.ft. of floor space.

**J. G. White Company, New York, N. Y.**, has been recognized in an award by the United States Government for distinguished service, loyalty, energy and efficiency in war work.

**Benjamin Electrical Manufacturing Company, Chicago, Ill.**, has moved its San Francisco office from 590 Howard Street to 580 Howard Street, occupying the entire four-story building.

**American Steam Conveyor Corporation, Chicago, Ill.**, has developed an air-tight ash-pit door which has a number of features that make it attractive to the power-plant engineer.

**Square D Manufacturing Company, Detroit, Mich.**, has purchased the property of the Peru (Ind.) Electric Manufacturing Company, manufacturer of standard and special porcelain wiring devices.

**Elliott Company, Pittsburgh, Pa.**, manufacturer of power accessories, is now placing upon the market an apparatus which removes substantially all of the air and dissolves gases from boiler-feed water.

**E. B. Badger & Sons Company, Boston, Mass.**, has acquired the American Spray Company, including its engineering personnel. The American Spray Company manufactures spray ponds and air washers designed especially for cleaning the air used to cool generators.

**Fairbanks Company, New York, N. Y.**, has appointed Edward J. Jeep, for many years city sales manager of the Commercial Electrical Supply Company, St. Louis, Mo., as manager of its electrical department in its St. Louis, Mo., branch at Seventh and Market Streets.

**Hyatt Roller Bearing Company, New York, N. Y.**, through the manager of the industrial bearing division, D. Gleisen, announces the removal of its offices to 100 West Forty-first Street, where larger quarters have been secured for advertising, sales and engineering departments of the division.

**Mitchell-Rand Manufacturing Company, New York, N. Y.**, has become the agent and representative of the Sterling Varnish Company and will sell its products at factory prices, making prompt deliveries either from a complete New York stock or from the factory direct.

**Graphite Metallizing Corporation, Yonkers, N. Y.**, which manufactures oilless bearings and impregnates carbons for brushes, has appointed as sales engineer Walter S. Hoyt, who has been for two years assistant to C. A. Greenidge, chief engineer of the J. G. White Management Corporation, New York City.

**National Carbon Company, Long Island City, N. Y.**, American Ever Ready Works branch, has appointed H. S. Schott as Eastern sales manager, succeeding J. H. Somers, resigned. Mr. Schott first became connected with the company in 1913 as a clerk, and after a term as salesman he was transferred to the Canadian Ever Ready organization, where he was promoted to be assistant sales manager.

**General Electric Company, Schenectady, N. Y.**, announces that the new addition to the Windsor works of the General Electric Company will be completed about the first of June and will be ready for occupancy about July 1. The building will be 200 ft. x 70 ft. and will contain two floors and basement, providing 40,000 sq.ft. of floor space. Small electric motors of various horsepower for direct current are manufactured at the Windsor works.

**Material Handling Machinery Manufacturers' Association, New York, N. Y.**, at a directors' meeting held April 6, elected officers for 1920 as follows: Charles Lang, president Lakewood Engineering Company, president; R. W. Scott, Otis Elevator Company, New York, vice-president; L. C. Brown, Elwell Parker Electric Company, New York, treasurer; and Zenas W. Carter, New York, secretary and manager. Calvin Tompkins, the retiring president, was made an honorary member. Three companies, the Whiting Foundry Equipment Company, Harvey, Ill.; Motors Terminal Company, Cleveland, Ohio, and the C. W. Hunt Company, Inc., West New Brighton, N. Y., were elected to membership in the association.

**Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.**, announces that L. A. S. Wood, prominent in illuminating engineering circles both in this country and in Europe, has been appointed manager of the illuminating section of the supply department of the company, with headquarters at South Bend, Ind. He came to this city in 1911 to intro-

duce the flame carbon lamp and was shortly afterward appointed as arc-lamp expert of the Westinghouse Electric & Manufacturing Company, with headquarters at East Pittsburgh, Pa. Soon after the introduction of the "Mazda C" lamp he became associated with the George Cutter Company of South Bend, Ind., as illuminating engineer, and during the past nine years has traveled extensively, taking an active interest in street-lighting improvements in all sections of the country.

**Edward R. Ladew Company, Inc., Glen Cove, N. Y.**, announces that Vance McCarty, general sales manager, has been made vice-president of the company. Mr. McCarty's connection with the house of Ladew covers the past twenty years and embraces every phase of the leather belting business, including manufacture, sale, branch management and general sales direction. He will continue in direct control of Ladew sales policies and has retained as assistant general sales manager Russell B. Reid, another Ladew belting expert with twenty years of leather-belting experience.

**Engineering & Appraisal Company, Inc., New York, N. Y.**, has added to its engineering staff Ralph G. Macy, who has been elected vice-president of the company. Mr. Macy has accordingly resigned as chief engineer of the construction department of the Walter Kidde Company. Mr. Macy has had a long experience in engineering and industrial work, and prior to the war was in charge of the operation of five plants making liquid oxygen and nitrogen.

### Professional Note

**L. B. Stillwell & H. S. Putnam**, consulting engineers, and the L. B. Stillwell Engineering Corporation, constructing engineers, now at 100 Broadway, announce the removal of their offices on May 1 to 143 Liberty St.

### New Advertising Literature

**Independent Pneumatic Tool Company, Chicago, Ill.**: Bulletin No. 95, describing "Thor" pneumatic motor hoist.

**International Register Company, Chicago, Ill.**: Catalog No. 5, showing all types of fare register now made by this company, together with register backs and repair parts.

**United American Metals Corporation, Brooklyn, N. Y.**: A reprint of an address, "Selecting the Babbitt," by H. S. Hood, of this company, manufacturer of Syracuse babbitts.

**Standard Underground Cable Company, Pittsburgh, Pa.**: Bulletin No. 100-1, describing its products, copper, brass tubes, rods and wires. Additional data are included.