

Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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Advertise—

And Keep It Up

WITH a product which is on sale twenty-four hours a day, with public relations never completely solved, why should not railways adopt and carry out a continuous advertising program? Is it any wonder, with the rather sporadic newspaper advertising of most railways, that the public, when the railway does advertise, wants to know "what the railway wants to put over now?"

The psychology of advertising is to keep continually at it. The public ought to be educated to expect to find the railway's "ad" in the same place every day, and it ought to be one of the best parts of the paper, too—there is "copy" galore. The newspaper reader should be led to remark, as he does occasionally of the advertising in other lines, "I am watching your advertising."

Advertising for particular purposes, for "direct results," is sometimes partially successful, but seldom if ever wholly so. This is particularly true of public utilities, which seldom desire direct results except when some controversy is present, when part of the public already has an opinion and when many, knowing the railway has a particular object in view, ascribe some ulterior motive.

It is better to have a public with which the railway is in constant communication by advertising. By nature the public is not particularly interested in any railway company; it is only mildly interested in transportation—until a failure or an inconvenience occurs. The way to gain that interest, to divert the thoughts of the public to the railway, is to advertise. And the advertising must be continuous to be effective. As the ELECTRIC RAILWAY JOURNAL has often urged in the past, spend at least as much in advertising as is received from advertising.

Mayor Hylan's Re-election and New York's Traction

MAYOR HYLAN'S re-election in New York was only what was expected, after he had made the 5-cent fare the chief issue in his campaign. It meant nothing to the average voter that the question of fare cannot be determined by the Mayor or that Mr. Hylan during the past four years has made no effort to present a constructive plan to settle this question. Throughout, he has acted merely as an obstructionist. Nevertheless, people cannot be expected to become enthusiastic over any plan which means a higher charge to them for a utility service, and it is an old dodge of politicians to drag fare questions into an election campaign. Tom Johnson won four times on this issue in Cleveland, and then finally lost because he was obliged to put into practice the ideas he had been advocating. Detroit and Chicago have afforded other examples of the same kind of issues. It is to be regretted that in the New York campaign this year Mr. Curran, the opposition candidate, did not declare positively for a just fare, no matter what it

might be, but the results would probably have been no different. Possibly the New York Times' explanation is pertinent when it says that New York is just naturally Democratic, and that for this reason a Republican as a Fusion candidate has little chance of election unless he is of outstanding ability and high civic reputation.

Fortunately the traction situation in New York will not be settled by the election last Tuesday. The matter is in the hands of a State commission, and its chairman has announced that it is going forward with its plan for hearings, which will begin on Nov. 15. Mayor Hylan can bluster during the next four years, but there is every reason to believe that long before this time has passed the traction situation will be settled in a sane way.

Of the following, however, there can be no doubt: The election has shown—with a majority of more than 400,000—that the companies have a tremendous problem in public relations ahead of them, even though the Transit Commission can formulate a definite constructive plan. There is need of the industry's greatest ability in the line of winning enlightened public interest and therefrom confidence.

Mayor Wilson's Defeat and Bridgeport's Traction

IN RATHER sharp and almost paradoxical contrast to the result of the New York election is that of Bridgeport, Conn., the scene of the interesting jitney bus-railway controversy of last year. For ten years Clifford B. Wilson has been Mayor of Bridgeport. Transportation has been one of his hobbies. His sole platform plank this year was "more jitneys and the return of the 5-cent fare," and on this he was defeated. This is beyond understanding when compared to New York, or else the traction issue is less important than sometimes supposed. Mr. Wilson's opponent, Mayor-elect Atwater, refused to commit himself to any program or policy as to fares or jitneys, saying that he could form no policy until he acquired office and studied the facts. Yet he was elected. And this from the city which patronized jitneys till the Connecticut Company had to suspend service and which has been the principal petitioner before the State commission requesting a fare adjustment from the present 10-cent fare! Verily, it is paradox.

Politics— and Railways

A COMPLETE examination of the relation of transportation issues to mayoralty and other elections on Tuesday last would show many more interesting and some enigmatical results.

In Youngstown, Ohio, for example, the mayor-elect ran on an eccentric platform favoring, among other things, the abolition of street cars and the adoption of unrestricted jitney service. In Detroit, the principal

issue was the traction question, with both candidates in the non-partisan election favoring municipal ownership but with Mayor Couzens re-elected on his particular municipal ownership plan. Also in Detroit, other traction issues, both passed, were the ousting of the Detroit United and the authorization to purchase trackless trolleys! Were it not so serious, the submission of such questions as the latter to popular vote should provoke the gods to laughter! In Norwalk, Conn., the defeated candidates ran on a platform of more jitneys and reduced fares.

When one considers such results as these with those of New York and Bridgeport, conclusions are hard to draw, except possibly what has already been mentioned in these columns. This is that intelligent judgment on such matters is hard to expect from the public and that so long as business matters like transportation policies are allowed to be footballs of politics, the public in the end is the loser through the resulting impediment to proper development of public service. There is still a long way for the industry to go in the education of the public to appreciation of the Federal Electric Railway Commission's statement that "The electric railway problem admits of a satisfactory solution, once the elements that compose it are made known and the principles of ordinary economic and business common sense are applied."

"Don't Ride Your Auto to Work" a National Publicity Program

ONE of the most common comments today is that the private automobile is the greatest competitor the railway has. Why not tell these auto users how much it is costing them, and do it in a national way?

A case comes to mind of a railway engineer who, in a social evening, asked two of his neighbors to make estimates of the cost of going to and from work in their private automobiles. One answered \$1.70 and the other \$1.45. His own figures indicated \$1.30 (they all had cars of the same make). It took no more than the comparison of these estimates with the known 15 cents on the street car to make street car riders of these neighbors.

There are millions—surely many, many thousands—of such cases, scattered nation wide. A nation-wide educational campaign should be started to deal with it. Why is this not a fitting duty for the advertising section of the association?

Chicago's Subway Again Up for Discussion

FOR the *n*th time, Chicago is taking up a discussion of subway construction. How serious a discussion is to be entered into this time remains to be seen, but the periodic babble has started and most every one in official circles is getting on the band wagon, whether or not he is sincerely interested in seeing a subway built. In fact, there is good reason to believe that a considerable part of the "city hall" is sincerely interested in seeing to it that no truly earnest plan is undertaken, for there are such tremendous political possibilities in bringing some kind of a traction plan including subways into the next mayoralty election in 1923 as the campaign issue.

The present discussion differs from the preceding ones mainly in the increased size of the traction fund. This has now accumulated to more than \$30,000,000.

This sum is adequate in itself to make a very substantial start on a subway system. And it could be spent to the very great improvement of the present traction systems and consequent benefit of the public if spent for providing facilities for the use of the present elevated and surface line companies, following out the initial construction program of the plan formulated by the Chicago Traction and Subway Commission in 1916. This plan was very comprehensive and one which would have given Chicago perhaps the best transportation facilities of any city in the world. It was prepared by experienced and highly competent engineers at a cost of \$250,000, but received only a superficial consideration and was then dropped. This plan is available and is still good; all that is needed is the honest disposition to take the proposition out of politics and determine to go ahead.

Here Is a Chance to Find Out What the Trolley Bus Can Do

ASSUMING that the municipal authorities of New York City will keep accurate records of investment and operation, including receipts and expenditures, and will permit them to be made public, there will soon be available some valuable and authoritative data on the actual operating results of trolley bus operation. Such data will be very welcome material for checking up the comparative costs of this kind of transportation with that of the gasoline-driven motor bus and the safety car. Heretofore, we have been obliged to rely almost entirely upon more or less hypothetical estimates of trolley bus costs. There will then be a real opportunity to judge of the advisability of using the trolley bus in new territory with infrequent service.

As detailed in the Oct. 15 issue, trackless trolley service was inaugurated by the municipal authorities on Oct. 13 on two routes on Staten Island, a borough of the city of New York. Eight new trolley buses have been purchased, several of which have just been delivered, and a trial trip on Oct. 8 was made the occasion of a public celebration by the Staten Islanders.

Two routes are operated, one 2.6 miles in length, the other 4.4 miles. Both routes radiate from the same junction point with an existing street railway line. This new service is designed to furnish sorely needed transportation to communities not hitherto served, except by sporadic independent automobiles and taxicabs at extortionate rates.

Owing to certain legal restrictions preventing at the present time the ownership and operation of motorbuses as a municipal undertaking in New York City, the officials were practically limited to the use of the trolley bus as an alternative to the construction of a regular railway line. In other respects, there is much to point to the motor bus for use in service of this general nature, if recent estimates of cost are at all sound. The routes are through sparsely settled territory, with regular schedules on a relatively infrequent service of twenty minutes, which provides ample facilities for all the traffic. One of the principal arguments for the trolley bus seems absent here. In considering the maintenance of rolling stock, it is usually assumed that the vehicles will be cared for in the shops of an existing electric railway, but in the present instance these cars can only be brought to the shops of the municipal line by being towed several miles; consequently, an independent maintenance organization will have to be established.

It is safe to predict that the development and progress of this new departure in transportation by the city of New York will be watched with great interest, not only by railway operators throughout the country who are following closely the expansion of rail-less transportation, but also by the manufacturers of electric railway rolling stock and the automobile builders.

Bradford and Leeds Furnish Useful Data

IN CONNECTION with this question of trackless trolley costs, the figures from Leeds and Bradford, presented on another page in this issue, are of timely interest. The figures from the British experiences should assist in studies being made in this country as to the possible field, at least from a cost standpoint, for trackless trolleys in the United States.

This much, however, must be recognized—that cost of service is only one element in determining the adoption of trackless trolley, motor bus or safety car. It is not necessary to try to list all other elements, but it is worth while always to keep in mind that in comparing costs on past or present performance, this is only one factor in the future of any particular problem.

Bankers See Better Times Ahead

AN ENCOURAGING note as regards electric railways is sounded in the report of the committee on public service securities, presented at the annual meeting of the Investment Bankers' Association of America, just concluded in New Orleans. Railway men have felt for some time, and have so expressed themselves, that except for certain isolated cases the industry had rounded the corner of depression. It is a satisfaction to hear the same feeling expressed at a meeting of investment bankers. The report of the committee, it is true, did not declare that the convalescence period of the electric railway industry was over. Many problems remain yet to be solved. Nevertheless, the report did point out a number of encouraging facts, such as a gradual reduction in the cost of materials and labor, more enlightened public opinion upon the injurious effect on public service of jitney competition, the merits of service-at-cost franchises and a better understanding of utility problems by regulatory bodies.

The report, which was published in last week's issue of this paper, included also certain warnings by the committee to utilities. One of these was a plea for conservatism in connection with the sale of utility stock directly to customers. While such sale is highly commended from many points of view, the report declares that any such stock should be issued under the same conservative restrictions which would be demanded if the issue was to be made through investment bankers. It should represent actual investment in the property, and the price should be in line with the current quotations for securities of a similar class.

It is to be hoped that these injunctions will be heeded. As yet, comparatively little along this line, certainly with electric railway securities, has been done. The plan has many advantages, but any abuse of the practice is sure to react on the company itself and to some extent on the industry as a whole. Of course no security, even of a utility, is immune from business vicissitudes.

Every buyer of securities takes a chance. Nevertheless, the issuing company should make sure that he has such a business chance and that the security is worth the price asked for it before it is put on sale.

The Tax-Exempt Security an Enemy to Proper Progress

AGAIN the taxation progress in Congress seems to be in the opposite direction from the overwhelming public political sentiment, at least as regards the effect on public service corporations. While the social and political policy is toward the integrity of private property and against public ownership, the fiscal policy seems to force public ownership of utilities on the country. By this is meant that the present tax program makes it harder and harder for public utilities to get new capital, thus tending to force the public to provide the money through municipal and state governments. This means public ownership, which the public as a body does not want.

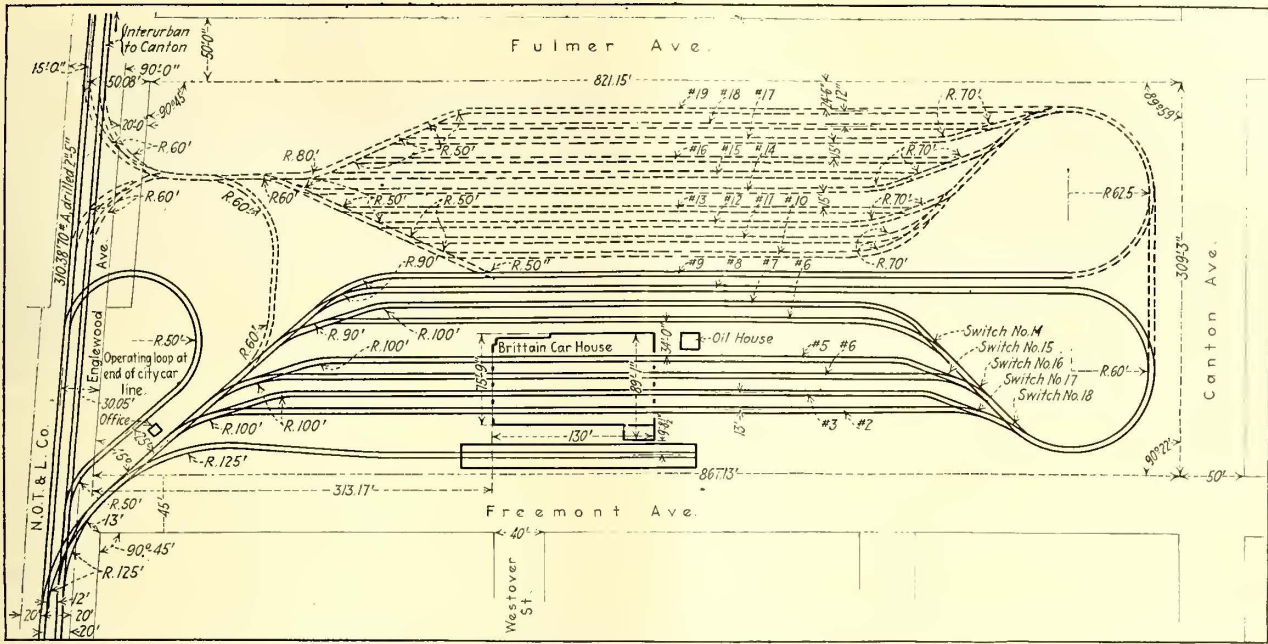
With a limitation on earnings, with a graduated income tax still high in surtax rates, with untold millions of tax-exempt securities available, there seems slim chance to look to any but the very limited income class to provide new capital, and the savings of this class have been shown to be woefully inadequate for public utility needs to meet the demands for increased service. Add to this situation the increased corporation tax, and even the possible profits which may be put back in the business are reduced.

Why cannot Congress take some immediate action with reference to the McFadden-Smoot amendments which would prevent the issuance of any future tax-exempt securities? Any move in that direction, even though time would be required for it to become effective, would prove to be very beneficial. The government itself has a good deal of refunding next year and later, and if Congress would, in refunding, refuse to issue tax-exempt securities, it would be a wonderful benefit to the country in more ways than one.

This question of tax-exempt securities has more serious aspects than merely the effect on public utility growth, though that is serious enough to be startling. There is almost an orgy of spending by public officials on more or less useless civic buildings, on municipal and state improvements which are nice but unnecessary, on federal "pork bill" improvements, etc.

This is no argument against needed public improvements which can well be financed on the public's credit without the use of the tax-exempt feature. But the point is that the tax-exempt security has distorted the spending of the nation by the reduction of possible constructive expenditures by corporations and individuals and by the increase of expenditures by public bodies. So long as this country has the graduated income tax, this security is a menace to the proper investment of the country's savings.

The present is an opportune time to register disapproval of an untoward fiscal policy, even though it may be impossible to change the present revenue bill. The utilities, so far as their particular interests are concerned, have been ably represented at Washington by P. H. Gadsden for the joint committee. But this is not enough. There must be continuous agitation for the best revenue policy in order that there be progress and that ultimately the tax-exempt security may be eliminated.



GENERAL LAYOUT OF NEW CAR STORAGE YARD IN EAST AKRON, OHIO

time continued, would have more than carried the new investment which also provides additional facilities.

GENERAL LAYOUT OF THE YARD

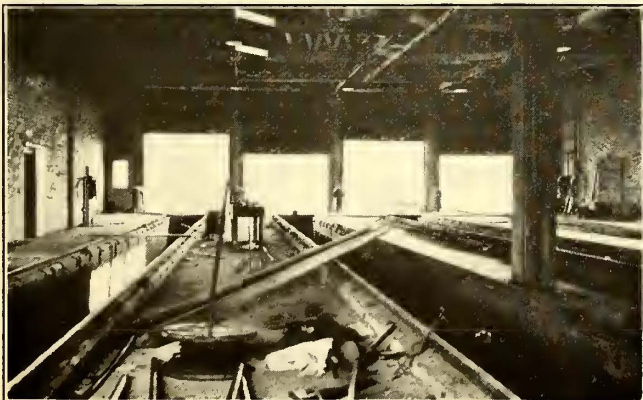
Of particular interest among the many features of the yard is the layout of track and general plan. In the first place all movements of cars in the yard are entirely separated from the main-line operation, thus avoiding to a maximum degree any interference with the regular operation of cars in service, or any delay due to yard derailments. While the new storage yard is located at the end of one of the city lines, the loop for this line, which occupies a portion of the front end of the tract of ground, is built entirely separate from the storage yard trackage. Aside from the special work connections with the main line, all of the track and special work in the yard is of the open type and hence easily maintained. Furthermore, the special work and curves entering the tipple track are so constructed that standard steam railroad cars with M.C.B. equipment can be operated over it.

The layout of the tracks provides great flexibility in the handling of cars in and out of the yard and in shifting them about the yard for inspection and washing purposes. The track for the whole yard is laid out in two parts, only one of which has been built for

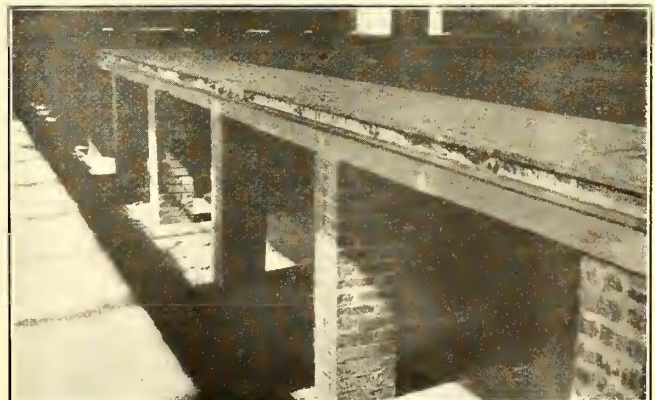
the time being. Each part is to be served by a direct connection to the main line, whence a ladder track makes possible the placing of a car on any one of the tracks of the group. All these tracks again converge into a ladder track and a loop at the rear end of the property, so that there is almost no movement of cars that cannot be quickly and expeditiously accomplished. The special work in every case has been kept of the simplest form by so placing the switches as to avoid any overlapping of special work. The overhead work is of the substantial backbone construction type and well strung to avoid trolley-off trouble.

Of the nine tracks installed in the yard at the present time, the first track serves the tipple described later on, four tracks extend through the carhouse and the four remaining tracks are available for storage only.

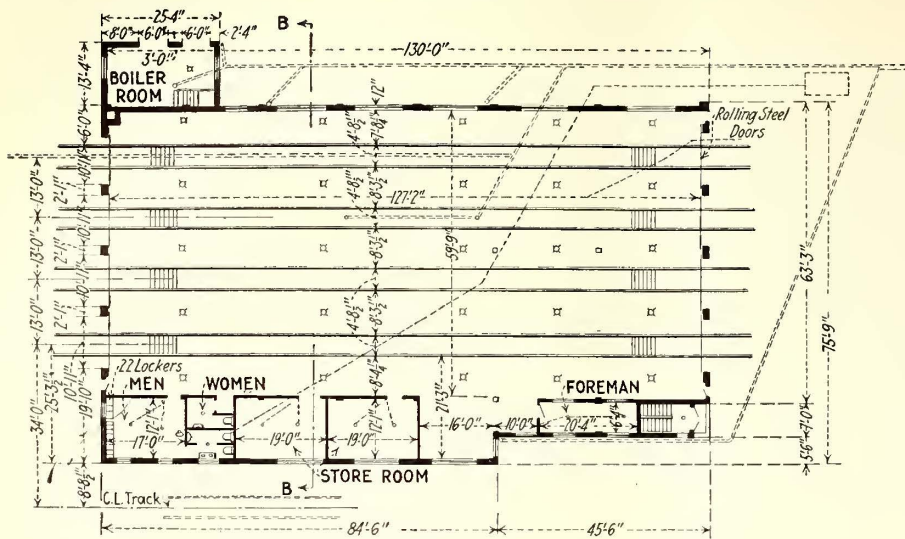
Ultimately, a second loop at the front end of the property will be made available by a connection from the present ladder track to the lead-in track of the second group of storage tracks. This will be provided for emergency use in case a car in regular service should become derailed on the shorter loop. Meantime, it is possible to loop the cars in an emergency by operating them through the present storage yard and around the loop at the rear end of the property, by



INTERIOR OF CARHOUSE NEARING COMPLETION SHOWING RAIL FASTENING ON INSPECTION TRACKS



OPEN PIT CONSTRUCTION AND LATERAL BOLTS FOR HOLDING RAIL ON WASH TRACKS



FLOOR PLAN OF THE NEW BRITAIN CARHOUSE

leaving track No. 9 and any other tracks in the yard open.

The track in the yard is constructed with 80-lb. A.S.C.E. rail with continuous joints and electrically-welded bonds, oak ties and cinder ballast. The special work is all of the iron-bound type with double-tongue switches having two adjustable connecting rods and spring ground throws. The first four switches leading into track No. 1 are designed for standard M.C.B. flanges to permit the receiving of sand and coal in carload lots on the tipple. These switches are 13 ft. 6 in. long and have a 150-ft. inside radius, while all other switches have a 100-ft. inside radius.

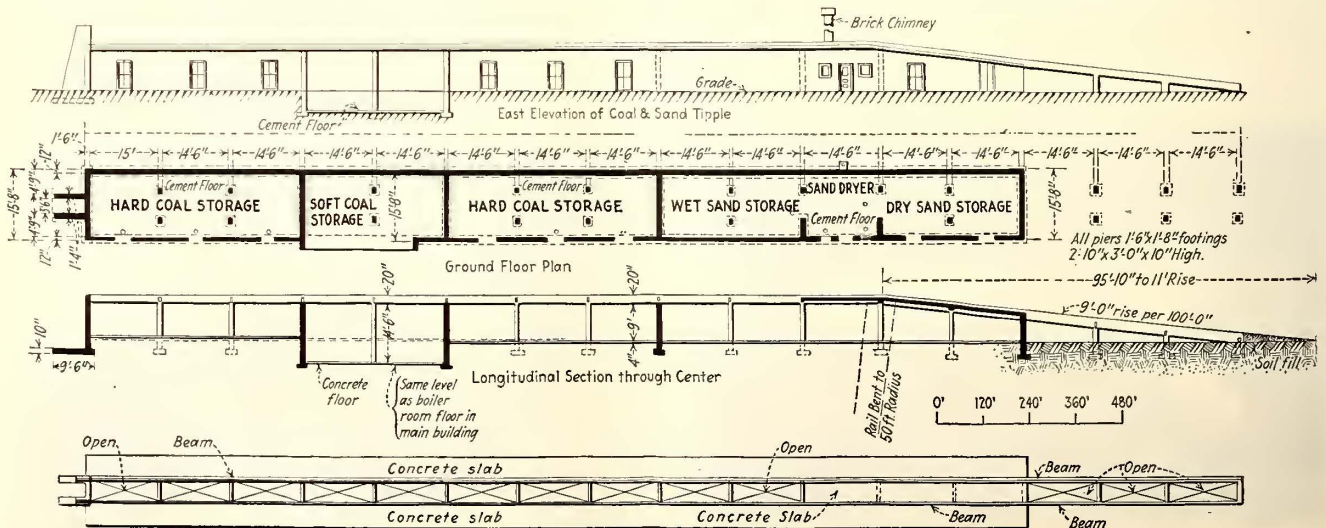
CONSTRUCTION OF CARHOUSE

From the accompanying drawing showing the layout of the new storage yard, it will be noted that the new carhouse occupies a central position from front to rear in the yard and that four of the storage tracks pass through the carhouse. This provides storage space in front of the carhouse for cars to be inspected or washed and in the rear of the carhouse for cars that have been inspected or washed and are again ready for service. The assignment of cars to tracks upon entering the yard is directed from the small brick office just inside the yard, where a car upon entering stops to deposit the

is of particular interest, and as this is clearly shown in an accompanying drawing, no description is deemed necessary.

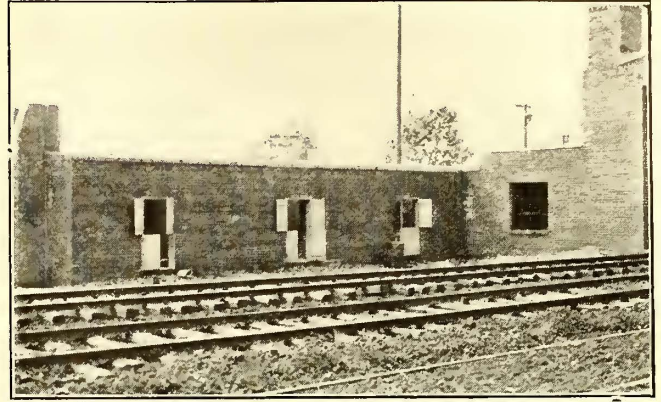
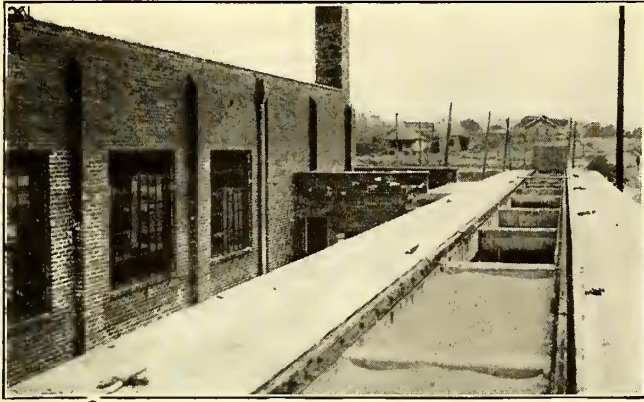
The building is constructed of red rough-faced pressed brick, fireproof partitions and wood trestle supporting the roof. On the main floor a series of rooms along the east side of the building provide an office for the carhouse foremen, two storerooms for supplies, and locker and toilet facilities for men and women employees engaged in inspecting and washing cars. An oil room is provided in a small brick building located just behind the carhouse. The west side of the building is formed almost entirely of windows, Fenestra steel sash being used. Four Kinear rolling steel doors close off each end of the building.

The second story is partitioned off and the walls sand-finished, providing offices for the train dispatcher, division superintendent and assistants. There is also a locker room to accommodate 250 trainmen, shower bath and toilet facilities, and a large bright club room for the trainmen. The interior finish throughout the building is good, but very plain, as is also the exterior finish. Heating of the building is accomplished with a Keewanis smokeless boiler and a Warren & Webster steam heating system. Radiators are installed both overhead and at the floor level along the west wall



Top Plan

CONSTRUCTION DETAILS OF THE TIPPLE SHOWING PIER DESIGN, METHOD OF FASTENING RAILS TO CONCRETE BEAMS, CROSS-SECTION OF TIPPLE AND REINFORCING IN CONCRETE BUMPER



CONCRETE BUMPER AND COAL STORAGE BINS AT REAR END OF TIPPLE. APPEARANCE OF THE TOP OF THE TIPPLE. THE BOILER ROOM IS LOCATED IN THE SMALL BUILDING BETWEEN TIPPLE AND CARHOUSE. NOTE ALSO LARGE WINDOWS IN THE CARHOUSE

beneath the windows, and also one radiator at either side of each rolling steel door at both ends of the building. This location of radiators is expected to give particularly satisfactory heating.

As a steam road connection is available, special facilities have been provided for receiving and handling sand and coal. These consist of a tippel, extending alongside the carhouse and adjacent to the boiler room, and ample storage bins. This tippel is built with brick walls with concrete piers to support the track, the details of which are given in an accompanying drawing. The approach to the tippel is over a 9 per cent grade. The rails on the tippel rest on heavy angle irons inset in the corner of concrete beams, so that the top of the rail is practically flush with the top of the beam.

STORAGE BINS BENEATH TIPPLE TRACK

Storage bins for hard coal, soft coal, wet sand and dry sand are provided in the space underneath this tippel track and the space between rails on the tippel is open except over the dry sand storage bin. Material received in carload lots is, therefore, hauled onto the tippel and dumped from bottom dump cars directly into the proper bin. The bin immediately adjacent to the boiler room and communicating with it has capacity for five carloads of soft coal. There is also storage space for ten cars of hard coal for use in the cars and five carloads of wet sand. A small room between the wet sand and dry sand storage bins is to be used as a sand dryer, a smokestack having been built to serve the dryer. A top plan view, side elevation, lateral

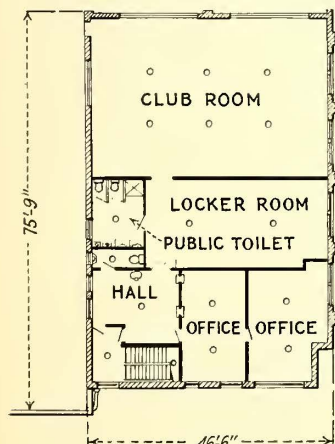
cross-section and vertical cross-section of this tippel are shown in an accompanying drawing.

Fire protection for the car yard is afforded by numerous fire hydrants placed at various places about the property. No sprinkler system was installed in the carhouse. E. D. Eckroad, engineer maintenance of way, was responsible for the construction of the new layout in East Akron.

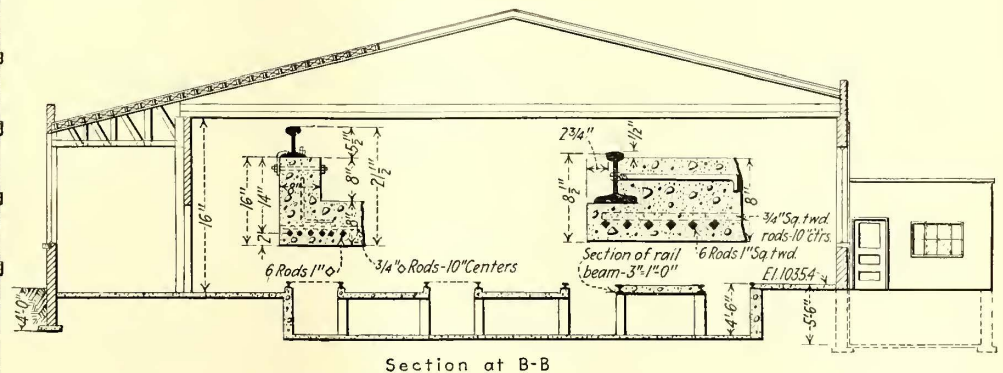
Influence of American Electrification Practice

IN THE past whenever the question of electrification has been taken up the matter of increasing the capacity of a section of steam railway has probably been the greater factor, rather than reduction in operating expenses. Now the high price of coal throughout the world has brought the latter factor into the greater prominence.

An item published in *Commerce Reports* recently says that in many of the larger countries abroad the heavy trunk-line electrification projects in the United States have been very carefully studied and are very frequently referred to by foreign consulting engineers in their reports, and that in several instances standard American plans have been adopted practically complete by engineers advising foreign governments on steam railway electrification. It is believed that the experience of American manufacturers in developing reliable heavy railroad equipment in this country will be of considerable help in furthering heavy traction electrification abroad.



FLOOR PLAN OF OFFICES AND TRAINMEN'S QUARTERS ON SECOND FLOOR



CROSS-SECTION THROUGH CARHOUSE WITH DETAILS OF METHODS USED IN FASTENING RAILS

Automotive Industry Appraisal of Traction Men

Generally Speaking, the Conservation Traction Interests Are Held to Regard the Bus as a Competitor Rather than Ally in Solving Their Transportation Problems

AN ARTICLE recently published in *Automotive Industries* (Oct. 13, 1921) commented on the attitude of the traction interests toward the motor bus and the lack of any comprehensive solution of the problem of motor bus competition. This was written by Sinclair Gluck, managing editor of the *Commercial Vehicle*, and reflected his views of the recent Atlantic City electric railway convention, when he stated many of the allusions in speeches to bus competition showed clearly that members considered it a danger rather than a possible ally, with no attempt to face the issue directly. Taking the convention as a whole, Mr. Gluck declared that the motor bus may be said to have been almost entirely disregarded as a possible factor in passenger transportation.

In his analysis of the points brought out Mr. Gluck showed that there were two factions present. On one side were the conservatives who seemed to regard the bus as a menace, and nothing more, to their business. They were greatly in the majority. The other and more progressive side consisted of but a few men, some of whom already had actually installed buses to cooperate with their trolleys. These regarded the bus not only as a possible but as an actual ally. These men, however, made no headway against the weight of opinion ranked against them.

LITTLE EFFORT TO SOLVE PROBLEM

In the passenger transportation business there is an organized influential group of men. These include electric railway interests as well as the manufacturers of buses and of truck chassis that are more or less convertible into buses. It is necessary for both of these important groups to work in a fundamental constructive way to solve many of the transportation problems, but there was little effort along this line at the convention. Men in the transportation business—men of vision who look to a better, broader and more satisfactory market—may have held hopes for such a development in this convention, but such hopes were justified to a very limited extent.

Short-haul passenger transportation work is in a chaotic state, the article goes on to say, and points out that here and there, in cities such as New York and Washington, well organized, efficiently operated motor bus lines work in conjunction with street car lines to a greater profit to both and more general satisfaction to the public. In other cities there are more or less well-organized bus lines competing with the street cars at a profit to themselves and at a heavy loss to the electric lines. In other places jitneys operate on a shoestring and are cutting down the number of street car patrons at little profit to themselves. Elsewhere buses have tried to compete and have failed. The difference in the outcome has depended upon local conditions and the efficiency with which each type of transportation was organized and operated.

There can be no doubt in the mind of the intelligent transportation observer, however, that there is a field for short-haul bus operation. And there should be no doubt in his mind that the bus is to be reckoned with in that field.

On the whole the conservative traction interests seemed to concede the best thing to do was to legislate the bus backward and through publicity extoll the benefits of street car lines both to municipalities and the general public and to decry buses as undependable, incapable of handling traffic and unwilling or unable to stand their share of municipal duties and taxes.

But far more important was the mistaken attitude of the convention toward the entire problem. After all, the most economical form of transportation is the one which should and will survive. The question fundamentally is not one of profit for traction companies now in business and in no hurry to go out of business, but one of solving the problem of the most economical and efficient form of transportation in each locality and under each set of conditions.

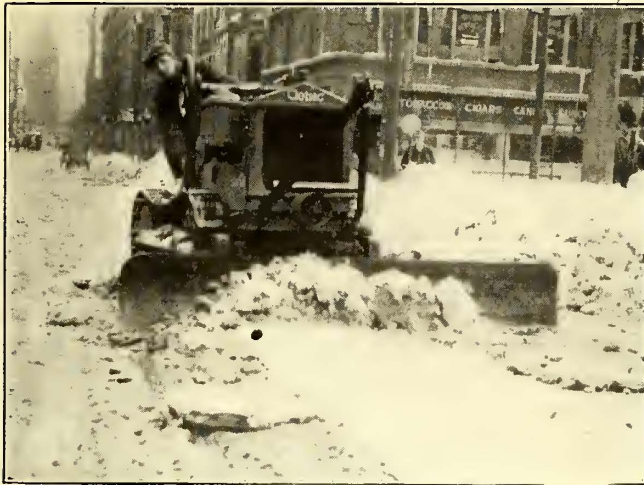
Either the street car lines are of real and permanent value to the communities in which they operate or they are not. If they are not of permanent value in their particular communities, the directors and stockholders should read the writing on the wall and either get out of a bad business altogether or adopt the type of transportation which will solve the problem in their communities—for if they are not of real and permanent value, they will not survive.

The article then goes on to quote extracts from the remarks of H. B. Flowers, chairman of the association's committee on trackless transportation, that the trackless trolley and the motor bus must be conceded a place in the sun and that more time should be granted the committee to inquire further into this important subject. Attention was also directed to the comments of F. E. Frothingham, J. K. Newman, Edwin Gruhl and J. P. Barnes on motor bus competition.

Summing up these comments, the writer held that unorganized jitney buses have done much in many communities to damage the prestige and decrease the profits of street car lines. If this is the case, properly organized and efficiently operated bus lines will surely do more damage. And these bus lines are coming. Therefore, where bus lines are practicable it would seem obvious that there are only two courses of procedure open for the street car line in certain cases—either to organize and operate the inevitable bus lines themselves or go out of business.

The article closes with arguments for a proper chassis and body design, the full details of which have not yet been worked out. It is pointed out that to construct a chassis which will be ideal for city bus work will mean much research and designing effort and possibly the installation of additional machinery to manufacture the final design. It is but natural that the manufacturers are reluctant to undertake this work without any knowledge of the extent of the market on which they can depend for the sale of the ideal vehicle when completed. For this reason there is a strong inclination on their part to recommend the use of present standard truck chassis equipment for buses. But the bus is coming and with it will come the ideal chassis.

No fewer than 4,000,000 passengers are carried daily by the Underground Railway Companies in London. An acceleration of train service has recently been made so that now during the rush hours 816 cars per hour pass through Earl's Court, one of the busiest stations. At the Charing Cross station, which is a stop on three separate lines, a total of 1,215 cars per hour pass through during the peak.



SMALL CATERPILLAR TRACTOR PROVES VERY EFFECTIVE IN CLEANING SNOW FROM DOWNTOWN SPECIAL TRACKWORK

Special Snow-Fighting Equipment

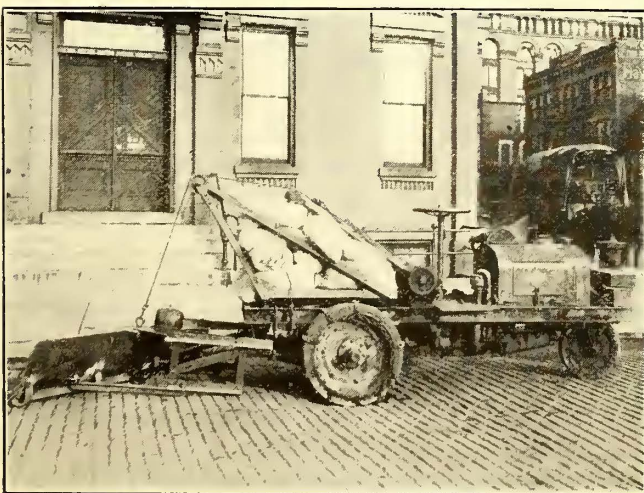
The Milwaukee Company Makes a Substantial Reduction in the Cost of Removing Snow from Streets—
Heavy Wing Plow Built for Clearing Highway in Emergency Situation—Description of the
Methods Employed to Continue Operation Without Interruption

SUBSTANTIAL savings in the cost of clearing snow off intersections and off company property have been made by the Milwaukee Electric Railway & Light Company by the substitution of small motorized plows for the laborer with a shovel. Gasoline engine tractors of two types are proving very effective in this work. One of the accompanying pictures shows a caterpillar tractor made by the Cleveland Tractor Company clearing away the very heavy snow which surprised Milwaukee in the storm on April 15, 1921. This caterpillar tractor is equipped with a 20-hp. engine and is used primarily for removing the snow from the special trackwork at street intersections and to clean off the loading spaces where passengers must stand to board the street cars. It will remove the snow from a 50-ft. x 60-ft. intersection and push it over to the side of the street in ten or fifteen minutes. One man and this machine will do an amount of work in clearing away snow equal to that done by at least ten men. Besides thus economizing on labor costs in clearing a certain location, it has the advantage of being able to move

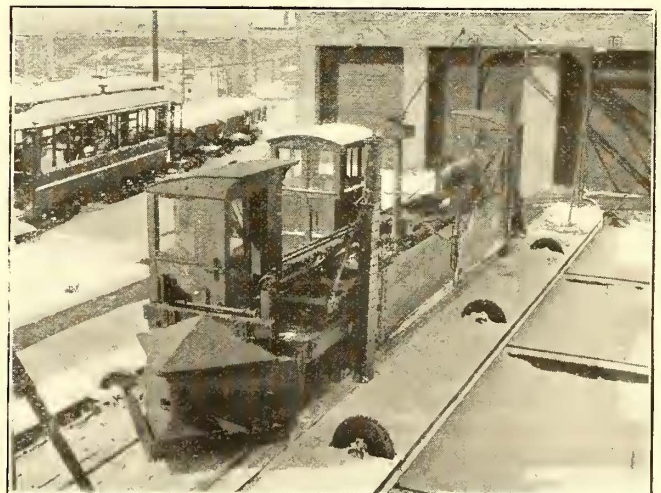
quickly from one location to another requiring snow removal. This machine has been found to be so effective in this work that the company plans to purchase another one this year. Furthermore, a study is being started to work out some machine for picking up the snow after it has been moved over to the curb line by this tractor and loading it into a truck for hauling it off the street. If this is accomplished, the familiar sight of large gangs of men shoveling snow for the car company after a heavy storm will be seen no more in Milwaukee.

The plow and raising and lowering device are readily detached from the tractor, which is employed in various other ways in the summer. It is used to haul a slusher for small excavating jobs, for spreading ballast, snaking rails and ties, pulling sections of construction track, backfilling, etc. It is one of the busiest and handiest pieces of equipment used by the department of way and structures of the Milwaukee company.

Another type of motor equipment used for the removal of snow is a Clark truck tractor, also shown in



THREE-WHEEL TRACTOR USED FOR REMOVING SNOW FROM SIDEWALK



SPECIAL WING PLOW FOR CLEARING AWAY SNOW ON THE INTERURBAN LINES

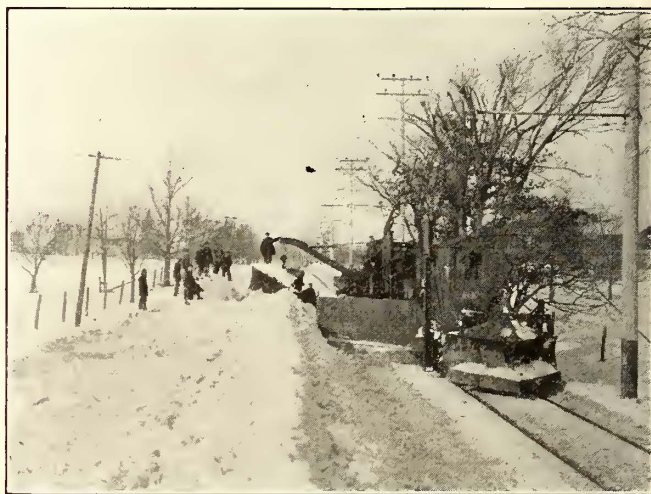
an accompanying illustration. This is a three-wheel truck steered from the rear, enabling the machine to be turned on a radius of 8 ft. and maneuvered into corners and cramped places where it is impossible to get any other machine. This tractor is equipped with a 6-ft. blade or plow which is raised and lowered by means of a hand winch. The plow can be set either at right angles to the direction of travel or at an angle of 60 deg. by simply changing the position of the bolt in the strut seen at the left of the picture.

In winter this machine is used particularly for cleaning snow from the sidewalks along company property, in front of carhouses, from special trackwork layouts in the outskirts of the city and such miscellaneous snow removal jobs. It is equipped with a 25-hp. engine and will travel 12 m.p.h. in moving between jobs. It is estimated that it will do work equal to at least eight men in removing snow from sidewalks.

In summer the plow is removed and a regular hand-operated dumping body is put on for use in hauling materials, tools, or anything in connection with construction and maintenance work. In this capacity it

again after the obstruction is passed. This is done by simply admitting and releasing air in the horizontal cylinder controlling the position of the wing. This wing will clear snow from a space 8 ft. outside the track.

To meet a very special condition which was confronted on account of the very heavy drifting of snow in January, 1920, along the Milwaukee-Racine-Kenosha interurban line and in the main highway to Chicago, which it parallels, the Milwaukee company developed a very unique side-wing plow to be used in conjunction with the car just described. Heavy snow storms and wind had resulted in very heavy drifting which made the highway and the interurban line impassable. After the company had cleared the track, motor trucks and various other vehicles began driving in the track, as it was the only place they could go, and became stalled and so interfered with the operation of the cars that the revenue from the line was almost completely lost. Appeal to the county and highway authorities to clear the highways in order to remove the necessity for driving on the tracks resulted in the employment of a number of men with shovels to attack the problem, but because of



AT LEFT, CLEARING THE HIGHWAY TO KEEP TRAFFIC OFF THE INTERURBAN TRACKS, SHOWING FOLDING WING PLOW IN OPERATING POSITION, FOLLOWED BY HEAVY SPECIAL PLOW PROJECTING OUT INTO THE HIGHWAY. AT RIGHT, FOLDING SIDE WING SNOW PLOW CONTROLLED BY THREE AIR CYLINDERS

will do the work of two or three teams, and forms an outfit that the track department has found almost indispensable. The company has two of these Clark tractors.

An accompanying picture shows a special wing plow constructed by the Milwaukee Electric Railway & Light Company, for removing snow on the interurban lines. In addition to the nose plow, this car is equipped with a unique wing plow for moving the snow back away from the track. The two sections of this wing plow are hinged together at one end, with the opposite ends supported in vertical steel slides and connected to the piston of an air cylinder mounted on top of each support. By admitting or releasing air from these two cylinders, the blades of the plow are raised or lowered.

One of these vertical slides is attached to a carriage which is free to slide longitudinally on the floor of the car, its position being controlled by a third air cylinder. When this carriage is pulled toward the middle of the car, the two vertical slides are brought closer together and the two sections of the plow fold out from the side of the car forming the triangular wing plow. When this snow plow is in use, as an obstruction is approached, the wing is simply pulled back straightening into a position parallel with the side of the car and then forced out

the enormous accumulation of snow, the headway made was insignificant.

In order to get cars operating, therefore, the Milwaukee Electric Railway & Light Company jumped in and built almost over night a very heavy plow which was attached to the side of a flat car by means of heavy steel framework. This flat car was then coupled behind two motor cars and a steel cable connected from the plow to the forward motor car to take up part of the enormous thrust to which the plow subjected the car to which it was attached. With the help of the folding wing plow described above, which went ahead, followed by this special plow, of which an illustration is shown, it was possible to clear the packed, heavy snow out of the road for a distance of 16 ft. out from the track. With the road thus opened up, motor trucks were not forced to travel on the track.

Since this experience, Milwaukee and Racine Counties have co-operated with the traction company to install a large number of snow fences at open points, to prevent the snow from drifting into the road. Hence there will probably not be much need in the future for this unusual plow, which will be appreciated by the company, as it was very hard on track and equipment.

Trackless Trolleys at Work Abroad

What Kind of Service Is Now Given by Trackless Trolleys and at What Cost?—First-Hand Data on Several of the Most Important Installations Are Presented, Together with Comparisons Against American Estimates—Bradford and Leeds Discussed in This Article

BY WALTER JACKSON
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DURING the spring and summer of 1921 considerable time was spent in Europe making detailed studies of trackless trolley operation, as American manufacturers were preparing to take up this form of transportation in a serious way. Indeed, since then an experimental installation has been made at Richmond, Va.,* and the first installation for regular service has been made on Staten Island, in New York,† while several more, like Detroit, are in the offing. The subject, therefore, is timely; and as most of the foreign installations are not radically different in engineering details, the experience gained in their operation may be helpful to American operators.

As a matter of courtesy to the managers who have so frankly stated their experiences, this article will refrain from extended comments and will deal only with the individual situations as found, except for occasional comparisons of actual British with estimated American costs.

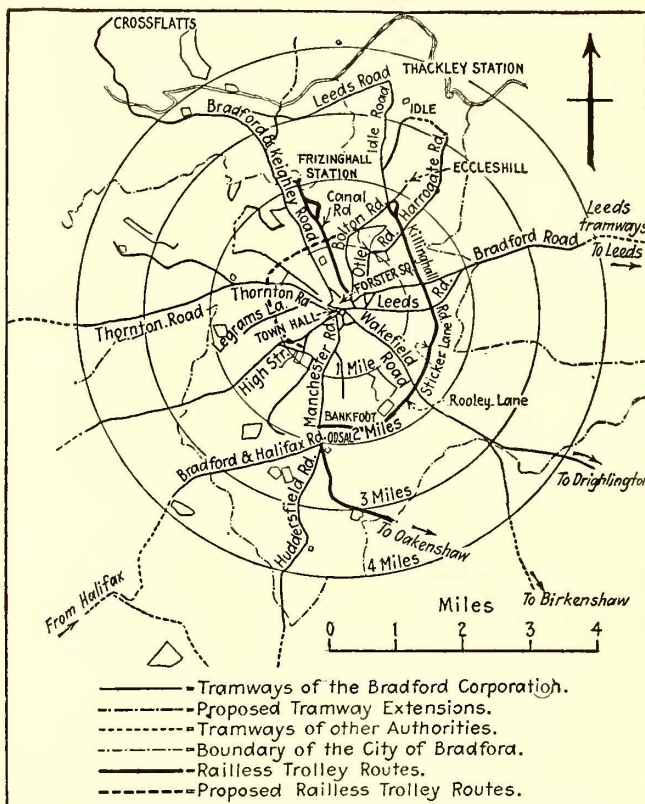
VARIETY OF INSTALLATIONS CHOSEN

From a technical standpoint, it was desirable to confine the study of trackless trolleys to that type which has some form of under-running current collector and standard trolley construction. The only over-running or carriage collector type system examined was the Mercedes-Stoll system at Vienna, where the nearness of the manufacturer made it fair to assume that the installation was being operated under more favorable conditions than the older, like-style (Cedes) installations in Great Britain.

Visits were made to Leeds and Bradford in England as representing places of considerable experience in the co-ordination of rails and rubber tires; to Teesside, as representing the largest all-trackless undertaking, and to York, as representing the latest available installation.

BRADFORD AND LEEDS THE PIONEERS—RECENT COSTS

The Bradford Corporation Tramways, which serves a population of 370,000, started its first trackless trolley on June 24, 1911. This installation was over a 1.25-mile connection between two track routes in a thickly-populated district. The present routes total 9.5 miles and are made up of the extension of a track route, of a half loop tying six track routes together and of a purely independent route from the center of the city along Canal Road to Frizinghall; in short, each route meets a different situation. Topographically, the situation is not favorable. The older parts of Bradford lie in a trough, so that grades of 6 per cent and even more have to be negotiated. Canal Road is the most favored, being both level and smooth-paved. The paving is usually a granite block, kept in better condition than similar paving in many American cities, but never-



THE CO-ORDINATED TRANSPORT ROUTES OF BRADFORD, ENGLAND

Rail-less Routes	
Canal Road, from Forster Square to Frizinghall, including loop around Gaisby Lane, etc.	2 miles 1232 yards
Cleckheaton Road, from Odsal Top to Oakenshaw	1 mile 1122 yards
Killinghall Road, from Leeds Road to Bolton Road	2 miles 242 yards
Rooley Lane, from Bankfoot to Wakefield Road	1 mile 1231 yards
Sticker Lane, from Wakefield Road to Leeds Road	1 mile 552 yards
Total	9 miles 859 yards

Note: Ministry of Transport in 1921 refused permission to run double-deck trackless buses in excess of 5 long tons on Eccleshill, Idle and Thackley (present track) sections.

theless not the sort of paving conducive to minimum energy use. There are sections, however, where tar macadam or other smooth paving has been introduced.

The rolling stock comprised seventeen single-deck, twenty-eight-seat two-man buses and one double-deck fifty-one-seat two-man bus. Owing to the excessive platform costs, R. H. Wilkinson, general manager, who designed the double-decker, has also made plans for a thirty-seat one-man single-decker to be 21 ft. 9 in. over all with a wheelbase of 156 in., and for a six-wheel double-decker, the latter now being under way. Before discussing the new double-decker it may be well to give some costs which are based almost entirely upon the operation of the seventeen twenty-eight-seat single-deckers, whose loaded weight must not exceed 11,200 lb. (5 long tons) and whose propelling equipment consists of two 20-hp. motors.

*June 25, 1921, ELECTRIC RAILWAY JOURNAL.
†Oct. 15, 1921, ELECTRIC RAILWAY JOURNAL.

In converting the financial figures into American money values, exactness is impossible because of the fluctuating rate of exchange. However, the matter is simplified by assuming the penny (d.) to be worth 2 cents. On this basis it will be observed that the operating cost was 41.2 cents against an income of 26.4 cents per bus-mile. It would not be fair, however, to cast discredit upon the trolley bus because of this low earning power for the reason that it is now only used in the poorer traffic territory where a trackway would have even heavier losses. This is indicated by the

TABLE I—BRADFORD TROLLEY BUS REVENUES AND COSTS, YEAR ENDED MARCH 31, 1921

Traffic revenue.....	£21,384
Traffic revenue per bus-mile.....	13.2d
Bus-miles operated.....	387,543
Average bus-miles per day per bus.....	118
Average schedule speed, miles per hour.....	7.7
Total kilowatt-hours for operation.....	470,427
Kilowatt-hours per bus-mile.....	1.213
Passengers carried.....	3,437,803
Average traffic revenue per bus-hour.....	8s. 5.75d
Power cost per bus-mile.....	1.82d
Total operating expenses per bus-mile.....	20.6d

fact that the average earnings per trolley car-mile in the same year were 54.2 cents. The operating expenses per car-mile approximated 49.3 cents, but were less per seat-mile, since the usual Bradford trolley car is a double-decker.

The schedule speed of 7.7 m.p.h. with a twenty-eight-seat bus is based upon an average of six stops per mile. Energy for propulsion and lighting alone (no heating) averaged 1,213 kw.-hr. per bus-mile and as the cost was 3.64 cents, the cost per kilowatt-hour was 3 cents (1.5d) at the bus. The platform cost was 14.2 cents per bus-mile. Reduction of total operating expense in this direction, through one-man operation, with vehicles of improved design, is placed by Mr. Wilkinson at 8 to 12 cents. As the operating expense for the 1921 fiscal year was 41.2 cents, the later type, if it saved say 11.2 cents, would bring the estimated cost of operation of a thirty-seat vehicle down to 30 cents per bus-mile. This cost is in itself an estimate but is based upon ten years' experience as compared with the advance cost estimate of 19 cents per bus-mile operating expense for a thirty-seat American 10,000-lb. light bus made by J. C. Thirlwall in his study: "The Urban Transportation Field Analyzed," ELECTRIC RAILWAY JOURNAL, Oct. 1, 1921. Table II shows the detail costs for the year ended March 31, 1921. It also shows the standard form of accounts used at Bradford and elsewhere to arrive at the cost of service rendered by the trackless trolley.

The foregoing statement does not cover investment charges. As of March 31, 1921, the capital account shows £13,866 for electrical equipment of routes and £16,987 for trolley buses. This is equivalent to £1,460 per mile of four-wire construction and to £999 per bus. Mr. Wilkinson is allowing for a useful life of fifteen years on future buses built to street car standards. The present buses purchased in 1911-1912, he says, have outlived their usefulness. In connection with the individual items in the operating account presented, it should be stated that the trackless buses are charged their prorata for such general items as superintendence, general officers, administration, etc. The insurance charges are actually lower. Mr. Thirlwall's Table III covers only four headings in all, so that comparisons cannot well be made except that his 0.7 cent for "maintenance of way and structure" is less than the 1.258 cents shown in Table II, under the headings of "con-

tributions to maintenance of roads" and "electrical equipment" (referring to overhead line). Up to this year (preceding the roads bill with tax based on seating capacity) the buses were charged 0.75 cent per mile run for road maintenance. Mr. Thirlwall's "power" charge of 2.3 cents is based upon an energy consumption of but 1 kw.-hr. per bus-mile and a delivered cost of 1.5 cents per kilowatt-hour, whereas the Bradford power cost of the fiscal year ended March 31, 1921, was 3.64 cents based upon an energy consumption of 1.2 kw.-hr. per bus-mile without heating and a cost of 3 cents per kilowatt-hour. It will be seen later, however, that the newest bus does better in ratio to weight. The greatest divergence lies in maintenance of equipment, to which Mr. Thirlwall has assigned 4 cents per bus-mile whereas Bradford's 1921 figure shows 13.4 cents per bus-mile without allowance for minor charges like "buildings and fixtures" and "workshop tools and sundry plant." Part but not all of this difference is due to age.

One strong reason for a lower operating expense as regards labor would appear to be the higher output in bus-miles per hour figured by Mr. Thirlwall, namely, 10 m.p.h. as against Bradford's 7.7 m.p.h. However, the experience of operators on the thin-traffic routes for which either gasoline or trolley buses are used is that one has a toss-up between higher running speeds or longer layovers. In either case, bus-hours have to be paid for whether the vehicles are running or not.

DOUBLE-DECKER CUTS TRACKLESS COSTS

Mr. Wilkinson is so enthusiastic for rail-less electric operation, as against the trackway, that he has figured it would actually pay to use the trolley bus for service in any density of traffic whatsoever, assuming that the June, 1921, estimates of £22,000 a mile for single and £46,000 a mile for double track in paving still hold. To give fair scope to the trackless bus for heavier serv-

TABLE II—DETAIL OF OPERATING COSTS OF BRADFORD CORPORATION TRACKLESS TROLLEYS FOR YEAR ENDED MARCH 31, 1921

Traffic Expenses		In Pence per Bus-Mile
Superintendence.....	0.043	
Wages motormen and conductors.....	7.106	
Wages of other traffic employees.....	0.311	
Cleaning and oiling buses.....	0.849	
Fuel, light and water for depots.....	0.199	
Ticket check (tickets, inspection, etc.).....	0.441	
Uniforms and badges (furnished free).....	0.298	
Miscellaneous.....	0.171	
Licenses.....	0.200	9.618
General Expenses		
Salaries of general officers and staff.....	0.454	
Administration and establishment expense.....	0.028	
Store expenses.....	0.076	
Rates and taxes.....	0.409	
Printing and stationery.....	0.090	
Fuel, light and water for offices.....	0.026	
Accident insurance and compensations.....	0.125	
Fire and other insurance.....	0.009	
Miscellaneous.....	0.128	1.345
General Repairs and Maintenance		
Contribution to maintenance of roads.....	0.280	
Electrical equipment (overhead line).....	0.349	
Buildings and fixtures.....	0.238	
Workshop tools and sundry plant.....	0.202	
Trackless cars.....	6.718	7.787
Power Expense		
Cost of current at 1.5d per kilowatt-hour.....	1.821	1.821
Total working expense.....		20.571

ice it is, of course, necessary to raise its capacity. This he has already achieved in part through the construction of a fifty-one-seat double-decker, and there is also under way a six-wheel double-decker seating fifty-seven people. The six-wheel construction is required to meet government regulations as to permissible weight per

axle. The standard surface trolley car seats sixty passengers.

The fifty-one-seat double-deck trolley bus was placed in service on Nov. 6, 1920, and up to March 31, 1921, it had run 15,453 miles at an average energy consumption of 1.685 kw.-hr. per mile. The weight of this bus was given as 16,576 lb. (7 tons, 8 cwt.). The bus is run over a variety of paving including granite block and tar macadam. It is equipped with solid tires renewed on a contract basis of 1.5 cents per mile. The original tires were changed after running 21,000 miles.

The bus is equipped with a single 40-hp. motor which has a double-reduction chain drive to the rear axle equipped with the usual differential gear. For routes having grades, the management would use a 60-hp. motor. This method of drive sets up the body so high that it is not possible to stand upright on the upper deck within Bradford's clearance limitations. In the six-wheel bus, however, the floor is 7½ in. lower. This gives three risers from ground, viz., 11 in., 11 in. and 10 in. The springs are underslung instead of being supported over the axle boxes. The objection offered to the gear and pinion drive is that the roads are not smooth enough. The chain drive used is not incased and therefore is subject to grit and dirt, but this has not proved a serious matter. The buses also have a sliding shoe for making rail contact when the bus is operated over a single-positive trolley wire route. This shoe, which is located in front of the bus, also acts as a fog guide.

So far as general construction is concerned, this is really a Bradford car on rubber instead of on steel tires, and much is hoped from it in the way of lower upkeep costs. A ride is not very different from one on the solidly-built cars of this system.

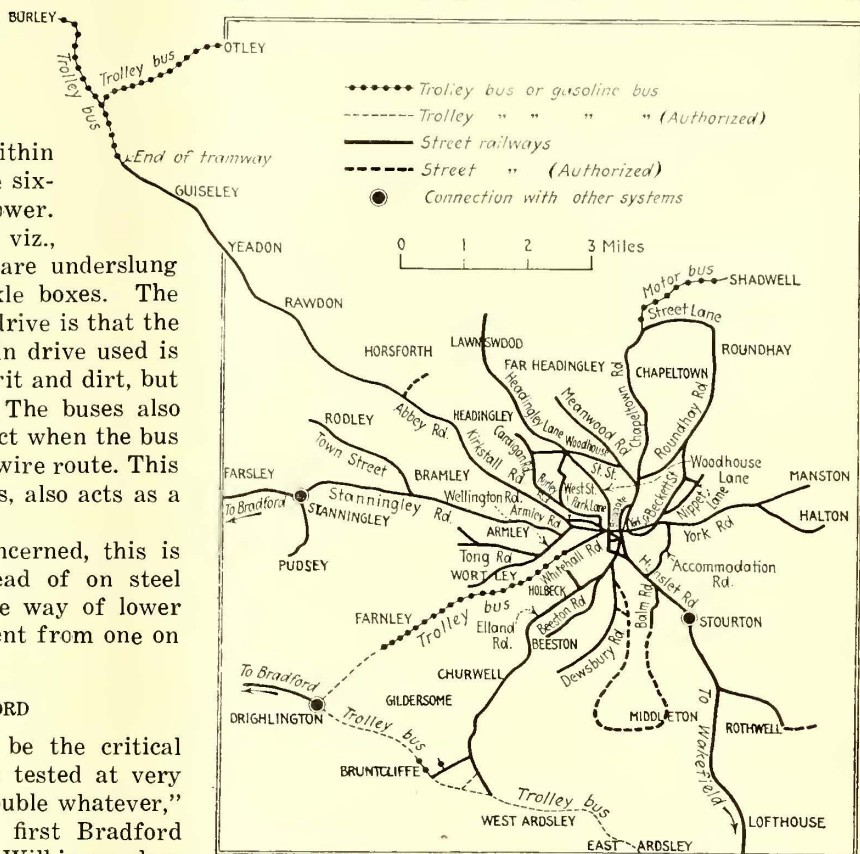
GENERAL NOTES ON BRADFORD

"The trolley, which may be said to be the critical feature, works admirably. It has been tested at very high speeds . . . and it gave no trouble whatever," are phrases from a description of the first Bradford installation in 1911. Apparently, Mr. Wilkinson does not agree, for he has since replaced the swiveling type trolley wheel by a cast-iron shoe of his own invention. This shoe, shown in an accompanying illustration, is provided with a lubricating groove to decrease wear on the wires. In case this sliding shoe strikes an obstruction it will fall back to avoid fouling. A pull on a cord attached to the collector suffices to restore the shoe to the wire. Stops on the shoe likewise prevent it from swiveling beyond a predetermined point. Besides holding to the wire better, the Wilkinson shoe is lighter and costs less to operate than the usual 5-in. wheels.

The danger of collision in fog has been minimized by the use of an indicator which shows the bus operator in feet how far he is off center. This device, which indicates as much as 14 ft., is also one of the general manager's inventions.

It is noteworthy that whereas the twenty-eight-seat buses cost £999 each to March 31, 1921, the proposed one-man thirty-seat bus was figured at from £1,700 to £1,800. On an exchange basis of \$4 to the pound, this gives either \$6,800 or \$7,200, showing how close British and American costs run at this time. As a matter of fact, if the British bus were upholstered as expensively as the American vehicles, the cost would

run up to £2,000. The original investment cost of £1,460 per mile of route has advanced to £4,500 for overhead system plus £6,000 for feeder cables or a total of £10,500 per mile. This presents an interesting contrast to Mr. Wilkinson's estimates for the overhead and feeders per mile in case of rail installations for the same locations. In the case of double-track rail lines the overhead with but single trolley would cost £4,000, while the availability of a rail return would bring the cost of feeder cables down to £3,800. On the assumption that double track would cost £53,800 in all (£46,000 for rail and paving, £4,000 for overhead and £3,800 for feeders) against £10,500 for trackless trolley,



IN LEEDS THE MOTOR BUS, THE TROLLEY BUS AND THE TROLLEY CAR ALL HAVE A PLACE IN PASSENGER TRANSPORTATION SERVICE

Mr. Wilkinson figures out that even a two-minute headway would be handled more cheaply with trolley buses than with cars.

At a conference of British executives, some exception was taken to the range of the track figures, but Mr. Wilkinson stood firmly on the ground of his own experience in building and operating high-class paved track. At any rate, it is obvious that Bradford must be fairly well satisfied with the reliability of the trolley bus since it is willing to extend its use to heavy routes whether for new lines or the changeover of existing lines where the rails have been worn out.

FRONT DRIVE INTRODUCED AT LEEDS

The Leeds Corporation Tramways, which serves a population of 542,000, was co-pioneer with its neighbor Bradford, inasmuch as it also opened its first route (3.7 miles) on June 24, 1911. Today a total of 8.8 miles is in operation over thin-traffic routes. Some of the original buses were equipped with a single 28-hp. motor, but later specifications call for two 23-hp. motors. Both types seat twenty-eight passengers. In the two

classes of motor buses, as installed, each motor drives one rear wheel through a double-reduction worm and chain gearing. Within the last year or so, J. B. Hamilton, general manager, and J. S. Hamilton, assistant chief engineer, have been trying a front drive in order to reduce energy consumption, improve adhesion and also obtain a lower rear entrance. One motor is mounted forward and the other motor is mounted behind the front axle. Each front wheel is driven by one motor through an intermediate spur gearing. By July, 1921,



DOUBLE-DECK TYPE OF TROLLEY BUS OPERATED BY BRADFORD CITY TRAMWAYS

some eighteen months' experience had been obtained through the trial of this drive on an old bus. It has since then been put on a new bus carrying two 23-hp. motors.

As at Bradford, the original Parliamentary restriction against double-deck trolley buses has stood in the way of their earlier use. It is now possible, however, to go ahead in this direction. Leeds is doing so by designing a fifty-five-seat vehicle. Up to the present time, the trolley bus routes of Leeds have not served any heavy traffic, but with double-deckers it will be feasible to replace the Whitehall Road trolley car route now operated with thirty-seat single-deck cars. At present, the trolley bus to Farnley makes use of this trackway for about 0.75 miles from the city center. When the track in this densely-traveled section is removed or covered over with 3 in. of tar macadam it will be feasible to install a trolley bus turnback to take care of the short-haul traffic now handled by the trolley cars. The corporation also intends to build a trolley bus route to serve the Morley football grounds, using high capacity buses.

On that part of the line where operation is over the trackway the negative trolley of the buses is put out of action. The buses take power from the positive wire and use a skate hinged at the rear of the bus to complete the circuit. By means of the hinge the skate can be raised or lowered to make the necessary rail contact.

The original Leeds bus bodies as purchased were of the front entrance and exit type. The home-built bodies introduced about 1914 have service doors at both front and rear. The twenty-eight-seat body and chassis weighs approximately 10,000 lb. The maximum speed of these vehicles is 15 m.p.h. and a schedule speed of 8 m.p.h. is maintained. There is no regulated number of stops per mile. This is impossible considering the nature of much of the districts served. As headways

vary from twenty to thirty minutes, it is clear that a higher schedule speed would simply mean longer lay-overs.

SOMEWHAT LOWER OPERATING COSTS AT LEEDS

It has been shown that the Bradford operating expenses were 41.2 cents for the fiscal year ended March 31, 1921. The Leeds cost is on a similar basis for the same year and is 28.5 cents. A comparison of the items charged against trolley bus operation in each case is presented in Table III.

The chief differences between the Bradford and Leeds accounting lies in the fact that certain general items at Leeds have not been prorated apparently against the trolley bus, possibly because the Leeds trolley bus mileage was but 195,401 against 9,981,473 car-miles, whereas Bradford ran 387,543 trolley bus-miles against 5,959,861 car-miles. The sum of the items termed "superintendence," "wages of other traffic employees," "salaries of general officers and staff," "stores expenses," "printing and stationery" and "fuel, light and water for offices" shown in the rail car column amounts to 0.912d. or 1.8 cents. Adding this to the total cost of 28.5 cents (14.25d.) would make the Leeds operating cost come to 30.3 cents as against 41.2 cents shown for Bradford.

Examination of the Leeds figures in detail shows there the principal factors for this difference of 10.9 cents per bus-mile lie. Leeds "wages of motormen and conductors" were but 9 cents (4.505d.) against Bradford's 14.2 cents (7.106d.) charge. This is accounted for in part by the fact that the Leeds buses are served by a man and boy instead of by two men at full pay. Table III also shows that platform expense on Leeds rail cars was 11.8 cents (5.9d.) while that on the buses was but 9 cents (4.505d.).

Power expense in Bradford was 3.64 cents (1.82d.)

TABLE III—VARIATIONS IN RAIL AND TROLLEY BUS OPERATING COSTS AT LEEDS IN PENCE PER VEHICLE-MILE—
YEAR ENDING MARCH 31, 1921

Traffic Expenses	Trolley Bus	Rail Car
Superintendence.....	None	0.189
Wages motormen and conductors.....	4.505	5.900
Wages of other traffic employees.....	None	0.261
Cleaning and oiling vehicles.....	0.828	1.046
Cleaning, salting and sanding track.....	None	0.251
Fuel, light and water for depots.....	0.197	0.099
Ticket check.....	0.087	0.448
Uniforms and badges.....	0.175	0.244
Licenses (miscellaneous).....	0.147	0.143
Total traffic expenses.....	5.939	8.581
General Repairs and Maintenance		
Road maintenance (permanent way, track, etc.).....	0.161	1.286
Electrical equipments of line.....	0.086	0.319
Buildings and fixtures.....	0.024	0.117
Workshop tools and sundry plant.....	0.062	0.067
Vehicles (including bus tires).....	6.227	2.839
Miscellaneous.....	0.061
Total maintenance.....	6.621	4.628
General Expenses		
Salaries of general officers and staff.....	None	0.272
Store expenses.....	None	0.082
Rents.....	None	0.012
Rates and taxes.....	0.303	1.029
Printing and stationery.....	None	0.070
Fuel, light and water for offices.....	None	0.038
Accident insurance and compensations, other insurance..	0.556	0.416
Miscellaneous.....	0.012	0.199
Total general expenses.....	0.871	2.063
Power expenses.....	0.822	1.719
Total working expense.....	14.253	17.046

as against only 1.64 cents (0.822d.) in Leeds due to the lower cost per kilowatt-hour and less energy consumption. Leeds figures show 0.77 kw.-hr. per bus-mile as against Bradford's 1.2 kw.-hr. per bus-mile. A pertinent reason for Bradford's higher energy consumption is that while the Leeds buses in 1921 aver-

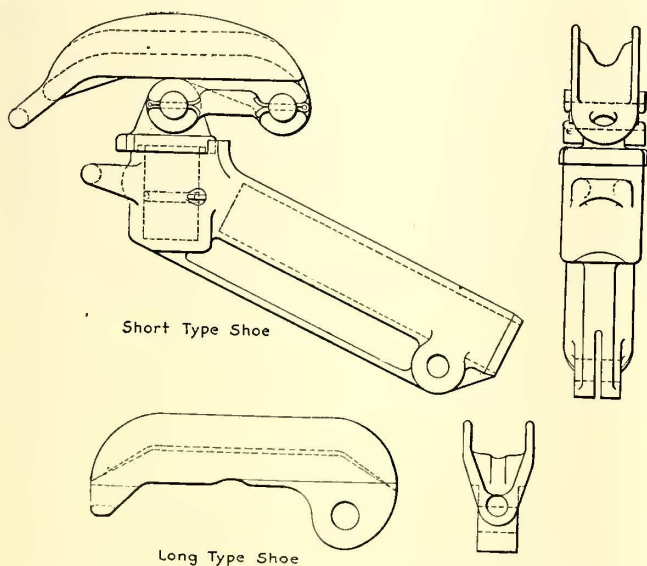
aged but five and one-half passengers per bus-mile, the Bradford buses average nine passengers per bus-mile with more than 95 per cent of the mileage made with but twenty-eight-seat buses.

The 1921 Leeds cost for "general repairs and maintenance of buses" was 12.4 cents (6.227d.) per bus-mile. This is almost the same as Bradford with 13.4 cents (6.718d.), including guaranteed solid tire cost of 1.5 cents per mile. These figures do not include auxiliary shop charges. They are of the highest significance in view of the belief that American trolley buses of like capacity and weight would cost only 4 cents per mile (J. C. Thirlwall in article noted) or 5 cents (K. F. Simon, *ELECTRIC RAILWAY JOURNAL*, Sept. 10, 1921). Mr. Stocks' average figure of 6.5 cents (*ELECTRIC RAILWAY JOURNAL*, Sept. 24, 1921) is more in line with what may be expected eventually. It may be added that in 1921 Leeds set aside 2.89 cents (1.44d.) for a redemption fund based upon a bus life of ten years, compared with Mr. Thirlwall's figure of 3.7 cents and Mr. Stocks' weighted average figure of 2.118 cents. The best way will be to take trolley bus upkeep and bus depreciation together, because it is very hard to draw the line between maintenance and replacement. We then have:

	Cents
Leeds, 1921.....	15.29
Stocks.....	9.70
Thirlwall.....	7.7

These figures would indicate that we cannot be certain that the American trolley bus will cost as little as anticipated simply because it is a blend of known car and known bus-chassis costs. British trolley bus operators are still experimenting with forms of collectors and types of drive despite the experience and careful study of a decade. Parenthetically, it may be remarked that much of the same optimism as to costs also appears in many gasoline bus estimates.

It is not without interest to say that while Leeds buses which average twenty-eight seats, cost 12.4 cents



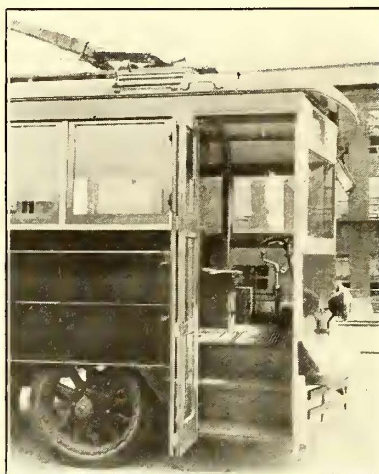
DETAILS OF WILKINSON SKID TROLLEY SHOE AS USED BY BRADFORD TROLLEY BUSES

per mile for upkeep, the considerably older Leeds cars, which average fifty-six seats, cost but 5.66 cents (2.83d.) per mile for upkeep. On a basis of equivalent seating capacity, *i.e.*, two buses for one car, the astonishing ratio of 24.8 cents against 5.66 cents, almost four and a half times as much per seat, would be obtained.

Automatic Control for Rail-less Cars

Foot Control with Three Running Speeds Perfected by the Cutler-Hammer Company—It Operates on the Current-Limit Principle with a By-Pass Button for Emergency Acceleration

IN THE article which appeared in the *ELECTRIC RAILWAY JOURNAL* for Oct. 1, 1921, the rail-less car recently developed by the J. G. Brill Company was described, although very little was said about the control, except that it consisted of the relay contact system.



KIND OF TROLLEY BASE USED CAN BE SEEN IN THIS VIEW, ALSO ARRANGEMENT OF CONTROL

This type of control, which was designed by the Cutler-Hammer Company, is operated by a foot master controller located on the floor in front of the driver's seat and interlocked with a reversing switch. In previous designs of the rail-less trolley made by other manufacturers, it was considered necessary to use only the plain manually operated drum controller, which was mounted on the car floor and operated

by a system of rods and toggle joints. Actual experience, however, with this form of construction resulted in the conclusion that due to the wear of the various joints, it was impossible for the operator to correctly "feel" the various positions of the control. It was decided, therefore, to go to the complete automatic control for the Brill rail-less bus.

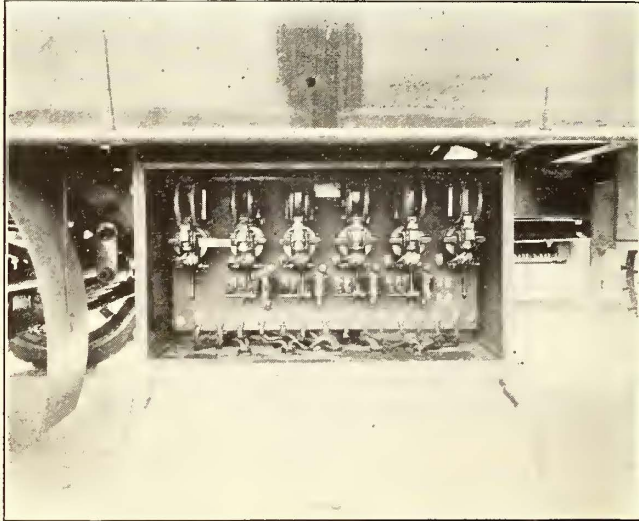
This control is of the selective series relay or current limit acceleration type, which means that the motor would always be accelerated with a constant current regardless of the load. The control is designed so that the operator has available three separate running speeds.

The equipment furnished consists of a foot-operated inclosed master switch mounted on the floor to the left of the steering wheel with a release operated by a spring which returns the switch to the off position operated. It is mechanically interlocked with the reversing switch, which is mounted underneath the car and operated by a projecting handle so designed that the handle cannot be removed unless the reversing switch is in the neutral or off position, thus providing complete safety. The magnetic contactor panel shown in the accompanying illustration is inclosed in a waterproof case, mounted underneath the car. A set of grid resistors mounted in open frames underneath the car was also furnished by the Cutler-Hammer Company.

As noted from the photograph reproduced, the contactor panel consists of an asbestos lumber board of proper strength and moisture resisting quality which supports a row of six magnetic contactors each provided with railway type of magnetic blowout. Two of the contactors handle the main-line current completely, disconnecting it in the off position. The remaining four contactors are used for current limit acceleration as previously described. To prevent any possibility of the contactors closing in any but the proper sequence due

to irregularity of the roads, neutralizing springs were provided on each contactor, together with a progressive electrical interlock. The contactors consist of a pressed steel frame and of an impregnated shunt coil of the continuous duty type. Main contacts are easily renewable. The switch, which is designed with very light weight, is speedy in operation.

In order to provide sufficient torque for insuring complete acceleration of the motor, a bypass push button is mounted on the car directly in front of the operator. Its purpose is to bring in the initial acceleration switch in case extra torque is required for climbing a steep



THE CONTACTOR PANEL IS MOUNTED IN AN ACCESSIBLE POSITION ON THE UNDERSIDE OF THE BODY

grade. The accelerating period is based on a rate of from $1\frac{1}{2}$ to 2 m.p.h.s. on an average level pavement. To secure this it is only necessary for the operator to press the pedal all the way down whenever he wishes to start the vehicle, while it is possible quickly to avoid danger of collision in any traffic jam by resorting to the bypass button, which makes available the emergency torque of the motor. Its use, of course, is not required for average running conditions on an ordinary grade.

The automatic control just described was installed on the Brill trolley bus in connection with the G.E.-258-D commutating pole, railway-type of motor, rated at 25 hp. at 600 volts for continuous operation with a 65-deg. C. rise. The ultimate control selected for this type of work must be as simple as possible and require the least amount of space in the cab about the operator. It must be consistently light in weight and mounted where convenient for regular inspection of the master contactor panel to take place.

100 per Cent One-Man Operation Successful

SINCE Sept. 27, 1920, all cars of the Cedar Rapids and Marion City Railway used in city service in Cedar Rapids, Iowa, have been operated with one man. This includes thirteen safety cars which are standard except for separate entrance and exit doors and ten double-truck cars. The latter are equipped with 24-in. wheels and four baby motors and air-operated doors, but no safety devices. They seat forty-four passengers and weigh 22,000 lb. A check of the service secretly made by the city after one-man operation of all cars was introduced and comparing the service then with what it had been under two-man operation of the double-truck cars showed that during the period of the

check 99 per cent of all cars were operated on time, which was 12 per cent better than the record made the year before with two-man operation.

E. C. Allen, general manager, states also that the number of accidents shows a reduction of 57 per cent as compared to two-man operation, there having been no platform boarding and alighting accidents since one-man operation was begun. While the change to one-man operation, accompanied by a reduction in wages from 60 cents to 50 cents an hour maximum, started off with a three-day strike, the trainmen now like the one-man operation better than the old plan, according to statements made by them, including the president of the local union.

The population of Cedar Rapids is 47,000 and the rate of fare is 7 cents cash with four tickets for 25 cents. A headway of fifteen minutes is maintained on all lines throughout the eighteen hours. In the central part of the city the operation of various lines over the same tracks makes headways of seven, five and 3.5 minutes. The daily average number of passengers carried is 20,000 and the average system speed is 8.5 m.p.h.

Road Test on Long Bus Run

THE statistics given below are from a run made last month from New York to Aberdeen, Maryland, by an International-Mack motor bus E-25 AB type, equipped with LM shock insulators. The distance covered in the round trip was 352 miles, as measured by hubo-

Item	Unit	Total	Per Day
Mileage run	Miles	352	117
Average distance between stops	Miles	32	...
Elapsed time for round trip	Days	3	...
Actual time on road	Hours-minutes	21:25	7:08
Running time	Hours-minutes	18:33	6:11
Standing time en route	Hours-minutes	2:52	0:57
Average schedule speed	M.p.h.	16.4	...
Average running speed	M.p.h.	19.0	...
Maximum average speed between stops	M.p.h.	28.0	...
Maximum speed under power	M.p.h.	33.0	...
Maximum speed coasting	M.p.h.	42.0	...
Miles per gallon of gasoline	Miles	6.4	...

dometers, and the bus carried twenty-three passengers on the outgoing trip and ten passengers on the return trip. The figures are of interest to show performance for a run of this kind.

Electrical Transmission Vs. Coal By Rail

H. W. SMITH in the September issue of the *Electric Journal* has written an interesting article on the relative economics of transmitting electrical energy on high-tension lines versus the shipment of coal by rail.

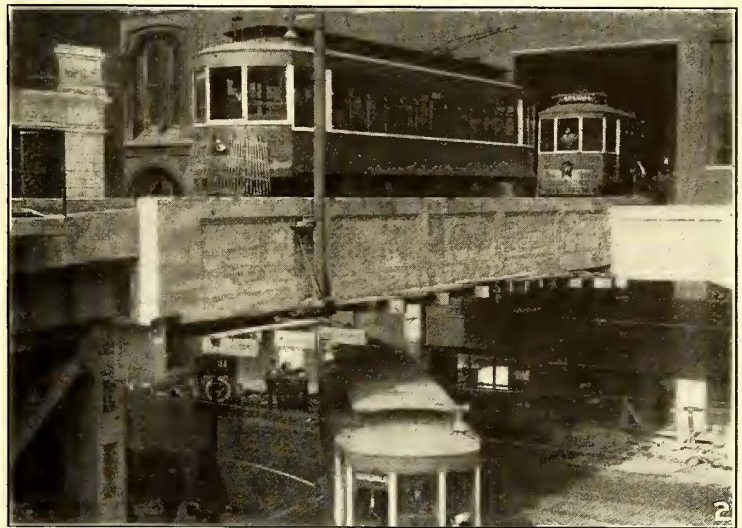
As an example, a double-circuit tower line 90 miles long with 500,000 circ.mil conductors was used for voltages of 110,000, 132,000, 154,000 and 220,000. The cost of all lines, substations and buildings was figured on present-day costs and a spare line and transformer were included. The cost was worked out on a basis of 50 per cent and 100 per cent "use" factor. Use factor means that for any given demand the losses are taken for the percentage of the total time this demand is on the system. Fixed charges on the lines were taken at 12 per cent and at 14 per cent on power plants and substations. At 50 per cent use factor for demands per line varying from 80,000 to 300,000 kw. the cost of transmission will vary from but 0.22 to 0.18 cent per kilowatt-hour and for 100 per cent use factor from 0.14 to 0.12 cent per kilowatt-hour. With a modern plant burning 1.5 lb. of coal per kilowatt-hour and with a \$2 per ton freight rate the cost of rail shipment is 0.15 cent.

Dixie Terminal Opened

The New Terminal in Cincinnati, Ohio, Provides Facilities for 165 Cars per Hour, Which Enter the Building on Two Levels

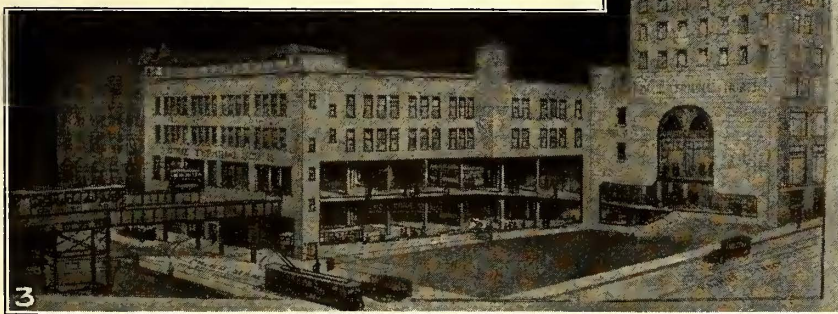
THE Dixie Terminal Building, Cincinnati, Ohio, was opened for service on Oct. 22. Its use provides terminal facilities for all cars of the South Covington & Cincinnati Street Railway entering and leaving Cincinnati. The handsome building is the last word in terminal construction. When fully completed the terminal, which cost approximately \$4,000,000, will remove

cars, but instead of proceeding over the Suspension Bridge they travel east on Third Street to Broadway and across the Central Bridge to Newport, Ky. Seven of the double-truck cars or nine of the old style cars can enter and leave the terminal at one time. There are two large entrances at the terminal proper. The interior is arranged in such a manner that congestion is almost impossible. Turnstiles are installed at the extreme northern end of the terminal and passengers pay their fares at the turnstiles before reaching the loop where they board the cars. The turnstiles are capable of passing 12,000 passengers an hour. When



DIXIE TERMINAL BUILDING

- No. 1. Front of the New Terminal Building.
No. 2. The suspension bridge is linked up with the new building.
No. 3. Sectional perspective view of Dixie Terminal Buildings.



all Green Line cars from surface lines in the heart of the city and will expedite trans-river transportation greatly. A total of 165 cars an hour will discharge and take on passengers at the terminal during the rush periods.

The terminal is divided into two concourses, one for the Kenton County cars of the South Covington & Cincinnati Street Railway and the other for the Campbell County trolleys. The Kenton County cars go into the terminal one story above the street level, on approaches built from the Suspension Bridge which connects Cincinnati with Covington. Campbell County cars run into the building from the street level. The incoming cars run in as far as the loop, discharge their passengers, pull around the circle, take on passengers and continue on their routes.

This same method is used by the Campbell County

the rush is the greatest extra turnstiles will be installed.

The plan provides that all passengers alight in the south part of the terminal building, follow a pathway into the main building and choose their exit either through the Walnut Street door or through the concourse, south stairway and arcade. Car patrons southbound use the main entrance and descend the north stairway.

The building was designed by Garber & Woodward, architects, while the construction work was supervised by the Ohio Building & Construction Company. All interior trimmings are of metal. The general illumination of the arcade which leads from the main building to the entrance of the terminal is by indirect lighting, the fixtures being invisible.

The floors and wainscoting of the main building are finished in Botteine marble. The ceiling in the arcade is painted and when the lights are on it has a typical Italian effect. A restaurant, newstand and cigar shop are located in the entrance leading to the concourses. More than 5,000 persons, including the prominent men of the city and the mayors of all of the surrounding municipalities whose citizens will have occasion to use the terminal, took part in the ceremonies of dedication.

Are the Trolleys the Only Practical System of Transportation?

The Motor Bus, with Its Lower Annual Investment Charges of \$2,000 per Mile of Route, Is Shown to Have Many Advantages Over the Trolley Car

BY GARDNER W. PEARSON

Practising Attorney and Patent Lawyer and Former Adjutant-General of the Commonwealth of Massachusetts, 1911-1914 and 1916-1917, Lowell, Mass.

EDITORS' NOTE: The following is an abstract of remarks made at the hearing of the Massachusetts Department of Public Utilities on comparative costs of transportation by motor bus and trolley car, Sept. 22, 1921, and reduced to writing by Mr. Pearson for the sake of accuracy. It is presented here for the purpose of indicating to railway men a kind of thinking and opinion which is held by many educated and intelligent persons who are a part of what is vaguely called "the public." The editors of this paper, as well as others who are closer students of the transportation problem than Mr. Pearson apparently is, will see errors and weaknesses in some of the statements and arguments. The article does show, however, that there are intelligent people devoting thought and study to local transportation problems, and that there is a sentiment for a dependable unified or at least co-ordinated transportation system.

AT THE recent hearing before the Public Utilities Department of Massachusetts on the cost of service rendered by motor buses and by electric trolley street cars there seemed to be a desire on the part of certain electric railway advocates to cloud the issue and to shout "jitney" whenever the subject of motor buses was mentioned.

That class of irresponsible jitneys operated by independent unbonded drivers was not the subject of the hearing, but it was a discussion of the safety, comfort and cost of operation of motor buses and trolley cars where both were operated by a responsible company. The trackless trolley had no part in the discussion.

When we talk of transportation we should consider that it has developed from pack mules, ox teams, stage coaches, canalboats and horse cars through street cars run by cable, by storage batteries and finally from trolleys.

Canals were an effective means of transportation until the faster steam railroads came, and the horse car on rails was more effective than the stage coach drawn over the poor roads of the '60s and '70s. There was a time when the trolley car was in general the best and cheapest method of transportation obtainable, but it now is a serious question whether or not it is the best for all classes of urban transportation on the public streets.

When we talk about a "natural monopoly" for transportation, we clearly do not mean for all kinds of modes of transportation, for there are in Massachusetts alone 200,000 privately owned automobiles that carry probably one million people daily.

MOTOR BUS VS. TROLLEY CAR ADVANTAGES

There are some comparisons between the motor bus and the trolley car running on rails which it may be of interest to consider. For comfort, the bus with pneumatic tires running on any kind of a decent street is much to be preferred to the trolley car with flat wheels running on worn out and poorly aligned tracks. On some lines it is almost impossible to read a newspaper because the cars shake so badly. Moreover, the buses are much quieter.

For safety, it must be remembered that the bus can

not only stop but can turn out to avoid a collision, where the car cannot. A bus equipped with proper brakes and rubber-tired wheels can stop quicker than a car running on a slippery steel rail. The bus can take on and let off passengers at the sidewalk, whereby their safety is conserved. Then, too, there are no highly charged trolley wires connected with the operation of a bus that are likely to fail and kill passengers.

In regard to dependability of service, the development of the automobile engine to its present high state of reliability has cut down to a minimum delays that were once of common occurrence. We also hear a lot about snow, but as a matter of fact the motor bus has demonstrated that it can be operated through a considerable amount of snow without the need of a plow. And besides, when travel is otherwise impossible it would be very easy to utilize caterpillar tractors of the tank type to pack down the snow. As a matter of fact, there have been many cases where snow has stopped the trolley cars and the motor buses have kept on running.

It is also apparent that a single trolley car can blockade a dozen, and that their operation is not as elastic as the motor bus, which can move around any blockade.

WHAT LEGISLATION HAS DONE TO THE TROLLEYS

In the past the Public Service Commission and the legislators allowed the enactment of the eight-hour-work-in-ten law to go into effect for electric cars. The commission also insisted that the roads run big heavy two-man cars all through the day, whether there were any passengers or not. There are today many such cars in operation which were purchased at the time when the expert of the Massachusetts commission insisted that the one-man car was too dangerous to be allowed to be used on any road.

With motor bus service, operation can be shifted from small one-man buses like the London cabs during the dull hours to larger buses, perhaps with trailers, during the peak hours.

In regard to speed, it is apparent that wherever buses have replaced trolleys, the speed has about doubled. The reason is not difficult to see. A bus can worm through traffic and apparently travel faster than the average trolley car. On that account it can be made smaller, with the result that passenger interchange can be accomplished more quickly.

On the matter of expense, the state regulation did not permit sound financing or did not insist upon it. Very few business concerns can survive unless they are permitted to have a surplus, and this was not permitted by our state regulation. We now have the day of reckoning and it looks as if the old rule that a business must run at a profit or be junked would apply to the trolleys.

As a matter of fact there seems to be no reason why the owners of trolley securities should be considered sacred. When any other business fails to meet expenses, it quietly goes out of existence and those who have invested their money in it are the losers. There seems to be no reason why investors should not lose their money if street railways cannot be operated at a profit.

We cannot escape the fact that the motor bus operated on streets and roads built and maintained either by municipalities or the state saves a first cost per mile of \$30,000 at least for tracks. With interest at 5 per cent and depreciation figured at 2 per cent, this means that the trolley companies have an expense of \$2,000 per mile of track per year. The motor bus therefore has the advantage of at least \$2,000 per mile of route

per year, or about \$5 per day. This handicap is too great, in my judgment, for the trolleys in many cases to overcome. It may be a fair proposition to require automobiles and auto buses to pay a larger tax in order to maintain the roads, but that is looking into the future and is not the existing condition.

The present Massachusetts street railway law is based on the theory that fares should depend on "cost of service." This means that, no matter how recklessly the roads are run, the public must pay the piper, and there is no incentive except the fear of utter bankruptcy to hold down the trustees and the directors of street railways.

Coupled with the cost of service regulation is a provision that permits the trolley roads to operate motor buses, but they have not done so to any extent because, in spite of the apparent saving of \$5 per mile of route per day, they claim that such motor buses cannot be run at a profit.

It is my belief, and it appeared to be the belief of the last Legislature, that the Public Service Commission should cease to act solely as judges sitting in state to hear the super-specialist representing only the side of the trolley car, but should go out and investigate actual transportation conditions in all its phases so as to present unbiased facts to the Legislature.

I do not contend that electric interurbans, subways and elevated roads or improved one-man cars should be abolished, and I submit that the trolley car still has its uses, particularly on private rights-of-way, but I insist the motor bus should be given a fair show.

I also believe that the trolley car experts have been blind in not taking up any and all auxiliary methods of transportation, thereby discouraging competition. They, as well as the Public Service Commission and the Legislature, have really been attempting to sweep back the tide of scientific progress instead of looking to find a better and cheaper means of transportation for different traffic conditions.

We can get nowhere by refusing to face the facts. To my mind the Ford car and good roads have been the real street railway competitor. The public now demands better and faster service and intelligent time-tables. What is needed, it seems to me, is a Commissioner of Transportation, who, with broad views and powers, will consider not only one method of transportation but all. His functions should be constructive, not obstructive or destructive.

Even the head of the Massachusetts Highway Commission insists that the steam railroads cannot compete with auto trucks in handling freight on less than fifty-mile hauls as the truck saves rehandling and does not require freight terminals. I believe he is right.

Perhaps it is not yet too late for the urban trolleys to come back, if guided by the actual transportation situation as could be developed through a State Commissioner of Transportation who would consider not only finances, but fares and wages, as applied to the latest scientific developments in motors and types of coaches.

With some such central authority to assign certain territory to each transportation system or corporation ruinous competition would be eliminated. We would then have a co-ordinated system of transport which would not permit motor bus and trolley car competition between the same terminals, but which would allow the trolley to tap one territory and the motor bus to tap another.

Toronto Railway Puts on Buses

Four Types of Vehicles to Be Used—At Present Four American-Built Double Deckers Are in Service—The Others Are on the Way

THE Toronto Transportation Commission has established a motor bus route along Humber Avenue from Dundas Street west to Quebec Avenue, then along Annette Street to Runnymede Road, in West Toronto, a distance of 1.36 miles. This route provides a means of transport to a thickly populated section, north of Bloor Street, hitherto without any system of transit, connecting with existing trolley lines. The fare for a ride is 7 cents, with free transfers to and from connecting cars, and to date the service has met with general popular approval. The average number of passengers carried now approximates 6,000 per day, of which about 550 are local riders, who do not transfer to the trolleys. Standees are not permitted.

The service maintained calls for a five-minute headway during the morning rush hours, a ten-minute headway from 9 a.m. to 4:30 p.m. and a five-minute headway again during the evening rush hour, tapering off to a



FOUR FIFTY-ONE-SEAT DOUBLE-DECKERS, BUILT BY THE FIFTH AVENUE COACH COMPANY, ARE ALREADY IN SERVICE

ten-minute headway later in the evening. On Saturday, the five-minute headway commences at 1 p.m.

Already real estate values in the territory served have increased 10 per cent and the storekeepers at the junction with the trolley cars report an increase in daily receipts of 15 per cent or more. Two even go so far as to say they have had a 20 per cent gain.

The scheduled time for a one-way trip is ten minutes. This permits a one-minute layover at the end of each half trip and allows nine minutes to make the run of 1.36 miles. The average schedule speed works out 8.16 m.p.h. The runs are based on eight hours per day and the men are paid the same sliding scale of hourly rates as the platform men on the trolley cars. Time and a quarter is paid for overtime on weekdays and time and a half for work on Sundays and holidays.

It took but four days to break in the drivers because one of the requirements of employment was experience in driving trucks. Three experienced repairmen who passed the drivers' test and for whom there was no place were given jobs as shop men. One is always on duty, each working eight hours. They make repairs,

answer road calls, make general inspection and keep the buses clean. This also put an experienced driver in the garage at all times in case some one "missed" or had an incapacitating accident. All conductors were taken from the regular force of men used on the cars.

The buses are housed in the Dundas carhouse on Ritchie Street, between Dundas and Roncelalles Street. Here tentative facilities are maintained for taking care of the buses. A new garage which is being built alongside this carhouse is now almost completed.

The vehicles are painted sagamore red for three reasons. This color, it is claimed, has a higher visibility; it also gives both employees and riders an incentive to keep the paint on the vehicle in better condition and also causes a decrease in the number of accidents due to greater care being exercised by others.

Four different types of buses will ultimately be used by the Toronto Commission. Four Type L double-deck fifty-one-passenger buses have been received from the Fifth Avenue Coach Company, New York, and these are now in service. One bus has also been contracted for from each of the following builders, the Leland Company and the Associated Equipment Company, two English concerns, as well as one from the Eastern Canada Motor Company, Hull, Que. The buses will all be double deckers, although the general design is likely to vary to the extent that each individual manufacturer has his own specifications.

The four type L buses ordered from the Fifth Avenue Coach Company have the following general dimensions:

Height over all (unloaded)	10 ft. 5 in.
Length over all	24 ft. 5 in.
Width over all	7 ft. 6 in.
Wheel base (175 in.)	14 ft. 7 in.
Wheel treads, front (66½ in.)	5 ft. 6½ in.
Wheel treads, rear (72 in.)	6 ft. 0 in.
Seating capacity, inside passengers	22
Seating capacity, outside (passengers)	29
Size of solid tires	36x5

Status of Employees on Strike

The Question Involved Is Whether or Not the Relation of Employer and Employee Is Fully Terminated by a Strike or Lockout

THE question of the status of employees who have left service collectively for the purpose of securing better conditions of employment is one on which varying opinions have been expressed. Strictly speaking, strikers have severed their employment relation, whether it was under contract for a fixed period or terminable at will. However, in a number of cases the courts have recognized a middle status effective within certain limits, giving striking employees a position differing from both those in employment and the public at large.

The subject is discussed at length in the September issue of the bulletin published by the Bureau of Labor Statistics in Washington. In this bulletin the status mentioned is described as follows: "The relationship is an anomalous one, yet distinctive, and of such nature as to secure to the parties certain correlative rights under which acts may be performed that would assume a different aspect if done by absolute strangers or in different circumstances." Thus organizers from the outside may be enjoined from interfering with labor conditions, being in no wise agents of "employees," as was held in a case before the Supreme Court of the United States. But former employees in association with others have been held to retain such an interest in the affairs of their former employer as to make it lawful for them to picket and persuade in a peaceable manner, though

incidentally interfering with the employer's free and unrestrained control of his business. This is on the ground that though strikers are not on the payroll of the employer, and so are not actual employees, the relation of employer and employee is not fully terminated by either a strike or a lockout. However, where a strike has failed and the employer refuses to recognize former employees, their places having been filled and normal production continuing, the temporary anomalous condition is held to have terminated, and striking employees can not be regarded as any further interested, and whatever rights to be recognized they may have had at one time are extinguished.

This principle is applied in a recent case (*In re Division 132 of Amalgamated Association of Street and Electric Railway Employees of America*, 188 N. Y. Supp., 353) which was decided by the Appellate Division of the New York Supreme Court, May 17, 1921. It involved the construction of a contract between the labor union named and the United Traction Company, Troy, N. Y. The contract contained provisions to the effect that the company would "through its properly accredited officers treat with the properly accredited officers and committees of the association on all grievances that may arise." The agreement was to continue in force for one year ending June 30, 1921. A supplemental agreement provided for an increase in wages to continue during this year on condition that the company be granted permission to charge increased fares on or before Nov. 1, 1920. This permission was not granted, and the increase was withdrawn in accordance with the terms of the contract. However, the members of the employees' union protested this action, which was announced on Jan. 22, 1921, and on the twenty-eighth of that month, when the change was to be made, the employee members of the association walked out, "leaving the traction company incapable of immediate performance of its obligations to the public."

There was an agreement to arbitrate controversies arising as to the rate of wages within thirty days prior to the expiration of the agreement. Obviously this was a limited agreement as to arbitration, but the employees demanded that their protests against the reduction of wages be referred to arbitrators. The court held that in leaving employment as they had on Jan. 28 "they committed a breach of contract, and if there had been a valid agreement for the arbitration of all controversies they would have relieved the traction company of the obligation to perform." The court pointed out further that in view of the limitation upon the subject matter of the agreement there was no obligation on the part of the employer to submit the question arising in January to arbitrators supposed to function only on questions arising in June following. "The election on the part of the employees to abandon their employment in disregard of the contract made in their behalf by the petitioners (the labor union) could not impose an obligation which was not provided in the contract. . . . The former employees have no ground for complaint, because they are no longer employees, and because the time fixed by the contract for its operation in any event has not yet arrived."

In view of these conclusions the order issued by the Supreme Court in special term directing the company to submit to a trial before a jury on the issues presented was reversed, and the petition of the labor organization dismissed on the ground that the petitioners had no standing under their violated agreement.

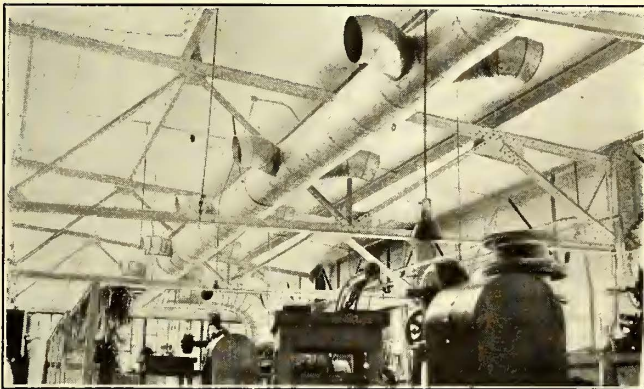
Equipment and Its Maintenance

*Short Descriptions and Details of New Apparatus of Interest
to the Industry. Mechanical and Electrical
Practices of All Departments*

Effective Shaving Exhaust System

Shavings and Sawdust Accumulating from Woodworking Machinery Carried by an Exhaust System from Wood Mill to Power House of Electric Railway

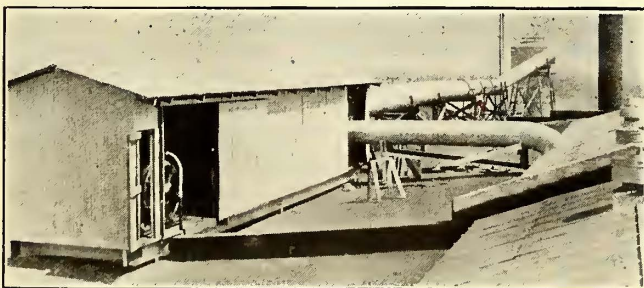
THE Pacific Electric Railway of Los Angeles, Cal., has just completed and placed in operation at its new Torrance shops a most efficient shaving exhaust system. The shavings and sawdust which accumulate from the woodworking machinery in the wood mill are collected and disposed of in the power house. The



ARRANGEMENT OF VENTILATING TUBES AND COLLECTOR LINES

collector lines run to a separator which is located on the roof of the power house. From the separator the material passes by gravity down a system of pipes and gates and is turned into the fuel storage bin or into either of the 250-hp. Stirling boilers in the power house for immediate fuel consumption by operating the gates in the pipe line from the floor of the boiler room.

The exhaust system consists of a twin 72-in. fan driven by a 125-hp. motor. The main lead pipe from



MOTOR DRIVEN FAN INSTALLED ON THE ROOF OF THE MILL

the fan to the separator is 40 in. in diameter and the two main collector lines leading into the fan are 32 in. in diameter. These latter are reduced in accordance with the requirements of the machines which they serve. The length of the discharge pipe from the separator to the fan is 176 ft.

The motor and fan are located on the roof of the mill,

which is a two-story structure. This was made necessary due to lack of space in the wood mill and also to keep the disagreeable noise of operation away from the workmen. Its location on the roof also places the motor in a position where the average suction line and discharge line are of approximately equal length.

Accelerating the Setting of Cement Mixtures

The Rapid Setting of Concrete Repair and Replacement Work is Essential, as Serious Problems Arise from Interrupting and Diverting Traffic for Any Extended Length of Time

THE Capital Traction Company, Washington, D. C., has been using a material commercially known as Cal in concrete mixtures for about six months, and finds that its use materially aids the initial setting of concrete. From the construction so far undertaken the introduction of this material in concrete mixtures gives a very hard concrete in about thirty-six hours. The Capital Traction Company has found this material of particular advantage in building its conduit track under traffic. The difficulty experienced when not using Cal has been that the cement requires too long a time to get the initial set and therefore poor results are obtained due to the vibration of the rail and yokes from attempting to operate cars before the concrete is thoroughly set.

NEED FOR A PRACTICAL MATERIAL FOR HARDENING CEMENT IS OF GREAT CONSEQUENCE

A demand for a practical and efficient material for accelerating the hardening of portland cement mixtures has received considerable attention in recent years. The need for such a material becomes of more consequence with the introduction of more rapid methods in construction and replacement work. Serious problems arise when it becomes necessary to interrupt or divert traffic for the duration of time required for concrete to harden sufficiently. The increased cost of lumber for forms has necessitated a more judicious use of such material, and its removal for further use as soon as the strength of the concrete will allow. This applies even more to the use of steel forms, which are rapidly replacing wooden forms in a great many types of concrete construction.

Considerable work toward the development of an accelerator for concrete has been done by the U. S. Bureau of Standards, which found that calcium chloride was the most effective of the various substances tested. Inasmuch as the use of commercial calcium chloride in concrete is attended by difficulties caused by its highly hygroscopic property and by the handling of the solution, the idea was conceived of introducing the salt by means of Cal, a material by which the above difficulties might be eliminated.

Cal is a material obtained by pulverizing the dried or undried product resulting from a mixture of either

quicklime or hydrated lime, calcium chloride and water. It is a dry white powder which may be handled in much the same way as hydrated lime, and with the same general keeping qualities. It is much more convenient to handle and use in making concrete than calcium chloride, either fused or in concentrated solution. Upon exposure to the air Cal gradually takes up carbon dioxide and becomes somewhat damp. However, tests indicate that long exposure does not affect its action as an accelerator of the hardening of portland cement mixtures.

TIME SAVED AND LESS DELAY TO TRAFFIC

The setting of normal portland cement mixtures may be hastened by Cal to an extent which is very desirable in concrete construction requiring a finished surface. The finishing operation may proceed with much less delay after the concrete has been placed, which should result in cutting down overtime labor. This hastening of the set is not objectionable in any type of construction providing the concrete is placed soon after it is gaged with water. It is believed that Cal increases the workability of portland cement mixtures. However, no attempt was made to measure the extent of this effect, because up to this time no satisfactory test has been developed for measuring the workability of various portland cement mixtures.

Unsound cements may be greatly benefited or made sound by an addition of Cal. This effect was produced in neat pats subjected to the steam test and in mortar test pieces stored in air. Limited tests indicate that quicksetting cements, either fresh or having become quicksetting on aging, may be made normal by the addition of Cal as used in cement mixtures. There was no indication that the amount of efflorescence appearing on the surface of cement mixtures exposed to the weather is increased by the use of Cal.

The series of tests on the effect of Cal on steel reinforcing bars which were imbedded in a thin layer of Cal cement mortar and exposed to the weather for eight months without showing any sign of corrosion, while favorable, is too limited to give assurance that corrosion will not occur under these conditions. Caution should, therefore, be exercised in the use of Cal in concrete containing steel reinforcement when the concrete is to be freely exposed to the weather or excessive dampness. It is believed that no bad effect will be produced in ordinary building construction.

Undried Cal mixed with portland cement causes greater deterioration in the quality of the cement during storage than that which ordinarily takes place. Therefore, Cal should be added to the concrete materials during the mixing operation, preferably before the water is added.

All portland cement mixtures treated with Cal attained greater strength at the two-day and seven-day periods than the corresponding untreated mixtures. The percentage increase in the strength of mortar at the two-day period obtained by an addition of 5 per cent Cal to cement ranged from 40 to 140. The strength of the treated mortar at two days was equal to the strength of the untreated mortar at three and one-half to eight days. These calculations are made from the results of tests in which the test pieces were stored in water, damp sand or a damp closet.

Treated mortars stored in the laboratory air attained at two days strength greater than that of the untreated mortar at twenty-eight days. This was due to the

rapid drying out of the small test pieces and the comparatively slow rate of gain in strength after the two-day period. However, this indicates that Cal is especially advantageous in cement mixtures which are necessarily subjected to any drying-out action.

The increase in strength produced by 5 per cent Cal in concrete mixtures at the two-day period ranged from 52 to 135 per cent, and the strength of the treated concrete at the two-day period was equal to that of the untreated at from three to four and one-half days. On an average this represents a saving of approximately one-half the time in operations which are dependent upon the strength of the concrete at early periods. The effect of the air storage in the concrete tests was lessened in degree, owing to the high relative humidity which existed throughout the storage period.

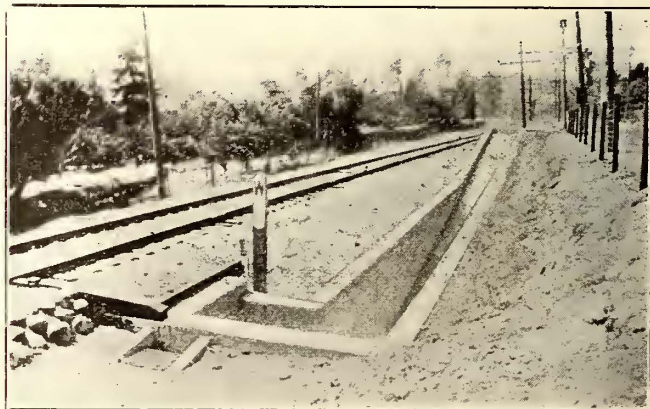
It should be remembered that the increase in strength resulting from an addition of 5 per cent Cal does not represent the maximum which may be obtained except in very rich mixes. As much as 15 per cent Cal was used in mortar tests, giving an increase of 220 per cent at the two-day period.

The general effect of Cal on portland cement mixtures is the same as might be expected from the use of equivalent amounts of hydrated lime and calcium chloride. The three-year tests by the Bureau of Standards on concrete gaged with a solution of calcium chloride are sufficient grounds for believing that the addition of Cal will not injuriously affect the ultimate strength and integrity of portland cement concrete.

Tunnel Crossing for Electric Railway Passengers

A SAFETY tunnel recently constructed under the steam line railroad near Sycamore Grove in Los Angeles provides a safe means of exit from a regular stop on the street car line at that point. Steam trains pass this location at a high rate of speed and when groups of electric railway passengers alight there is danger of serious accidents if they cross the steam tracks at grade.

To eliminate this grade crossing a tunnel with inclined approach has been constructed, as shown in the



TUNNEL CROSSING UNDER STEAM ROAD TRACKS

accompanying illustration. As the level of the ground beyond the steam railroad tracks is considerably lower than on the side where the electric railway tracks are located, the exit from the tunnel is practically on ground level, which makes it necessary to have but one incline. The safety tunnel was built by the city of Los Angeles.

Commissioners Recommend Private Ownership

At Recent Convention of Utility Commissioners, Committee on Public Ownership and Operation Makes Clean-Cut Report Urging Private Ownership and Maintenance of Higher Rates

THE following report of the Committee on Public Ownership and Operation is given in full as it embodies some principles which the National Association of Railway and Utility Commissioners has adopted as fundamental in the interests of most intelligent and successful provision of public utility service. The report is not a "snap judgment." It is the result of several years of study by the utility commissioners who have to regulate utilities and who have a more nearly complete view of the situation than is privileged to any other group. *To the National Association of Railway and Utilities Commissioners:*

In 1917 there was created by the National Association of Railway and Utilities Commissioners a special standing committee known as the "Committee on Public Ownership and Operation." The report of the first committee made at the thirtieth annual convention of this association, November, 1918, outlined an elaborate program of study of the subject, and the two reports of subsequent committees have dealt with various aspects of the question. The limited space available in this present report precludes the setting out in full of the results of any detailed study of the question and circumscribes this report to a condensed expression on the most salient and important factors involved.

There are, as we see it, only two elemental aspects of the question of public utilities, viz.:

1. Publicly owned, either with public or private operation; and
2. Privately owned and privately operated, either with or without public regulation.

This committee takes the negative view as to the first and the affirmative as to the second, i.e., with public regulation; and sets out its reasons therefor in the following:

Government is instituted among enlightened, civilized peoples in order to insure to the majority of the governed the greatest degree of freedom, liberty and happiness. There is no other sound reason or excuse for the existence of government, if we grant the truth of the principle that all government derives its just powers from the consent of the governed.

This granted, it is then no less true that a sound theory of government would dictate that there should be as little governmental interference with legitimate business activity as is consistent with the protection of the rights and property of the citizens and their enjoyment of life, liberty and the pursuit of happiness.

We take it that these general principles are now but axiomatic. If they be the great basic truths that they are generally and universally conceded to be in this country, then it naturally and logically and inevitably follows, as a necessary conclusion, that the less governmental encroachment there is upon the domain of private business initiative and incentive, consistent with the fair and equitable protection of the rights of the majority of citizens, the more nearly does such government approach the real functions of sound

government, as is laid down by our forefathers in the basic principles of the creation of our republic. It necessarily and logically further follows that government is then not instituted, as one of the ends of its creation, for the purpose of the ownership and operation of what are essentially and basically private business. Public utilities are essentially such, provided the public is given fair and adequate service at a reasonable cost. Public, governmental, regulatory bodies are created for this latter purpose only, and can have no other reason for their existence at the expense of the public. However, the safeguarding of these essential rights of the people do make the existence of such bodies a real necessity.

Again, a closer examination of the application of these general principles, we submit, but bears out the conclusion reached. In the ownership and operation of such utilities by government, it is practically impossible to exclude the influence of politics. As long as human nature and self-interest is as it is, and before the coming of the dreamed-of Utopia or millennium, the subtle influence of politics would almost inevitably creep in, however ingenious the safeguards that might be thrown around it. Again, with every change of political administration would come a change of business administration of such utilities, with its consequent change of business policy. This would be fatal to their operation under sound principles of economy and business efficiency.

As illustrative of this fact, we may be pardoned for calling attention to two late outstanding examples in this country, viz.: the government operation of railways and the creation, management and operation of the United States Emergency Fleet Corporation. The first of these is now almost past history, except the readjustments to private ownership and operation and the liquidation of the staggering operation-loss debt of \$1,800,000,000 resulting from the twenty-six months of government operation.

The United States Shipping Board and its subsidiary, the Emergency Fleet Corporation, were created in 1917, as a war measure to provide adequate transportation of troops overseas. Since the signing of the armistice, November, 1918, it has been operated as a business corporation. It has over \$3,000,000,000 worth of property. For the first two years after the armistice there was an extraordinary boom in shipping. Yet the statement of its business operations from its inception to June 30, 1920, shows the following astonishing financial results from operations, viz.:

Revenues received....	\$817,271,542.00
Expenses	1,002,396,579.00
Operating loss.....	\$185,125,037.00

Yet privately managed British merchant fleets reported, during the same period, net profits on their investment ranging from 20 to 40 per cent. The latter were privately owned and managed, under certain reasonable government regulations; the former was government owned and operated. The

difference in the respective systems of management is responsible for the difference in the results. This we believe sufficiently speaks for itself.

However, it may not be amiss to call attention to a few other cases where government ownership and operation has been in recent years tried. The largest example, carried to its ultimate logical conclusion, is found in the communistic régime in Russia. The plans upon which their theory is based apparently are wholly logical and should work out successfully, if only they had a new and different kind of human being to deal with; but human nature being what it is, such plans will not and do not work out in actual practice. The result of the attempt to put these into actual practice is known to the whole world. Another example is the tramways of Glasgow; they are said to be a model of municipal ownership, and they are, yet the tax rate of Glasgow has steadily risen. The English telephones are owned by the government; they are not self-supporting. The people of this country would not for a moment submit to such service as they give. Our telephone service at its worst is better than theirs at its best, and yet our tolls are lower. Instances of public ownership and operation might further be multiplied. The results are practically all the same. Also, private ownership and operation under municipal or community regulation has also been tried in this country in many instances. Instances of these are found, among others, in the states of Washington, Arkansas, North Dakota, etc. However, wherever tried, it has proved a practical failure, with either a resultant increase in rates beyond the reasonable value of the service rendered, or the breaking down of the utility in question with a large proportion of its operation costs borne by taxation.

Business is essentially management; not a plant, nor blue prints, nor rules; but is men. Business is the functioning of a highly skilled managing personnel, a buying and selling organization, trade connections, and the intangible but valuable good will, in addition to plant and equipment, and even finances. The latter constitute but the instrument, the former the business. The criterion of successful business is the periodical balance-sheet. Government is essentially a political concern; it necessarily thinks and acts politics. Politics are not concerned with the profit or loss showings of balance-sheets; but are vitally concerned with political campaign showings. "Passing the buck" in critical situations is necessarily one of politics' favorite pastimes. Basic conditions of politics make it so. Making quick decisions and assuming responsibility is an essential part of the life-blood of business. The two are un congenial bedfellows. Again, as above mentioned, changes in political administration necessarily bring about changes in administrative policy. Changes in administrative policy are costly and bring about unsettled business conditions. Continuity in adherence to a sound, tried business policy is an essential to continued successful business operations, and the maintenance of the concurrently necessary business good will. This is at least difficult, if not impossible, in the publicly owned and operated public utility. The ultimate conclusion in the last analysis is self-evident to all thinking

men, and forces us to discard the public owned and operated public utility.

There then remains only the privately owned and operated public utility, either with or without public regulation. All experience has shown, as is generally conceded, that such, without a regulation by a representative body of those who are dependent for service upon such utility, is both unwise, unsound and unfair to the public served. By the process of elimination, there then remains only the public utility regulated by an authoritative governmental body in close touch with and sensitive to the needs of the public served.

Such regulatory governmental bodies, however, at the same time must be sufficiently wise and fair and farseeing to stand between the utility in question and unthinking, hasty public clamor, not based upon full knowledge and careful thought. Public utilities are subject to the same financial laws of operation as are private enterprises. They must operate successfully in order successfully and adequately to fulfill their duty of service to the public, not only in the present, but in the near future. This is peculiarly true at the present time; and for the reason that for the last five years their

revenue rates did not proportionately increase with their rapidly increased costs of operations. It therefore follows that, in order to maintain a just, equitable balance and to even keep such utilities out of bankruptcy, it is necessary to maintain their higher rates longer than would to the layman seem necessary, judging by the surrounding decline in commodity prices. To follow any other policy would be to put such utility out of business, and to discontinue that service to which the public is so justly entitled, and which is now more necessary to the return of the vast bulk of private business to the desired goal of normalcy.

The foregoing considerations force the committee to the conclusion that the present system of private ownership and operation under public regulation is the logical, just, equitable and best system of conducting the business of public utilities that has or can be devised to meet the needs and requirements of both the utilities in question and the public by them served.

The report was prepared by a committee composed of A. G. Patterson, chairman; William C. Bliss, James Causler, H. H. Williams and Frank R. Spinning. The report was presented on Thursday morning, Oct. 13.

Amortization of Discount on New Securities*

Commissions Should Assume Responsibility of Permitting This—Analysis Made of Typical Case to Show Amounts Required

BY CYRUS PEIRCE
Banker, San Francisco

THE question of doing a large portion of the financing of public utilities through the medium of junior securities is becoming of more and more importance all the time, but before it can be done in any large way two vital points must be safeguarded.

First, the income of the company must be sufficient and so stabilized that the dividends on these junior securities will be paid with the same punctuality as the interest on the funded debt, and, second, the security upon which the issues are based must be ample to safeguard the principal. In order to accomplish these two things, it seems to me to be necessary for the Investment Bankers' Association to use the weight of its influence with the various public utility commissions to the end that the rates may be adequate not only to pay the dividends but to build up the physical property to the extent where there shall be at least one dollar of physical property for each dollar of the junior securities outstanding that may have been sold to the public.

This brings us right to a question which seems to me to be the heart of the whole matter, and that is the proper amortizations of discounts. It has been current practice to amortize the discount on an issue of bonds throughout the life of that issue. In theory that is probably correct and is not materially harmful. But what about the discounts on preferred stocks and common stocks? What is the proper period in which the difference between the par value of these stock issues and the amount derived from their sale should be made up, and how?

It has been current practice recently when public utility bonds are issued to limit the issue at par and the face amount of the issue to 75 per cent of the cost of the improvements to be made. Therefore, the other 25 per cent, and in addition thereto such discount from the sale of the bonds as the company is compelled to stand in order to market them, must be made up. Somewhere, somehow, the utilities have been called upon to find this money. It is now the fashion to provide this from the sale of stock. In most cases it is preferred stock. It is customary to say to an intending investor that every dollar he puts into the preferred stock is represented by a dollar of fixed assets, and this is true in most instances. It also is true that recently most utilities had to sell their preferred stocks on an 8 per cent basis, which, if the stock is a 6 per cent stock, means the sale of it at about 75. Ordinarily 8 per cent is all a company is permitted by the commissions to earn on the investment. Therefore, there is no profit to the company. The earnings do not provide a means by which these discounts may be quickly amortized or a surplus built up to protect the investor further. The result is that there is little chance of there being an increase in the intrinsic value of the securities of the corporation, which are junior to the preferred stock and which should be the vehicle for providing additional equity, and as their market can't improve, their price cannot go up. Consequently, the price at which the company must continue to sell its preferred stock remains low, discounts continue excessive, and the vicious circle goes on.

This attitude on the part of regulating bodies too closely restricting earnings cannot help but eventually result in two things. First, that the sale of

junior securities will become increasingly difficult at increasingly relatively higher costs of money, and, finally, that it will become impossible to raise money from that source at all because the company cannot afford to pay the price which investors will demand where there is regulation of security but no assurance that the issuing corporation will have such earnings as will enable it to administer its financial affairs along those lines which experience has shown to be necessary. Those lines are that there should be sufficient earnings to enable the corporation to lay up in lean years a reserve which may be applied to dividends as an assurance against the time, which always recurs in every corporation's experience, when earnings will not be sufficient to pay such dividends. This reserve, of course, also constitutes an assurance of the continuity of the promised dividends upon the preferred stock, and over and above this, there should be sufficient earnings to make it possible for the company within a comparatively short space of time to build up in actual property against which no securities can be issued an equity equal in par value to the amount of discount upon its outstanding securities.

If a company were static, this would be easy, but in a growing company where the annual construction requirements run into the millions, this has become a grave problem and the cord is being drawn tighter each year around the neck of the unfortunate corporation.

Assume, for example, that a company spends \$10,000,000 cash in one year for a new development and issues against it \$7,500,000 of bonds and \$2,500,000 in preferred stock which are sold at 90, i.e. the company has installed property which cost \$10,000,000, but against which it has received but \$9,000,000. Then \$1,000,000 must be provided from some source and that amount is immediately reflected in floating debt. This may temporarily be carried as an open account and then as notes in favor of the vendor, and finally, when the vendor must be paid, these notes or their successors find their way into the hands of the banks with which the company does business. The result is that the company has made permanent capital expenditures of \$1,000,000 and obtained the money therefor by using bank credit which is a highly improper proceeding as credit must never be confused with capital.

What is the remedy?

The \$1,000,000 of deficiency to be provided should be made up by the sale of common stock. It is apparent, however, that after the common stock is sold there is no property value behind it. It, therefore, must either bear such a dividend as to make it a good speculation, or it must be safeguarded, and the only way that it can be safeguarded is to build up the property value behind it. Assume that the \$1,000,000 is provided by the sale of common stock at 75. This would mean that there must be sold common stock to the par value of \$1,333,333, against which, as stated before, there is no property value. Under present conditions this stock is not salable, but the public service commissions must be brought to a point of view to regard the discount of \$1,333,333 as a construction charge to be added to the property value, which is more or less fallacious, or it must allow the company to make sufficient earnings to pay not only the interest on the bonds

*Abstract of address presented at annual meeting of the Investment Bankers' Association of America, New Orleans, La., Oct. 30-Nov. 2, 1921.

and the dividends on the \$2,500,000 preferred and \$1,333,333 common stock and to provide proper depreciation, but, over and above all this, earnings sufficient to build up within a reasonable time, say five years, a property value of \$1,333,000. In other words, it must allow that company to earn, in addition to the above items, \$266,666 each year in additional property, against which no securities, either bonds or stock, may be issued. When something of this kind, and only when something of this kind, is done, can a reasonable amount of the financing of our public utility companies be properly done through the sale of junior securities. It seems to me that it is the duty of this association to go on record in such a way that we who are financing public utility companies, and the companies themselves, may use the findings of this association as the leverage upon the various utility commissions to the end that they will take this stand and permit such earnings.

Meeting on Tie Standardization

RULES covering standardization of grades and sizes and inspection of wood, cross and switch ties are to be drawn up as a result of a tie standardization conference held in Washington Oct. 25. The conference was called by the American Engineering Standards committee at the request of the American Railway Engineering Association and the United States Forest Service. All present strongly favored the establishment of standardized rules. There was some objection to the grouping of woods for preservative treatment and it was decided not to include the question of preservatives. It was decided that the rules should be sufficiently comprehensive to include all classes of wood ties. This was done so as to include the ties used in mines and light railways generally as well as on steam and electric railways.

The organization of a bureau of inspection will be necessary, but it was decided to leave that step to the producers and the consumers.

The conference recommended to the American Engineering Standards committee that the Forest Service and the American Railway Engineering Association be appointed as sponsors to organize a sectional committee. Producers and consumers are to be represented on the committee which is to be directly responsible for the preparation of the standards. The standardized rules are to be presented to the American Engineering Standards committee with the recommendation that they be adopted as the American standards.

A. A. Stevenson, chairman of the American Engineering Standards committee, presided and P. G. Agnew, secretary of that organization, acted as secretary of the conference. Others in attendance were: John Foley, American Railway Engineering Association; C. S. Kimball, American Electric Railway Association; H. P. Haas, A. L. Kuehn and C. L. Warwick, American Society for Testing Materials; Dudley Holtman, National Lumber Manufacturers' Association; L. P. Keith, West Coast Products Bureau; E. R. Shepard, Bureau of Standards; W. C. Nixon, National Association of Railroad Tie Producers; Charles N. Perrin and Frank R. Buck, National Hardwood Lumber Association; Earle H. Clapp and H. S. Betts, U. S. Forest Service; David G. White, Forest Products Laboratory, Madison, Wis.

Handling Employees' Claims*

Methods of Collecting from Owners of Foreign Vehicles Who Have Injured Employees While They Were at Work—Policies Pursued by Member Companies in Handling Claims of Employees While Not at Work

By S. A. BISHOP

General Claim Agent Pacific Electric Railway, Los Angeles, Cal.

EVERY employer has a natural human interest in the welfare of his employees. When one of those employees is injured through the negligence of a third person, I, for my employer, come immediately to his assistance with an offer to investigate the facts of the accident and to effect, if possible, a satisfactory settlement. The claim agent's training and experience have fitted him to care for such a claim as effectively as it can well be done, and the employee, realizing this, is rested from a mental burden which, perhaps, he can ill afford to carry during the period of his convalescence. This service is gratuitous, and is a part of my company's welfare work.

But the workmen's compensation, insurance and safety act of the State of California has created for employers a particular interest in the claims of their employees against third persons whose negligence has been responsible for personal injury while the employee was engaged in his line of duty. While imposing a liability for the payment of compensation by the employer at the usual rate to the injured employee, the act also fixes upon the third person the same liability toward the employer, in the amount of compensation paid, or for which the employer may become obligated, as such third person may have toward the injured employee himself for his losses, as established by the facts of the accident. This mutual interest in pressing the claim against the third person culminates in the claim agent's conducting the negotiations leading up to a settlement, and, if necessary, the prosecution of a law suit by the railway company's law department. The employee is thus relieved from a burden which he is reluctant to assume, and the employer in donating his services retains the close co-operation of the employee in recovering the compensation paid.

In those cases, where the amount of damage is substantial, the first information to be determined is the third person's ability to meet a judgment if it can be obtained. If he is the owner of things of value, here or elsewhere, then, at least, there is the assurance that when all attempts at an amicable adjustment have failed, there is left the privilege of having the issues determined by a court of law, with the positive assurance that if a satisfactory showing can be made to the jury, damages can be recovered for the employee. However, the proposition of collecting damages from the owner of a foreign vehicle, where such vehicle

has been the instrument in producing the employee's injury, presupposes that such owner in being a non-resident is also judgment proof in the home state of the employer.

Where an employee has been so unfortunate as to have been struck by a vehicle of foreign ownership, when there are so many vehicles in California owned locally, I consider his chances for recovery of damages slim. This is true because of the difficulty of reaching assets outside of the State. And the chances are even slimmer if the vehicle owner is judgment proof in his home state, and perhaps not even the owner of his own automobile. In such cases there is nothing left but to make demand upon this third person and rely, for satisfaction, upon the kindness of his heart. For information as to the stranger's financial standing in his own community, I have called upon claim agents of railways in adjacent neighborhoods for searches through county records and have reciprocated like demands in my own city.

When the search reveals this negligent third party to be the owner of property and able to meet the just demands upon him, and has not already motored beyond the State's borders; and where the damages are substantial and demands for payment have not been met, suit should be immediately instituted so that service can be had while the defendant is yet within the State court jurisdiction. Once service is had we care not where goeth our stranger. The employee recovers; his action for damages is joined with that of his employer for the amount of compensation paid, and upon trial the plaintiff takes judgment upon the facts, or the defendant defaults by his failure to appear. In either case the judgment may be sued upon in the home state of the defendant, a second judgment had, and, finally, levy of execution against his assets.

Now, we have to consider the event wherein our third party, the defendant, has left California, hurrying home because of the press of business. He has evaded service issuing from the State court and leaves behind the remedy of action in the United States District Court, with jurisdiction over claims arising from torts between parties of diverse citizenship.

A suit in the District Court has the advantage of requiring but one action before levy of execution in the foreign state, as against the two actions required by procedure through the State court. Opposed to this is the disadvantage, fatal to the action of small demand, arising from the \$3,000 mini-

*Paper presented at the annual meeting of the Pacific Claim Agents' Association, Butte, Mont., Aug. 25-27, 1921.

mum-value rule applicable to District Court actions. In addition to this is the difficulty of securing a unanimous verdict.

The disadvantages attendant upon suing out a judgment upon the facts in the foreign state may be of less moment than those incident to the other two methods suggested. This may be so if the claim agent can call upon attorneys of his acquaintance in the foreign state who have his confidence that the case will be tried well, and that the fee will be compatible with the service rendered. And yet, because of the unavailability of witnesses for use in the foreign state and the great distance over which the negotiations would have to be conducted, probably this method of collection is seldom, if ever, used. I have, however, made adjustments in this manner to advantage.

The method by far the best, however, is to convince the foreign automobile owner that he owes the claim and accept his payment of it.

I have pleasure in reporting that the policy of the Pacific Electric Railway in the matter of claims of employees growing out of injuries received by the act of third persons while the employee is not at work for his employer is to take over without expense to him the negotiations and effect a settlement of his claim, if possible, out of court. We have quite an extensive program for welfare work. Our employees' club harbors many kinds of amusements and is the meeting place for secondary organizations which interest the employees in outdoor sports, athletic events and the like. During the summer months the employees have the benefit of an extraordinary summer camp in the San Bernadino Mountains. An annual picnic at the seashore attracts everyone who is free. The gratuitous handling of claims for employees by our claim department is merely a part of this admirable scheme. While only a very small percentage of our employees are unfortunate enough to require that kind of service, yet the benefit to those few individuals is great enough and the appreciation of employees sincere enough to make the service an item of respect in the general plan.

Kentucky Utility Association Resumes Meetings

THE annual meeting of the Kentucky Association of Public Utilities will be held at the Seelbach Hotel, Louisville, Ky., on Nov. 22. This will be the first regular meeting since the discontinuance during the war.

At the morning session following the report of the secretary and treasurer an address will be given by James P. Barnes, president Louisville (Ky.) Railway, entitled "Outlook for the Electric Railway Industry." Martin Insull, past-president of the National Electric Light Association and vice-president of the Middle West Utilities Company, Chicago, Ill., will be the guest of honor at the luncheon.

Three addresses will be given at the

afternoon session. The subjects of these addresses are: "Public Safety," by George H. McClain, manager Louisville (Ky.) Safety Council; "Financial Outlook," by Richard M. Bean, presi-

dent Louisville National Bank; and "Functions of a Public Utility Association," by A. Bliss McCrum, secretary Public Utilities Association of West Virginia, Charleston, W. Va.

The Genteel Faker*

Filching Money from Public Service Corporations Is Considered a Mark of Rare Business Ability by One Class of Claimants Which Must Be Dealt With

BY F. J. LONERGAN

Claims Attorney Portland Railway, Light & Power Company, Portland, Ore.

"GENTEEL" is defined as the state of being well bred or refined; stylish or fashionable. "Faker" is one who fakes. In the vernacular, "fake" means to cover up or alter defects or imperfections in, especially with intent to deceive; to fabricate in order to deceive; one who originates a fake or humbug. Notwithstanding the contradiction in terms between "genteel" and "faker," it would seem that, from the beginning of man down through the ages to the present time, there is much evidence of the presence and activities of what may be termed the "genteel faker."

The claim agent of every railway company has met the "genteel faker," for the claims department is a veritable clearing house for the practice of their wiles. It is one of the real serious matters that confront the claim agent, because it is often very difficult to penetrate their mask of respectability, and more difficult still to obtain a jury that will see through their disguise.

It is strange, but nevertheless true, that there are many people in every community who have no qualms of conscience when dealing with a public service corporation, particularly a railway company. In the ordinary affairs of life they are scrupulously honest and their integrity is never suspicioned or doubted. They will not defraud the grocer, the butcher or the baker. They deal open-handedly in all ordinary business affairs. But when an injury has been sustained at the hands of a railway company, to them even-handed justice no longer prevails.

Instances are not at all uncommon where a person of prominence having met with an accident involving personal injury presents a claim based upon fraud, deceit and exaggeration. If the claim agent attempts to make a thorough investigation as to the nature of the alleged injuries he is met with rebuff, and oftentimes open insult. The claim agent is charged with doubting the honesty and veracity of the injured party and is denied an interview, and many times the company's doctor is not permitted to make an examination. In the event the claim agent fails to make settlement, which settlement does not mean compromise but surrender, then the controversy is

taken into the courts. Such a claimant experiences no difficulty in producing numerous witnesses to his alleged pains and sufferings. In most instances, the pains and sufferings consist of facial contortions, bodily gymnastics and moans and groans during the presence of friends and neighbors who are depended upon to later convey what they have seen and heard from the witness stand.

Policy settlements, so called, is another phase presented by the genteel faker. It not infrequently happens that those who have considerable business dealings with the company threaten the claim agent that unless the matter is settled in accordance with their demand the business relations with the company will be broken and service will be obtained elsewhere. The claim agent is thus confronted with a very delicate situation, and all his skill and tact is not sufficient to offset the hold-up. The highwayman with mask and gun who demands your money takes a chance, but the genteel faker, to use the vernacular, has that game backed off the boards.

How can the claim agent obtain the best results in dealing with the so-called genteel faker? In some instances to be firm and outspoken may meet with success, although many times when the claim agent so acts he is publicly denounced as a crook, a scoundrel and a blackguard.

Where a claimant is obsessed with a notion that no wrong can be done in dealing with a public service corporation, and that to filch money from such a company is an indication of rare business ability, education and publicity would seem to be the only remedy. If the community were educated to know and to feel it has an interest in the welfare of the public service corporation, in that the money that the company makes and saves will be reflected in the betterment of service and lowering of rates, some good might be accomplished. If publicity were indulged in freely concerning false, fraudulent and exaggerated claims it would undoubtedly awaken the sleeping conscience of even the genteel faker. For after all, education and publicity are the only great and true weapons of defense on behalf of public service corporations.

Knowing that the companies are desirous at all times of doing the fair and square thing in the matter of set-

*Abstract of paper presented at the annual meeting of the Pacific Claim Agents' Association, Butte, Mont., Aug. 25-27, 1921.

tlement of claims, there is no reason why the company through the claim department should not feel entirely justified in bringing to its aid a properly and well-informed public. The only fear of the genteel faker is exposure and knowledge of the truth on the part of others. And this being so,

the path of duty of the claim agent lies before him.

Solomon in all his glory had not such clever genteel fakers appearing before him as the claim agent of today has to deal with. If Solomon were here now, he could learn much by one day's visit to the office of the claim agent.

Effect of the One-Man Car on Traffic Hazard*

One-Man Cars in Spokane Have Bettered the Two-Man Car Accident Record, Although There Has Been a 50 Per Cent Increase in the Number of Automobiles Since Their Introduction Three Years Ago

BY THOMAS G. A. ASHTON

Claim Agent Washington Water Power Company, Spokane, Wash.

"EXPERIENCE is the best teacher," and judging from the experience of the Washington Water Power Company the effect of the one-man car on the traffic hazard has been most favorable. The Washington Water Power Company, one of the pioneers in the one-man car operation, had its system fully equipped with one-man cars on July 1, 1918, and since that time has operated none other than one-man cars on its city lines. We operate sixty-six cars eighteen hours a day and thirty-three trippers five hours a day. During the time the sixty-six cars are running we have a headway of twelve minutes. While the trippers are on we have a headway of five minutes. This same headway has been maintained since 1915, there being no change made when the one-man cars were put on.

The traffic hazard has in our city, as in most cities, greatly increased since we started to operate the single-end cars. On July 1, 1916, there were 6,493 automobiles in Spokane County. On July 1, 1918, the day our company started to use the one-man cars exclusively, there were 12,294 automobiles, while on July 1, 1921, there were 19,325, an increase of 7,021 since we made the change from two to one-man cars.

Regardless of this increase in the worst traffic hazard we have shown a reduction in traffic accidents. In the three years previous to the placing in operation the new type of carrier we had 1,324 traffic accidents, divided as follows: Automobiles, 1,023; horse-drawn vehicles, 147; bicycles, 44; motorcycles, 31; pedestrians, 79. During the three years of the one-man car we have had 1,292 traffic accidents, divided as follows: Automobiles, 1,151; horse-drawn vehicles, 36; bicycles, 16; motorcycles, 13; pedestrians, 76; showing a decrease of 22 traffic accidents, regardless of the large increase of automobiles. During the three years previous to July 1, 1918, we ran 10,375,648 car-miles and had 1.28 accidents to every 10,000 car-miles. We operated 1,205,535 car-hours and had 10.9 accidents every 10,000 car-hours. During the three years since July 1, 1918, or the one-man car period, we ran 10,400,881 car miles and had 1.27 accidents to every 10,000 car-miles. We operated

1,292,241 car-hours and had 10 accidents every 10,000 car-hours.

Upon inquiry I learned that the Municipal Street Railway, Calgary, Canada, another pioneer in this type of operation, has had the same experience. This railway was exclusively equipped with one-man cars in the fall of 1917. I have been advised by the management of the Terre Haute, Indiana & Eastern Street Railway that its experience with the one-man cars has likewise been profitable. Its report shows one accident for every 13,227 car-miles with the one-man car and one accident for every 8,476 car-miles with the two-man car. The traction company of Spokane has had a decrease of 6½ per cent in traffic accidents during the first six months it has operated the one-man cars.

In Spokane we have to contend with every kind of traffic condition. We operate over grades as high as 12½ per cent. We have sharp curves on grades. The climate is such as to give us snow, sleet and fog. We are also bothered on some of our lines with leaves on the track, which is one of the most dangerous things any street railway has to be bothered with. All our cars are routed through the congested district, passing through one central point

We do not operate the small safety cars, but a standard type, practically the same as our old double-end cars. They are double-truck, four-motor equipment, weighing 26½ tons, 44 ft. 9 in. long and seating forty-two passengers.

An advocate of safety has said, "There is a reason for everything but a woman getting off a street car backward." So there must be a reason for the one-man car reducing the number of traffic accidents. In the first place you have placed the entire responsibility for the safe operation in the hands of one man. There is no chance for a misunderstanding of signals. In backing up the operator is required to go to the rear of his car.

If an automobile suddenly cuts in front of him he does not have to rely upon a signal to tell him to stop. The near-side stop is compulsory with the one-man car. This to my mind is the cause of the elimination of most traffic accidents. Passengers being picked up at the near side of the intersection cause the car to cross the intersection

more slowly, thus enabling the motor-man to stop his car more quickly. The construction of our type of car is such that the over-hang is in front, thus preventing pedestrians and vehicles which are standing close to the car from being struck by the over-hang as the car rounds the curve.

In point of importance it will therefore be seen the work of the investigator ranks high. It affords the basis and foundation of all settlements and the defense of all litigated claims. Without a high-class investigating bureau the success of a claim department is bound to be limited. While the work of the investigator is at times vexatious and his difficulties many, still the satisfaction of a task well done goes far to mitigate the discouragements with which his path is strewn. And just in passing, let this impression be recorded, that the person in charge of the investigators should not forget that a word of praise where deserving is a staunch stimulant to the morale. Certain it is that the intelligent young man of today in the field of investigations will attain success if he but put forth an honest, conscientious effort and the way will open for bigger and better things.

"The Soul of Service"

AT THE meeting of the American Gas Association held in Chicago, Nov. 9-11, among the papers presented was one called "The Soul of Service," by W. H. Rogers, Public Service Gas Company, Paterson, N. J. This paper is one discussing what Mr. Rogers says is "old stuff" but always with us, the service of public utility corporations.

In speaking of the street railway company, Mr. Rogers says: "The soul of the street railway company is the will and the desire of owners, managers and employees so to handle transportation of human beings, so to operate trolley cars, that every man, woman and child in the community will want to ride in these trolleys and will be satisfied and willing to pay to the company adequate and reasonable fares."

Starting with the three great characteristics of man, known as spirit, soul and body, Mr. Rogers defines these as:

(a) Spirit is what really exists. Spirit is reality. In man, it is that part of man which knows—it is his mind.

(b) Soul is the consciousness of existence. Soul is the seat of the active will and of the affections, desires and emotions.

(c) Body is the outcome, the result, of the activity of spirit, guided and controlled by soul, by the will, by our desires.

He then goes on to say: "The spirit of the street railway company is the idea of satisfactory transportation for men, women and children, for everybody, for the whole public."

As to the body, Mr. Rogers asks "Does not the body of each of our companies consist in the opinion which has grown up in the minds of our customers and the public regarding these companies?"

*Paper presented at the annual meeting of the Pacific Claim Agents' Association, Butte, Mont., Aug. 25-27, 1921.

News of the Electric Railways

FINANCIAL AND CORPORATE :: TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

Saginaw Votes for Return of Street Cars

Mayor's Proposal for Return of Cars Is Now Before Committee Representing Security Holders

A plan for the resumption of electric railway service in Saginaw, Mich., under the direction of a board of trustees appointed by the Council who have had no former connection with the operation of the Saginaw-Bay City Railway was proposed by Mayor B. N. Mercer on Nov. 8 and adopted by the Council at a special meeting. A summary of the proposal was transmitted to New York by wire, where Otto Schupp, trustee of the local property, appointed by the Federal Court, is meeting with the protective committee representing the bondholders.

SPECIAL MESSAGE FROM MAYOR

The matter was brought to the attention of the Council in a message from the Mayor, who made the following recommendations: Appointment of the five trustees to operate the property under a trust agreement from the bondholders' committee, the rate of fare to be four tickets for 25 cents with universal transfers, five school tickets for 25 cents, and a cash fare of 8 cents. Elimination of jitney competition on streets traversed by street cars. Price for current to be fixed by Public Utility Commission.

It is generally believed the Council's action is the result of two outstanding features which have occurred during the last week to ten days. The Council had before it for consideration a proposal of the Wolverine Transit Company, Detroit, to install a motor bus system in Saginaw provided some agency would dispose of \$125,000 worth of advanced transportation. The financing question was submitted to the board of commerce, but the board declined to act favorably on the subject. The local newspaper started a referendum and by a tremendous majority the people voted for the return of street cars at an increased rate of fare, and the elimination of jitney buses. A straw vote which was to have been taken in each of the city's voting precincts as proposed by one member of the Council it is believed now will be dropped as the action of the Council Tuesday makes this unnecessary.

RECEIVER IN NEW YORK

It is generally believed in Saginaw that if Mr. Schupp is unable to have the protective committee representing the bondholders accept the proposal of the Council, it will at least result in a counter proposal being made and if it is honest and fair, it will be accepted by the city and street cars will again run.

Under the Mayor's plan the trustees are to act without compensation and none of the former officers of the traction company is to be employed. The only salaried official is to be a capable superintendent.

In his message to the Council Mayor Mercer points out that beyond any doubt the sentiment is for street cars and

against municipal ownership of either buses or street cars and the only solution left for the city is the resumption of street car service without jitney competition.

A definite answer is not expected before Nov. 12.

Recently the Council by a four to one vote accepted the proposal of the Wolverine Transit Company which calls for an advanced sale of \$125,000 worth of transportation, which funds will be used to help pay for the buses as they are delivered.

The plan was referred to the board of commerce by the Council and after two meetings the transportation committee of the commerce board appointed a sub-committee to investigate the financial condition of the company as to its ability to go through with its part of the program and two disinterested engineers to investigate the construction of the bus and report on the cost and their adaptability for use in a northern climate.

City Must Pay Cost When Utilities Move for Municipal Railway

A decision handed down by the United States Supreme Court on Oct. 24 in the case of the Postal Telegraph Company vs. San Francisco, establishes an important precedent in the municipal railway field. The decision holds that in the operation of a municipal railway the city is acting not in a "governmental capacity" but in a "proprietary capacity," and that the city must pay the costs of removals or changes in location of other utilities occasioned by the construction or extension of a municipal railway.

The San Francisco case has been in litigation since the third and fourth tracks were laid on Market Street from Geary Street to Van Ness Avenue. These tracks were laid on portions of the street that had never before been used for railway lines and under which were the conduits of the Postal Telegraph Company. When the tracks were built these manholes had to be changed or the conduits moved. The city acknowledged the company's rights to maintain its conduits, but held that those rights did not carry with them the right to use the street to the exclusion of the municipal railway line.

The company objected to paying the costs but did the work with the understanding that it would be reimbursed if the courts ruled that the city should pay. The case was carried to the United States Supreme Court where the decision of the lower courts was sustained and the city was ordered to pay the cost of the manhole changes.

Deficit in Davenport in September

Electric railway operation in Davenport during the month of September, 1921, showed a deficit of \$36,106, according to a report of the Tri-City Railway. The report showed total receipts of \$56,178, while the company had operating expenses of \$55,331, with \$5,452 in taxes and \$4,084 in interest.

Mayor Couzens' Policies Indorsed

Result of Detroit Election Taken to Mean City Is Satisfied with Municipal Program

Unofficial returns of the Nov. 8 election in Detroit, Mich., indicate that James Couzens was re-elected Mayor. He received a vote of nearly two to one over Daniel W. Smith. Mr. Couzens' majority was about 33,000 out of total vote of less than 115,000.

The ouster ordinance compelling the Detroit United Railway to remove its tracks and equipment from Fort Street and Woodward Avenue, put on ballot by initiative petition after it had been passed by the Council, carried by majority of 35,000. According to statement attributed to A. F. Edwards, vice-president of the Detroit United Railway, the company will bow to the will of the people as expressed at election and will discontinue service on Fort Street and Woodward Avenue on or about Nov. 25. It is estimated that about 50,000 riders per day use the two lines.

The charter amendment fostered by Mayor Couzens and the Street Railway Commission empowering the commission to engage in trackless transportation using trackless trolleys and buses was carried by majority of 26,000. This amendment was defeated in the October primaries.

The re-election of Mayor Couzens is accepted as an expression of people of Detroit for municipal ownership and for the continuance of the program started during the Mayor's last term.

Eight of the nine councilmen were re-elected, only one new member being elected to fill vacancy.

COMPANY STATED ITS CASE

A special edition of *Electric Railway Service*, the official publication of the Detroit (Mich.) United Railway, which was suspended with the June 17 issue, was put out on Nov. 5. In it the company took occasion to explain the ouster ordinance which was placed on the ballot for the Nov. 8 election. This measure was concerned with car service on Fort Street and Woodward Avenue. In referring to the ouster ordinance the company's publicity department stated that it was felt that the matter of service on the Fort Street and Woodward Avenue lines was so important as to call for the revival of the paper in a special edition.

It was cited that the Detroit United Railway had taken no part in the political fight drawing to a close with the election, nor was the company making any campaign to influence the electorate in their vote on the ouster ordinance. Attention was called to certain facts because, in the company's opinion, the effect of the ouster ordinance upon the people of Detroit had not been as fully and completely discussed in the public press as so vital a measure deserved.

In reviewing the conditions it was stated that the Detroit United Railway had refused to accept \$388,000 as the price for the Woodward Avenue line

from the Grand Belt Line on Milwaukee Avenue to the Detroit River, and the Fort Street and West Jefferson lines from Artillery Avenue to the eastern terminals of these lines, including Cadillac Square turning facilities. The price mentioned, it was pointed out, covered not only the tracks but the overhead system of poles and wires as well. The company said:

Should the ordinance be approved by a majority of the voters and the civic authorities insist upon it being made effective, then within ten days after the vote has been declared official, which will probably be Nov. 15, the company must stop service and within ninety days the property will have to be removed.

SERVICE MAY BE CUT OFF

The company sees not less than three months of confusion depending upon weather conditions, and still further delay and confusion while the Street Railway Commission is constructing new tracks to replace the ones torn up. During that time, it is cited, street railway service to and from the north end of Woodward Avenue would be cut off.

With the completion of the city tracks, car riders above the Grand Belt line would have to pay two fares to reach the heart of the city and congestion would be greater because of the cars of the Hamilton, Twelfth and Linwood lines of the municipal railway being routed over Woodward Avenue instead of the present routes. The Fort Street and Woodward Avenue lines are referred to as large transfer lines used by people from all parts of the city. The final warning was given that the company would not accept the city's offer, pointing out that in the 1919 appraisal of the properties by the Public Utilities Commission these tracks were valued at \$2,500,000.

In denying the report that the company would accept the city's offer rather than spend a large sum in obeying the ordinance if it were approved, the fact was pointed out that there is an underlying mortgage of \$1,200,000 on the Fort Street line maturing in 1924. The bonds secured by this mortgage were in the hands of the public before the line was purchased by the Detroit United Railway, and if the company accepted \$388,000 for the parts of Woodward and Fort lines mentioned it would practically mean more than half the amount or \$194,000 for the Fort line. There would be a deficiency of more than \$1,000,000 so that if the company is to lose \$1,000,000 it might as well lose the entire \$1,200,000, it is cited.

HOLDER OF MORTGAGE BRINGS SUIT

The Woodward line above Pallister Avenue cannot be secured by the city except by agreement for years to come because of existing franchises, some of which have been granted to the company on perpetual terms. The question was raised, would it not, therefore, be better for the people of Detroit to have the price to be paid for the Fort and Woodward lines arrived at by arbitration, all things to be taken into consideration, including the fact that the franchises on parts of the lines considered have expired?

Suit has been filed in the Circuit Court for the city against the Detroit United Railway and the Guaranty Trust Company, New York, to clear title to the 29 miles of so called day-to-day lines which are to be taken over by the city according to recent arbitration.

The Trust Company holds the mortgage on the Detroit United Railway system and refuses to release mortgages on the track and equipment upon which the arbitration board fixed a price. The suit filed by the Corporation Counsel will determine whether the Trust Company or the Detroit United Railway is to receive the money for the day-to-day lines, to be paid according to the terms of the arbitration.

Transit Plan Hearing Nov. 15

Inquiry Before Commission in New York Will Continue Three Days a Week

The Transit Commission of New York City has fixed Tuesday, Nov. 15, as the date for the beginning of its public examination of the street railway and omnibus companies, and has served notice upon the representatives of each of the companies coming within its jurisdiction to appear at its offices, at 11 o'clock in the forenoon of that day.

The commission about three weeks ago announced that it would make no effort to proceed with these examinations during the progress of the city election campaign. It declared at that time that, while the publication of the plan in outline had brought forward some suggestions bound to prove constructive and of a helpful tendency, there had, on the other hand, been a pronounced disposition in some quarters to make the matter a football of politics through the employment of prejudiced misrepresentation and abuse in place of dispassionate inquiry.

POLITICS ELIMINATED

The commission is of the opinion that the subsequent course of the campaign has fully justified this view. It has been convinced that any attempt to develop the plan through the medium of the proposed examinations before the end of the campaign would have been futile. As the commission has previously pointed out, its program has nothing to do with current politics, and its action will not be affected either one way or the other by the issue of the election. Its functions are clearly defined by law, and it will proceed, immediately following the election, as the law directs, to complete its general plan of reorganization along the lines it has already indicated.

The examination of the companies is likely to occupy several weeks. The commission plans to sit on Tuesday, Wednesday and Thursday of each week until this stage of its work is complete. It will then be prepared to put the draft of its plan in final form for submission to the city authorities and to the several companies for the formal action of each.

Under the law, public hearings will be held upon this final draft, and at various other stages as the consideration of the plan proceeds. It is the purpose of the commission to make these hearings as broad as may be desired and to afford the fullest opportunity for public discussion not only of the plan itself, but of the valuations to be placed upon such railway properties as may be taken for incorporation in a unified system and the processes through which these valuations are reached.

The commission, as it has already announced, will require as a primary condition that the new system, when put

under operation, shall retain the city-wide 5-cent fare. It is, moreover, confident that if its plan is adopted and the cost eliminations and economies it has in view are made possible, the five-cent fare will be retained without future disturbance.

The order of the commission directing the attendance of the representatives of the railroad and omnibus companies was served upon nearly eighty companies and individuals representing those companies, covering every street railroad in the city, with the exception of the Hudson & Manhattan Railroad. Receivers, where there are such, were also served.

Maximum Pay at Louisville Forty-three Cents

The wage scale for platform employees in effect on the lines of the Louisville (Ky.) Railway was incorrectly stated in the ELECTRIC RAILWAY JOURNAL, issue of Nov. 5. The schedule for city operation (in cents per hour) is as follows:

First year.....	33
Second year.....	35
Third year.....	37
Fourth year.....	39
Fifth year.....	41
After the fifth year.....	43

For interurban operation the scale is 1 cent per hour over the above rates.

Election Results of Nov..8

The traction issue was injected into the political campaigns in New York, Bridgeport and Youngstown to a greater extent perhaps than in any of the other cities except Detroit, to which reference is made elsewhere in this issue.

In New York Mayor Hylan, the pronounced advocate of the 5-cent fare, was re-elected with an overwhelming plurality. He defeated for office Henry H. Curran, who in a last hour announcement threatened to undo some of the work of the Legislature of last year in passing a bill creating the New York Transit Commission, under which Governor Miller hopes to bring about a settlement of the traction situation in New York.

In Bridgeport, where the battle between the trolleys and the jitneys has been waged for several years, Mayor Wilson went before the people on the avowed platform of jitneys and the 5-cent fare. His opponent, Mr. Atwater, was reticent about the traction situation, but indicated that any moves made by him in connection with this matter would be taken only after a full study had been made of all the details entering into the situation. The people of Bridgeport evidently want the traction situation settled in a business-like manner, for they have voted Mr. Atwater into office.

At Youngstown George L. Oles has been elected Mayor. Mr. Oles is regarded as something of an eccentric. He would turn the streets over to the jitneys and jail citizens who pay taxes under the recent revaluation. He conducted a whirlwind campaign extending over a period of several weeks, in which he called to his aid every device of the publicity promoter. Mr. Oles is a local merchant of Youngstown and although he has lived for many years outside the city limits he removed to that city in time to take up his residence and qualify for election to office.

Uniform System Proposed

California State Railroad Commission Recommends Uniform Accounting for All Motor Utilities

Frequently the State Railroad Commission of California meets with attendant delay in trying cases of motor freight, passenger, express and mail-carrying lines that operate on the public highways in the state, as the majority of motor utilities do not keep their books in sufficient shape to permit the commission's accountants properly to analyze the claims of the utilities for an increase in rates. The Railroad Commission has full jurisdiction of these motor transportation lines as to regulation of rates, operating schedules and other fixed rules. Therefore, the commission took it upon itself to prepare a uniform system of classification of accounts and recommend that it be put in force and be complied with. On Aug. 19, 1921, the commission forwarded its tentative form of a system of accounts to every auto freight and passenger-carrying line within the State, asking that the carrier comment upon and criticize the proposed schedule of accounts.

The proposed plan as worked up by the commission was for the purpose of aiding this type of carrier as much as possible, so that he could keep his books in such shape to tell how he stood as to making or losing money in his business. After the commission considered that the tentative schedule of accounts had been in the carriers' possession a sufficient length of time two meetings were scheduled to hear the carriers' views as to accepting the proposed classification; however, the commission made it known that the system of accounts was not to be forced upon the carriers.

It was known that several of the larger motor utilities were keeping their books under some sort of system of uniform accounting, but the commission desired to adopt a system uniform to all. The first hearing was held at San Francisco on Oct. 24 for the carriers in the northern part of the state and a second hearing was held in Los Angeles on Nov. 1 for the southern section. At the northern hearing little opposition was met, as practically all the carriers entertained the commission's plans; however, one carrier opposed showing in any one month his returns under income accounts for revenue returns from sale of round-trip tickets. He desired to show in his monthly income account report to the commission the revenue from actual haul and to carry the revenue unaccounted as yet from the return portion of the round-trip ticket in a suspense account until services had been rendered for the other portion of this class of ticket. This privilege met with the favor of the commission and other carriers so affected.

The commission's tentative schedule is in some manner similar to the Interstate Commerce Commission's uniform system of classification of accounts as prescribed for electric lines. The commission divided it into two classes—Class A and Class B. Class A is for companies whose revenues are in excess of \$20,000 per annum, while Class B is for companies whose revenues are for only \$20,000 or less.

The commission only outlined a system of accounts for Class A companies, stating that it was so generally pre-

pared that it could be applied to both classes; however, the commission stated that it was optional with the Class A companies to set up a subdivision of the accounts as outlined by the commission, as the commission realized that the larger carriers had more complex problems of accounting than the smaller companies.

In the hearing at Los Angeles one of the largest motor utilities operating out of Los Angeles desired that the commission elaborate upon its tentative schedule of accounts. The commission's schedule includes asset and liability accounts, income accounts, revenue and expense accounts. This carrier contended for privilege to keep its accounts by lines, so in cases of application for rate changes the true cost of operation and income of particular lines could be determined.

The carrier also contended that the commission's depreciation account should be broadened to include obsolescence of motor equipment, as there was a constant improvement in types of motor buses and trucks, and that frequent changes in motors were required to get more mileage at less cost.

Likewise, the prediction of any possibility of changing from gas-driven motor cars to other types due to fuel situation and other modern improvements in motor cars. Also, it was asked that some provisions be made for an account to cover motive power, as difference types of motors were used on various equipment. Such motors are changed from time to time for improved types, and the cost of these changes and maintenance should be accounted for.

Objection was also made to the commission's miscellaneous account carrying insurance of all classes. It was asked that an account known as "Loss and Damage" should be added to cover insurance carried on damage or injury to others' property or person. The general insurance account would then cover insurance, buildings and car-houses.

The tax accounts were reviewed. There was little opposition as to the commission's plans to have the state and local taxes deducted from the operating expenses, while the accounting schedule provided that the federal taxes be deducted from the income account. In this respect the commission followed to some extent its classification of accounts that has been effective for some years for gas, electric light and water corporations.

At the close of the hearings the commission stated that it was its intention to draft a classification of accounts and to make it effective as soon as possible. The commission's accountants are to call on all the motor utilities to instruct and aid them in installing this new uniform system of accounts.

Public Ownership Recommended

The public utilities committee of the Board of City Development of Amarillo, Tex., through its chairman J. N. Riggs, has filed its report recommending public ownership of all public utilities, including street car lines, in that city. There has been considerable dissatisfaction in Amarillo over the street car service and the line has been placed in receivership and service discontinued for a time. The people of the city finally took the lines over and are now operating them.

"No Smoking Allowed"

The Chicago *Journal* recently published the following dialogue which contains a significant moral presented in an effective way and perhaps of special interest from the standpoint of merchandising transportation.

(Scene: The front platform of a street car. Typical hard-boiled motorman is gossiping with passenger. Second passenger enters from car smoking a cigarette. Motorman glares at cigarette and then at sign "No Smoking Allowed on Platform." Second passenger continues to smoke with studied indifference.)

Motorman (continuing conversation with first passenger): When the union tells me to walk out, I walk.

First Passenger: Ha, ha! So does everybody else.

Motorman (glaring at second passenger): Y'can't smoke out here, buddy.

Second Passenger: Why?

Motorman (savagely): It's against the rule. No smoking, see? Can't you read that sign?

Second Passenger (calmly): Sure enough, you have a sign. How droll. But tell me, my good man, you don't care for the rules, do you?

Motorman (triumphantly): Oh, don't I, though. I'll say I do.

Second Passenger (nonchalantly): Well, well. That's quaint. I'd never suspected it. As a matter of fact, since I have been standing here you've violated five of the company's rules.

Motorman (sputtering): I—I—wad d'ye mean, huh?

Second Passenger (taking a deep puff and exhaling slowly): Well, in the first place you were talking to that passenger. Motormen are forbidden to talk to passengers while on duty. As you would say, "Can't you read that sign?"

Motorman (flushes): I—I—

Second Passenger: Exactly. Also, as I stood here you spit on the floor. That is not only against the company's rule, but it is a violation of the city ordinance as well, punishable by a fine of \$5 to \$25.

Motorman (gasping): Why—why—

Second Passenger (lighting another cigarette): Also, you started your car back there about six blocks before you got the bell. Also, you started your car on the last corner before a passenger had alighted and your door was closed. Would you like to hear the other one?

Motorman: Say, who are you, anyway?

Second Passenger (exhaling reflectively): You needn't be alarmed. I'm not a spotter. But I would suggest that in the future you observe a few rules yourself before you impose them on the public and, what's more important still, that you learn to speak courteously instead of hollering like a Comanche at a passenger who may be, as I was, unaware that smoking on the front platform was no longer allowed. Next corner, please.

Motorman (as he lets second passenger off): Well, I'll be—

Predicts Electric and Steam Lines Will Handle Freight Traffic

J. L. O'Toole of the Public Service Railway, Newark, N. J., in speaking recently before the New Jersey Industrial Traffic League, said that day would undoubtedly arrive when electric lines will be used in a co-operative plan with the steam railroads and with motor lines for the movement of freight.

Mr. O'Toole told of a law passed years ago giving street railways the right to carry freight in municipalities where sanction was given by the governing body. It was later amended so that the permission of municipalities of less than 12,000 population was not necessary, and again at a later date permission was given electric railways to carry freight from 11 o'clock at night to 6 o'clock in the morning without approval of municipalities.

Mr. O'Toole stressed the fact that the investment of as much money as this plan would require was not warranted at this time.

Indiana Commission to Decide Paving Question

The Indiana Public Service Commission will be asked to decide whether the Indianapolis Street Railway will be required to pay paving costs between tracks in the future. This is in accordance with an agreement reached recently at a conference between representatives of the company and members of the board of public works. Mark H. Miller, chairman of the board of works, said that orders are being entered for the railway to pave between tracks on four streets now being paved for the first time. Dr. Henry Jameson, chairman of the board of directors of the company, who was accompanied at the conference by Robert I. Todd, president and general manager, said that the matter will be referred to the Public Service Commission as soon as notice is received by the company for paving.

Samuel Ashby, city corporation counsel, agreed that the points in dispute should be settled by the commission at once. The company was required to pay paving costs in the old franchise which was surrendered on June 4, when the company relinquished its franchise in order to operate under state control. Provisions of an ordinance just passed by the City Council continues in effect all terms of the old franchise except those inconsistent with powers of the State.

Under the public utilities law of 1913 the company takes the stand that orders for paving between tracks are unreasonable. A number of service questions were up for discussion at the conference for the first time since the franchise was surrendered early last summer. Among them was extension of the College Avenue line from Forty-sixth Street to the city limits, just south of Fifty-second Street. The board issued an order for the extension.

The Real Gist of It

At the hearing in Hartford before the Public Service Commission to which reference was made in the *ELECTRIC RAILWAY JOURNAL* for Oct. 29, page 798, the experience of the Connecticut Company in running autos was commented on. In alluding to the facts then brought out the *New Haven Register* said:

It is the testimony of the Connecticut Company that motor omnibus lines cost more than trolley lines. Most of these lines it is running at a loss, it testifies. This is easily believable, nor is it surprising. The company can afford to run some of them at a loss, if necessary, as feeders for its electric lines. Some of these short lines are transfer lines only, taking in little or no cash. The company has established them in response to a demand and to save the expense of laying new lines of track.

But the testimony of the Connecticut Company on its experience in running bus lines should furnish something for the two ardent jitney enthusiasts, who talk about substituting jitneys for trolleys altogether, to think about. It may be questioned whether the Connecticut Company has uniformly made a success of the transportation business, but at least it has had experience. If it cannot make short lines, where the jitney has everything to itself, pay, can others?

The Connecticut Company does not talk of discontinuing these non-paying lines. It can afford to keep on losing money on them, providing it can get the business on its rail lines. But supposing it were an independent company or an individual concerned. Would not it be likely to discontinue forthwith lines that were losing money? That to do that would deprive persons in a certain locality of transportation altogether and without warning would not be a consideration. The brusque answer would be that the jitney owners were not running lines to amuse the public, but to

make money. The trolley company has certain charter responsibilities which do not circumscribe the jitney operator. This essential difference is something for the serious consideration of those who think we should all be assured of unlimited happiness in the event of killing off the trolley with the jitney.

"Legion Number of The Railwayman"

Having some 1,500 ex-service men in its employ, the Kansas City (Mo.) Railway has published a special issue of the *Railwayman* devoted to them and in honor of the occasion of the third annual convention of the American Legion held in Kansas City last week. The issue contains eighty-six pages of pictures of the employees who served in the great war, various scenes taken during the struggle, numerous stories covering the incidents of service of various employees and stories of some of the outstanding engagements. The magazine forms a souvenir which will be of immense interest to the ex-soldiers now engaged in the street rail-



COVER OF CONTRIBUTION OF RAILWAY TO LEGION CONVENTION PUBLICITY

way service, and it is a great credit to those who are responsible for its compilation and publication.

Approximately 100,000 visitors were expected to be in Kansas City during the convention, which, added to the regular business handled by the street railways, meant a considerable undertaking to provide adequate transportation. In addition, at the end of the Sunset Hill car line, there was one of the greatest flying machine contests ever held, which again multiplied the task of the company. More than seventy airplanes of different makes were entered and a crowd of sixty to seventy-five thousand people attended.

Curtailment Policy Under Way—Railway Still Reports Deficits

General business depression and a 25 per cent reduction in traffic have been the reasons for the monthly deficits reported by the Wilmington & Philadelphia Traction Company, Wilmington, Del. This opinion was recently expressed by T. W. Wilson, vice-president and general manager of the property, who appeared before the Board of Public Utility Commissioners in response

to the board's request to explain the deficits.

Mr. Wilson said the company was doing everything it could to reduce the deficit, that every department was showing some curtailment; the month of September was a far better month than August and that he was hopeful for the future.

The commissioners with Mr. Wilson and company officials discussed the earnings of the various lines, type of equipment and the burdensome suburban routes. When the conference was terminated the commission thanked the traction officials for their co-operation.

News Notes

New Wage Scale Proposed.—Discussion of a new wage scale to go into effect Nov. 15 has been started between the Cincinnati (Ohio) Traction Company and the Electrical Workers' Union. The traction company proposes a 30 per cent wage reduction. Foremen now receive 97½ cents an hour and linemen 87½ cents. The union asks for a 10 per cent increase.

Oil Production Drops.—According to the United States Geological Survey oil production in September fell off considerably in comparison with output of August and September a year ago. The average daily barrels in September, 1921, was 1,215,633, against 1,321,484 just the month previous. The total production in September was 36,469,000, against 37,889,000 in September, 1920, and 40,966,000 in August, 1921.

Emergency Service Supplied.—When pressed for cars during the Harvard-Princeton football game at Princeton on Nov. 5 the New Jersey & Pennsylvania Traction Company placed a monster freight car in service for the transportation of passengers. It was the first time that the company has had to resort to using a freight car for passengers and it worked very satisfactorily.

One-Man Cars to Be Operated.—The British Columbia Electric Railway, Vancouver, B. C., will soon put in operation about thirty new one-man cars, which have cost more than \$150,000. Resort to this operation is the result of decreased revenue. The first cars of this type will be run in North Vancouver, Victoria, Westminster and outlying districts of Vancouver where traffic is not heavy.

Franchise Extensions Granted.—The City Commission of Dallas, Tex., has again granted extension of time on the franchises granted the Dallas Southwestern Traction Company and the Dallas Northwestern Traction Company. Original grant of these franchises, which contemplated the building of two interurban lines out of Dallas, one toward the southwest and the other toward the northwest, was made in 1906, and extensions of time have been granted yearly since the first expiration. E. P. Turner of Dallas is named as president of the two companies. Mr. Turner assigns tightness of the money market and the high cost of materials and labor as the reasons for the company not building the lines immediately.

Financial and Corporate

Readjustment Planned

Present Financial Structure of the Eastern Massachusetts Precludes Success, Say Trustees

The public trustees of the Eastern Massachusetts Street Railway in a statement issued to bondholders and stockholders said that they are convinced the company cannot become a financial success with its present capital structure. They have formulated a plan which has been approved by the largest holders of each class of securities.

Briefly the readjustment is made necessary by the fact that during the two years and more which it has taken the trustees to put the property in good physical condition, and in a position to earn the "cost of service," charges have been accumulating in the form of deferred bond interest and cumulative dividends. The trustees are strongly of the opinion that the credit of the company can be restored and maintained only by refunding the deferred interest on bonds, removing the accumulations from the various classes of stocks and placing the company in a situation where surplus earnings each year over the bond interest requirements may be used for payment of dividends.

The new plan provides that the \$976,590 of extended coupons of refunding mortgage bonds, Series A, B, C and D, are to be canceled and the penalty waived in exchange for \$732,442 in one to seven-year 6 per cent serial bonds with a State guarantee, payable February, 1923, through 1929. The \$739,000 Series D; \$500,000 Series E refunding bonds of 1925 and \$972,000 Series D refunding bonds of 1927 are to be extended to 1948. The sinking fund stock is to be exchanged for first preferred stock eliminating sinking fund and to receive \$518,240 in common stock for dividends to Feb. 1, 1922.

The first preferred stock is to receive \$138,884 in common stock for dividends accrued to Feb. 15, 1922. In the case of the preferred B stock the dividends accumulated to Feb. 1, 1922, are to be canceled. The adjustment stock is to be made non-cumulative and dividends accumulated to Feb. 1, 1922 canceled. The plan provides for \$657,123 of common stock either by a surrender of stock or reduction in par value. This would reduce shares held by common stock holders by about 10 per cent.

Under the trustee plan now in effect the company can have a net round income applicable to fixed charges and stock dividends of only \$2,400,000. Any increased revenue must be applied toward a reduction of fares. Notwithstanding the fact that the company is now earning its cost of service it has not been able to pay interest on series A, B, C and D of its refunding mortgage bonds during 1920. This deferred interest amounts to \$976,590 and matures Dec. 31, 1925.

On Jan. 1 of each year from 1922 to 1929 inclusive \$300,000 of the serial refunding bonds, the principal of which is guaranteed by the state, becomes due. The first two maturities of \$50,000 each due Jan. 1, 1920 and 1921, although paid by the State, must be re-

paid out of the first income otherwise applicable to dividends.

Including the \$300,000 of serial bonds and the \$100,000 already refunded by the State the company has obligations of \$12,112,908 which will mature before 1930. The trustee plan does not provide for the refunding of the major portion of these obligations nor does the act permit it except in accordance with the general laws of the State, which do not allow bond issues in excess of the paid-in capital.

In the light of actual experience the 1919 reorganization plan was too hopeful of immediate results. The trustees believe that if the company is to be put in a position to meet or refund its obligations as they become due steps must be taken immediately to establish sound credit. In order to do this the preferred stocks must be put on a dividend-paying basis in the near future. So that as it becomes necessary to sell additional stock prior issues will have had a creditable dividend record.

Under existing conditions there is not the slightest prospect of any dividend being paid upon any class of stock for an indefinite period, and no payments can be made to the sinking fund for the redemption of sinking fund stock until all dividends on the first preferred and sinking fund stocks have been paid.

Government Denies Claim

The United States Government through the War Department has refused the claim of the Georgia Railway & Power Company, Atlanta, Ga., to recover the sum of \$123,363, which has been the net loss to the company for building the Camp Gordon line.

In his claim, which was submitted last August President Arkwright of the power company said that the government was anxious to have electric railway service to the camp and it was supposed that the camp would be maintained a sufficient length of time to justify the expenditure. A portion of the line to Oglethorpe University will be retained. The application made by the railway for the reimbursement was along the same lines offered by the city of Atlanta in seeking a recovery of investment in the water mains to the camp.

October Operation Successful in Toledo

The operations of the Community Traction Company, Toledo, Ohio, for the month of October will show a surplus of nearly \$20,000, which will take care of all deficits in various funds set up with the exception of the stabilizing fund. It is expected that a gain will be made in that fund during November.

The sinking fund, which represents cash ownership of the lines by the city, is now at \$159,375.

The stabilizing fund is \$53,333. It started in February at \$400,000. There is not much chance of the car fares going higher since Commissioner W. E. Cann's preliminary figures for October operation have more than held good. A raise in fare was contingent upon the operation for that month.

Opposition on Abandonment Voiced

Opposition has developed in a number of quarters to the proposal of the Indiana, Columbus & Eastern Traction Company of Cincinnati, Ohio, to abandon three branch lines of its system. Application filed with the State Public Utilities Commission has elicited protest from Prosecuting Attorney John R. King of Franklin county, who promises to fight the application before the commission.

Contests are also predicted on the part of several concerns which are served with power by the company, who will be deprived of such service if the lines in question are abandoned.

The application was filed by J. H. McClure, receiver for the company. The commission has assigned the matter for hearing on Dec. 14.

The protest of Prosecutor King is directed toward abandonment of the line from Columbus to Orient, a distance of 12.1 miles. This single track line was built in 1900-1901 and obtained a franchise from the Columbus city council in July, 1909, expiring in 1934. The line was leased by the Ohio Electric Interurban Company Aug. 31, 1917 and operated by that company until Jan. 25, 1921, when it was taken over by B. J. Jones, receiver for the Ohio Electric and operated under his management until July 15. After that time Mr. McClure, appointed receiver for the I., C. & E., took charge of the branch line, the lease to the Ohio Electric having been cancelled by order of the Federal court for the Southern Ohio district Aug. 5. On Oct. 18 the court ordered the line to be abandoned and the application to the state commission followed.

The other lines which the company seeks to discontinue are; from Carlisle Junction to New Carlisle, a 4.22-mile single track, the franchise on which expires in 1924, and the single line from Lima to Defiance, covering a distance of 39.92 miles, originally chartered as a steam road, electrified and reconstructed in 1907. Its franchise expires in 1932. The matter was referred to in the ELECTRIC RAILWAY JOURNAL, issue of Oct. 22.

Net Income Increases in September

An increase of more than \$113,000 in net income is shown by the comparative statement of operations for September, 1921, compared with September, 1920, filed recently by the Public Service Railway, Newark, N. J., with the Board of Public Utility Commissioners. The net income for September of last year showed a deficit of \$104,495. A favorable balance of \$9,175 was reported for September, 1921, a gain of more than \$113,000.

Revenue from transportation in September of this year amounted to \$2,082,808, compared with \$2,227,081 for September, 1920. The total operating revenue for September was \$2,130,458, compared with \$2,273,032 for the corresponding month of last year.

Cost of conducting transportation decreased from \$820,112 for September of last year to \$625,598 last month. The decrease was mainly due to a reduction in the amount paid for wages. In September of last year the wages of passenger conductors, motormen and trainmen amounted to \$621,834, compared with \$460,381 in September, 1921.

Large Loss Likely

\$2,453,726 Deficit Probable in 1921 If Seattle Operates Municipal Railway at Five-Cent Fare

In a report to Mayor Hugh M. Caldwell and the City Council D. W. Henderson, Superintendent of Railways, stated recently that a 5-cent fare on the Seattle (Wash.) Municipal Railway would result in a deficit in the year 1922 of \$2,453,726. This figure was based on an estimated increase of 3 per cent in the number of riders under the reduced fare and taking into consideration Councilman C. B. Fitzgerald's proposal of transfer privilege on 83-cent tokens.

The estimated revenues, under the Fitzgerald plan, according to Mr. Henderson's figures, would be \$4,452,033, while the estimated cost of operating the railway next year is \$6,905,760. The report prepared by Mr. Henderson follows:

Estimated revenue, based on 5-cent fare and 3½ cents for transfers, and based on passengers carried in September, 1921, plus 3 per cent increase:			
10-cent cash fares.....	382,483 plus 3 per cent	393,957	
8½-cent cash fares.....	5,484,630 plus 3 per cent	5,649,169	
		6,043,126 at 5 cents	\$302,156
3-cent cash fares, no increase, 4,221.....			126
23-cent cash fares, no increase, 177,303.....			4,432
S. & R. V. transfers, 67,549, plus 3 per cent, 69,575 at 5 cents.....			3,478
Transfers, 1,573,682, less 5 per cent, 1,494,998, at 3½ cents.....			49,783
			\$359,977
Miscellaneous revenue			11,025
Total for one month.....			\$371,002
Twelve months			\$4,452,033
Operation—			
Estimated expense for 1922	\$3,246,394		
Supplies and expense.....	1,499,616		
Betterments	9,000		
Interest	789,591		
Bond redemption	843,000		
Due general fund	318,157		
Depreciation	200,000		
Deficit			\$2,453,726
	\$6,905,760		\$6,905,760

In a letter to the City Council, Mayor Caldwell called attention recently to the report of the municipal railway for September, showing that under the 8½-cent fare and with the \$20,000 depreciation set aside by ordinance, the revenues were \$11,111 below the amount necessary to meet all charges. He asked that this be considered by the Council in passing on transportation matters, particularly the proposed 5-cent fare ordinance.

MAYOR CALDWELL ANXIOUS

Mayor Caldwell has announced that he will ask the Corporation Counsel for an opinion as to whether the adoption of the 5-cent fare on the municipal lines would lead to any legal difficulties with Stone & Webster in case the revenues under the reduced fare are insufficient to meet the liability in the contract. In the contract, the city binds itself to "establish and maintain rates for transportation upon such municipal street railway system which shall provide sufficient revenues to permit such sums being paid into such special fund which the city has pledged to be set aside semi-annually for interest and annually for principal, to be applied to the payment of principal and interest of the bonds authorized, until such bonds have been paid in full, and in addition thereto all costs of operation and maintenance."

Mayor Caldwell calls attention to the fact that the September report shows that 6,119,191 pay passengers were carried during the month. This

is a falling off of 4,807 pay passengers compared with June, notwithstanding that during the last half of September no jitneys were being operated.

Mr. Henderson, who recently returned from a trip through eastern cities, submitted to the Council data showing that the decrease in the number of car riders is not confined to Seattle.

SOME STARTLING STATISTICS

As a sidelight on the Seattle situation, Mr. Henderson compared the private automobile traffic of August, 1915, with August, 1921, by a check of the daily drawbridge traffic in the city. It showed that the street railway passengers over the bridges totaled 60,278 in August this year and passengers in private cars 8,642 in August, 1915. In 1921, the street railway passengers numbered 80,085, and passengers in private cars, 59,153. The increase in

street railway traffic shown by the comparison is 32.86 per cent, and the increase in private car traffic, 584 per cent.

Passengers carried on jitneys are not included in these figures.

Effort Made to Fix Value for Properties at Kokomo

Representatives of the Indiana Public Service Commission, of the city of Kokomo, Ind., and of the Indiana Railways & Light Company met recently to place a valuation upon the property of the company. The company operates an electric interurban railroad between Frankfort and Kokomo, Ind., besides electric distribution systems in the Kokomo territory. The commission submitted figures of \$3,529,965 on the basis of its reproduction cost in 1916. The properties were appraised at \$4,299,533 on the basis of the average reproduction costs in the last ten years, which included war-period prices. Cecil F. Elmes, a representative of Sanderson & Porter, submitted a valuation of \$4,226,387 for the ten-year period. Mr. Elmes also submitted a \$5,541,669 valuation as of last February. The property of the company was figured in the proposed formation of the Indiana Electric Corporation in August at \$4,480,000 by W. E. Vogelback. Mr. Garman, for the commission at that time, figured the company's property at \$3,584,037. Engineers for the state board of tax commissioners appraised the property at

\$2,844,370 for tax purposes. Commissioner Glen Van Auken heard all interested persons. With other members of the commission he will work out an order in which the valuation will be fixed. Representatives of the Indiana Electric Corporation have said that the corporation again will petition the commission for authority for the proposed consolidation. The commission declined to authorize the consolidation on the basis proposed in August.

Berlin Railway Operates Successfully

Through a well-defined plan of reorganization and increased fares Berlin railway lines are now operating on a paying basis. According to an article in the Berlin *Vorwaerts* by Hugo Peotzsch the city of Berlin has turned the monthly deficit of 20,000,000 marks which was incurred in the operation of street railways when the consolidation of various lines of Berlin was brought about in October, 1920, into a surplus during the last few months.

Of course, an increase in fares materially helped the situation. This advance from 10 pfennigs before the war to 80 pfennigs (½ cent at present exchange rates) soon cut the deficit to 12,000,000 marks. It is reported that the fares will be advanced on Dec. 1 to 1 mark 30 pfennigs.

The work of reorganization included a reduction in the number of directors' offices, with a cut in the force, the hiring of experts to repair the rolling stock, extension of freight service and better exploitation of the advertising possibilities.



Mr. Borland Made a Director.—Bruce Borland has been elected a director of the Chicago (Ill.) Railways, succeeding the late Seymour Morris. Other directors have been re-elected.

\$400,000 Net Income Realized.—Market Street Railway Income Statement for six months ended Sept. 30, 1921, shows a railway operating revenue of \$4,679,962. After deducting operating expenses, the net revenue from railway operations is \$1,092,807. Taxes amounted to \$303,000 and non-operating income \$19,363. This gives a gross income of \$809,170, which after deducting \$397,890 per bond interest, leaves a net income of \$411,280 to cover Federal Income Tax and allowances for sinking funds or betterments.

Large Sums Spent in Relief.—H. H. Vreeland, director of the Welfare Department of the New York Railways, has submitted the annual report of his department for the year ended June 30, 1921. The various features of this work and the amount of money needed to carry on the activities involved are noted in the disbursement account of the New York Railways' Association. From July 1, 1920, to June 30, 1921, a total of \$22,435 was spent. In this sum are included sick benefits amounting to \$8,149; death claims, \$7,500; medical fees, \$4,200, and other items, including printing, stationery, etc.

Traffic and Transportation

Only Arguments Remain

Illinois Commission Will Take Chicago Lower Fare Plea Under Consideration on Nov. 14

Except for the presentation of arguments, the fare case of the Chicago Surface Lines is now in the hands of the Illinois Commerce Commission for decision. Adjournment was taken on Nov. 4 until Nov. 14, at which time the petition of the city for a restoration of the 5-cent fare will be taken under advisement.

The closing days of the hearing were marked by a sensation due to the fact that one of the newspapers announced that it was understood the commission had already come to the conclusion that the 5-cent fare would be restored on midnight of Nov. 5 so as to prevent the companies from seeking an injunction in the federal court. Shortly after that story appeared one of the commissioners suggested that arguments be presented immediately upon closing of evidence.

Attorney James M. Shean for the Surface Lines stated before the commission that this suggestion of immediate closing gave color to the story which appeared in the newspaper and if the lawyers were not to be given sufficient time he would close without argument, taking it for granted that arguments would be superfluous. The commission took the matter under advisement and then allowed a ten-days' continuance.

Evidence presented by the companies in the last few days showed the rates of fare prevailing in 587 cities, including only three cities of more than 100,000 population where the 5-cent fare still prevailed. Some interesting exhibits also were presented to show that the Surface Lines were not extravagant in setting aside 20 per cent of their gross revenue for maintenance and renewals. Attention was also called to the costly working conditions under which the companies were operating, most of them fixed by arbitration.

A. L. Drum, consulting engineer, who previously had made a valuation of the companies' property, gave figures to show that the cost to reproduce new had increased 10 per cent since April 1919, largely due to higher labor costs in the Chicago district. He also stated that a better theory for allowance of maintenance and renewals would be to have this fixed as 2½ per cent of the capital investment rather than a percentage of gross earnings. E. H. Morgan, superintendent of schedules, showed that the companies were already giving a considerable amount of turn back service which had been suggested by engineers for the city.

John A. Beeler, consulting engineer, who has been studying the Surface Lines system for more than a year, explained a plan of re-routing which has been on file with the commission since last February. He said this would allow for an 11 per cent increase in track capacity in the downtown district. His assistant A. M. Buck, presented numerous exhibits to show the impracticability of the rout-

ing plan suggested by Engineer G. W. Jackson, who had appeared for the city.

H. H. Adams, superintendent of rolling stock, told what was being done to provide additional equipment, particularly trailers and one-man cars. President H. A. Blair, and his predecessor L. A. Busby, explained the steps which had been taken to provide improved service as ordered by the commission. Mr. Blair stated that the companies' credit had been hampered by the hostile attitude of the city.

On Nov. 5 the local transportation committee of the City Council, began public hearings with a view to starting on a series of subways for Chicago. Meetings are to be held every other day and if a plan can be agreed on the \$30,000,000 in the city's traction fund will be used to cover part of the cost of construction. Several engineering societies in Chicago have offered to give their advice and assistance free to the city.

Files Application for Seven-Cent Fare in Federal Court

The St. Paul City Railway, St. Paul, Minn., on Nov. 3 filed in the federal court application for a flat fare of 7 cents per passenger and an injunction restraining St. Paul city officials from interfering with collection of this fare. Whereupon Judge W. F. Booth issued an order to show cause returnable at 10 a. m. Nov. 8, when it is understood three federal judges will be present.

Hearing on a similar action is set for Nov. 15 before Judge F. M. Catlin. This action was brought in the Ramsey County District Court on appeal of the St. Paul City Railway from an order by Judge J. C. Michael restraining the company from collecting the 7-cent fare granted as an emergency rate by the Minnesota Railroad and Warehouse Commission. The city will here contend that the federal court has no jurisdiction as the case is pending in the state court. The plea is also made that apparently the state commission made no effort to learn whether the costs and expenses mentioned in the application by the company were reasonable. The rate of fare is now 6 cents.

The company's application differs in that a flat rate of 7 cents is asked without the provision of four tickets for a quarter cited in former applications for the emergency rate, and the company says that a fare of 8 cents would bring the company a return of only 7.48 on the fair value of the property.

Vice-President T. Julian McGill of the Twin City Lines said:

We do not dare to operate any longer at the present rate of fare or we will break our back. The revenues we now receive are insufficient to meet our obligations, and are \$20,000 below the interest due on the company's bonded indebtedness. The 7-cent fare will give us relief we need until a permanent valuation and fair return on the property are determined by the State Railroad and Warehouse Commission.

It is understood the action brought in the federal court is based largely on the allegation of confiscation of the company's property and deprivation of its use without compensation and due process of law.

New Ticket Plan Suggested

Instead of selling six tickets for 45 cents under the seven and one-half cent rate, the Cincinnati (Ohio) Traction Company, has adopted a plan whereby two tickets will be sold at 15 cents. The new arrangement is the outcome of a conference between William Jerome Kuertz, Street Railway Commissioner and officials of the traction company. Mr. Kuertz was directed in a resolution adopted recently by the City Council to confer with the traction company officials, relative to the issuance of two tickets for 15 cents instead of compelling the car riders to buy six tickets or pay a cash fare of eight cents.

However, the traction company adopted the two ticket plan voluntarily, because under its operating ordinance whenever the rate of fare in force and effect shall produce a fraction of one cent, the cash fare shall be the next whole number of cents above the rate of fare producing the fraction. When the fare was eight and one-half cents the traction company sold two tickets for 17 cents, but after a trial it was found that the two ticket strips are in disfavor, because they serve to cause congestion at the downtown terminals.

W. Kesley Schoepf, president of the traction company, said that he hoped the company would have the co-operation of the public who should make up their minds before boarding cars whether they wish to purchase tickets and if so whether in strips of two or six and that they should also have the exact money ready.

Walter A. Draper, vice-president of the traction company, said that there had been little complaint about the old method of selling the tickets in strips of six and that he believed the plan whereby tickets are sold two for 15 cents will result in traffic tie-ups which the company is trying to avoid.

The resolution adopted by the City Council which brought about the two ticket plan recites that the sale of six-ticket-strips for 45 cents works a hardship on a "number of citizens" who can not afford to buy six tickets at one time and who therefore are compelled to pay 8 cents cash fare.

Commission Authorizes Seven-Cent Zones

The Public Service Commission recently held that all intrazone fares to be charged by the Erie County Traction Company, Buffalo, N. Y., shall be 7 cents for one year and thereafter until the further order of the commission, excepting between Carlyle Avenue and the Buffalo city line at Seneca Street, in which territory a five-cent fare is to be charged. The company is to provide metal tickets or tokens to be sold at the company's office and on cars at four for 25 cents.

The railroad now operates five zones with a 5-cent fare in some and a 7-cent fare in others. The company alleged that those rates were insufficient to yield reasonable compensation and asked that it be permitted to charge 7-cents in all zones.

The question of a franchise agreement was raised by the West Seneca township, but the commission has ruled against the town's claims because of the evidence which showed that the company could not do business on the present fare rates and revenues.

Supreme Court Will Consider Fare Stay

The application for a stay against the 8-cent fare recently granted by the special statutory court at Trenton to the Public Service Railway has been taken under advisement by the United States Supreme Court. The motion for the stay was advanced by Attorney General McCran for the New Jersey Public Utilities Commission.

In their argument Messrs. McCran and Herrman, counsel of the Utilities Board, said that the statutory court through its temporary injunction preventing interference with the 8-cent rate by the Utilities Board assumed to exercise legislative power. On this point the state brief continues:

The establishment of a rate is the making of a rule for the future and is therefore an act legislative not judicial in kind. It assumed to prescribe rates for the future differing from those prescribed by the order of the board to authorize the exaction of the rates so prescribed in the future and to restrain the board from interfering with such exaction.

In assuming so to exercise a legislative function, the statutory court placed an unjust and unreasonable burden upon a large number of the riders using the facilities of the railway company, and at the same time permitted a large number of riders to ride for less than the rate prescribed by the board.

California's Motor Transport Business

Regarding the report of the California Railroad Commission for the year ended June 30, 1920, 786 freight and passenger tariffs were then on file by motor transport companies, operating throughout the State. The number on file on June 30, 1919, totaled 643. Because many of its carriers file a combination passenger and freight report, it has not been possible to segregate them into classes. It is, however, estimated that of the total number of tariffs filed, 450 represent carriers serving exclusively as freight lines.

Move Launched for Lower Fare

A move for a lower fare has been made by Davenport businessmen through the Presidents Club, a civic organization composed of the heads of some 50 leading clubs and societies. The club asks the Tri-city Railway in a petition to reduce its fare to five cents or as near thereto as possible. It is suggested that if a 5-cent fare is impossible the ticket plan successful in many cities be adopted.

According to this plan the passenger buys a ticket every month, paying 50 cents for the ticket and then being allowed to ride for 5 cents.

President B. J. Denman of the company has not answered the petitioners but has stated that an arrangement along this line is not impossible.

While this may be due in part to the 8-cent fare the lack of employment is a contributing cause. Merchants believe that a lower fare will stimulate car riding, bring back the old volume of street car passengers, and act as a stimulating force on business.

When it appeared that the company and merchants were about to get together the socialist city administration, which was elected to office on a 5-cent plank, and which has bitterly opposed the utility company in all of its moves, came into court and demanded that the company either return to a 5 cent fare or surrender its franchise.

The city administration charges that the dismantling of the Fourth Street line has lowered the overhead expense and the installation of one-man cars has cut labor expense to a sufficient degree that the fare may now be lowered and the revenues of the company remain sufficient for all needs.

Five-Cent Fare or Buses

Additional Routes Will be Granted to Jitneys Unless Relief Is Afforded in Bridgeport

The Public Utilities Commission of Connecticut will hold a hearing on Nov. 10 on a petition of the city of Bridgeport asking for a reduced fare rate on the lines of the company in that city. The Commission had previously urged the Connecticut Company to try a 5-cent fare in Bridgeport. Some of the salient features of the correspondence between Chairman R. T. Higgins of the Public Utilities Commission to W. C. Noyes, chairman of the board of trustees, on the matter of reduced fares were outlined in the ELECTRIC RAILWAY JOURNAL for Nov. 5, page 837.

Mr. Higgins stressed the fact that New Britain, Bridgeport and Norwalk were examples of cities charging a 10-cent fare which resulted in loss of business and revenues to the company and failure of acceptable transportation service to the public.

In asking for a trial of the 5-cent fare in Bridgeport, Mr. Higgins said that the time had arrived when certain lines could be treated independently of the whole system, and that fare adjustments should be made on certain lines without affecting the entire schedule of rates. His letter reviewed the demand of the general public and the city officials for a 5-cent rate in Bridgeport and recommended such an experiment without transfer on all city lines radiating from the center of the city. On this point the letter read:

Such an experiment would not put the company in much worse condition than now exists, and in the absence of some prompt action or relief in Bridgeport the commission will feel obliged in the interests of the public to authorize additional jitney routes and grant additional certificates.

In Norwalk a 5-cent service was recommended on the short local line between Norwalk and South Norwalk. If it was found that such a service would not be sufficiently profitable to maintain all the lines in the Norwalk division, the commission suggested increasing the rate or abandoning certain of the non-paying lines.

For New Britain no concrete plan was offered, but as a measure of relief for other sections the retention of the 10-cent fare with the sale of tokens or tickets for city riders at a materially reduced price was suggested.

In concluding its suggestions on the transportation problem facing the cities served by the Connecticut Company Mr. Higgins says:

In President Storrs' recent memorandum to you relative to financial conditions he points to the large number of passengers and sustaining revenues taken from the company by the very limited number of licensed jitneys operating in part of Connecticut Company territory. This statement presents an economic condition worthy of careful consideration. If an agency with a few thousand invested can transport the public and successfully compete with an agency having hundreds of thousands of dollars invested it is a demonstration that methods of transportation must conform to economic conditions. Your company has the right to operate both forms of transportation.

Early Hearing of Fare Case Urged

The city of Louisville, Ky., has made a motion for an early hearing of the fare case before the United States Supreme Court, on the ground that with an election on Nov. 8 the present City Attorney and other legal lights may be out of office on Dec. 15 and that the case should be tried before that date. Churchill Humphrey, attorney for the company, earnestly insists that the case be not tried until February or March, in order to give him time to prepare his argument.

The railway has filed a bond of \$100,000 additional, making \$300,000 that has been put up to cover receipts issued for the 2-cent increase in fares. In the event the United States Supreme Court rules against the company's right to an increase from 5 to 7 cents under franchise agreements, passengers holding receipts will receive a cash refund for each receipt held. It is estimated that excess fare receipts totaling about \$250,000 are outstanding.

Monthly Ticket Plan Installed

The monthly commutation fare plan which went into effect in Muscatine, Iowa, on Nov. 1 has met with general public approval. The Clinton, Davenport & Muscatine Railway, the local property, in giving the monthly ticket plan a trial announced that "The more you ride, the less you pay."

By this plan the passenger pays 50 cents a month for a ticket and the ticket allows him to ride as many times as he wishes for 5 cents a ride. The system was explained in the ELECTRIC RAILWAY JOURNAL, issue of Oct. 22, page 758.

Only Specially Designed Cars

An ordinance was recently approved by the City Council of Richmond, Va., which specifies that all streets cars in the city must be operated by two persons unless they are especially constructed and designed for one-man operation. Violation of this ordinance is punishable by a fine of not more than \$1,000 and not less than \$250. Paragraph 2 of the ordinance states:

Nothing in this ordinance shall be construed as intended to affect or diminish in any way the rights of the city of Richmond under any existing franchise to forbid or regulate the operation on the streets of the city of the one-man cars. The operating company in Richmond is the Virginia Railway & Power Company.

Bus Line in Operation.—Service on the Flushing-Jamaica, N. Y., bus line was started on Nov. 3, when the first four buses which will be operated on the line left the bus terminal at the Flushing Bridge. The line has been opened under the supervision of the Department of Plant and Structures. For the present four buses will be in operation, running on a fifteen-minute headway. The trip from Flushing to the Jamaica terminus at the Long Island Railroad depot consumes about twenty minutes, which is fifteen minutes less than the same trip by trolley car. The fare is 5 cents and the route from Flushing is along Broadway to Main Street, to Jamaica Avenue, across Hillside Avenue to Fulton Street and west on Fulton Street to the Long Island Railroad depot.

Railway Will Run Buses

City Council Decides on the Organized Operation of Autos as Against Independent Service

The Rockford & Interurban Railway, Rockford, Ill., has entered the bus transportation field. Purchase of six motor buses for use on the streets of Rockford will be made shortly. The buses will be operated on four routes as "feeder" lines which will connect outlying sections of the city now lacking transportation facilities with existing electric railway lines. As yet no announcement has been made as to how fares on the buses will be fixed.

DISPUTE OF LONG STANDING

Through the authorization of the City Council as a result of the controversy between the traction company and the Fay Motor Bus Company the new buses are being obtained. On Oct. 3 the City Council finally disposed of and tabled the Fay ordinance which provided for bus operation in the outlying districts not paralleling the traction lines.

The dispute between the Rockford & Interurban Railway and the Fay Motor Bus Company for supremacy in the city dates back several weeks when the United States Government in a retrenchment drive ordered six army cantonments to be closed on Oct. 1. Among them was included Camp Grant at Rockford.

Up to that time the Fay Motor Bus Company operated exclusively between Rockford and Camp Grant. The run is 5 miles and the fare was 20 cents. On Aug. 18 Mr. Fay announced a city-wide transportation plan in direct competition with the railway lines operating over the same street, running on the same headway, and charging 5 cents with a 2-cent transfer charge. The railway charges 8 cents with two tickets for 15 cents.

On Aug. 19 the railway company secured an injunction restraining the bus company from operating as proposed. On Aug. 22 through one of the Aldermen a resolution was presented to the City Council asking approval of the plan. The resolution was referred to a Joint Committee and this committee met on Aug. 26, voting favorably on the plan and authorizing Mr. Fay to operate.

CHAMBER OF COMMERCE INTERVENES

Meanwhile the Chamber of Commerce announced a public forum for the discussion of this situation. The motor bus company had a hearing on Sept. 1 and on Sept. 6 the attorney for the railway presented the case. On this day the Rockford City Traction presented an ordinance to the City Council for consideration authorizing it to operate buses as "feeders" in districts not now served by railway until such time as a new franchise is granted and the railway can be extended. The ordinance of Fay Motor Bus Company authorizing it to operate on the streets paralleling those upon which the street railway cars operate was referred to the railway committee of the City Council.

The railway committee met on Sept. 9 and the majority reported in favor of the street railway franchise against the ordinance authorizing the operation of the Fay Motor Bus Company on streets paralleling the railway streets. The

report was read to the Council on Sept. 12, and on Sept. 19 the Fay ordinance was tabled.

36,283,839 Bus Passengers in Newark in Nine Months

Jitneys carried within 5,000,000 as many passengers in Newark, N. J. during the first nine months of this year as they did the whole of 1920. Figures to this effect are contained in a report made recently to Director Breidenbach of the Department of Revenue and Finance by Joseph Kroehl of the City Treasurer's office. The number of passengers carried last year was 41,501,854. The total for this year up to Sept. 30 was 36,283,839.

The bus business during September was shown as follows in the report: Passengers carried, 4,345,934; gross receipts, \$217,296; tax paid to the city, \$8,625. The report for September, 1920, was: Passengers carried, 3,357,718; gross receipts, \$167,885; tax paid, \$6,398.

With the exception of March of this year the record for September showed the heaviest travel on buses for any one month. Last March the number of passengers was 4,390,000. Mr. Kroehl pointed out that March has one more day than September, so that the average daily travel last month would indicate that the March record would have been broken with another day of such travel as was recorded during September.

The report also shows that there were 404 buses in operation last month. In September, 1920, there were 385.

Forty-nine Bus Applications

According to the fourteenth annual report of the Public Service Commission, Second District, New York, for the year 1920, the use of motor buses in all parts of the State has shown recently a great tendency to increase. The result has been that the commission is constantly engaged in passing upon the propriety of the issuance of new certificates for public convenience and necessity. In such cases it is found, however, that the statute law governing such operations is confusing, and the commission recommends that its powers and functions with reference to this class of utility be more clearly stated and defined.

The number of motor bus applications for certificates of convenience and necessity received during the year was forty-nine. These were disposed of as follows: Thirty-six were granted, seven denied, three are pending and three petitions were withdrawn.

During the year the commission, under section 55 of the public service

Insist City Should Regulate "Interurban" Buses

Officers of the interurban electric railways which center at Grand Rapids, Mich., are insisting that the Council shall regulate the operation of "interurban" buses within the city in order that the railways may be preserved to the communities through which they operate. At a recent special meeting of the City Commission Richard Schaddelee, vice-president of the Grand Rapids, Grand Haven & Muskegon Railway; F. K. George, statistician of the company, and Leonard A. Verdier, attorney appeared before the commission to petition for passage of regulatory ordinances controlling the interurban bus lines after they enter the city limits.

Mr. Schaddelee is reported to have said:

The situation is not so exaggerated as yet, but it is growing constantly worse. If competition continues the electric roads will be killed off by a vastly inferior type of service. No one notices if a bus doesn't operate on a rainy day, but it would be a great inconvenience if the interurbans failed to operate.

Mr. Verder is quoted as follows:

You can't have both types of service. One or the other must go or else both must be placed under the same restrictions. At present you have buses operating on highways which they did not pay a cent to build or maintain. Their only expense has been that of an automobile license, while the electric roads are under strict regulation by the state.

Mr. George asked that in considering the proposition the City Commission remember that the interurban company contributes about \$31,000 annually toward the net earnings of the Grand Rapids Railway in charges which are made for use of that company's tracks in the city.

He stated that during the first nine months of the current year the Muskegon interurban carried 38,322 fewer passengers than during the same period last year. In spite of this he stated increased fares have boosted the company's earnings during the same period \$18,166 over 1920.

Municipal Bus System Behind

The West Orange Municipal Bus Service had a deficit of \$43,018 from the time it was started in July, 1919, to Oct. 1, 1921, according to a report submitted to the Town Council. The report shows \$56,192 had been expended and \$29,208 returned through receipts, leaving \$26,983 deficit, not including \$16,035 paid for the buses, which brings the total to \$43,018. The company lost \$6,000 the first three months of operation because the machines used were hired. The fate of the municipal line will be voted on at the November elec-

BUS COMPANIES AUTHORIZED BY NEW YORK COMMISSION TO ISSUE SECURITIES

Name of Corporation	Nature of Security	Amount Allowed	Date of Order 1920
Woodlawn Improvement Auto Transportation Corporation.....	Bonds	\$21,000	April 22
	Ammendatory		April 27
Alexandria Bay-Redwood Transportation Company.....	Bonds	\$9,000	July 20
	Stock	\$15,000	June 29
Total, two companies.....	Bonds (2 issues)	\$100,000	
	Stock (1 issue)	\$15,000	

commissions law, granted permission to the autobus corporations listed in the accompanying table to issue stocks, bonds or other evidences of indebtedness.

Residents of West Orange want the line continued for another year under changed conditions. Adherents of the bus contend that the fares on the autos have been too low.

Bus Company Starts Operation

The Columbia Auto Bus Company which was recently organized, announces the commencement of service between Franklin and Columbia, Tenn., a distance of about 25 miles, starting on Oct. 31. The schedule calls for three trips each day between the two towns and connects with the Nashville-Franklin Interurban. A new state and federal aid highway has been completed recently for 12 miles of the distance between towns, which affords a good roadway for travel.

The new line will afford a better and more frequent service between that territory and Nashville than that now given by the railroad.

The buses are of the latest type for such service, seating twenty-one persons, are equipped with electric lights and heated by engine exhaust.

The corporation has a capital stock of \$50,000. The incorporators are J. H. Carpenter, Jr., R. G. Sparrow, R. C. Sparrow, Jr., J. E. Napiers and Meade Frierson. The last mentioned incorporator is identified with the Nashville Interurban Railway, thought it is stated that the companies will in no way be financially connected.

Head of City Utility Department Favors Non-Competitive Buses

Major Carl H. Reeves, superintendent of the Utilities Department at Seattle, Wash., has recommended the issuance of fifteen permits to operate jitney buses into the Cowen Park district from downtown, to F. M. Peterson, representing the Auto Drivers' Union. The recommendation was made on the basis of an offer by Mr. Peterson to pay the city 3 per cent of the gross earnings of each car as a fee.

While passing favorably on the issuance of permits, Major Reeves says the percentage payment would not be satisfactory, and proposed a flat rate of \$10 a month a car for the first six months, at the end of which time a check would be made to determine whether that rate is sufficient. The jitney service proposed would be limited to serve the Cowen Park district, without loading or unloading passengers along the Municipal Railway, or in sections served thereby.

The ordinance to appropriate \$50,000 for the purchase of buses for the Cowen Park service, to be operated by the city, which was recently vetoed by Mayor Hugh M. Caldwell, failed to pass over his veto.

Governor Favors Try-Out of Lower Fare

Governor Everett J. Lake of Connecticut was called upon to answer a number of questions pertaining to the Bridgeport jitney situation at a meeting in that city during the week ended Nov. 5. In speaking of the railway situation the Governor said:

The Public Utilities Commission has told me on broad lines that the fares must come down and that they were going to get them down at the earliest possible moment. I believe the 5-cent fare worth a tryout, and I think the Public Utilities Commission has shown the same attitude in its recent ruling.

At the same meeting, President W. F. D. Kilpatrick of the Bridgeport Business Men's Association, said if the Public Utilities Commission grants a

5-cent fare in Bridgeport, the commission will be asked to revoke the licenses under which about seventy-five jitneys operate in the city. He claims that this is taken from a statement made by Judge Walter C. Noyes, chairman of the Federal Board of Trustees of the Connecticut Company. In answer to the commission Mr. Kilpatrick said:

I believe that the Connecticut Company will not grant a 5-cent fare for Bridgeport. The Connecticut Company has pointed out that if it is going to give a fare at that price, it would rather be in Hartford and New Haven where the people have not been bucking the company.

Norwalk had the privilege of a 5-cent fare beginning Nov. 6. According to the ruling of the Public Utilities Commission, it ordered the 5-cent rate for a ninety-day test period, weekly reports to be made by the company to the commission. These will be available later.

Bus Company Formed

The Toledo Bus Transportation Company, Toledo, Ohio, was recently incorporated with a capital stock of \$100,000. The incorporators, among them F. J. Westhoven and H. W. Tassell, are owners of buses now operating in Toledo.

In outlining his plans Mr. Westhoven said that the company did not contemplate a war with the Community Traction Company, but that it wanted to co-operate with it in providing transportation service to residents of Toledo.

Governor Suggests Rate Review

Formal review of all railroad and public utility rates by the Wisconsin Railroad Commission, with a view to material reductions on coal rates and on all necessities of life, was ordered on Oct. 28, 1921, by Gov. John H. Blaine of Wisconsin.

The Governor stated he believed the time had come when all rates should be re-examined and that the Railroad Commission must protect the people in cases where poor service and excessive charges were found. The Governor's formal demand on the commission follows in part:

During and following the war, railroad and public utility rates were largely increased. Since these increases there has been a constantly falling market, including reduction in wages. Not only were rates increased, but in some cases—as, for instance, in gas—the standard of quality was materially lowered, and in other cases the service was cheapened, as in the case of street car companies installing one-man cars.

I believe the time has come when the railroad commission should, on its own initiative, re-examine the rates and services of public utilities and railroad companies, with a view of making reductions in rates and of making improvements in service wherever possible.

Of course, you will approach this subject free from any bias or prejudice, and with the single purpose of doing equity to all parties concerned. However, the pinch of hard times is upon us, and the utilities must expect in some measure to share in the hardship of the people generally, in order to equalize the burdens and to bring about general prosperity.

Notwithstanding this situation, I feel that the state should continue to assert its right to fix these rates, and I therefore suggest that your commission will undertake the work promptly. If you will advise me that you will initiate proceedings on your own motion, I will immediately thereupon communicate with the mayors of the several cities and ask them to co-operate with you in connection with utility matters, and will give you every assistance available with respect to both utility and railroad rates and services.

Transportation News Notes

Wants Half Fare for Pupils.—The city of Knoxville will appeal to the Public Utilities Commission in an effort to secure reduced fares for school children. When the 6-cent fare was authorized recently the company refused to sell the half-rate tickets on the ground that it was operating at a loss.

May Operate Buses.—H. W. Patten, general manager of the Wichita Railroad & Light Company, Wichita, Kan., recently announced that his company contemplated the use of motor buses as feeders for the railway lines. They will be used on off streets with a universal or transfer system to the railway.

Wants Bus Permit Deferred.—The Trenton & Mercer County Traction Corporation, Trenton, N. J., has asked the Hamilton Township committee to defer action on the granting of a license line to be operated between Trenton and Hightstown, a distance of sixteen miles. The company says that the proposed bus line would affect the receipts on the Mercerville division.

Rural Districts to Have Trackless Trolleys.—In commenting recently on the trackless trolley system which is in prospect for Baltimore, H. B. Flowers, vice-president and general manager of the United Railways, said that the rural districts are the best places for the new trolleys and that the United management will install them there. He said further that though no routes could be definitely slated now, two lines have been decided on for operation early next year.

Ticket Charge Extended.—As a result of a complaint filed with the city and a petition submitted to the Public Utilities Commission 6-cent tickets will be accepted to South Danville and Vermilion Heights, Ill. Heretofore, the Danville Street Railway & Light Company charged 7 cents to these sections, the 6-cent ticket charge being good on city lines. The announcement to this effect was made recently by the corporation counsel for the city.

City Opposes Ten-Cent Fare.—The Peekskill Lighting & Railroad Company, Peekskill, N. Y., which has obtained increases in fare from 5 to 6 cents and then to 7 cents with the consent of the village now wants to charge a 10-cent fare and the village objects. Former Public Service Commissioner Decker, who represented the railroad company, contended that the commission was the only legally constituted body which had jurisdiction over fares and that the village could not participate in the proceedings. In an opinion sustaining the right of the village to oppose the application, Mr. Semple said in part: "My theory is that if the facts show that your service cannot be adequate or safe for the public interest under a 7-cent fare the commission has the power to suspend the provisions of the contract rate until that condition changes, but the contract is not abrogated and may be restored." The contract rate of fare is 5 cents and under the ruling this rate may be restored if the service, at a higher rate, is not adequate.

Personal Mention

C. E. Morgan Advanced

Elected General Manager of Brooklyn City Railroad, Which Operates All Surface Lines

The election of Clinton E. Morgan as general manager of the Brooklyn (N. Y.) City Railroad has been announced by the board of directors. H. Hobart Porter, who has been both vice-president and general manager, remains as vice-president in charge of operation. Henry F. Noyes has resigned as vice-president of the Brooklyn City, but continues as a director. Mr. Porter is now the only vice-president of the lines. The personnel of the board is unchanged.

As general manager Mr. Morgan will be in direct control of the operation of all the surface lines of Brooklyn, now being operated as a unified system through arrangement between the Brooklyn City management and Receiver Lindley M. Garrison of the Brooklyn Rapid Transit Company. The Brooklyn Rapid Transit surface lines,



C. E. MORGAN

which Mr. Morgan operates in connection with the Brooklyn City system, are the Nassau Electric Railroad, the Queens County & Suburban Railroad and the Coney Island & Brooklyn Railroad. Under Mr. Morgan's immediate operating direction will be 525 miles of track owned and operated by seven companies. Of these companies, all except the Brooklyn City Railroad are controlled by the Brooklyn Rapid Transit Company's system. The Brooklyn City has been operated as an independent since Oct. 19, 1919, when the property, which had been leased by the Brooklyn Heights Railroad Company, reverted to its owners following the failure of the Brooklyn Heights Company to meet the obligations imposed by the terms of the lease to which these companies became parties in 1893. Under independent control, the Brooklyn City lines have been directed by a separate executive organization built up by H. Hobart Porter, who assumed the management when separation from the Brooklyn Rapid Transit system was decreed by the United States District Court.

Mr. Morgan, who has been assistant general manager since Mr. Porter took

charge, is one of a group of street railway experts chosen by Mr. Porter to work out a solution of Brooklyn's surface line problems. Associated with Mr. Morgan in this group are Edwin H. Reed, who came from the American Public Utilities Company, Grand Rapids, Mich., to be auditor of the Brooklyn City; L. J. Davis, who left the Westinghouse Electric & Manufacturing Company, Detroit, to become engineering assistant to Mr. Morgan; George W. Jones of Sanderson & Porter, New York, who was made treasurer, and A. LeRoy Hodges, formerly with the Michigan Railway, who has been appointed assistant secretary and treasurer.

Before coming to Brooklyn Mr. Morgan had been prominently identified with traction properties in the Middle West, where most of his career has been spent. Mr. Morgan entered electric railway work in 1899, progressing through the construction and the operating departments of the Indianapolis and Greenfield Rapid Transit Companies, centralizing in Indianapolis. In 1902 he became purchasing agent and later was appointed auditor. Then he became assistant general manager of the Indianapolis & Eastern Traction Company, and in 1905 he was named superintendent of the Indianapolis & Martinsville Rapid Transit Company, the Indianapolis Coal Traction Company and the Indianapolis & Western Traction Company. Subsequently he was chosen superintendent of the Terre Haute, Indianapolis & Eastern Traction Company.

Mr. Morgan resigned from the Terre Haute, Indianapolis & Eastern on Feb. 1, 1909, to accept the position of general manager of the Indianapolis, Crawfordsville & Danville Electric Railway, Crawfordsville, Ind. He continued in this capacity until April 1, 1912, when he resigned to assume the general superintendency of the Michigan United Traction Company, the Michigan Railway and Michigan Railroad. These companies were subsidiaries of the Commonwealth Power, Railway & Light Company, operating extensive city and interurban properties in the Central States. Mr. Morgan was in full charge of the company's mechanical, electrical, engineering, traffic and transportation departments. On Oct. 1, 1919, he terminated his connection with these Michigan enterprises to join, at the invitation of Mr. Porter, the organization of the Brooklyn City Railroad as assistant general manager.

Mr. Morgan has been active in association work. He is a charter member of the Central Electric Railway Association and is active in the American Electric Railway Association. He has been a member of the standardization committee on equipment in both the Central Electric and American Electric Railway Associations. Also he has been a member, and later chairman, of both the schedules and timetables and the rules committees of the American Electric Railway Transportation & Traffic Association. He also served on the block signal committee.

When the Brooklyn City Railroad resumed independent operation it became necessary to break up several

routes, with the result that new riding habits were formed by the public. These changed conditions led to a thorough traffic survey of all the surface lines.

The fundamentals of the methods followed in this survey were described by Mr. Morgan in an article in the issue of this paper for Sept. 24, 1921. The policy there outlined will be continued under the general management of Mr. Morgan, whose promotion, it was explained by the Brooklyn City Railroad, was the natural result of the success that has attended his effort in operation and administration.

Mr. Wilson with B. R. T.

Former Connecticut Company Roadmaster Appointed Superintendent of Surface Roadway

P. Ney Wilson recently assumed his duties as superintendent of surface roadways of the Brooklyn (N. Y.) Rapid Transit Company. He succeeds to the position vacated by E. L. Matthews, who resigned in April of this year to accept a similar position with the Third Avenue Railway, New York. Mr. Wilson was formerly roadmaster of the New Haven division of the Connecticut Company.

For the company Mr. Wilson's ap-



P. NEY WILSON

pointment is a particularly valuable accession. Since his initial electric railway connection with the Camden Railway in 1899 Mr. Wilson has devoted his attention and energy not only with the actual construction and maintenance of way methods of the various properties with which he has been identified, but also in the study of foreign track construction methods. It was in 1906 after he had been made supervisor of track and roadway of the Camden Railway following several years of field work that Mr. Wilson made an extended trip to England and South America to acquaint himself with track construction practice there.

Returning in 1907 Mr. Wilson was appointed roadmaster of the Rochester Street Railway. He remained there two years when he received the appointment as roadmaster of the New Haven Division of the Connecticut Company. In terminating his connection with the Connecticut Company to enter larger fields Mr. Wilson ends a twelve year period of enviable service as roadmaster. During that time he was able because of his combined knowledge of foreign and domestic track work practice to institute many valuable and

practical money saving schemes along these lines.

Mr. Wilson was educated in Philadelphia and Camden, N. J., at both of which places he studied civil engineering following his graduation from High School. Mr. Wilson is a member of the Connecticut Society of Civil Engineers.

Mr. Cadby Executive Manager of Wisconsin Association

John N. Cadby, consulting engineer of Madison, Wis., was selected to be executive manager of the Wisconsin Electrical Association at a recent meeting of the executive board. This office is a newly created one, the duties of which he will assume next March.

"The establishment of this new department means that our association intends to be of greater service to the public making it more useful to our members," said J. P. Pulliam, president of the Association. "Mr. Cadby will be able to bring his wide experience to bear on public utility problems anywhere in the state."

Mr. Cadby is a graduate of the electrical engineering course of the University of Wisconsin, class of 1903. For a time he was with the Milwaukee Electric Railway & Light Company. In 1908 he became a member of the engineering staff of the Wisconsin Railroad Commission.

A. Telford Smith has become associated with the São Paulo (Brazil) Electric Company, Ltd. Mr. Smith was formerly with the Winnipeg (Man.) Electric Railway.

Floyd W. Parsons, formerly editor of *Coal Age*, one of the McGraw-Hill publications, and for the past two years in charge of the department entitled "Everybody's Business" in the *Saturday Evening Post*, has become editorial director of the *Gas Age-Record*.

Matthew C. Brush, formerly president of the Boston (Mass.) Elevated Railway and who is now the senior vice-president of the American International Corporation, New York City, was elected president of G. Amsinck & Company. Mr. Brush, who is in general charge of the American International Corporation's commercial interests, says that the Amsinck organization, which is engaged in the import and export business, expects to enlarge its functions between the United States and Central and South America.

M. H. Gerry, formerly engineer and power superintendent of the Metropolitan West Side Elevated Railway, Chicago, has been made secretary, agent and engineer for the St. Anthony Falls Water Power Company and the Minneapolis Mill Company. He succeeds William de la Barre, who was elected president. Mr. Gerry, while with the Metropolitan West Side Elevated, superintended the electrification of the company's elevated tracks. Mr. Gerry graduated in 1890 from the College of Mechanical Engineering of the University of Minnesota and was employed several years by the General Electric Company. For twenty-two years he has been in Montana. He built the first dam in the Missouri River for commercial development of power and built the original transmission lines to Butte, Anaconda and Helena. During the war he was fuel administrator for Montana.

Manufactures and the Markets

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

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

European Business Poor

Gear Manufacturer Comments on Situation Abroad—Observed Many Buses Used as Feeders

According to E. S. Sawtelle, assistant general manager Tool Steel Gear & Pinion Company, Cincinnati, Ohio, the prospects for the immediate present of American manufacturers doing a considerable business in Europe, except those who have a specialty, is slight. Even in specialties a very strong effort is being made by European manufacturers to reproduce or imitate devices that have hitherto been bought in America. Mr. Sawtelle has recently returned from a six weeks' trip through England, France, Holland and Switzerland. In commenting on the business situation in Europe, he said in part:

"Before and during the war our company was selling tool steel gears to about eighty companies in England, eighteen in France and practically all of the large roads in Holland and Spain. Some of these represented trial orders, but with most of the larger companies the business was thoroughly established and competing very successfully with European manufacturers. This situation, I believe, was duplicated by a large number of American manufacturers who had been able very successfully to introduce their products in Europe, due either to unusual quality or to low costs through quantity production. Business of this sort was necessarily expensive to start, as it involved many changes in standard practice to take care of European desires, great difficulty in selling due to language barriers, and, of course, the continual problems of long deliveries and high transportation costs due to our geographical location.

"The reasons for the extensive discontinuance of purchases in America does not seem to be a matter of quality or of service, but purely a question of policy. I was told by the head of one of the largest British tramway lines that he now was unable to buy out of Britain any quantity larger than \$100 without submitting the bid to his board. European manufacturers are driving desperately to duplicate American products and the tramway lines, largely municipal, find great pressure brought to bear upon them to buy home products if the makers can even approximately match the American goods, or even claim that they can duplicate.

"The exchange situation is a further almost insurmountable barrier for American goods in such countries as Italy and France, and even in England the high exchange rate, coupled with ocean freight and similar charges, makes our competition exceedingly difficult. Swiss exchange is as high as ours, and it seems as though every topic you discuss with the Swiss business man, sooner or later, mostly sooner, leads to exchange. They claim that their business has been practically killed by this situation.

"German competition is the most serious factor that confronts the Amer-

ican exporter. The skilled mechanic in Germany is being paid from 70 cents to \$1 a day, and net living costs are such that he is probably better fixed on this pay than he was before the war. This is due to the fact that rents have increased but slightly. This situation, however, enables Germany to sell for export at prices that are absolutely unthinkable in any other land. Before the war we were laying down tool steel gears in Holland at a price about twice the cost of the soft gear made in Europe. Today, in some cases, our price will be as much as five times as high. The prospective purchaser does not dispute the question that the gear may be worth more than five times as much in terms of life, but the primary question is the ability to pay.

"Many of these conditions will eventually right themselves, but it seems to me that America must for several years to come import in excess of its exports before conditions will work around to give us a fair chance for export business."

Speaking of general impressions gathered during his trip, Mr. Sawtelle said:

"In London and Paris (and in many other of the English cities, one sees a very large number of motor buses, and these seem to be operating under very satisfactory conditions despite a heavy horsepower tax that they pay and a gasoline cost that is several times the American price. I found several cases where the trackless trolley was also being seriously considered or plans were being made to try it out, primarily to avoid excessive paving charges and to help act as a feeder for their main system. Nevertheless, all the tramway people with whom I talked feel that the bus is but a feeder or a substitute necessary in special conditions only, such as with crooked streets, etc. They seem universally of the opinion that the street railway company must continue to exist in practically its present shape as the solution for the transportation problem.

"Practically all of the European city street cars are very light as compared with American standards, though not light as compared with the safety car. It would look to me as though Europe has avoided the cars of excessive weight with very heavy equipment, and by going very extensively to light double-deck cars has been gaining the economies that we are now finding in lighter equipment. Wherever the safety car was discussed I was invariably told that their equipment was now so light that they did not need to take this step for additional saving. On most of these light cars, they are using old standard light motors, such as GE-67, GE-54, etc."

Electric Locomotive Exports

In the preliminary figures given by the United States Department of Commerce showing the exports of electrical goods for September indicate that the export trade of this class of manufactured products is still declining.

Particularly was this true of electric locomotives, of which \$242,362 worth were exported during August while the value of those shipped out of the country during September was only \$59,817.

The nine-month total for 1921, however, shows that the amount paid by foreign purchasers for electric locomotives ordered in this country was \$1,506,877, which is nearly double the amount for the corresponding period of 1920. This large increase is undoubtedly the result of the electrification that is at present in progress in Brazil for which practically all of the equipment was manufactured in the United States.

General Electric Employees' Pay Cut 10 per Cent

Another reduction of 10 per cent in wages and salaries affecting all employees has been announced by the General Electric Company, which took effect on Oct. 31. The announcement by E. W. Rice, Jr., president of the company, follows:

"In accordance with an order of the board of directors, a reduction of 10 per cent will be made as of Oct. 31, 1921, in the salaries of all officers and employees of the company. Heads of departments are requested to notify all those affected."

The General Electric Company has made several reductions since last January. The first reduction became effective Feb. 1, when the wages of day workers at the Schenectady plant were reduced 10 per cent and the pay of piece workers 10 per cent. The bonus system was also dropped.

In July another reduction of 10 to 30 per cent was announced. The working forces have been reduced in line with the company's plan of gradual retrenchment.

German Interest in Spanish Electrical Company

At a recent meeting of the *Compania Hispano - Americana de Electricidad*, Madrid, Spain, says the *Electrical Review*, London, they have elected to the board of directors four Germans who are prominent in banking and electrical manufacturing companies. This action is interesting in view of the fact that last summer the South American operation of the German Transmarine Electricity Company, Berlin, was transferred to the *Compania Hispano-Americana de Electricidad*. It would seem from this that a continuation of German influence in central station and traction operations in South America was being effected.

Some Improvement in Porcelain Insulator Market

A survey of the market for porcelain insulators shows that some improvement has been experienced since last summer, but that something in the nature of a dead level may be expected until around the first of the year. Demand for the small distribution sizes of porcelain insulators is fairly good in the East and South, and indications are that a number of jobbers have let their stocks run low. Rush orders have been received by manufacturers from jobbers in Boston and in various parts of Pennsylvania, though none of these orders has been particularly large. A

number of fair orders have been received from the Southeast and the South. Jobbers in other parts of the country seem fairly well stocked.

Reports from the Middle West say that jobbers are well stocked and can make immediate shipments for all ordinary demands. There are numerous inquiries and a fair number of orders, most of them for small lots. Utilities there are not buying as heavily as was the case several months ago. This condition may be accounted for by the fact that the number of small extensions under construction has dropped off considerably.

Prices remain unchanged since the drop which was made around the beginning of September. Manufacturers say that labor costs are still high and that there is not apt to be another decrease for some time.

Petition for Foreclosure on Car Company Sought

A petition for foreclosure of the \$2,000,000 mortgage which it holds on the plant of the Barney & Smith Car Company, Dayton, Ohio, was instituted in Cincinnati by the Guaranty Trust Company of New York. Thus the sale of the assets and property of the company is assured within a short time.

The company was established in 1849 and has a paid in capital of \$4,500,000. It is being operated at present by Valentine Winters, president of the Winters National Bank and receiver for the car company. In a recent report Mr. Winters indicated that the sale of the plant would be necessary for the conservation of the interests of all. A number of people living in Cincinnati are stockholders and officers of the company. Attorneys for the trust company filed a motion for the consolidation of the foreclosure case with the receivership suit instituted by Irwin Ballman & Company, Cincinnati, Ohio. Judge Edward T. Snediker indicated that he would grant the request, and he stated that the plant probably would be sold at public auction within a few weeks and an entry to that effect is expected soon.

Rolling Stock

Morris County Traction Company, Morristown, N. J., contemplates purchasing within the next four weeks power recording meters and headlights with which to equip twelve cars.

Boston (Mass.) Elevated Railway, which recently bought sixty-five elevated steel cars from the Pressed Steel Car Company at a cost of about \$1,250,000, is beginning to receive the equipment. Half a dozen of the cars have already been delivered and three or four will be delivered every week until the contract is completed next March. The new cars are to replace wooden cars that are about twenty-two years old.

Track and Roadway

Pekin (China) Tramways have submitted plans to the municipality for the construction of a modern tramway system.

New York State Railways, Syracuse, N. Y., has been ordered by the court to relay its tracks in Willow Street to conform to the repaired street grade. The cost is set at \$5,000.

Pacific Electric Railway, Los Angeles, Cal., will lay two additional tracks on American Avenue, Long Beach. This will expedite traffic as local cars will operate on one set of tracks and interurban cars on another set.

Pittsburgh (Pa.) Railways, through its receivers, is seeking permission of the court

to construct a single track on Brownsville Avenue from Carson Street to Warrington Avenue. It is estimated that the track and paving costs would amount to \$10,000.

New York State Railways, Rochester, N. Y., has progressed in its Clinton Avenue extension to the extent that about 1,000 feet of track have already been laid in Clinton Avenue, north of Norton Street. The Clinton Avenue line is being extended from Norton Street to Ridge Road, at a cost of \$100,000. The distance is approximately 2,500 feet. Charles R. Barnes, commissioner of railways, said that the work will be continued as long as the weather permits. Double tracks are being constructed and they are being placed in the center of the roadway.

Power Houses, Shops and Buildings

Pekin (Ill.) Municipal Railway will erect a new carhouse which will cost \$5,000.

Morris County Traction Company, Morristown, N. J., expects to build within the next month a dispatcher's office. The contract for this building has been let.

Los Angeles (Cal.) Railway Corporation expects to build one substation in which will be installed two 1,000-kw. automatic substation equipments.

Mesaba Railway, Virginia, Minn., has let the contract for the erection of the waiting station, carhouse and substation at Hibbing, Minn., to A. Guthrie & Company of St. Paul.

United Traction Company, Albany, N. Y., had its service seriously interrupted recently as the result of a fire which damaged its Watervliet substation. The extent of the fire was such that men were required to work continuously for several days to get the substation back in service.

Trade Notes

C. V. Allen has been appointed Mexican manager of the Westinghouse Electric International Company, with headquarters at Mexico City.

C. I. Earll, York, Pa., recently received an order from the Toronto (Ont.) Transportation Commission for 140 sets of No. 10 trolley catchers.

International General Electric Company has made a contract with C. I. Earll, York, Pa., to handle all foreign business pertaining to trolley retrievers and trolley catchers.

Johnson Fare Box Company, Chicago, by a vote of its stockholders, has increased the capital stock of the company from 2,000 shares, par value \$100, to 4,000 shares of the same par value.

Harry W. Eastwood, who for the last four years has had charge of the steel mill and crane division of the Cutler-Hammer Manufacturing Company, has been appointed manager of the Cleveland branch office, taking the place of Lynn B. Timmerman, former assistant manager of the central district, who leaves to enter the automobile business in Lima, Ohio, after having been associated with the Cutler-Hammer Company at Cleveland since 1914. Mr. Eastwood has had considerable experience in the electrical industry, particularly in the controller field.

New Advertising Literature

Atlas Valve Company, Newark, N. J., has recently published Junior Catalogue No. 21, describing its line of reducing valves, pump governors, pressure regulators, etc.

Westinghouse Electric & Manufacturing Company announces that it is distributing a publication, the title of which is "Lead-Base Babbitt Metal." It announces the placing on the market of lead base babbitt metal, which is the result of many years' use of this material by Westinghouse. Approximately 1,000,000 lb. of Westinghouse lead-base babbitt metal was made and used during 1920. The subjects discussed in this publication are overheating, bearing design, preliminary machining of shells, cleaning of shells, care of tinning alloy, tinning of bronze shells, tinning of pipe and malleable iron bearing shells, anchor holes in case iron bearing shells, care of the babbitted metal, cleaning solutions and materials. This is known as Folder 4,474.