

Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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"We Cannot Comply with Your Order"

WHEN the city "dads" are considering or expect to consider any extensive improvements in streets in which car tracks are located it might be well for them to give ear to appeals from the street railway companies asking for permission to earn a sufficient return on their investment to pay operating expenses and taxes, plus a little on the side for depreciation and improvements.

This was forcefully brought home recently in a certain Eastern city when after having refused the request of the company for an increase in fare the Mayor let contracts for the repaving of a certain avenue. It is an important thoroughfare and is traveled daily by thousands of motorists. The repaving had been planned as one of the big improvements. It was also planned to change the tracks from the sides of the avenue to the center and to repave within the railway area.

A communication was sent to the president of the railway company directing him to proceed with the repaving within the railway area as required by the company's franchise and also to move the tracks as stated. In answer the president replied:

"The ——— Railway Company is not now taking in enough money to pay operating expenses with taxes and interest excluded. The company cannot borrow money. We have no money to pay for this repaving and cannot comply with your order. You have no authority to direct us to move our tracks from one position in a street to another. We do not intend to obey your order and will not move our tracks."

It is now up to the municipal authorities to determine what action they can take. Money cannot be obtained from a source where it is non-existent, and the city will not gain by forcing the company into bankruptcy. This particular case may not bring any immediate relief to the railway company in question, but a few more cases of a similar nature in the same city will eventually make an impression on the hard-headed politicians.

Yale Establishes Chair of Transportation

LORD STRATHCONA, the great Canadian railroad builder, like James J. Hill and E. H. Harriman, had a creative visualization of what transportation means to the North American continent. When he died he bequeathed to Yale University an amount now found to be in excess of \$600,000, to be used to construct a building and support professorships in the interest of the physical agencies and the economics of transportation.

Yale has now given expression to a broad conception of transportation as a combined engineering and economic agency by her decision to establish a chair of transportation, under which, apparently, all various ele-

ments of engineering and economics will be grouped and correlated. Yale has been known to be considering this question for some time and is to be congratulated on her decision to view the question broadly and not divide her efforts under various heads, such as railroad engineering, electric traction, economics of transportation, etc. We hope that she may be most fortunate in her selection of the man to fill this chair and that he may be as broad as the conception of Lord Strathcona, who made this development possible.

What's the Matter with Iowa?

CONSIDER the three "D's"! They are Dubuque, Des Moines and Davenport. All are in Iowa. Dubuque walked for two months. At first Dubuque didn't mind. It took the suspension of electric railway service with good nature. As time wore on, however, the residents became petulant. They sought the reason for their inconvenience. And so seeking, they finally found the truth. It is a simple truth. Reduced to its lowest terms, it is that no public utility that is starved to death financially can function properly. The federal court had to drive this lesson home to Dubuque. In consequence, Dubuque has an 8-cent cash fare, with seven tickets for 50 cents. The trainmen got an increase in wages.

Des Moines hasn't walked yet. But it appears to be heading that way. The road is in receivers' hands. It is subject to the terms of a franchise made in 1916. The Des Moines City Railway appears not to be able under its franchise to increase fares. At least the court has so ruled. The same court, however, has held that the company may keep its service within the bounds which the 5-cent fare justifies. Thus service, with the court's sanction, has already been reduced. Moreover, the court has materially reduced the recent wage award, the umpire in the arbitration having admitted that the current earnings were insufficient. Dubuque has meant nothing to Des Moines.

And now Davenport. Dire consequences threaten there for June 1. On that date the term of the temporary 7-cent fare expires. The men are clamoring for more pay. Even under an extension of the present temporary rate of 7 cents the ability of the company to increase pay is doubtful. It is absolutely impossible under a 5-cent fare. The company's plea for an extension of the 7-cent fare has fallen upon deaf ears. The majority of the City Council are Socialists. They have voted to throw the company back on June 1 where it was before the temporary fare increase was allowed. Dubuque and Des Moines have meant nothing to Davenport.

In the Dubuque case resort was apparently made to the court because there is no State body duly authorized to assume jurisdiction over rates on elec-

tric railways. It is, of course, unfortunate that such a commission does not exist. That is one of the sins of the State's legislators. Here is home rule at its worst. Iowa's deadly "D's" are delay, distrust and disaster. There are twenty-two other cities in Iowa in which electric railways are operated. Before them stand the lessons of Dubuque, Des Moines and Davenport. Heaven forbid such an end for them.

Labor, Politicians and the Safety Car

IT IS highly creditable to the intelligence of most platform men that objection to the one-man feature of the safety car should be the exception instead of the rule. These men know, in the first instance, that if the railway cannot make use of safety car operation it will have to shut up shop or close down the thinner routes at least. In the second instance, they know that even on a car for car basis the rate of turnover is too fast to make it likely that any of them will lose their jobs. Finally, in the third instance, the increase of 50 to 100 per cent in car units operated by so many companies puts the "jobs lost" bugaboo down for good.

As a matter of caution, however, we should not ignore the few controversies that have arisen, if only for the lessons that they convey. The electric railways which were so tardy in recognizing the merits of the safety car must needs have a little patience with those who think that it may be an injury to their particular group and even with the cheap politician who tries to capitalize that feeling. Hence the following experiences may not be found malapropos.

In one community the committee of the local Council had returned from a safety car scouting trip full of enthusiasm. Their political proclivities, also, led them to insist that the price of giving the public some 50 per cent better service at an expenditure of \$250,000 to \$300,000 should be the immediate return from a 7-cent to a 5-cent fare. Obviously, this was most unfair inasmuch as no one could foretell whether the increased net would justify so big a cut, and, in any event, the railway was surely entitled to have a breathing spell. Convinced that further argument with the Councilmen was useless, the company before appealing to the state commission called a public meeting to determine the sentiments of the most frequent riders, the shopmen of the city. It was a meeting at least 90 per cent proletarian. What was the dominant note? Lower fares? No. Objection to one man per car? No. Better service? Yes, decidedly so. The big job of the meeting was not in explaining why fares could not be reduced or why one man with an automatic tool can do more and better work than two men with a hand tool. What they had to be told over and over again was that the railway really, truly, honestly, "cross-my-heart" did intend to run new cars and more cars. Such news seemed too good to be true, but was accepted at last.

In a second community, the first batch of safety cars gave such satisfaction that enemy newspapers were turned into friends and the railway obtained such encouragement from the riders that it has duplicated the first order. Now note the irony of the situation. Two years ago the company was abused by political interests up hill and down dale because it was not ready to accept the city expert's recommendation to use safety cars. Today, the same interests are stirring up the platform

men to object to the modern method of operation suggested originally by themselves!

In a third community, safety car operation was in operation on one line and rehabilitated cars temporarily on some others. Seizing upon the latter as an excuse for a play to the labor gallery, certain members of the Council are determined to drive any and every one-man car out of town, stupidly believing that the company will have to continue operating two-man, heavyweight cars at the old 5-cent fare. Indignant protests from the passengers who now get a 7- instead of a 10-minute headway at 10 to 15 per cent greater speed mean nothing to their sworn servants(?). They have grabbed Mrs. Partington's broom and are determined to sweep back the resistless oncoming of the safety car. Today they do not even deign to argue the case, but when service goes down as fares go up they will probably discover that they didn't do such a great favor to the workingman after all and will be glad to recant.

As a parting shot, it is well to recall where such arguments arise that the municipal electric railways of the United States seem exceptionally eager to take advantage of the economies and better-service possibilities of the safety car. Aside from the smaller properties like Alexandria, Monroe and Pekin, there is the big Seattle system with scores of safeties at work and a request before the Council from the superintendent for enough money to convert all cars to safety type. Evidently the city does not believe in using two men where one will do the trick. And, in the slang of Shakespeare and today, Seattle is "some labor town, too!"

How Can Motor Maintenance in Winter Be Reduced?

AS A result of the severe weather conditions in the New England section during the recent winter many railway officials have been wondering if we have not over-rated the reliability of our railway motors. Reliability has always been considered as the first and most necessary requirement for electric railway service, and to maintain this motors must withstand the most severe service and abuse under the extreme conditions of winter service. We have received considerable information regarding failures to various types of motors during the past winter and have already commented on these in previous issues of this paper. In attempting to analyze the relative merits of the different motors we have found some quite contradictory results in different cases. This has been brought about because all of the information furnished did not contain data regarding operating conditions. The troubles that have occurred were largely due to the operation of cars over ice, to the slipping of wheels which caused spinning of motors and the operation of motors through water. The information received, however, does show that a vast amount of trouble was experienced, and it is evident that the solution, or at least the alleviation, of the troubles will be found in improvement of motor insulation and improvement in operation. To bring about the desired result it is thus necessary for both the manufacturer and the operator to make improvements.

The manufacturers already have begun to take active steps to make the insulating materials used in railway motors more completely impervious to moisture, and there is no doubt that substantial progress can be made in this direction. Another line of investigation should

determine whether it is not possible to close ventilating motors more effectively during the winter season and still not endanger the admirable results of forced or self-ventilation.

In order to obtain far-reaching results it will be necessary also for the various railway companies to improve their methods of rewinding armatures and field coils and taking care of other repairs, for obviously the motors which are now in operation will be continued in service for several years and improvements in these motors cannot be made by the manufacturers. Electric railways which are not already dipping and baking their railway windings should consider this most carefully, for it is evident that only through a more thorough waterproofing of the motors can improvements and beneficial results be obtained under these extreme weather conditions. Improvements in snow and ice fighting equipment should also be provided, and particularly means must be found for removing the snow and ice, which is often allowed to accumulate between the rails to such a height that gear cases and motors slide on the ice or compacted snow. While operating conditions during the recent winter were entirely abnormal in the New England section, especially because of operation through water and the dragging of motors over ice, still if companies will work along the lines indicated they can accomplish marked improvement and will be able to meet more satisfactorily the conditions when they arise again, as they most surely will some time.

Why Not Electrify the Steam Roads at Once?

WHEN one reads reports of the results of electrification like those contained in the papers read by Messrs. Beeuwkes and Bellinger at the N. E. L. A. convention last week, which are abstracted elsewhere in this issue, he is apt to ask why steam roads other than the present few have not adopted electric motive power. The arguments in favor of early electrification of certain sections of the steam railways of the country are cogent and convincing. Actual progress as measured by electrified track mileage seems, however, quite slow.

While of course the ELECTRIC RAILWAY JOURNAL is desirous of seeing a more rapid adoption of electricity as steam railroad motive power, this paper recognizes certain gains which are to come through the present enforced comparative stagnation. Considerations of economics always control in a development of this sort, but at the moment they are dominated in turn by the financial stringency. In other words, no matter what the possibilities of immediate and ultimate profit, the railroads have not the money or the credit to electrify extensively. It is to be hoped and expected that the coming freight rate increases will alter the situation materially.

In the meantime the country is becoming more and more interested in conservation, and conservation means electrification. The public is coming to see that conservation along this line means the investment of large sums. These the railroads can secure only when they are permitted to earn a fair income. While this conviction is being built up, a few pioneers are blazing the trail for the procession which is to follow. The C. M. & St. P., the B., A. & P., the Norfolk & Western, the Pennsylvania, the New Haven, the New York Central, the Michigan Central, the Great Northern, the

Erie, the Long Island and a few other railways deserve honorable mention. And the manufacturers are building up a solid foundation of experience which will serve well as the basis of the transportation structure of the future.

It will pay to be patient in this matter, but alert withal. Father Time is working in the interest of electrification. He invites those interested to grasp him by the forelock.

Capitalize the Local Investor's Self-Interest

VARIOUS attempts at direct sale of public utility securities to the immediate community have been made and various plans of showing the closely allied interests of public and public utility have been tried, but a new idea embracing both these purposes was brought to our attention recently as having been tried practically in the central station field and we believe it merits passing on with an appeal to try to apply it directly to problems at hand.

The idea is to use the natural "self-interest" of any individual or group of individuals as a basis of proving the consequent proper and necessary interest in the welfare of the public utility. In other words, show in dollars and cents what each man loses as a result of lack of a given public utility service or what he would gain if a given public service were available. When there is a demand for additional service calling for extensions and construction or replacements, show in dollars and cents the direct and indirect benefit to each individual and group. His very self-interest will make every individual interested in the company's ability to maintain and extend service. A natural result of this is his desire to invest his own money in a business which of necessity affects his prosperity so vitally.

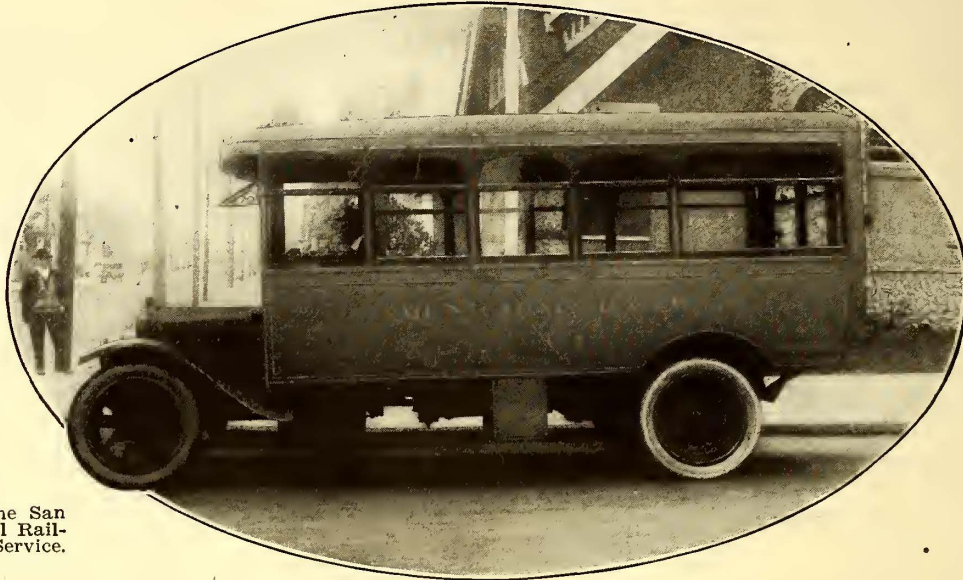
"Be more specific," you say. "How does it apply to railways?" The challenge is accepted. Assume an outlying district with the residences of a few persons who are willing to walk a half mile to a car, or who have automobiles, but who desire railway extension which can't be financed. Prove the number of additional homes which would be built in the district if the extension were made. Show the downtown merchant how many more patrons would call on him each day and show the average annual business thus added for him. Find the value of the new homes which would be built and show the carpenter, the lumber merchant, the banker, the mason, the painter, the contractor and the rest of those similarly interested how much of this, in dollars and cents, will come his way. And the whole thing held up by lack of money or credit! The very self-interest of each of these is an impelling motive to assist the utility and prompts the individual actually to purchase securities.

The foregoing is merely typical of a direct application to a given condition. Similar analyses and campaigns are said by representatives of the San Joaquin Light & Power Corporation in California to have produced satisfactory results in its territory. Something of this sort should be applicable to the railway field. When successful the result is not only the necessary financial support of the utility by the community but a better and a concrete realization of how closely knit are the success of the utility and the progress and success of each individual and the community as a whole.

The Place of the Bus—IV

The New York Municipality's Inauguration of Bus Service and Some Other Competitive Undertakings—De Luxe Operation in New York, Chicago and St. Louis

BY WALTER JACKSON
Consulting Engineer



A Motor Bus of the San Francisco Municipal Railway's Extension Service.

THE necessity for electric railways to concern themselves with the motor bus and its possibilities is clear from the dire situation that has arisen in New York City. As the reasons for the municipal bus service there may not be so well understood outside of New York as they are to residents of that city, a brief survey of this development may be clarifying.

The greater part of the electric railway mileage in the Borough of Manhattan (old New York) is on the underground conduit system. This system, compelled by city ordinance, was much too costly for the electrification of certain routes which had lost their traffic importance with the decline of the ferries. Indeed, by 1913 several miles of practically hopeless trackage had been removed from the streets by order of the city. This year also marked the substitution of the storage battery car for the horse car on such unelectrified trackage as remained.

At no time did these storage battery cars make any money, even when operated under such modest conditions as those of the Third Avenue Railway system, which used both new cars and rebuilt horse cars. In May, 1916, when this company was operating the now defunct Twenty-eighth and Twenty-ninth Street Cross-town Railway, the operating and depreciation expense of a 16,000-lb. twenty-four seat car was 29.1 cents, whereas the revenue was but 20.9 cents. This cost might have been brought nearer the point of subsistence if these cars had been operated with but one man each. The city ordinance which barred this practice with a slow car traveling on a fixed route does not apply evidently to the operation of the faster jitney buses, which can twist and turn at will.

With the further increase in costs due to the war the New York Railways, in particular, found the burden

of these storage battery lines too great to bear at a 5-cent fare. Application to permit certain discontinuances therefore was made by the receiver on Sept. 19, 1919, before Judge Mayer of the United States District Court, Southern District of New York. The application was granted at once, with the result that on Sept. 20 the Madison Street, Sixth Avenue ferry, Avenue C and Spring-Delancey Street routes ceased to function. The answer of the city administration was the installation of a "scratch" bus service, which, despite obvious shortcomings, has given the public more and faster service than was received before. The fare remained at 5 cents, but, as will be pointed out later, this is made possible only by a tax on the community as a whole.

A portion of the Spring-Delancey Street line was restored Feb. 1, 1920 (chiefly for transfer reasons), but it is doubtful whether the other routes ever will be. The fact must be faced that the railways on these and similar streets had become obsolete. Storage battery two-men-per-car operation had proved both too slow and too costly to justify frequent service in territory where almost all of the traffic was of a short-ride character. The narrowness of some of the streets traversed had also been a factor in discouraging a renaissance of these lines following the elimination of the horse car.

All in all, then, the policy of substituting motor buses for the cars was the only correct one from a transportation standpoint under the conditions as they existed. It is doubtful whether any increase in fare would have done the railway operators any good. While a proposition from them to operate buses might have met with more favor, a higher fare than 5 cents would have been inevitable, since the cost per seat furnished is at least as high on a bus as on a battery car.

The lines now operated by the city of New York in the Borough of Manhattan to replace abandoned storage battery routes are the following, as shown on the accompanying map:

- Route A, Delancey-Spring Street line, 2 miles, opened Sept. 21, 1919.
- Route B, Avenue C line, 3.5 miles, opened Sept. 21, 1919.
- Route C, Madison-Chambers Street line, 2 miles, opened Sept. 21, 1919.
- Route E, Seventh Avenue-Williamsburg Bridge route was opened March 7, 1920. It runs from Seventh Avenue and West Twenty-third Street, Manhattan, over the Williamsburg Bridge to the Brooklyn terminal of the latter via West Eighth and other streets.
- Route F, Fourteenth Street-Williamsburg Bridge, runs from the ferry terminal on West Twenty-third Street, Manhattan, to the Williamsburg Bridge Plaza via West Fourteenth and other streets.

In addition, this map shows Route D, Yorkville; 2 miles long, which is in direct competition with the Eighty-sixth Street line of the New York Railways. For many years the New York Railways vainly endeavored to secure the right to extend this route through the fashionable streets on the west side up to Riverside Drive, thus giving a badly needed crosstown line across the island via Central Park. The property owners who objected to this necessary extension may now have the double enjoyment of hearing the honk of the municipal buses and of helping to pay any deficits arising out of their operation.

A feature of this route, indicating the flexibility of the bus, is that, when necessary, vehicles run to the foot of East 86th Street instead of East 92d Street to take care of visitors to the city institutions on Blackwell's Island.

**BREAKUP OF BROOKLYN RAPID TRANSIT SYSTEM
BROUGHT MOTOR BUS INTO BROOKLYN**

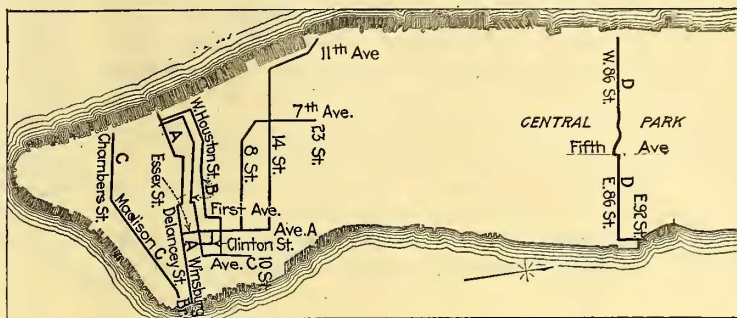
While the complete abandonment of service was the occasion for the advent of motor bus operation in three out of the four instances in the Borough of Manhattan, a somewhat different cause led to the same consequence in the Borough of Brooklyn. The Brooklyn Rapid Transit system, finding that a 2-cent transfer charge did not afford sufficient relief, was broken up into several of the underlying companies on Oct. 18, 1919. Rental and intertrackage agreements that had stood for a generation were abolished overnight. The result was that a number of the suburban lines were left hanging in midair, that certain cars were restored to old, uneconomical roundabout routes and that some people were obliged to pay two, and in some cases three, fares on as many cars instead of one fare on one car. It is a pity that some temporary leasing plan was not devised to continue the old routings upon the basis of the conditions that had led to the receivership. Had this been done there would have been far less need or excuse for the bus service which the city immediately inaugurated.

As a matter of fact, the bus services installed in Brooklyn are doing very little to save people from double and triple fares. Brooklyn distances are so magnificent that the sum of all the subsidies and other privileges enjoyed by the individual bus operators is not a make-weight to the heavy losses that would follow any attempt to duplicate the original through routes of the trolley lines. The actual situation is that the bus lines simply parallel trolley lines for part of the way, stealing a portion of their traffic from the cars, but also undoubtedly creating some traffic due to the greater frequency of service and to their better accessibility where they happen to have pre-empted a trackless street.

The fragmentary character of the Brooklyn bus

routes, which tend to parallel rather than overlap the car lines, will be better understood by the reader if he will refer to the partial map of the Borough of Brooklyn on page 1091 and then consider that under the full-fledged trolley system a single 5-cent fare carried the passenger from any part of the borough to any other part of the borough or over the bridges to Manhattan. The chief of the few exceptions was the 10-cent fare to Coney Island, and even in this instance the residents of the Isle of Pleasure long enjoyed a 5-cent fare on weekdays. A list of the routes follows:

- Route No. 2, Coney Island line, 1.5 miles, opened Oct. 24, 1919.
- Route No. 3, Greenpoint line, 3 miles, opened Oct. 27, 1919.
- Route No. 4, Park Slope line, 4 miles, opened Oct. 27, 1919.



BOROUGH OF MANHATTAN, SHOWING JITNEY BUS ROUTES PERMITTED BY THE CITY OF NEW YORK

- Route No. 5, Bay Ridge line, 3.25 miles, opened Nov. 3, 1919, and quit Nov. 12, 1919, because of poor business (not shown on map).
- Route No. 6, Bushwick-Lafayette line, 3 miles, opened Nov. 3, 1919.
- Route No. 7, Bedford-Hanson Place line, 3 miles, opened Nov. 3, 1919, and quit Nov. 7, 1919, because of better pickings elsewhere.
- Route No. 9, Borough Hall via Flatbush Avenue to Nostrand Avenue, opened Dec. 15, 1919, 4.5 miles (approximately).

No one has manifested an avid desire to run on the proposed Route No. 8, Atlantic and Flatbush Avenues to Atkins Street and Atlantic Avenue, also a distance of 5 miles. Most of the riders on Route 9, also, go no further than the Atlantic Avenue subway station (approximately 4 miles). Although in competition with the Flatbush Avenue car route, a detour is made via Washington Avenue to avoid the bad paving along Prospect Park.

Route No. 1 was a bus route which replaced Manhattan Bridge operation abandoned on Oct. 4, 1919, by the Brooklyn & North River Railroad Company. This company, which was owned jointly by the Brooklyn and Manhattan systems, was of considerable advantage to the public because of the free transfer privileges obtainable at either end and because the bridge cars also continued across Manhattan Island to the North (Hudson) River. Practically all of its business was long haul, for on the bridge itself it was in competition with the 3-cent Line, which is still operating. The importance of the suspended company may be judged from the fact that for the fiscal year ended June 30, 1919, it carried 5,340,619 cash and 3,777,192 transfer passengers. The 5-cent bus route which superseded this operation was 3.75 miles long from the Brooklyn terminus to Desbrosses Street ferry, Manhattan, with a shorter run extending from the Manhattan terminus of the bridge for 0.75 miles to Grand Street and Broadway. It suspended operation March 16 owing to inability to compete with the local 3-cent bridge trolley, which does not run beyond the Manhattan terminal of the bridge.

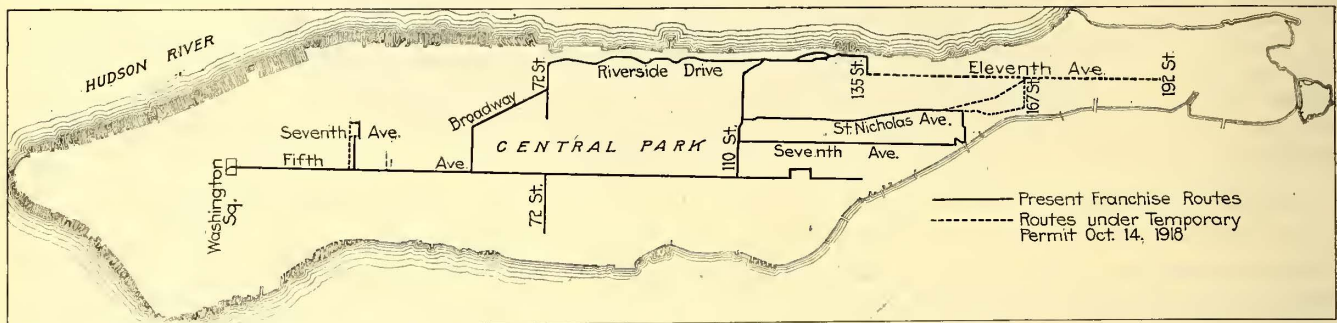
As previously stated, the city has hardly made good its promise to Brooklynites that the bus routes would save them from paying multiple fares. It has, how-

ever, given them additional service and minimized the inconveniences caused by the destruction of long-established trolley routes. A good example is the Park Slope line, with which the writer is most familiar.

The map on page 1091 shows the course of the original Sixteenth (and Ninth) Avenue line (A) which served the New York subway terminals and the Brooklyn shopping and business center, the Seventh Avenue and Flatbush-Seventh (B) and Ninth Street-Smith Street (C) lines still available and (4) the Park Slope bus route. It will be quite obvious that the people living at the upper end of the original Sixteenth Avenue line are not being served by the bus route at all. Their fare from Sixty-fifth Street and Gravesend Avenue via car to downtown is 12 cents. On the other hand, people who live along the southern side of Prospect Park are furnished with a more direct and faster route than is afforded by the Ninth Street-Smith Street (C) line, which skirts the lower edge of Brooklyn's business and shopping center instead of going straight through. So, also, people living on Prospect Park West (Ninth Avenue), having been deprived of a downtown route via Ninth Avenue, will naturally tend to patronize the buses running via Eighth Avenue instead of walking another

at two places instead of merely turning in from Atlantic Avenue (in the case of "Seventh Avenue" cars) or from the Atlantic Avenue loop (in the case of short-liners). Many cars are held up because passengers get off at Fifth Avenue to walk to the subway entrances instead of taking the extra ride.

Compare this tortuous roundabout route, which certainly does not relieve track congestion, with the straightaway run of the bus and its delivery of the passengers at the curb. It is true that the addition of buses to an already crowded terminal area has added to the hazards of both pedestrians and passengers, but a patronage of 13,000 riders a day indicates that the best way to eliminate the bus menace is to restore the original Sixteenth Avenue route, with better headways than obtained formerly and also with a somewhat shorter route (Ninth Avenue and Flatbush) instead of the Ninth, Vanderbilt and Atlantic Avenue loop. No matter what franchise complications stand in the way, means must be found to remove them if the electric railway is to give as direct service as the bus. The public has no enduring favoritism toward the bus nor enduring ill will toward the car. It simply takes the vehicle that serves its convenience better.



BOROUGH OF MANHATTAN (NEW YORK) SHOWING ROUTES OF THE FIFTH AVENUE COACH COMPANY

700 ft. to Seventh Avenue. Home-bound passengers so circumstanced are particularly likely to favor the bus, as the grade up the Park Slope is quite perceptible. In bad weather people in the Ninth and Eighth Avenue areas generally prefer the bus.

A bit of irony in this connection is that during the February blizzards the Park Slope or Eighth Avenue bus calmly appropriated the cleared tracks on Seventh Avenue for a period of several weeks, waiting until the drifts, hummocks and bergs had been removed by city employees and Old Sol combined. Following an earlier snowstorm, the writer noted a municipal motor plow working during the night to smooth the way for the buses on this thoroughfare. However, the same little favors were extended to the Fifth Avenue Coach Company. It's all due to the condition that the motor bus uses the same roadway as all other trackless vehicles and therefore gets the benefit of general street-clearing expenditures.

Incidentally, the distressing condition which the break-up of the Brooklyn Rapid Transit system has brought to various routes is indicated in the case of the two Seventh Avenue lines. When a Seventh Avenue car reaches Flatbush and Fifth Avenue it meanders to Flatbush and Atlantic Avenues, via the Fifth and Atlantic Avenue loop. This adherence to what may be some aboriginal franchise obligation wastes time, power and track. It is also a source of accident, inasmuch as it means cutting across a Flatbush Avenue track

(On Monday, April 12, several weeks after the foregoing was written, the Brooklyn Rapid Transit System installed the Park Slope line (D), which competes more effectively with the bus than the original Sixteenth Avenue route since it is more direct.)

EXTRAORDINARY JITNEY BUS DEVELOPMENT AT NEWARK AND BRIDGEPORT

In the early days of the jitney it was fondly believed that liability bonds, taxation and other imposts would make continuance of such operation impossible. As a matter of fact, the small touring type jitney has largely disappeared, but it has been replaced by the more formidable jitney bus. So long as such buses are individually operated and run only on choice routes and during choice hours their owners can show enough above actual costs to keep in the business. When investigation discloses that the same men have stuck to the game for two or three years it is time to give up watchful waiting or passive resistance as good policy.

Probably no city offers a better example of the jitney bus's tenacity than Newark, N. J. From 171 vehicles in June, 1916, to 402 buses in December, 1919, is one record; from 8,195,591 passengers in 1917 to 36,895,010 passengers in 1919 is another. These figures are derived

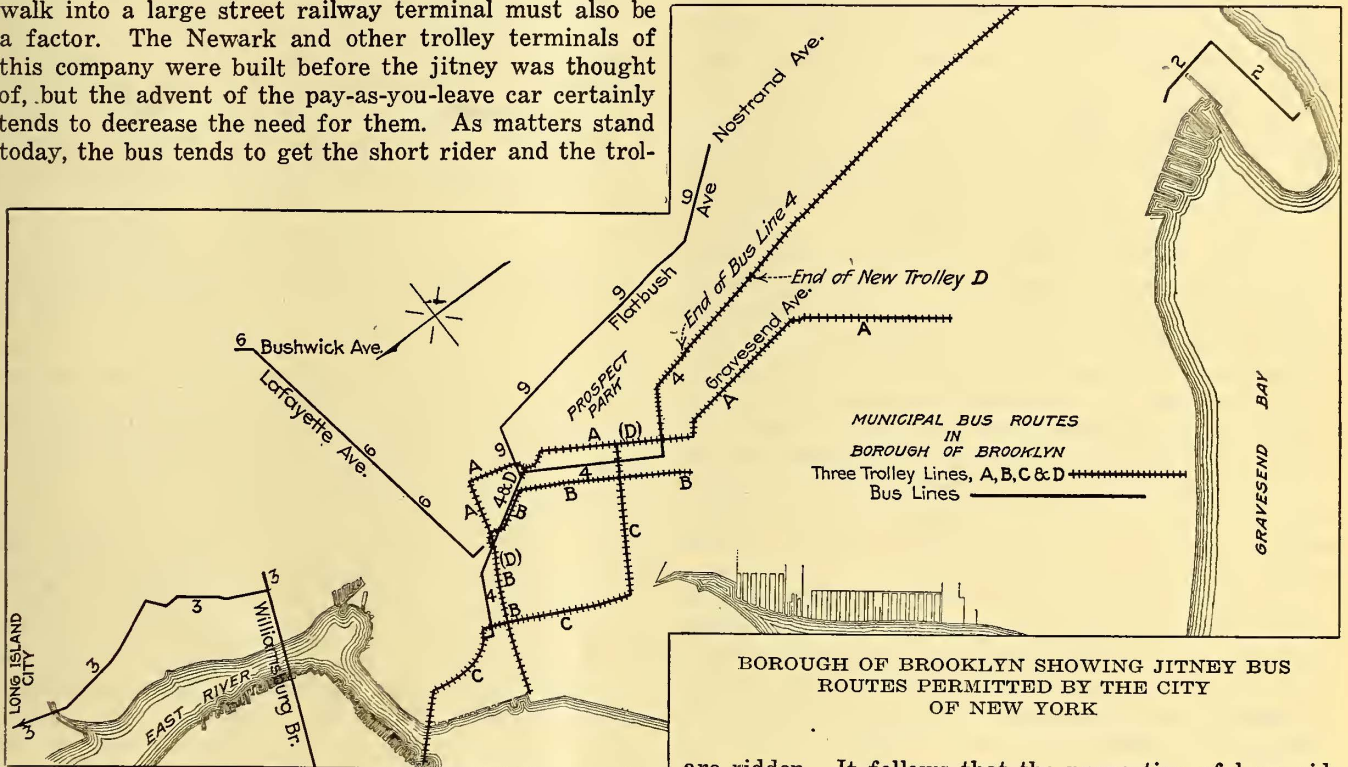
(NOTE—Reference to the Staten Island (Borough of Richmond) municipal bus service which replaced the abandoned lines of the Midland Rapid Transit Company has been omitted, inasmuch as this situation was exhaustively discussed in the ELECTRIC RAILWAY JOURNAL for Feb. 28, 1920.)

from the reports made by the jitney operators to the City Treasurer when they pay monthly 5 per cent of their gross earnings, exactly as the railway does. As the city has no means for checking these reports, it may be guessed that the actual jitney traffic is many millions in excess of that reported.

When this competitor entered the field the fare of the Public Service Railway was 5 cents and transfers were free. Both the flat and zone fare increases, as against the continuing 5-cent no-transfer fare on the buses, have accelerated the increase of jitney business. There are some fourteen routes in all emanating from Newark, most of which appear to range from 3.5 to 4 miles or more in length. Greater frequency of service, higher speed and antagonistic public sentiment are among the causes for this frightful draft on the railway revenues. The convenience of a curb-loading vehicle against the walk into a large street railway terminal must also be a factor. The Newark and other trolley terminals of this company were built before the jitney was thought of, but the advent of the pay-as-you-leave car certainly tends to decrease the need for them. As matters stand today, the bus tends to get the short rider and the trol-

ELECTRIC RAILWAY JOURNAL for July 26, 1919) Mr. Storrs brought out the startling fact that the jitney got 50 per cent of all people riding within 1½ miles of the city center, 68 per cent of all within 2 miles, 44 per cent of all within 2½ miles and 56 per cent of all traffic whatsoever. Not all the jitney business is stolen business. The 1, 2 and 3-minute headways introduced by the jitanes surely have helped to create traffic.

Unlike the Public Service Railway, the Connecticut Company has begun to eat into the jitney bus traffic through the medium of increased service with safety cars. If safety cars alone do not wipe out the ever-narrowing margin of the 5-cent jitneur, a reduction of the base fare to 5 cents ought to turn the trick and speed up the schedules as well. At present the trolley fare is 6 or 8 cents, according to whether two or three zones



ley the long rider, a condition which would hold true even with equal fares.

Bridgeport, Conn., with a population of 180,000, is another city where the jitney bus and the flivver have prospered exceedingly at the cost of the railway. It is still more favorable territory than Newark, because the intermingling of factory and residential sections with the business district between gives a remarkable amount of two-way loading and because the jitney drivers wisely confine themselves to those fat routes which are within 4 miles length over all Bridgeport is such a wonderful riding town that the daily riding index is almost unity; that is to say, there is 1 ride per diem per inhabitant. Thus during November and December, 1919, the number of bus patrons was placed at 75,000 to 80,000 a day. The precise number of car riders is not available, but it was probably 90 per cent as large as the number of bus riders. This estimate is based partly upon observations and partly upon a table submitted July 21, 1919, by L. S. Storrs, president of the Connecticut Company before the Federal Electric Railways Commission. In this table (see page 185,

are ridden. It follows that the proportion of long ride and transfer to total passengers is higher than it would be if the two-zone rate were 5 cents.

Up to the end of 1919 there were almost as many touring car jitanes at Bridgeport as buses. The new liability bond, however, is so great an overhead charge on the small car that the tendency toward the thirteen to sixteen-seat bus has been greatly accelerated.

DE LUXE MOTOR BUS SERVICES

Up to the coming of the municipal bus 5-cent routes the only other bus operation in New York (Borough of Manhattan) was the 10-cent service of the Fifth Avenue Coach Company. For reasons dilated upon later, this company had no competitors to hamper its growth. In spite of its monopoly of Fifth Avenue, the finest thoroughfare in America, and of an exceptionally high proportion of short riders, this pioneer company has not been consistently prosperous, as will be brought out in the article in this series relating to costs. At present, however, we are chiefly concerned with the exceptional character of the patronage of this company.

The original organization was the Fifth Avenue Transportation Company, Ltd., which filed its certificate

of incorporation with the Secretary of State on Nov. 28, 1885, and which was authorized by the State Legislature during the following year to operate horse-drawn buses at a 5-cent fare on Fifth Avenue between Washington Square (Bleecker Street) and Eighty-ninth Street, a route length of 5.37 miles, following the consent of a majority of the abutting property owners. Upon securing further franchises for downtown extensions from the Legislature in 1889, the company sought the necessary permission from the Commissioners of the Sinking Fund of New York City to charge a 10-cent fare. This was refused. The Sinking Fund Commissioners imposed also certain schedule requirements, transfer interchange with street railways, a \$20 license fee and a 2.5 per cent share of the yearly gross receipts. There is no record of the company's acceptance of these terms. On Oct. 17, 1895, its rights and property were sold under foreclosure and on Nov. 3, 1897, were transferred to the Fifth Avenue Coach Company, which had been incorporated July 25, 1896, for that purpose.

The successor company made no effort to secure additional routes until 1900, when a section (Chapter 657) was added to the transportation corporations law whereby a company already in business for five years could apply for extensions to existing routes through the New York State Board of Railroad Commissioners without securing the consent of abutting property owners, of the Mayor and the Common Council, as called for in the Greater New York Charter of 1897. As there was but one company already in business five years, the Fifth Avenue Coach Company was able to shut out all competition. Between Aug. 2, 1900, and Feb. 6, 1912, this company obtained approvals from the board and its successor, the Public Service Commission, for certain extensions which brought its theoretical route mileage up to 21 miles. Actually, it gave service up to 1913 on but 9.84 miles.* By 1916, however, the company reported a total of 19.19 miles of route. With the further permits, not franchises, obtained later the company is now serving a total of 25 miles of route, as shown on the map on page 1090.

Through these extensions the Fifth Avenue Coach Company has greatly enlarged its traffic, but it has probably also increased the average length of haul over the days when its operations were confined to a show street like Fifth Avenue. Then the short-haul, residential district rider must have constituted a bigger proportion of the traffic than now. The out-of-town visitor, who knows that the bus offers the cheapest way to see New York's best, now can get beautiful Riverside Drive in addition to Fifth Avenue. The northern end of the bus routes is in a high-grade, skyscraper apartment house section with tenants who are able to pay 10 cents for the short ride to the nearest rapid transit connection. On the whole, however, the traffic of this company retains its distinctive de luxe character. So little is this service affected by other transit developments that one of the largest increases in its history occurred during the year that saw the opening of the paralleling Lexington Avenue subway, which is but 0.3 mile distant. What does affect the traffic of this company most adversely is raw, cold or rainy weather. One could readily determine the weather con-

ditions in each fiscal year by noting the feverish fluctuations in traffic. This is due, naturally, to the operation of buses with open tops. So long as the American is used to overheated houses, so long will he seek cover under conditions that would leave a Londoner positively indifferent. Several efforts have been and are being made to overcome this waste of seating by providing a light roofing. The dilemma is that a roofed bus is less attractive to the large proportion of people who use it for sightseeing and for the cooling, terminal-to-terminal rides so popular with New Yorkers in the summer. The fact that the splendid traffic territory of the Fifth Avenue Coach Company ranges from but 3.5 to 4.5 passengers per bus-mile on a forty-four-seat vehicle throughout the four seasons is a sufficient comment on the "outdooriness" of the American in the climate of New York, even after making due allowance for the "no standing" rule of this service.

So much popular ignorance exists as to bus schedule speeds that it may be well to point out that the schedules of the Fifth Avenue Coach Company are not perceptibly bettered by the ability of a bus to leave the beaten track. Between such intersections as Twenty-third Street and Forty-second Street along Fifth Avenue the bus is glad to be allowed to crawl along at 4 to 6 m.p.h., although Fifth Avenue is 55 ft. wide. This indicates that it is perfectly useless to argue about flexibility, when the entire current of traffic is under what is practically a block-to-block control. It is only the small, nimble private vehicle that can gain a few blocks per mile over the larger vehicles (whether on tires or on track) that must stop at practically every corner for the interchange of passengers. On the freer runs the Fifth Avenue buses are handicapped because of the double-deck feature and the slower rate of acceleration. Hence it is not so surprising to find that the average schedule speed for the year ended June 30, 1919, was but 8.2 m.p.h. It is only the single-deck sixteen-seat bus that can show its heels to the trolley car of three times the seating capacity, and this superiority is due almost wholly to the simple fact that a sixteen-seat vehicle makes fewer passenger-interchange stops than a forty-eight-seat car. In fact, thirty-two-seat safety cars have been found by the writer to be just as fast as a sixteen-seat bus, the flexibility of the bus in the congested section being more than offset by the shorter stopping time and quicker running of a front-entrance car equipped with automatic devices throughout.

If the bus confined itself to short cuts, non-stop through runs and the relief of congested trackways it would naturally show marked superiority in speed to the vehicle on a fixed roadway. However, such operation need never be expected from any independent operator, who seeks developed routes as a plain matter of business. Only the electric railway itself has anything to gain by using the bus on by-streets as a genuine means of traffic relief.

DOUBLE-DECK BUS OPERATION IN CHICAGO AND ST. LOUIS

The favorable effect on schedule speeds of long free runs is illustrated by the experience of the Chicago Motor Bus Company. This operator reaches a schedule speed ranging from 9 to 10.7 m.p.h. with a fifty-one-seat double-deck bus because the greater portion of the run is through Lincoln Park and along the Lake Shore

*Report of Bureau of Franchises of the Board of Estimate and Apportionment of the city of New York, 1913, prepared by John A. McCollum, assistant engineer, from which a portion of the preceding data has been derived.

Drive, which are free from intersecting streets. It is significant that this company is now inclosing the upper deck of its buses. Like New York, the routes cover a combination of shopping and sightseeing district, but the density of traffic is much lower. The company's franchise for operation on the north side was granted in June, 1916. The desired south side rights were granted to the rival Chicago Stage Company Jan. 20, 1920. The term of the North Side franchise is for twenty years and the fare is 10 cents. The latest type of bus made by the bankrupt Motor Bus company is to have fifty-nine seats, a capacity from which no satisfactory schedule speed can be expected for purely city operation.

A still larger double-deck bus, a sixty-one-seater, has been put on by the Missouri Motor Bus Company, which began a 10-cent-fare service in St. Louis with nine buses on Feb. 10, 1920.

These three installations comprise the only de luxe city buses regularly in operation on a public utility basis, although plans are under way to install 10-cent bus services in several other cities. The cost analyses presented in a later article will enable the reader to judge whether the profits of these independent enterprises are likely to be as large and as certain as the promoters promise.

In the following, or fifth, article the writer will discuss the legal status of the motor bus, its obligations, if any, and so forth.

Convention at Galveston

Southwestern Electrical & Gas Association Holds Meeting on May 13-15—Railway Matters of Interest Discussed

THE fifteenth annual convention of the Southwestern Electrical & Gas Association was held at the Hotel Galvez, Galveston, Tex., on May 13-15. Some 300 delegates were present. The interest was so keen in the various topics presented to the association that it was not possible fully to carry out the program as originally drafted, although all sessions began promptly and ended late. Without exception, however, the full business program was carried out item by item and every question in the question box was discussed.

One of the most interesting features of the session was an address by G. L. Burr, manager of the bond department of the Guaranty Trust Company of New York, on "Successful Financing of Public Utility Needs." In his address Mr. Burr referred to the general feeling among investors "that many public utility companies have not had the support which is due to them as honestly and ably managed public servants and that the problems of these companies and the just deserts of their owners and creditors have not been appreciated by the public bodies." It was not necessary, he said, for such securities to be judged by the same characteristics as are demanded from industrial investments. If the investor, he said, should be shown that a public utility obligation offers the prevailing rate of return and will be paid, principal and interest, and that there will continue to be a good market for it, he will buy it, but he has taken many heavy losses in this type of investment and has very properly grown to be a discriminating person. At present the gates to new capital are virtually closed to public utility companies, whose customers and the public in the territories which they serve do not take an intelligent and effective

interest in them. In Mr. Burr's opinion it is most desirable that a part of the community served should make a sufficiently large investment in its local utility to assure outside investors that the company will receive the same consideration as other home industries.

Other addresses which were of general interest to all sections of the association and attracted wide attention were made by B. J. Mullaney of the Illinois Committee on Public Utility Information on the work and its results of that committee; W. H. Blood, Jr., on insurance and kindred matters affecting the public utility industry; J. F. Owens of the Oklahoma Gas & Electric Company, on public utility association work; Dr. E. P. Schoch, head of the department of chemistry of the University of Texas, on the possibilities of the use of Texas lignite, and H. C. Abel, treasurer of the N. E. L. A., urging the formation of a southwestern geographic section by the associations of Texas, Louisiana, Oklahoma and Arkansas. The convention was also addressed by representatives of the Mississippi Electrical Association as to that association being admitted into the Southwestern Geographic Section, and this matter will be taken under advisement. Favorable action was taken by the association with reference to the formation of a Southwestern Section for the N. E. L. A. A committee of eleven operating and technical members of the association was appointed to investigate immediately the matter of Texas lignite and report to the executive committee of the association.

Sessions of the railway members were held on the mornings of May 14 and 15. The topics considered at the first meeting were safety cars, collection and registering of fares, traffic ordinances, flagging steam railroad crossings and selections from the question box. At the second meeting the topics were training of transportation employees, power-saving devices, track welding and grinding and selections from the question box.

The entertainment features of the convention for the attendants-at-large were a get-together and get-acquainted ball at the Hotel Galvez, given by the Supply Section of the association, and a banquet joviation, given by the association. A special committee of Galveston ladies entertained the visiting ladies, fifty in number, with luncheon, dinner, automobile ride and boat ride.

A. Hardgrave of Dallas was elected as president to serve for the coming year. With him on the roster of new officers are the following:

First vice-president, C. E. Calder, Dallas; second vice-president, Alba H. Warren, El Paso; third vice-president, S. R. Bertron, Jr., Houston; secretary, H. S. Cooper, Dallas; treasurer, J. B. Walker, Dallas.

Executive Committee—A. Hardgrave, C. E. Calder, Alba H. Warren, S. R. Bertron, Jr., Burr Martin, W. B. Tuttle, G. H. Clifford, A. F. Townsend, C. H. Courser, Howard Smith, H. C. Morris, Charles W. Davis and F. D. Murphy.

Advisory Committee—H. O. Clarke, K. L. Simons, F. L. Weisser, H. E. Danner, B. F. Cherry, J. C. Kennedy, W. E. Wood, James P. Griffin, Theodore Dienst, W. A. Darter, V. W. Berry, John W. Carpenter, H. E. Borton, P. A. Rogers, P. W. Campbell, H. F. Cameron, L. L. Stephenson, A. Patterson, H. B. Hearn, Nelson H. Brown, R. W. Van Valkenburgh, H. E. Hobson, F. G. Kune, Charles A. Newning and Mac F. Sterett.

Finance Committee—J. E. Van Horn, R. G. Soper and C. H. Dickey.

Pulverized Fuel for Peak Loads*

The Author Shows How the Burning of Coal in This Form Is Economical in the Railway Power Plant

BY O. M. RAU

Power Specialist Philadelphia Rapid Transit Company

PULVERIZED fuel has aroused renewed interest due to the increasing cost of coal and to some extent the irregular quality of the coal. Ordinary methods of firing and any individual designs of grates or mechanical stoker allow but slight variation in fuel without impairing efficiency or capacity. These conditions have, therefore, called attention to a method of firing which is less dependent on the quality of fuel obtainable and without attendant decrease of efficiency.

The Philadelphia Rapid Transit Company in its power studies has found that by purchasing high-load-factor power and generating only peak-load power the lowest combined costs result. Traction companies should study power generation carefully before adding to present facilities or constructing new plants. Power costs are only about 10 per cent of the operating expenses of an electrical transportation system as against 90 per cent of an electrical power company and are, therefore, rarely given the consideration accorded by the latter.

Comparing power production for a traction load only with power production for a combined load of traction and electric light and power (less the peaks of the former) shows up to the disadvantage of producing for traction load alone.

In the interest of conserving coal, aside from any monetary saving, this point should be considered, for with few exceptions railway power plants operate at not less than 2½ lb. of coal per kilowatt-hour compared with 1½ lb. per kilowatt-hour for large central stations, particularly when they carry a combined traction and power load. This leads to the logical conclusion, if the power companies will recognize the fact, that most traction power will ultimately be purchased from large stations, leaving existing railway plants to be used as peak-load stations and as standby capacity.

The Philadelphia Rapid Transit Company has applied this principle and has found that even then a large amount of coal is used in banking and in addition there is a large time element in getting the plant on the lines. This naturally suggested a change in firing and oil was suggested as a fuel, but the present cost of oil prohibits it from consideration and attention was turned to the possibilities of pulverized fuel. This has the advantages of oil and is independent of a selected grade of coal.

Powdered coal has been successfully applied for many years in various industries, but prior to the high price of coal has not been considered much by utilities. It is doubtful if it can be burned any more efficiently than high-grade bituminous. With efficient equipment and under pre-war conditions there were no particular advantages to offset the additional cost of pulverizing the coal, but with the increasing cost and variable quality of coal public utilities must consider it.

Particular attention is called to the distinction between pulverized fuel and powdered coal. The latter has no interest to steam power producers, as such fuel is recognized at present, its successful application in the plants now using pulverized coal depending on the highest quality of coal being powdered.

Broadly speaking, the use of pulverized coal is a solution of the coal problem for public utilities, particularly traction. The work now in progress by the Rapid Transit Company consists of equipping its Mount Vernon power plant, which has a rated capacity of 10,000 kw., with a complete milling and burning installation.¹ This plant is a peak-load plant. It has at present 20 hand-fired B. & W. boilers of 375 hp. each, five 1,500-kw., with a complete milling and burning installation,¹ engines, and two 800-kw. direct-current Curtis exhaust steam turbines. The plant now uses anthracite coal, which in former times cost \$3 per ton delivered. The cost per kilowatt-hour, considering transmission and conversion losses and investment and substation, made the cost from this plant compare favorably with power from any other source. With increasing cost of material and labor conditions this was changed. Automatic stokers were contemplated, but, as coal increased, even this was not a solution. It then became evident that the most efficient use of the plant would be for peak-load service three to four hours morning and evening. Pulverized fuel seemed to be the solution.

The installation will consist of a 6-ton per hour milling plant installed in duplicate, a weighing and conveying system and a furnace equipment of feeders and burners. "River coal," culm or anthracite may be burned, and of the first the company controls a supply of 2,000,000 tons. When river coal is used it will be dried in a 100-ton bin, then conveyed to dry coal bins above the pulverizers, thence by screw feeders to two high side Raymond mills, capable of reducing 3 tons of dried coal per hour to powder of a fineness of 95 per cent through a 150 mesh sieve. These mills are of the air separation type and convey fuel as fast as pulverized to the elevated fuel bins, from which it feeds by gravity to the conveying tank. This tank is on a scale and equipped with a compressed air conveying system by which it is conveyed in any quantity up to the capacity of the tank to the boiler hoppers.

Feeding and burning equipment consists of two screw feeders attached to the bottom of each boiler hopper. From the feeder it is conveyed into the burners, where it mixes with the required amount of primary air to carry it into the mixing chamber, where the necessary auxiliary air for proper combustion is added as the fuel enters the furnace.

This installation will allow of the use of any of the cheaper grades of coal. Labor cost will be below that required for automatic stokers and the maintenance expense of the burning equipment low. The principal items will be in the milling plant, which, however, should be charged directly to fuel. The installation will not be complete until in July, but the total savings which will be effected by it are estimated to be sufficient to pay for the improvements within two years.

Cost of fuel delivered in the boiler room.....	\$3.50 per ton
Cost during 1919 under present conditions.....	\$5.40 per ton
Saving of fuel during banking periods.....	3,000 tons per year
Variation of steam pressure during a twenty-four-hour shutdown using pulverized fuel, 5 per cent.	

Pending the completion of this installation, when accurate data as to performance will be available, it is well for traction companies requiring additional power facilities to consider carefully the purchase of the high-load-factor block of their power and utilize existing facilities for peak service, using pulverized fuel.

*Abstract of paper presented before the Pennsylvania Street Railway Association, Harrisburg, Pa., May 27-28.

¹Description of the method to be employed in this plant was given in the ELECTRIC RAILWAY JOURNAL, issue of Feb. 14, 1920, page 343.

The Library as a Business Asset*

A Clearing House for Transportation Data Will Reduce Memory Strain and Save Money by Preventing Duplication of Effort

BY H. B. MEGARGEE

Secretary to the Vice-President American Railways Company, Philadelphia

TO MOST of us the word "library" immediately calls to mind a place of many shelves, a storehouse of books in overwhelming numbers. We hesitate to call the modest array of books which constitute the source of printed information for the average member of this association by such name. Here we have each department head collecting in his office a more or less homogeneous mass of pamphlets, periodicals and other matter bearing on his particular problems.

Modern business of all kinds grows more and more highly specialized, and it is only by keeping in touch with the most advanced thought in the industry that an executive may hope to produce the best results. By constantly following up the literature which affects his business, whether it be manufacturing airplanes or selling transportation, he avoids the mistakes and takes advantage of the ideas of others.

Edward Hungerford, in a recent publication, describes how the head of a public library in a big steel-making community in western Pennsylvania met the chief chemist of a great steel concern one day a short time ago. The librarian is fairly expert himself in the theory of making steel and to him the chemist confided the details of an important new experiment that he had just finished.

"It must have cost the firm something to put through that experiment," ventured the librarian.

"A pretty penny," was the prompt reply. "In fairly exact figures, something in excess of \$10,000."

The librarian laughed. "The entire experiment was made four years ago and with practically the same results," said he. "The whole thing down to the fine details is on the shelves of our library."

Public utilities maintain libraries for two general purposes—welfare of employees and executive information. The former usually are connected with recreation rooms for the men, where they may go and read for profit or pleasure in the evening or while waiting for their runs. But it is with the latter that we are concerned in this instance.

The ideal arrangement is to have a central organization in charge of a librarian, whose duty it is to collect information on all matters pertaining to the various branches of the business; to mobilize data so that they may be readily available for reference and research, and in addition to see that all articles of interest are brought to the attention of department heads. The librarian should be an expert in his subject and the material he is handling, who will forecast areas of interest in the industry and be prepared beforehand for inquiry from the executive.

One large traction company in the state has in connection with its executive offices a library which is primarily a bureau of current intelligence. Here a librarian with assistants and clerks daily makes clippings from some forty newspapers. Newspaper descriptions of valuable reports are followed up and copies obtained, if possible. In all cases an effort is made to get at the

original source of the matter described. Periodicals received—I believe there are sixty or more of them—are scanned and articles of special interest are listed on a route sheet which is attached to the magazine, so that it reaches the members of the organization interested. Special services are performed, such as making photo-stats of copies of data not otherwise obtainable.

MAKE A CARD CATALOG LIBRARY

Such a system is desirable, and, to a great corporation, imperative, but for most of us it is not possible and we content ourselves with the more or less limited amount of information which comes to our personal attention. But even this may be collected into a library of incalculable value if we systematically accumulate matter in our own special field. You read an article dealing with a certain subject and are impressed with its excellence; months later this very subject comes up and it would be highly advantageous to refer to the article. You cannot remember in just what periodical it appeared—was it *Aera*, the *ELECTRIC RAILWAY JOURNAL*, or some other technical journal? You search through your files and after much wasted time you may locate it or give up the search, with a vague regret that your memory is not better. Had you not depended on the overworked memory the time would have been saved and the worry spared.

And it is very easy to devise an accurate substitute—a card index topically arranged. The only plant required is the index and a filing cabinet. Whenever you happen upon a subject which seems to have possibilities make a note of it and have your stenographer make up a subject filing card. The card should indicate the subject heading, a brief description of the field covered and a suitable reference to the periodical. In this way you will accumulate a ready reference library which will be most useful and accessible.

In addition to this, you will have your own shelves of books, and it is not possible to go into a discussion of their contents, as each individual's problem differs. There should be, however, in every street railway office copies of the proceedings of the American Association, public utilities reports annotated, pamphlet laws of the states, files of *Aera* and the *ELECTRIC RAILWAY JOURNAL*, department reports of Pennsylvania and the monthly bulletins of the United States Department of Labor.

Having established your own special library, which is necessarily very limited, you will have occasion from time to time to examine other areas. The average public library will not supply the information desired, and even if it does, it takes work to "dig it out." Some few cities have established branch libraries to render such service, but they are rare. A pioneer in the field is Mr. Dana of Newark. Desiring to render the utmost possible service and finding that the business men did not come to his library, which was somewhat out of the way, he reached out and placed a strictly business branch in the heart of the business district. Here is to be found a skilled staff for finding or abstracting material. Men engaged in business call for chemical formulæ, the transport facilities in foreign countries, the history and standing of corporations, farming conditions in Western states and a thousand such queries, most of which the library is equipped to answer.

But Newark is the exception, and the need for some clearing house of special information has been so keenly felt that it has resulted in the formation of the Special Libraries Association. In most large cities we have

*Abstract of paper presented before the Pennsylvania Street Railway Association, Harrisburg, Pa., May 27-28.

today branches of the national association, having access to the majority of special libraries in the district. The object is to bring together all these sources into one reservoir, and this is done by indexing the subjects covered by the special libraries of the members, so that if a member desires information outside of the sphere of his activities he can find it in the library of some other who makes a specialty of that particular thing, and at the same time he stands ready to perform similar service when called upon.

With such an organization standing ready to supply information on any subject and our own special library for our own particular problems we should be able to meet any contingency which may arise, and, as there is nothing new under the sun, there should be a key to every question in one or the other of them.

A Reasonable Rate of Return on Investments*

Under Present Conditions of Individual Extravagance, Restricted Production and Currency Inflation Not Less Than 10 Per Cent Is a Reasonable Return.

BY C. L. S. TINGLEY

Vice-President American Railways Company, Philadelphia.

PRESENTED arguments tend to show that 9 per cent or 10 per cent should be the minimum equitable rate of return on investments in public utilities. In answering the question what is a "fair return" to be allowed, the commissions and courts have frequently gone astray. They have either found the answer in a negative, for example, holding that a 6 per cent return is not confiscatory, or else have traditionally failed to recognize the fact that capital is a commodity. The New York Public Service Commission, First District, recognized this principle in the Queensboro Gas & Electric case, June 23, 1911, when it said:

Various standards have been suggested for determining the fair rate of return. The one which in our opinion is properly applicable is that the rate should be such that investors would be induced to provide the funds with which to construct and extend a utility. If the State were to fix a rate below this standard capital could not be secured. If investment were made before the State acted the original capital might be forced to remain, but additional capital could not be secured unless necessary to protect the first outlay.

It seems necessary to start from elementary principles, mostly well known, but which should not be forgotten. All capital is the product of work—physical, mental, or financial—and may be represented either by tangible property or that medium of exchange which we call money, either in the form of currency in our pockets or credit in the bank. When primitive man acquired more meat and skins than necessary he became the first capitalist; when he traded his surplus to some other caveman for a stone hatchet he became the first merchant.

But barter of commodities is inconvenient. The Greeks used oxen as currency; the Abyssinians used salt; shells were used in India; dried cods in Newfoundland, and tobacco in old Virginia. Commodities such as these could not be divided without loss, and a man seeking to exchange a whole ox for salt was forced to buy more than he needed. From this came the demand for some universal medium of exchange.

From the foregoing it is evident that that which gives value to money is labor or its product and the real value of a coin is that for which it can be exchanged. Adam Smith in his "Wealth of Nations" says:

Thus, if a guinea be the weekly pension of a particular person, he can in the course of the week purchase with it a certain quantity of sustenance, conveniences and amusements. In proportion as the quantity is great or small, so are his real riches—his real weekly revenue. . . . A guinea may be considered a bill for a certain quantity of necessaries and conveniences upon all the tradesmen in the neighborhood. The revenue of the person to whom it is paid does not so properly consist in the piece of gold as in what he can get for it and what he can exchange it for.

The potent cause of the present price of money to the private borrower is the present extent of tax-free governmental securities. More than \$34,500,000,000 in securities now outstanding are exempt from normal income taxes. About \$16,700,000,000 are exempt from all taxes except estate and inheritance; about \$14,000,000,000 of these are municipal bonds, \$342,000,000 farm loans and \$2,350,000,000 liberty loan bonds. If held in proper proportions, an individual can hold \$160,000 of liberty and victory loans exempt from all taxation. Now the entire capital in street railways in the United States in 1917 was \$5,532,000,000. Compare this with the huge sum of \$34,000,000,000 removed from the realms of private enterprise. In addition last year the government collected in income, excess profits and surtaxes \$6,000,000,000 more. So that \$40,000,000,000 was withdrawn from the market for productive enterprise.

Banks are closing their doors to loans to public utilities. One banker states:

Where under ordinary conditions expansion could be financed out of working capital, today it is in many cases impossible without asking the bank to become practically a partner in the business.

A further factor in increasing the cost of money is our faulty system of taxation. On this subject attention is called to recent pamphlet by Otto H. Kahn on "Two Years of Faulty Taxation," which shows the manner in which present taxation with its extremely high rates upon large incomes forces large investors into tax-free securities or into demanding higher rates of return. This is further corroborated by L. C. Leffingwell, Assistant Secretary of the Treasury, who stated in a recent address that

the Treasury always asserted that the excess profits tax discourages initiative and enterprise, rewards overcapitalization and discourages conservatism in capitalization. . . . and adds to the cost of living. . . . Excessive surtaxes do not produce revenue, but drive capital into the billions of exempt securities.

You can fix the price of capital, but you cannot make it work for that price. You can fix the price of labor, but you cannot make it work for that price. By holding down rates for the shippers, the railroads have been kept so poor that neither capital nor labor will work for them. The shipper has cheap rates, but he cannot get transportation.

Money is a commodity and those who desire it must pay for it, as well as for labor and materials. To show this several standard investment bonds of 1914 are listed, these having sold in 1914 to yield an average of 4.2 per cent. At the present time these same bonds are selling on an average of 5.47 per cent. Thus if 7 per cent, the favorite rate of return of most of the commissions, was a fair return in 1914, 9 per cent should be a fair return today. Seven per cent represents more nearly the open market price for money, and, in addition to citing the recent large ten-year loan of the Pennsylvania Railroad Company at a cost of 7½ per cent to the

*Abstract of paper presented before the Pennsylvania Street Railway Association, Harrisburg, Pa., May 27-28.

company, a large number of bonds are listed which can be bought in the open market to yield approximately 7 per cent.

This condition leaves the street railways so that from January 1 to April 16, 1920, for example, forty-four issues were quoted with a mean average of 49.1 per cent. A study of all street railway bonds, as well as a first-hand knowledge on the part of the writer of those of his own company, leads to the conclusion that at the present time an electric railway could not place a considerable amount at a higher price to the public than 80 per cent. Deducting banker's commission and other expense—say 5 per cent—the company would net 75 per cent, which leaves the company in this shape:

Cost of property.....	\$1,000,000
Bond issue.....	800,000
Bond yield at 75.....	600,000
Capital stock to supply the remainder.....	400,000
Total capitalization.....	1,200,000
Ten per cent return on \$1,000,000.....	100,000
Bond interest at 7 per cent.....	56,000
Amortization of \$200,000 discount (thirty years).....	6,666
Total fixed charge.....	62,666
Return on stock.....	37,334
Rate of return on stock.....	9 3/4%

But the bonds cannot be sold unless they show approximately double the interest charges, which in this case would require \$112,000.

There is another factor in the present high cost of money for public utilities. This is the comparatively modern notion that it is a fraud on the public to use surplus earnings for capital account. Before 1906 it was considered good practice, as it still is in other business, to put back into property a portion of the net earnings or else provide a sinking fund for debt reduction. Then the doctrine was enunciated that a public utility should earn only a fair return upon its value, and that fair return was generally construed to be the legal rate of interest or a little more. The logical result is that the margin of safety has shrunk to the vanishing point. Low rate bonds have been issued to increase rate of return on stock, but, there being no margin for stock, little was issued, a greater amount of bonds being the result. Thus fixed charges increased and the financial structure was distorted. The owners of the property no longer have a substantial interest therein. It is merely the result of another futile effort to override economic law by statute law.

The capital structure should be properly proportioned, the borrowed money should be not more than 60 per cent of the total cost, and the allowed rate of return should provide an attractive dividend and a sinking fund of at least one dollar for every two paid in dividends. Comparing with the former illustration on such a basis:

Interest on bonds and discount amortization.....	\$62,666
Eight per cent on \$400,000 stock.....	32,000
One dollar margin per two dollar dividend.....	16,000
Total return.....	110,666

This more nearly equals the bond sales requirement of \$112,000.

While not exactly under the title, perhaps, there are some corollary causes of the high cost of money which should be mentioned under the following heads:

First, the increase in expenditure for public purposes.

Second, the wild orgy of public and private extravagance.

Third, the curtailment of production by labor.

Fourth, the unsound fiscal policy which has almost doubled our currency.

Until we begin, both as individuals and governmental agencies, to practice old fashioned rigid economy, increase production and return to a sound fiscal policy, there is no apparent hope of a return of a money price to a point where less than 10 per cent will produce funds necessary to develop and maintain the electric railway industry.

Bus Fares Too Low for Profit on Pacific Electric System

IN 1917 the Pacific Electric Railway bought out the private motor bus line with which it had been competing for two years between San Bernardino, Highland and Patton. The bus route and trolley line operated between competitive terminal points did not each serve the same intermediate territory, but outside of the terminals there was very little traffic as the country was very sparsely settled. When the Pacific Electric took over the bus route the bus schedules were so arranged that they did not conflict with the trolley schedules, but provided alternate service on the two routes, with the result that the trolley car mileage was very materially reduced.

For the bus service four cars were required. These were of special construction. The power plant was a 40-hp. Case engine, which was mounted on a tractor truck with the passenger body as a trailer. The power unit was specially designed and cut off immediately back of the front seat and made for a greatly shortened chassis. Pneumatic tires were used on the trailer and on the front wheels of the engine tractor, while solid tires were used on the rear wheels of the engine tractor truck. A picture of this bus will be found in the ELECTRIC RAILWAY JOURNAL for Sept. 29, 1917, page 589.

Bus operators are paid the same scale of wages as one-man car operators on the electric lines, and fares are the same as on the trolleys. The rates per mile are: One-way fare, 3 cents per mile; round trip, 2.5 cents; ten-ride individual ticket with a ten-day limit, 2 cents; thirty-ride family ticket with ninety-day limit, 1.5 cents, and sixty-ride individual ticket with forty-day limit, 1 cent.

This bus line, the only one operated by the Pacific Electric Railway, has not been a financial success. The principal reason is that the fares are too low. The company concludes that auto bus service cannot be operated with commutation rates at 2 cents per mile or less and says that it is a mistake for any corporation to put in such fares on a bus route. Another reason put forth is that the type of bus is not as satisfactory as some others.

Super-Power Investigation Appropriation

A COMMITTEE of Engineering Council made up of W. S. Murray, Prof. L. P. Breckenridge, Prof. D. C. Jackson and M. O. Leighton appeared before the House committee on appropriations in Washington recently in support of the appropriation of \$250,000 asked by the Secretary of the Interior for investigating the possibilities of the Boston-Washington super-power project. The work would be undertaken by the United States Geological Survey and would cover water, steam, electric and oil power production and distribution in relation to the industries within the territory surveyed. On May 11 the House passed the sundry civil bill carrying an item of \$125,000 for this purpose.

Iowa Railway Men in Conference

Two-Day Session of State Association Devoted to Discussion of Publicity, Labor Relations, Safety Cars and Legislative Matters

DISCUSSIONS on the proposed formation of an Iowa committee on public utility information, on the design and application of safety cars and on labor relations and legislative matters occupied the attention of the sixteenth annual convention of the Iowa Electric Railway Association at the Fontenelle Hotel, Omaha, May 20 and 21. This was the managers' meeting of the association, the mid-year meeting in the fall being arranged primarily for the operating men. The attendance at this Omaha meeting was therefore rather small and the three sessions were devoted to informal discussions of various policy matters. While there were no papers presented and no prepared discussions, certain timely topics had been scheduled for consideration and the interchange of thought and experience proved of great value to those present. The meetings were presided over by the vice-president, F. J. Hanlon, Mason City, Iowa, the president, J. P. Ingle, having resigned because of moving without the state during the year.

Almost the entire morning session of May 20 was devoted to the consideration of whether the association should organize an Iowa committee for disseminating public utility information, similar to the pioneer Illinois committee, and how extensive a plan of publicity should be undertaken. This subject was brought up through the report of H. E. Weeks, Davenport, as chairman of a committee to which had been assigned the task of looking into the advisability of extending the Illinois plan to Iowa. This committee reported that it seemed desirable that some publicity work should be undertaken by the Iowa association sooner or later, but that it did not seem feasible now, mainly on account of the limited resources of the association. In the discussion which followed it developed that several of the managers were doubtful as to the value of an organized publicity effort in behalf of the utilities. R. A. Leussler, Omaha, Neb., said that the matter had been considered by the Nebraska utilities and they had decided not to go into the proposition. He was of the opinion that a centralized bureau for circulating publicity matter was open to the accusation that it was for the purpose of twisting the public mind rather than setting it straight, and that the matter emanating from such a bureau was therefore subject to attack from a vicious newspaper and consequent failure. Mr. Leussler thought that the objection to this plan could be overcome by resorting to a very loose organization of the men handling publicity matters on the various railway properties, whereby they would keep in touch with one another, but issue all publicity matter in the name of the individual companies.

Several other railway men argued that the matter put out by a centralized bureau was very likely to be taken by the public or by the newspaper editors as undesirable propaganda, while O. H. Simonds, Dubuque; Rex H. Fowler, assistant secretary of the association, and others endeavored to explain how the publicity matter sent out could be made of such character that it would not be open to the criticism named. They cited the great success attending the effort of the Illinois

committee, which has been free from any propaganda accusation. Various substitutes for the plan were suggested, including one whereby the individual companies would make as much use as possible of the matter emanating from the publicity bureau of the American Electric Railway Association and one proposed by C. D. Cass, Waterloo, for having publicity material worked up by the Iowa association, but distributed over the names of the individual companies. This last suggestion gained favorable comment from a number of the delegates, but the whole matter was finally referred to a committee which reported back the following day, recommending that the matter be held in abeyance until it could be taken up by the Iowa Electric Light Association, and that the board of directors of the railway association be authorized to take whatever steps seemed desirable in conjunction with the electric light and gas associations. The convention approved this recommendation.

SAFETY CAR DESIGN AND APPLICATION

T. C. Roderick, Davenport; Nic LeGrand, Safety Car Devices & Equipment Company, St. Louis, Mo.; C. E. Fahrney, Ottumwa; Mr. Hanlon, Mr. Leussler, Mr. Cass and others contributed to a good discussion of the safety car, which brought to light the fact that several of the Iowa managers are very strongly in favor of a double-door opening, or a separate entrance and exit for safety cars. Mr. Hanlon said he had one line equipped with safety cars built with double openings which made a schedule speed of 11 m.p.h., and that he had found it impossible to maintain this schedule speed with safety cars having the single-door openings. Some one accused Mr. Hanlon of favoring a 60-in. double-door opening so he could personally get on and off the cars, he being a near 300-pounder, but he retorted with the information that his cars had two 25-in. door openings. While it was admitted by the proponents of the single opening that a separate entrance and exit would decrease the standing time slightly, they argued that the double doors resulted in a longer platform and fewer seats and made it impossible for the operator to police the car as well as he could with the single-file loading and unloading. But these points did not seem to lessen the enthusiasm of several of the railway men for the double-door car.

Another interesting point brought out by one of the speakers was a plan for decreasing the shop time and the expense of reconstructing the safety car vestibule when damaged in collision by making use of a detachable vestibule. This would be so arranged that a damaged vestibule could be readily removed and a new one, all made up, set in its place and simply fastened by bolting. It was understood that some of the manufacturers are about to inaugurate this construction improvement, for it is undesirable to strengthen the vestibule construction materially because that would tend in collisions to carry the blow to the more important body structure, which now usually escapes damage.

Mr. Roderick expressed the opinion that safety cars could be operated on all the lines in Davenport, Iowa, and Rock Island and Moline, Ill., with resulting better returns, and he made the further comment that there are few lines on which they could not be satisfactorily operated. He said it was the plan of the Tri-City company to use double-truck cars for extras during the rush-hour service after safety cars had been installed, but that in following out this plan the company would sell its best double-truck cars, since they would bring the most money, and retain the older, less valuable cars for its own use.

In his talk Mr. LeGrand endeavored to answer the criticism that safety cars are flimsily constructed by pointing out that the safety cars built today are much stronger and somewhat heavier than the original designs. He spoke of the importance of a careful publicity campaign as a preparatory step to the installation of safety cars and expressed the belief that the best way to go about this problem was to go direct to the editors of the papers and convince them that the small cars will result in a real improvement of service. He said that safety cars are not applicable everywhere, but that there is not a company that does not have some lines where safety cars should be used. He admonished the managers not to install them, however, on a car for car basis, but on a plan which would insure a decided increase in frequency of service. Mr. Weeks told how he had taken the Mayors of Davenport, Rock Island and Moline to Terre Haute to see the safety cars in operation and how these magistrates had been completely sold on their desirability for the Tri-City lines. Mr. Fahrney told of the installation of seventeen safety cars in Ottumwa to replace fourteen two-man cars, this providing a 100 per cent installation for the city. These seventeen cars give a ten-minute service on all lines except one. None of the trainmen lost their positions because of the installation of safety cars, the natural turnover having taken care of the shrinkage. A new wage scale of 54, 56 and 58 cents an hour became effective with the safety car installation, and Mr. Fahrney reported that the men now liked the cars.

A. Jenks, General Electric Company, spoke of the tendency of big companies to put safety cars on some little stub-end line where few people saw them and where they had little opportunity to demonstrate their real worth. He said that the best way to sell the safety cars to the public is to put them on the best line where there will be an opportunity for them to show what improved service will do.

W. D. Brooks, Westinghouse Electric & Manufacturing Company, urged the railway operators to spend more money in snow-fighting equipment and in keeping the tracks clear and therefore lessen damage to motor equipment. He thought it was more profitable to spend money in snow fighting than in the maintenance of crippled equipment, for the former plan made for continuity of full service, while the latter might cause service reduction and delay.

Mr. Cass gave some personal experiences in explaining the grief through which his company has had to go in the plan adopted about four years ago to convert the cars in Waterloo for one-man operation. Bad weather, heavy increases in traffic, hand brakes, manually operated doors, absence of safety devices contributed to the difficulties encountered.

A discussion of service-at-cost franchises was included in the program, but it developed that there were

not many enthusiasts for this type of franchise in Iowa. Those who were working in this direction to solve their local situation were doing so on the theory that while it was not particularly desirable, it seemed to be the best arrangement that could be secured. Greater interest was manifest for the fare situation throughout the State. As Iowa has no public utilities commission, the matter of rates is in the hands of the local Councils, and there is question as to whether a municipality can force a company to continue service on a 5-cent fare when this is specified in the franchise. The Supreme Court of the State reached a decision in connection with Ottumwa that the municipality has authority in this connection, but it consented to a rehearing of the case. The contention of the company in this case has been that the municipality does not have the right to contract as to the rate of fare unless this right is specifically given by the Legislature. The court is expected to reach a decision on the rehearing about June 20. This has a vital bearing on the general situation in Iowa and is awaited with great interest.

Mr. Simonds was requested to tell the convention about the recent Circuit Court decision which authorized a higher rate of fare in Dubuque. He pointed out that unfortunately this was an agreed-upon decree and could not be taken as a precedent for other Iowa companies. The full details of this decree were published in the May 22 issue of the *ELECTRIC RAILWAY JOURNAL*.

Mr. Cass said that the franchise which his company has in Waterloo is the only one in Iowa which provides for a change in the rate of fare. A fixed rate is the general provision of Iowa franchises, and up to the present no court has said that this was not a contract and hence the rate of fare could be changed. He said that he believed the whole subject of street railway rates was purely an economic matter and that it was coming to be so considered by most cities. He referred to the good feeling in this connection which seemed to prevail in the hearings now taking place before the city Council at Waterloo. While the franchise there provides for an increased fare, 5 cents is still the prevailing rate. This came about primarily because just one week after the franchise became effective in 1918 the government took over the Waterloo, Cedar Falls & Northern Railway and did not seem to have much concern about the rate of fare.

KEEP CLEAR OF THE CLOSED SHOP

At the final session of the association Alvin Johnson, an Omaha attorney, made a very able plea for the principle of the open shop. He said that the real significance of the labor movement, the real issue, is whether or not a fraction of the people organized into groups, controlled by a handful of men, shall be permitted to control American industry and even dominate American government. He expressed the belief that the people are no longer sympathetic with the acts of unionism in promoting the closed shop principle. In proof of this he quoted Henry Sterling, chairman of the legislative committee of the American Federation of Labor, appearing before a Senate sub-committee to oppose the Poindexter anti-strike bill for railroads, as saying: "Did it ever occur to you that the public does not give a d— for the man who works? The public is the one great sinner in the industrial field. It makes all the bad conditions. It is positively criminal in its indifference. The only party considered in the conflict is this so-called innocent third party, while as soon as we

who work take some action for our own welfare, they only want to put us in jail."

Mr. Johnson then emphasized the duty of employers to take definite steps to see that all employees understand the policies and principles of the company; that they have the point of view of the employer on vital problems and know something about his obligations, and that they are advised as to the facts to counteract the destructive propaganda which is being circulated so freely among laboring people. There is too much waiting on the part of the employers for some national movement to correct the situation, but the problem is one with which every employer should concern himself actively. The speaker referred to the sweep of the open shop principle in the South and West and commented that Hoover and Poindexter are the only Presidential candidates who have come out definitely for the open shop. He explained at some length how the open shop is guaranteed by the Constitution and characterized the closed shop as industrial slavery and the open shop as industrial freedom. He spoke of how the American Federation of Labor has carried the closed shop principle to public office through its resolution directing all union men not to give their political support to any man unless he carried a union card or was avowedly favorable to unionism. Mr. Johnson asserted that it was the duty of every American to discourage the closed shop and do all in his power against it, and not only to believe in the open shop but to practice it. He said that whenever a railway manager enters into a contract with a union, even though that contract may contain an open shop clause, he is really acknowledging the closed shop, because that is what the union stands for, that is one of its major planks.

Mr. Johnson said that every employer should make a survey once in a while to determine whether there were conditions unfavorable to labor and then correct them voluntarily, thus anticipating the business agent and making the union unnecessary to the best interests of the employee. Mr. Cass further emphasized this thought, in the discussion which followed the talk by Mr. Johnson, by urging the managers not to overlook the spirit of fair play in their dealings with workmen. He said it was the absence of this spirit which had been largely responsible for the development of the American Federation of Labor and that it would be only that which would undo the radical tendencies of unionism. He said organizing and collective bargaining of the men cannot be prevented unless a substitute is provided whereby labor will know it is receiving fair play.

CLOSING BUSINESS OF THE ASSOCIATION

The next meeting of the association, it was decided, will be at Omaha, Sept. 16 and 17. This meeting will be arranged primarily for the heads of the departments or operating men, and the managers will "not be urged" to attend. John Sutherland, Davenport, chairman of the program committee for this meeting, made a report which indicated that the meeting will be an exceedingly valuable and enjoyable one to the operating men.

Mr. Fahrney and Mr. Weeks were nominated for directors of the association for a term of three years by the nominating committee, of which T. C. Roderick, Davenport, was chairman. The convention approved a motion electing them. Later at a meeting of the board of directors the following officers were chosen: President, H. E. Weeks, vice-president Tri-City Railway & Light Company, Davenport, Iowa; vice-president, R. A.

Leussler, general manager Omaha & Council Bluffs Street Railway, Omaha, Neb.; secretary-treasurer, C. E. Fahrney, general manager Ottumwa (Iowa) Railway & Light Company; assistant secretary, Rex H. Fowler, 510 Crocker Building, Des Moines, Iowa.

The delegates to the convention were entertained Thursday evening with vaudeville at the Orpheum Theater. Friday noon a special car took them to Manawa Lake, a few miles from Council Bluffs, where they were the guests of R. A. Leussler at a fine dinner, followed by a boat ride and other amusements in the park maintained by the Omaha & Council Bluffs Street Railway. A brief visit en route from the lake was paid the company's automatic substation in Council Bluffs.

Data regarding this substation were printed in the issue of the ELECTRIC RAILWAY JOURNAL for Jan. 4, 1919, page 54. It was then under construction.

Changes in Living Costs

THE following tables show the cost of living in several industrial centers in the United States in December, 1919, as compared to the same month in 1918 and 1917. The information contained in these tables was prepared and issued by the United States

PERCENTAGE OF TOTAL EXPENDITURES DECEMBER, 1919

	Food	Clothing Male	Clothing Female	Total Clothing	Housing	Fuel and Light	Furniture and furnishings	Miscellaneous	Total
Atlanta, Ga.....	38.5	.....	.....	18.6	10.4	5.6	5.6	21.4	.....
Birmingham, Ala....	38.1	.....	.....	16.5	12.2	4.6	5.3	23.3	.....
Cincinnati, Ohio.....	40.6	.....	.....	15.2	14.4	4.1	5.2	20.3	.....
Denver, Col.....	38.3	.....	.....	16.2	12.0	5.7	5.5	22.4	.....
Indianapolis, Ind.....	37.0	.....	.....	15.8	13.1	5.9	5.9	22.2	.....
Kansas City, Mo.....	38.7	.....	.....	15.2	13.6	5.7	4.9	21.8	.....
Memphis, Tenn.....	36.2	.....	.....	16.3	13.5	5.1	4.5	24.4	.....
Minneapolis, Minn....	35.4	.....	.....	15.5	16.8	6.8	4.8	20.5	.....
New Orleans, La.....	42.6	.....	.....	15.0	12.0	4.8	3.9	21.8	.....
Pittsburgh, Pa.....	40.2	.....	.....	17.8	14.5	3.2	5.4	18.9	.....
Richmond, Va.....	41.6	.....	.....	15.9	10.5	5.6	4.8	21.5	.....
St. Louis, Mo.....	38.5	.....	.....	15.0	13.4	4.9	5.6	22.6	.....
Scranton, Pa.....	42.6	.....	.....	18.4	10.9	4.6	4.9	18.5	.....

PERCENTAGE INCREASE DECEMBER, 1919, OVER DECEMBER, 1917

	Food	Clothing Male	Clothing Female	Total Clothing	Housing	Fuel and Light	Furniture and furnishings	Miscellaneous	Total
Atlanta, Ga.....	27.9	88.0	56.7	66.9	32.6	30.8	49.9	31.7	37.9
Birmingham, Ala....	26.5	70.6	49.2	57.6	34.9	39.8	45.1	26.8	34.3
Cincinnati, Ohio.....	22.9	85.6	82.8	84.2	12.8	11.0	51.1	40.3	35.2
Denver, Col.....	26.0	87.2	79.3	82.1	33.5	19.6	46.3	32.3	38.2
Indianapolis, Ind.....	28.2	75.3	72.7	75.8	11.6	27.3	48.4	38.1	36.5
Kansas City, Mo.....	24.5	79.0	94.3	89.9	26.0	27.5	61.8	31.4	38.2
Memphis, Tenn.....	28.4	64.6	66.9	66.2	23.1	34.1	53.1	28.3	35.2
Minneapolis, Minn....	34.1	66.6	67.4	8.0	22.4	45.6	25.4	25.4	32.7
New Orleans, La.....	21.1	91.8	77.1	83.2	10.8	24.7	57.6	35.1	33.9
Pittsburgh, Pa.....	25.1	84.1	82.4	82.8	15.5	9.8	63.1	28.2	36.2
Richmond, Va.....	23.1	85.0	73.6	78.6	9.8	18.7	55.9	23.9	32.0
St. Louis, Mo.....	26.2	64.6	89.7	78.1	16.8	8.2	52.9	30.3	34.2
Scranton, Pa.....	26.9	69.1	86.8	82.1	2.4	31.5	48.9	34.7	37.1

PERCENTAGE INCREASE DECEMBER, 1918, OVER DECEMBER, 1917

	Food	Clothing Male	Clothing Female	Total Clothing	Housing	Fuel and Light	Furniture and furnishings	Miscellaneous	Total
Atlanta, Ga.....	18.9	43.3	22.3	29.0	14.0	17.0	24.9	14.8	19.7
Birmingham, Ala....	17.7	30.7	19.3	23.8	8.1	22.8	19.4	13.8	17.0
Cincinnati, Ohio.....	15.3	41.7	28.8	33.8	0.2	10.0	25.7	20.4	17.3
Denver, Col.....	20.0	46.3	36.9	40.1	12.8	8.1	22.6	14.8	20.7
Indianapolis, Ind.....	17.8	38.4	28.1	32.4	1.6	19.7	18.7	21.9	19.1
Kansas City, Mo.....	17.3	42.9	39.1	40.7	5.3	18.0	31.1	15.6	19.6
Memphis, Tenn.....	20.3	32.9	25.2	27.7	**	26.8	25.4	16.1	18.6
Minneapolis, Minn....	17.7	30.6	35.4	33.5	*0.1	14.7	18.1	12.3	15.8
New Orleans, La.....	16.6	44.4	31.4	36.7	**	19.7	23.7	15.8	17.9
Pittsburgh, Pa.....	18.8	41.3	33.0	35.9	7.6	9.2	26.3	16.2	19.8
Richmond, Va.....	20.5	43.4	27.2	33.8	1.0	11.8	26.3	9.0	17.9
St. Louis, Mo.....	18.0	29.9	34.9	32.4	2.7	4.8	21.8	14.5	16.7
Scranton, Pa.....	21.3	37.0	32.6	34.4	0.5	24.7	27.0	21.4	21.9

* Decrease. ** No change or practically so.

Department of Labor, Bureau of Labor Statistics, Washington. Weighted averages were attained by the same method of calculation as heretofore.

Since 1911 the number of persons transported per accident by the Philadelphia Rapid Transit Company has increased from 18,640 to 50,043, equivalent to a gain in "safety efficiency" of 18.8 per cent per year.

Electric Operation on the B., A. & P.*

During Seven Years of Heavy Freight and Passenger Service the Butte, Anaconda & Pacific Railway Electrification Has Increased in Capacity and Effectiveness—Locomotive Maintenance Costs Are Low

By F. W. BELLINGER

Electrical Superintendent Butte, Anaconda & Pacific Railway, Butte, Mont.

THE Butte, Anaconda & Pacific Railway was built in 1892, principally for transfer service between the ore mines in Butte and the Washoe Smelter at Anaconda. Between the two cities the tracks are about 26 miles long. The railway was electrified in 1912 and 1913, the present total electrified mileage of single track being 120, which includes the main line, yards and sidings.

WHAT THE ELECTRIFICATION ACCOMPLISHED

To illustrate how the 2,400-volt direct-current system was able to meet the unusual conditions on this railway a few concrete examples will be given:

On the Smelter Hill line, 7 miles long with a 1.1 per cent grade, twenty-five ore cars, averaging 70 tons each, were hauled, as compared with sixteen cars hauled by a steam engine. With the electric locomotive the round trip is made in an hour, thus rendering it possible, unless there are unusual delays, to make eight round trips per day, or to deliver 200 cars in ten hours, as compared with six round trips and ninety-six cars per day with steam. Thus there is an increase of more than 108 per cent in this particular service, using the same crew and working the same hours.

In our main-line freight service between East Anaconda and Rooker, 20.1 miles, the standard westbound train formerly handled consisted of fifty cars, aggregating 3,500 tons in weight, and the average running time, with no stops, was about an hour and a half. This corresponds to 13.4 m.p.h. At first the electric locomotive took only the standard train, making the trip without stops in an hour, or at 20 m.p.h. The ruling gradient on the westward trip is 0.3 per cent and with a fifty-five car train the steam engine made approximately 7 m.p.h. The electric locomotive with a similar train made 16 m.p.h. on the same grade. The weight of train on this run has been gradually increased up to sixty-five loaded ore cars, averaging about 71 tons each, a trailing load of 4,620 tons. Adding 160 tons for the locomotives and 20 tons for the caboose gives a gross train weight of approximately 4,800 tons.

A comparison of June, 1913, under steam operation with June, 1914, under electrical operation shows that with a slight increase in the total tons of ore handled the average tonnage per train was increased from 1,761 to 2,378, or 35 per cent. The decrease in average time per trip was 27½ per cent. There was also a decrease of 75 per cent in the time lost through delays from all causes.

The trackage in and about the mines runs on many different levels, thus necessitating heavy grades and curves. It is safe to say that in approximately 25 miles of electrified track enough tangent track could not be

picked out to equal 5 miles. Thus the overhead system has been built up to meet unusual conditions.

The original overhead installation was somewhat experimental in so far as the support structure was concerned. Subsequent to the first year of operation under electric power we found it possible to make a considerable reduction in the cost of overhead construction due to a more general use of brackets in place of the two-pole spans. On curve construction, up to and including four tracks with four degrees of curvature, we trim the pull-off points to a substantial backbone. Five tracks or more are trimmed in the usual manner, except that the backbone is done away with and a pole is substituted at each pull-off point. This change in construction was found necessary to reduce maintenance cost.

Three linemen are employed to maintain the overhead lines and feeders, with headquarters at Anaconda. One box car with a wood tower is kept for heavy line work and construction jobs. A Federal 1½-ton truck, equipped with car wheels and a Trenton tower, provides a convenient car for all general line work. The Trenton tower, as well as the movable table on top, is well insulated, so that it is possible to work on the contact wire under all weather conditions.

The average cost of maintenance of overhead system per mile per year for the past four years is \$137.57. Table I shows the several items of cost for 1918.

TABLE I—COST OF OVERHEAD MAINTENANCE, B., A. & P. RAILWAY, 1918.

Poles and fixtures, labor.....	\$3,261.52
Poles and fixtures, material.....	687.46
Feeders, labor.....	554.10
Feeders, material.....	87.77
Trolley, labor.....	3,889.79
Trolley, material.....	1,168.86
Bonding, labor.....	1,410.96
Bonding, material.....	1,980.23
Total of above.....	13,040.69
Motor car.....	1,119.65
Work train.....	2,290.04
Total maintenance expense.....	\$16,451.08
Number of miles operated.....	120.27
Cost per mile per year.....	\$136.78

The greatest wear, of course, comes at rigid points, such as pull-offs and rigid hangers. We use the roller pantographs, one to each locomotive, with a 2,400-volt bus line when two locomotives are connected in series. This bus line insures continuous current supply to both locomotives while passing under wood section insulators or in the event of arcing at rigid points. Currents up to 400 amp. per engine are collected, and we believe that better operating conditions are obtainable from the use of two pantographs.

Pantograph rollers give an average life of 20,000 to 40,000 miles. Each roller is mounted on a pair of Hyatt roller bearings, which wear out as many as three roller tubes. These bearings are greased twice each week with semi-hard grease. The contact pressure is main-

*Abstract of contribution to discussion of report of committee on electrification of steam railroads, F. M. Kerr, chairman, to N.E.L.A. at Pasadena Convention, May 21, 1920.

TABLE 11—MAINTENANCE AND OPERATING DATA, BUTTE, ANACONDA & PACIFIC RAILWAY, 1914-1919.
(Road Electrified 1912-1913).

	1914	1915	1916	1917	1918	1919
Number of electric locomotives.....	17	18	21	24	28	28
Average locomotive weight, tons.....	80					
Miles single track basis.....	90	90	114	114	120	122
Cost of repairs.....	\$27,811	\$35,253	\$49,811	\$55,846	\$54,167	\$35,264
Freight revenue miles.....	321,946	317,595	505,162	412,509	413,519	226,851
Passenger revenue miles.....	65,428	87,625	100,290	94,659	80,020	90,805
Switch revenue miles.....	136,892	161,871	404,356	367,690	324,322	197,838
Mixed and special revenue miles.....			616	456		
Total revenue miles.....	524,266	567,091	1,011,424	875,314	817,861	515,474
Non-revenue miles.....		5,507	2,477	10,796	2,957	1,142
Total locomotive miles.....	524,266	572,598	1,013,901	886,110	820,808	516,616
Maintenance per locomotive-mile in cents (not including depreciation).....	5.3	6.16	4.91	6.3	6.4	6.8

tained at approximately 30 lb. and is adjusted by means of a hand spring-balance. All adjustments of this kind are made on a special track, wired but not energized.

Three electrical workers are employed at the machine shop to make such repairs as are necessary on electric locomotives, shop lights and power, coach heating and lighting, as well as to assist in the maintenance of block signals and dispatchers' telephones.

The equipment which must be maintained comprises twenty-eight electric locomotives, weighing 82 tons each, and equipped with four GE-229 motors with type M control. There are also two steam engines which have been retained for service on the Georgetown branch and on a sand-pit job not electrified.

The cost of the maintenance work on the locomotives, together with the data which are necessary in order to permit comparisons to be made, are given in Table II.

For comparison with the data in Table II, it is interesting to note that during 1909 the maintenance cost for steam locomotive operation per locomotive-mile, not including depreciation, was 16.1 cent. Wages and material have increased greatly in cost since 1909, so that the real saving is not shown by the data in Table II.

Taking up some of the details of maintenance work, attention may first be directed to tire wear. On account of the character of the track on this road, it is necessary to turn the tires every year. Tire wear is most noticeable at the flange. Our principal haul is "infested" with curves of 8, 10 and 20 deg. In all there is a total curvature of 13,342 deg. between the mines at Butte and the Washoe Smelter at Anaconda.

The average time for each locomotive in the shop per year is ten days, while the shortest is four days. *During this time a general overhauling is given to the mechanical and electrical equipment. The time for electrical inspection and repairs varies with the class of service. In general, the electrical work is completed in less than two days. Poor rheostat connections and tight contactor pins give the only causes for electrical work in the cab. Regarding rheostats, ours have stood the test beyond any expectations. The first year or two of electrical operation developed a weakness which was soon overcome by replacing the jumpers between the rheostat boxes.

Our electric locomotives are inspected approximately every forty days. Engines working at Butte or on Butte Hill have no care except oiling and renewal of brake shoes. The maximum number of days which a locomotive has been away from the shop is seventy, during which it was working two ten-hour shifts per day. Monthly inspections, as we call our forty-day periods, are made over a cinder pit, summer and winter. Two electrical men inspect a double unit in twenty minutes to an hour, making all necessary repairs and adjustments. One machinist inspects the mechanical parts in the same time.

Seven machinists, two machinist apprentices, four helpers, two drill press men, one wiper, one oiler, one boilermaker and his helper, three blacksmiths and three helpers, who work on steel cars principally; a pipefitter and helper and a carpenter form the machine-shop crew.

One of the first questions asked by all visitors is: "How do your commutators wear?" In reply, it can be said that to date we have not turned a single commutator on account of wear. We have turned a few due to injuries received when inspection plates were allowed

TABLE III—OPERATING DATA, B., A. & P. RY.

	April, 1917	April, 1918
Number of cars handled during month.....	31,282	25,980
Average cars per day.....	1,042.7	866.0
Total tonnage for month.....	1,337,911	1,137,498
Average tons per day.....	44,597	37,917
Number of main-line trains east per month.....	190	154
Total tonnage east per month.....	275,327	240,217
Average tons per train east per month.....	1,449	1,560
Number of main-line trains west per month.....	190	155
Tonnage of trains west per month.....	787,634	716,925
Average tons per train west for month.....	4,198	4,625
Average tons per train east and west.....	2,797	3,098

to fall on the commutators. The wear is now just appreciable. The color could not be improved, and there is no evidence of burning or flashovers. We are using an electro-graphitic brush, which gives very good mileage and very little breakage.

Like all electric roads, we have had some armature trouble. However, this amounts to so little that we keep but one man as an armature winder and his time is spent principally on equipment other than armatures. Recently we went one year and eleven months without an armature failure.

In order to give an idea of the amount of traffic handled the figures for April, 1917, and April, 1918, may be taken as representing average conditions. These are given in Table III.

Accountants Needed by I. C. C.

THE Interstate Commerce Commission is in need of a large number of examiners of accounts of common carriers, at salaries ranging from \$1,800 to \$3,000 a year, with the addition of the bonus of \$20 a month granted by Congress. The United States Civil Service Commission is receiving applications for these positions.

The commission states that the positions afford an unusual opportunity to qualified persons; that under recent legislation returning the railroads to private control the duties of the Interstate Commerce Commission are greatly increased, and that those who enter the service as examiners of accounts will receive invaluable training in their chosen profession and at the same time will have a part in a public work of first importance. Applicants for these positions will not be given written tests in an examination room, but will be rated solely upon their education, training and experience.

Notes on the C., M. & St. P. Electrification*

Experience with Electrification of 645 Route-Miles of Track Shows the Reliability and Economy of Electrical Operation

BY R. BEEUWKES

Electrical Engineer Chicago, Milwaukee & St. Paul Railway

THE electrification of the C., M. & St. P. Railway now extends from Harlowton, Mont., to Avery, Idaho, and from Othello to Tacoma, Wash., a total distance of 645 route-miles, or of about one-third more track-miles. The following general notes regarding some of the items of a list suggested as representing matters of particular interest in connection with electrification work are based on experience with this installation:

The electrification work on the Rocky Mountain and Missoula divisions was carried on during the years from 1914 to 1916, when labor and material conditions were comparatively stable and arrangements for the supply of both could be made in such a way as to avoid the delays to which the work west of Othello, carried on largely during the war, was more or less subject. Costs for the former work are therefore believed to be more capable of application of the necessary corrective factors corresponding to present and other assumed pipe standards and approximate figures are given in Table I.

tween the electrified Rocky Mountain and Missoula divisions and the adjacent steam-operated divisions. The items are those which are affected by the type of motive power employed, cost of the Missoula division being taken as unity. The figures apply for the last six months of 1918, data for which were readily available.

TABLE I—COSTS AND OTHER DATA

	Average Cost per Route-Mile	Various Average Unit Costs	Per Cent Item Cost to Total, Excluding Locomotives
Trolley system complete.....	\$8,390		47.7
Transmission system complete.....	2,360		13.3
Per mile of transmission line.....		\$2,835.00	
Substation layout complete.....	6,050		34.4
Per station.....		189,400.00	
Per kilowatt.....		45.00	
Substation building and grounds:			
Per station.....		38,400.00	
Per kilowatt.....		9.50	
Operators' dwellings, etc.:			
Per station.....		6,100.00	
Per kilowatt.....		1.50	
Substation apparatus:			
Per station.....		144,900.00	
Per kilowatt.....		34.00	
Miscellaneous, including right-of-way, changes in telegraph and telephone lines to clear transmission and trolley, store-houses, minor apparatus at shops and round houses, etc.....	265		1.7
Engineering and administration, except that for drafting and inspection for substations, charged direct.....	514		2.9
Locomotives, including transportation, messenger and miscellaneous charges:			
Per road locomotive.....		122,500.00	
Per switching locomotive.....		37,700.00	
Total per route-mile, excluding locomotives...	17,579		100.00
Route-miles.....			438
Actual mileage transmission line.....			364
Total kilowatt capacity of substations.....			59,500
Number of locomotives—Twelve passenger, thirty freight and two switching locomotives.			
Number of substations, fourteen. Two operators' buildings at each station.			
Automatic signals—Existing battery fed track circuit and semaphore signals were replaced with alternating-current light signals fed from a 4,400-volt primary circuit connected to substations; costs not included.			

The figures in Table I are given mainly to furnish an approximate idea of the relative importance, from a cost standpoint, of the different items involved.

Table II indicates the relative magnitude of the more important items of freight operating expense, as be-

TABLE II—COMPARATIVE OPERATING EXPENSE

	Columbia Division	Idaho Division	Missoula Division	Rocky Mountain Division	Musselshell Division
Steam or electric locomotive repairs.....	\$1.97	\$2.34	\$1.00	\$0.86	\$2.26
Train conductors and brakemen.....	2.78	3.05	1.00	1.46	1.61
Train engineers and motormen.....	1.84	2.17	1.00	1.30	1.21
Train locomotive fuel or power.....	2.05	2.34	1.00	1.04	1.38
Enginehouse expense, train.....	3.15	2.50	1.00	0.80	3.71
Total yard service*.....	0.78	1.12	1.00	0.99	0.71
Total of items of expense affected by type of motive power.....	1.67	1.90	1.00	1.11	1.33

*In 1918 a considerable portion of the switching was still done by steam, sufficient electric switching locomotives not having yet been received.

†Includes superintendence, maintenance of substations, transmission and trolley systems, water and fuel stations, shops and engine houses, also locomotive and train supplies, in addition to the items for which individual comparison is given in the tabulation.

In considering the data in Table II, it should be noted that the Musselshell division is of low grade, maximum being 0.4 per cent, while the Rocky Mountain, crossing both the Belt and Rocky Mountain ranges, and formerly under steam operation, constituting the "neck of the bottle" as far as operation was concerned, has long mountain grades of 1.7 and 2 per cent. The Missoula division, crossing the Bitter Root Mountain, with long 1.7 per cent grades, might not appear to involve as difficult operating problems as the Columbia division, with its long 2.2 per cent grades on the east slope of the Saddle Mountain and its comparatively long 1.6 per cent grade on the west slope. However, the much more unfavorable weather and topographical conditions existing on the Missoula division more than offset the difference in grades.

Some of the more important reasons for the advantageous results secured under electrical operation are as follows:

The cost of engine repairs per 1,000 ton-miles is much decreased, due to the fact that not only is the cost of repairs per engine-mile of the electric locomotive much less than that of the average steam locomotive replaced, but the number of engine-miles per 1,000 ton-miles is, on account of the greater capacity of the electric locomotive, much less. The engine-miles per 1,000 ton-miles for the Missoula division under electric operation in the 1918 period taken above were only about 55 per cent of that of the latter half of 1915 under steam operation.

Train conductor and brakemen expense per 1,000 ton-miles is reduced under electrical operation due to increased ton-miles per train-mile and increased train speed. This item for the Missoula division for the 1918

*Abstract of contribution to discussion of report of committee on electrification of steam railroads, F. M. Kerr, chairman, to N.E.L.A. at Pasadena Convention, May 21, 1920.

period was about 9 or 10 per cent less than that of the 1915 steam period, while on the Idaho and Columbia divisions, still operated by steam, the expense per 1,000 ton-miles more than doubled.

Enginemen's expense decreases under electrical operation, due to the same causes which decrease trainmen's expense. For the Missoula division this item increased only a few per cent for the 1918 period as compared with the 1915 period, while for the Idaho and Columbia divisions it practically doubled.

Regarding the items of train locomotive fuel, it should be stated that the factors given are not based on the actual cost of fuel for the particular divisions involved, but on the average fuel price for the system. Cost of fuel haul is not taken into account.

The question of the relative reliability of steam and electrical operation is one that is frequently raised. The data given in Table III will be of interest in this connection. This recapitulation gives the delays to passenger trains on basis of miles of line operated for the several railway divisions of the Milwaukee west of Moberge. Similar information is not conveniently

California Officials Meet

Convention in San Francisco Devoted Largely to Discussion with State Commissioners of Ways to Improve Conditions and Service

AT THE annual meeting of the California Electric Railway Association, held in San Francisco on May 25 with over 90 per cent of California's electric railways represented, comprehensive plans were made for active co-operation this year on common problems. Consideration was given primarily to means of securing much needed relief from paying and tax burdens and illegitimate bus competition. A three-hour conference was also held with four of the five State railroad commissioners and was pronounced one of the greatest strides ever made by California electric railways in that it enabled the companies to show the commission just what present conditions mean and enlisted the commission's aid and advice in planning relief. The seriousness of the situation which the railways are facing and conditions in urgent need of remedy were explained by W. R.

TABLE III—RECAPITULATION OF PASSENGER TRAIN PERFORMANCE, SHOWING DELAYS TO TRAINS ON THE BASIS OF MILES OF LINE OPERATED; LINES WEST OF MOBRIDGE; MONTHS OCTOBER, NOVEMBER AND DECEMBER, 1919, AND JANUARY, FEBRUARY AND MARCH, 1920

Item	Moberge to Marmouth Steam 190 Miles	Marmouth to Harlowton Steam 340 Miles	Harlowton to Avery Electricity 437 Miles	Avery to Cle Elum Steam* 325 Miles	Cle Elum to Seattle Steam* 90 Miles
	1. Meeting and blocked behind passenger.....	18.33	11.33	15.15	10.33	12.60
2. Meeting and blocked behind freight.....	14.03	5.88	6.49	1.98	2.89
3. Extra cars.....	1.33	0.58	0.02	2.35	1.37
4. Excess time switching.....	1.35	2.69	2.16	1.54	4.51
5. Electric block signals.....	0	0.13	9.52	4.07	10.62
6. Slow orders.....	4.54	1.37	1.29	0.33	5.38
7. Bad weather and poor coal.....	109.2	13.59	3.53	3.48	4.91
8. Engine condition.....	20.92	25.20	11.43	9.39	10.54
9. Accidents and derailments due to engine.....	2.63	2.25	0.15	3.85	2.05
10. Trolley and substation.....	0	0	3.93	0.03	0
11. Total of items 1 to 10 inclusive, which are affected by the type of motive power used.....	172.65	62.95	52.73	35.34	54.93
12. Average of items 1 to 10 inclusive, for the four steam divisions.....	74.75				
13. Awaiting connections.....	0	1.16	0.02	1.82	1.94
14. Handling extra heavy bag mail and express.....	6.79	3.26	2.09	1.20	0.97
15. Extra stops for passengers and railway crossings.....	0.92	0.97	1.99	0.22	1.13
16. Car conditions.....	8.63	18.05	9.75	6.87	6.10
17. Accidents and derailments not due to engine.....	27.69	12.51	17.75	14.63	30.49
18. Slides, earth, rock and snow.....	2.53	0	3.64	3.86	13.80
19. All other causes.....	11.30	1.78	11.03	4.91	9.95
20. Total of items 13 to 19 inclusive, which are not affected by the type of motive power.....	57.80	37.85	46.30	33.86	103.69
21. Average of items 13 to 19 inclusive, for the four steam divisions.....	46.77				
22. Total of all items.....	230.45	100.80	99.03	69.20	158.62
23. Average of items 13 to 19 inclusive for the four steam divisions.....	121.52				
24. Minutes lost on schedule running time per mile of line operated.....	205.5	69.7	8.94	0.00	162.2
25. Minutes made up per mile of line operated.....	46.6	35.6	100.00	81.00	11.54

*Electrical operation commenced in March.

available for freight train performance, but delays to freight service would naturally be reflected in the passenger train performance.

It will be noted from item 11 that the electrically operated territory shows less time of trains delayed than any of the steam operated divisions except that between Avery and Cle Elum, a district particularly favored as regards its freedom from climatic, topographical and other conditions which tend to cause delays. Attention is also called to the favorable showing for electricity in items 24 and 25.

In concluding, I believe it may be said that in no respect have the results of the electrification failed to equal the expectations of the railway organizations, and in most respects these expectations have been far exceeded. We have found by experience and estimates that items of operating expense depending upon whether steam or electricity is used as the motive power are so reduced and the benefits indirectly obtained are so great as to render justifiable, even with the increased investment charges, the serious consideration of indefinite extension of electrification even for lighter grades.

Alberger, vice-president San Francisco-Oakland Terminal Railways; Paul Shoup, president, and Frank Karr, chief counsel Pacific Electric Railway; W. E. Dunn, vice-president Los Angeles Railway; William Von Phul, president United Railroads of San Francisco, and others. E. O. Edgerton, president of the commission, spoke optimistically of the future prospects for the electric railways because of the essential service they render, and he advised showing the public that the electric railways cannot go on without relief. Emphasis, he said, should be placed not so much on protecting investment as on the importance of public service. Showing the real need of service, which only electric railways can render economically, should be the ground on which to urge the passage of bills at the coming session of the Legislature. The railways should adopt an affirmative, aggressive policy, not a program of defense.

It was agreed that a small committee of the association would meet with the Railroad Commission and work on details of plans for improving conditions affecting electric railway operation, particularly needed legislation. All officers of the association were re-elected.

Number of One-Man Cars Increases 15-Fold

Approximately 300 in 1916, the Number Has Grown So That There Are Now More Than 5,000 in Operation and on Order

THE accompanying table has been compiled at the request of a number of readers of this paper and gives a list, so far as it is possible to obtain it, of all electric railway companies that own or have on order one-man cars. The number of cars is subdivided as between safety cars, that is, cars equipped with automatic safety devices, and cars having only ordinary control and door mechanisms.

Attention is called to the various geographical divisions, which indicate that the highest percentage of one-man cars operated is by 126 companies in the territory west of the Mississippi River. The second largest group is south of the Ohio and east of the Mississippi, where forty-three companies operate 9 per cent of the cars with one man. The largest number of cars in any state is in New York, where 2.5 per cent of the cars owned by 19.8 per cent of the companies are one-man cars.

The States of Texas, Washington, Massachusetts and New Jersey follow in the order named. The State having the largest percentage of one-man cars is Kansas, with 34.6. Mississippi, Montana, Washington and Texas follow in sequence.

Every attempt has been made in the preparation of this table to avoid duplications and to eliminate the cancellations of orders as well as the transfer of cars already built between several systems. The information has been compiled largely from the rolling stock columns of the ELECTRIC RAILWAY JOURNAL and checked with available tabulations that have been compiled by others.

It may be that errors will still be found to exist and it is hoped that all such will be reported promptly in order that at some later day a corrected list can be published.

Number of One-Man Cars Owned or on Order as of May 15, 1920

New England States				Name of Company				Name of Company			
Name of Company	Safety Cars		Other Types	Name of Company	New	Rebuilt	Other Types	Name of Company	Safety Cars		Other Types
	New	Rebuilt							New	Rebuilt	
Connecticut				E. St. Louis & Suburban Ry.	1	...	7	Ironwood & Bessemer Ry...	...	...	8
Bristol & Plainville Trmry...	1	...	...	E. St. Louis Ry.	2	...	...	Manistee Railway	...	...	4
Connecticut Co. (The)	132	...	5	Galesburg & Kewanee Elec. Railway	...	...	5	Menominee & Marinette Lt. & Trac. Co.	...	...	23
Danbury & Bethel St. Ry.	8	...	...	Galesburg Ry. & Ltg. Co.	20	...	...	Michigan Railways	20	...	...
Total — 3	141	...	5	Freeport Ry. & Lt. Co.	3	1	7	Saginaw-Bay City Ry.	20	63	...
Maine				Jacksonville Ry. & Lt. Co.	...	...	7	Total — 11	73	65	78
Androscoggin & Kennebec Railway	12	...	...	Kankakee Elec. Co.	...	...	10	New Jersey			
Bangor Ry. & Elec. Co.	15	...	...	Northern Illinois Lt. & Trac. Company	...	...	6	Jersey Central Trac. Co.	...	...	3
Biddeford & Saco R.R.	8	...	...	North Kankakee Elec. Lt. & Railway	...	...	2	Morris County Trac. Co.	14	...	...
Knox County Electric Co.	3	...	...	Pekin Municipal Ry.	3	...	2	Penn. & N. J. Trac. Co.	11	...	2
Portland R. R.	15	4	...	Peoria Ry.	20	...	...	Public Service Ry.	200	...	7
Total — 5	53	4	...	Quincy Ry.	30	1	5	Salem & Penns Grove Trac. Company	6	...	...
Massachusetts				Rockford & Interurban Ry.	12	...	...	Trenton & Mercer County Trac. Corp.	60	...	...
Berkshire St. Ry.	17	...	...	Springfield Consolidated Ry.	17	7	...	Total — 6	291	...	12
Boston Elevated Ry.	31	...	...	Sterling, Dixon & Eastern Elec. Ry.	...	...	7	New York			
Brocton & Plymouth St. Ry.	4	...	...	St. Louis & E. St. Louis Elec. Railway	...	2	...	Batavia Trac. Co.	...	...	(a)
Concord, Maynard & Hudson St. Ry.	1	...	...	Urbana & Champaign Ry. Gas & Elec. Co.	6	...	2	Binghamton Ry.	...	16	...
Connecticut Vy. St. Ry.	1	...	...	Total — 27	199	18	99	Brooklyn City Ry.	98	...	...
Eastern Mass. St. Ry.	201	1	...	Indiana				Brooklyn Rapid Transit Co.	108	...	...
Medway & Dedham St. Ry.	4	...	...	Beech Grove Trac. Co.	6	...	...	Buffalo & Lake Erie Trac. Co.	...	...	2
Middlesex & Boston St. Ry.	2	4	...	Central Indiana Ltg. Co.	5	...	3	Corning & Painted Post St. Railway	...	...	4
Milford, Attleboro & Woonsocket St. Ry.	...	2	...	Chicago, So. Bend & No. Indiana Trac. Co.	20	...	...	Elmira Water, Lt. & R. R. Co.	7	...	...
Norton & Taunton St. Ry.	...	2	...	Evansville & Ohio Valley Ry. Co.	3	...	...	Empire State R. R.	6	...	8
Springfield St. Ry.	10	...	...	Gary & Hobart Trac. Co.	...	2	...	Geneva, Seneca Falls & Auburn R. R.	2	...	...
Worcester & Warren St. Ry.	1	...	1	Gary St. Ry.	10	...	...	International Ry.	...	...	8
Worcester Consolidated St. Railway	10	...	...	Indiana Ry. & Lt. Co.	10	...	2	New York & Stamford Ry.	7	...	...
Total — 13	301	10	1	Indiana Service Corp.	...	...	65	Ogdensburg St. Ry.	...	...	7
New Hampshire				Louisville & Northern Ry. & Lighting Co.	...	...	(a)	Orange County Trac. Co.	3	2	...
Concord & Manchester Elec. Br.	4	...	...	Louisville & Southern Indiana Ry.	10	...	...	Peekskill Ltg. & R. R. Co.	4	...	4
Laconia St. Ry.	2	...	...	Public Utilities Co.	8	6	3	Putnam & Westchester Trac. Company	...	...	2
Nashua St. Ry.	4	...	...	Terre Haute Trac. & Lt. Co.	66	...	16	Third Ave. Ry. System	...	75	50
Total — 3	10	...	...	Union Traction Co. of Indiana	...	...	13	Westchester St. Ry.	6	...	...
Rhode Island				Vincennes Traction Co.	7	...	...	Total — 17	241	93	85
Newport & Providence Ry.	3	3	...	Washington St. Ry.	3	...	...	(a) Details not available.			
Vermont				Total — 15	148	8	102	Ohio			
Rutland Ry. & Light Co.	1	...	...	(a) Details not available.				Ashtahula Rapid Transit Co.	...	3	...
Total — 26	509	17	16	Maryland				Chillicothe Elec. R.R. & Light Co.	...	4	...
North of the Ohio and east of the Mississippi River				Hagerstown & Frederick Ry.	3	...	...	Cincinnati, Milford & Blanche Trac. Co.	3	...	...
Illinois				Towson & Cockeyville Elec. Railway	...	...	1	Cleveland, Southwestern & Columbus Ry.	2	...	...
Alton, Granite & St. Louis Trac. Co.	...	(a)	(a)	United Rys. & Electric Co. of Baltimore	33	...	9	Columbus, Delaware & Marion Elec. Co.	...	...	(a)
Aurora, Elgin & Chicago R.R.	40	...	...	Total — 3	36	...	10	Columbus Ry., Lt. & Pwr. Co.	...	...	5
Cairo Ry. & Lt. Co.	...	...	11	Michigan				Lake Shore Elec. Ry.	16	...	...
Central Illinois Pub. Service	10	...	14	Adrian St. Ry.	...	...	4	Northern Ohio Trac. & Light Co.	25	...	...
Centralia & Central City Trac. Co.	2	...	...	Benton Harbor-St. Joe Ry. & Lt. Co.	4	...	...	Penn. & Ohio Electric Co.	32	...	10
Centralia Trac. Co.	2	...	...	Detroit United Ry.	10	...	38	Richland Public Service Co.	7	...	...
Chicago & Joliet Elec. Ry.	...	7	...	Escanaba Trac. Co.	...	...	1	Toledo, Bowling Green & So. Trac. Co.	5	...	...
Chicago, No. Shore & Milwaukee R. R.	10	...	...	Grand Rapids Ry.	19	...	...	Total — 11	90	7	15
Chicago, Ottawa & Peoria Ry	1	...	...	Houghton County Trac. Co.	...	2	...				
Decatur Ry. & Lt. Co.	20	...	13								

CANADA							
Name of Company	Safety Cars		Other Types	Name of Company	Safety Cars		Other Types
	New	Rebuilt			New	Rebuilt	
Brandon Municipal Ry.	7	.....	.....	Peterboro Radial Ry.	2	.....	.....
Calgary Municipal Ry. (b) ..	.....	.....	66	Quebec Ry. Lt. & Pwr. Co. .	1	.....	8
Cape Breton Elec. Co., Ltd. .	2	11	.....	Sherbrooke Ry. & Pwr. Co. .	9	.....	9
Edmonton Municipal St. Ry .	2	.....	(a)	Three Rivers Trac. Co. ....	.....	.....	.....
Hydro-Electric Pwr. Com. ...	.....	.....	.....	Total — 13	70	13	98
Lethbridge Municipal Ry. ...	9	.....	4	MEXICO and CUBA			
Levis County Ry.	14	2	4	Mexico Tramways Co.	6	.....	.....
Moncton Tramways, Elec- tric & Gas Co., Ltd. ....	.....	.....	5	Matanzas (Cuba) Elec. Ry. .	15	.....	.....
Nova Scotia Tramway & Power Co., Ltd.	24	.....	.....	(a) Details not available. (b) McCauley type.			

RECAPITULATION OF ONE-MAN CARS

	Safety Cars				
	Companies	New	Rebuilt	Other Types	Cars
New England	26	509	17	16	542
North of Ohio and East of Mississippi River (b) ..	(b) 118	1,248	215	450	1,913
South of Ohio and East of Mississippi River ..	(b) 43	321	.....	150	471
West of Mississippi River	(c) 126	1,097	152	706	1,955
Total United States	313	3,175	384	1,222	4,881
Canada	(a) 13	70	13	98	181
Mexico and Cuba	2	21	.....	.....	21
Grand total	328	3,266	397	1,320	5,083

(a) Details not available for 1 company.
 (b) Details not available for 6 companies.
 (c) Details not available for 4 companies.

the contestable factors, he emphasizes the breadth of view which a complete valuation should hold. Instead of attempting to close the door of the past in today's proceedings, it should be remembered that very large and definite equities are sometimes shown to exist which would be completely obscured without the necessary economic research of the past history. Mr. Bibbins calls attention to a specific problem which he had outlined in previous addresses and which he had described in the ELECTRIC RAILWAY JOURNAL for Sept. 20, 1919, page 570. Advanced industrial executives seem, he said, to be more generally awake to the facts and needs of the economic situation than any other class, especially in their understanding and care of depreciation. Dean M. E. Cooley presented an

A. S. M. E. Meets at St. Louis

Mechanical Engineers at Spring Gathering Discuss Valuation, Flying, Power-Plant Topics, etc.— Visit Keokuk and Tulsa

THE spring meeting of the American Society of Mechanical Engineers was held at the Hotel Statler, St. Louis, Mo., May 24 to 27. The program comprised a wide range of topics, including aeronautics, appraisal and valuation, industrial housing, river transportation, foundry practice, power and combustion, including stokers; pulverized fuel, feed-water heaters and feed water treatment, and miscellaneous topics. In addition there was a visit to the hydraulic power plant of the Mississippi River Power company, at Keokuk, Iowa, and another following the meeting to the oil fields at Tulsa, Okla. A varied series of entertainments was also provided.

The feature of the meeting on Monday was a symposium of papers on appraisal and valuation, briefly summarized below. Brief abstracts of other papers and discussions will be given in a later issue of this paper.

In a paper entitled "Appraisal and Valuation Method" David H. Ray, Pasadena, Cal., urged the need of the engineer entering the appraisal field in the full capacity which his training and experience warrant. The engineer, being more familiar with cost and value of materials, machines and structures than the lawyer or accountant, has the duty to develop, guide and control method and procedure. Procedure and report must necessarily depend in part upon the purpose of the valuation, and appraisals may be classified in two general groups, private and public. Most of this paper is devoted to industrial valuation.

In discussing the "Fundamental Principles of Rational Valuation," James R. Bibbins, Chicago, Ill., appraises the seriousness of the present situation brought about by the lamentable failure of engineers to agree upon a certification of definitions, methods and practices in valuation procedure, especially when ultimate decisions must rest upon the shoulders of court commissions or non-technical bodies. He urges a policy of open-minded co-operation, research and education along fundamental lines of economics rather than a continuance of purely partisan methods of thought and action.

Analyzing and listing all of the admissible facts and

analysis on the "Data on the Cost of Organizing and Financing a Public Utility Project," prepared by the late F. H. B. Paine. From Mr. Paine's experience, it is shown quite clearly that there are certain preliminary steps which must be taken before a project can be said to have been finally launched, such as the development of the project, the securing of sufficient capital funds for preliminary outlays and for the actual construction. All of these steps involve money expenditure, and as a result of considerable experience in this line the conclusion is reached that the proper percentages of these are as follows: Development of the project 2½ per cent, cost of money 5 per cent and promoters' remuneration 5 per cent.

Prof. H. C. Anderson of Ann Arbor, Mich., discussed, under the title of "The Construction Period," the proper allowances to be made for interest and taxes during the period of construction. He concludes that the proper interest charges can only be determined by a thorough study of the particular property under consideration, with a view of determining (1) the magnitude of the property; (2) the method used in finding the reproduction cost; (3) the proper construction period, and (4) knowing the construction period, what is the proper method to use. The author is of the opinion that the proper amount depends on (1) the length of the construction period, (2) the percentage of the construction cost which the official will find, and (3) the tax rates.

The last paper of this symposium dwelt on "Price Levels and Values." It was by Cecil F. Elmes, of the engineering staff of Sanderson & Porter, Chicago, Ill. The author traces the changes that have taken place in prices and wages both in this country and in England since 1600 and shows how these have been influenced by contemporary history. The general trend of the paper is to indicate that the general law of economics applies to public utilities just as much as to other lines of commerce, and every procedure and decision based upon the theory that economic laws applies to everything else except the public utilities is essentially unsound and vicious.

Furthermore, the word "dollar" should not be used so as to mean two different things, a high figure to one party and a low figure to the other party in one and the same controversy.

Letters to the Editors

An Appeal from Hungary

BUDAPEST, April 30, 1920.

To the Editors:

The American Relief Administration has established American relief warehouses in Hungary, from which food can be drawn on presentation of United States American Relief warehouse food drafts. There is great need for food in Hungary, and this is the simplest as well as the surest method by which Americans can supply food in Hungary to those in need. It has been suggested that those in our country who have no relatives in America might possibly look for assistance to those in your country who are in the same occupation or employment. As an employee of the largest electric railway in Hungary, Budapesti Egyesített Varosi Vasut (Budapest Consolidated Street Railway) I am taking this opportunity of bringing this matter to the attention of the electric railway men in America.

TOTH TIVADAR.

Energy Concentration in Electrical Short Circuits

GENERAL ELECTRIC COMPANY

SCHENECTADY, N. Y., May 21, 1920.

To the Editors:

In the issue of the *ELECTRIC RAILWAY JOURNAL* for May 8 you reviewed my discussion of the problems in the design of a super-power plant, delivered before the Washington section of the A. I. E. E.

You properly make it clear that one of the great problems in the design of such a station is the limitation of the concentration of power that may occur in case of a short circuit. But the nature of this problem is not made clear. It is not a case of limiting the concentration of energy to an amount that can be interrupted by available oil switches, for that is but a challenge to build a larger switch which the engineer would be glad to accept. It is a case of expediency.

In the case under consideration the major portion of distribution was to be underground, at 60,000 volts, with the neutral point solidly grounded, giving 35,000 volts from conductor to ground. Single-conductor lead-covered cables would be used of size sufficient to give 45,000 kva. in capacity per three-phase feeder. The first step was to decide the concentration energy that it would be expedient to allow at a point on the cable system in case of a short circuit. A severe short circuit is liable to do damage to adjoining conductors; if of large energy it may also damage the conduit system, necessitating excavation of the street before the injured cable can be withdrawn and a new one installed. However, it should be possible so to construct an underground system that any trouble will be confined to the cable on which it originates. It is then a question of how much it is expedient or economical to spend in extra-heavy underground construction to permit occurrence of faults without damage to anything other than the faulty cable.

Conditions were quite favorable in this case, due to the single-conductor cable. In case of failure of such cable the fault should be confined to a single conductor

and a single phase to neutral, whereas with a three-conductor cable a fault is very likely to involve all three conductors and all three phases. It was therefore decided that the short-circuit concentration on which station design should be based could be allowed to be unusually high, and the figure of 500,000 kva. was adopted for instantaneous balanced three-phase value.

After the limit has been determined, as far as the underground system is concerned, the same balancing of costs can be applied to the station apparatus, oil switches, reactors, etc. In the case in question the latter balance did not change the decision. It was decided to be best to use a regular oil switch which was capable of interrupting satisfactorily 580,000 kva.

The point is that oil-switch rupturing capacity, in many cases, and in this one in particular, is not the limiting condition, but the effect of short circuits on the whole system must be considered.

H. GOODWIN, JR.,

Power and Mining Engineering Department.

Association News

A. E. R. A. Committee on Exhibits Holds Meeting

THE committee on exhibits appointed by President Pardee of the American Electric Railway Association to have charge of the exhibit in connection with the convention at Atlantic City, N. J., October 11 to 15, held a meeting in the Association offices on Friday, May 21, to outline a program of work and to approve certain tentative arrangements already entered into with various contractors. The contracts discussed and approved were those offered by C. M. Koury & Company for furniture, rugs, etc.; J. J. Habermehl & Sons for floral decorations, and Eldredge Express and Storage Warehouse Company for hauling. There was also taken up some minor changes in the space diagram and some additions to the regulations for exhibitors which were recommended as necessary by last year's exhibit committee. The contract offered by the Pier Company was also considered. The personnel of the committee is as follows: Frank H. Gale, chairman, Schenectady; Fred C. J. Dell, National Railway Appliance Co., New York; J. C. McQuiston, Westinghouse Electric and Manufacturing Company, East Pittsburgh; A. M. Robinson, J. G. Brill Company, Philadelphia; John Benham, International Register Company, Chicago; S. D. Hutchins, Westinghouse Traction Brake Company, Columbus; Edwin B. Meissner, St. Louis Car Company, St. Louis; J. Fort Flowers, Differential Car Company, New York; John B. Kilburn, Hale & Kilburn Company, Inc., Philadelphia; Charles E. Woodbridge, Texas Company, Whitehall Building, New York.

The first spring conference of the engineering section of the National Safety Council was held in New York City on April 27. It was attended by about 100 men representing the national engineering societies, the universities, the inspection departments of insurance companies and the men in charge of accident prevention in the industries. Papers were read on the inculcation of safety principles in the minds of technical students, on safety standards and on related topics.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION
PERSONAL MENTION

Construction to Proceed

Detroit Railway in Courts in Interest of the City—Contends Its Rights Are Irrevocable

Four suits are now pending in the courts involving the city of Detroit and the Detroit United Railway. The fourth suit was filed by the railway in the federal court. The company seeks to enjoin the city from interfering with the railway in the construction of tracks on Harper Avenue, where activities were stopped by the police on May 6.

According to the bill, which was signed by President Frank W. Brooks, the Rapid Railway, a subsidiary of the Detroit United Railway, has a perpetual franchise to build a track on the north side of Harper Avenue. On June 26, 1917, the Council passed a resolution ordering the railway to remove its single track and replace it with a double track in the center of the street. These instructions were carried out in part.

The Detroit United Railway now maintains that there exists an irrevocable grant to the company for laying of tracks on Harper Avenue between Frontenac Boulevard and Gratiot Avenue, by virtue of the original franchise agreement with the township of Hamtramck, the construction of tracks, the Council resolution of 1917, and also by the moving of tracks from the north side to the middle of Harper Avenue.

CITY BOND ISSUE ATTACKED

The legality of the public utility bonds authorized by the voters on April 5 is attacked by the Detroit United Railway. The court is petitioned permanently to enjoin the city from selling any of the public utility bonds. Mayor Couzens, the Corporation Counsel, the City Treasurer, the Commissioner of Public Works, the City Comptroller and the three members of the Street Railway Commission have been subpoenaed in connection with the suit instituted by E. J. Burdick, assistant general manager, which charges that the ballots in the recent election were exposed. A motion has been made to have the ballots used in the recent election preserved.

In commenting on the city's action with regard to the Harper and St. Jean lines, where the police forcibly stopped work, officials of the Detroit United Railway refer to their answer to the city's inquiry relative to the company's policy in the matter of railway extensions. At that time the company answered that all authorized extensions would be put in operation as soon as construction could be car-

ried to completion. No objection having been offered by the public authorities, the company began the work of completing the double tracking, with paving between the tracks, of Harper Avenue, the continuation of the so-called St. Jean route and the completion of the Twelfth Street extension, the major portion of which was put in before the coming of winter put an end to the work last season. When some progress had been made on these three undertakings, and after considerable expenditure of money had been made, the Council adopted resolutions rescinding the permits granted, and work on the Harper and St. Jean routes was forcibly stopped. It is also pointed out that the Mayor's statement to the effect that no matter what the necessity for service may be the Detroit United Railway would not be allowed to provide it emphasizes a policy of destruction.

In the meantime the company reiterates its desire and willingness to improve and enlarge the transportation facilities and hopes the civic authorities may not make it impossible for the company to obtain the several hundred additional cars contracted for. The company is not fighting and will not fight the city of Detroit, it maintains, but, as it considers its duty, will endeavor to protect in all legal ways its property and investments.

Commissioner Declines Post on Wage Arbitration Board

Chairman Charles B. Hill of the Public Service Commission for the Second District of New York will not serve as a member of the board of arbitration to settle the wage question and other differences between the International Railway, Buffalo, N. Y., and its employees. He has also informed the company he does not believe that any other member of the commission will care to serve.

Chairman Hill's announcement came as the result of a suggestion made by Herbert G. Tulley, president of the International Railway, that Mr. Hill serve as a member of the board because if higher wages are allowed the men the company will need a higher rate of fare. Chairman Hill says that by acting as umpire on the board he would be placed in an embarrassing situation.

President Tulley has been in Philadelphia conferring with Thomas E. Mitten, a member of the International Railway bondholders' committee and a big factor in the management and operation of the International's lines, regarding the question of raising money to pay for relaying of tracks.

Service-at-Cost Suggested

Engineers at Work in Syracuse on Valuation Preparatory to Arranging New Operating Agreement

Henry C. Allen, city engineer of Syracuse, N. Y., in an interview with a representative of the ELECTRIC RAILWAY JOURNAL recently, stated that a railway commission of nine men has been appointed to ascertain the fare that it will be necessary for the people of the city to pay in order that the New York State Railways may obtain a fair return on its investment. Two weeks ago engineers of Ford, Bacon & Davis, New York City, were contracted with to make an extensive investigation of railway conditions and also to appraise the property of the traction lines there and ascertain the correct valuation. Arrangements for proceeding with this work have already been made.

SIX PER CENT RETURN

Mr. Allen stated that the service-at-cost plan is contemplated in Syracuse. The administration, should it adopt the service-at-cost policy of dealing with the railway, would see to it that the company receives a return of 6 per cent upon the investment. The engineers will report on the actual value of the property of the railways as found by them and agreed to by the city.

Railway service in Syracuse at the present time is not such that it meets with the approval of the residents. The railway contends that it cannot operate at a profit on a 6-cent fare and therefore must to a slight extent curtail the service. The railway is not opposed to any investigation of its affairs. On the contrary, it welcomes the proposed inquiry because it feels that now the stockholders are in a fair way to be dealt with on the basis of the value of the service which the railway performs.

LOCAL PUBLIC SERVICE COMMISSIONER

Should the service-at-cost system be put in operation in Syracuse it would probably provide, like other measures of the kind, for the appointment of an administration employee empowered to direct the activities of the railway and to give the public the service that is demanded.

The New York State Railways and Syracuse & Suburban Railway operate in Syracuse. It is their plants and equipment that will be investigated at this time.

Rochester, in which the New York Railways also operates, has a service-at-cost proposal under consideration.

Toledo Ordinances Ready for Council

Final Effort Being Made to Put Settlement Matter Before Voters by July 1

Cost-of-service and municipal ownership ordinances will be submitted to the Council at Toledo this week if the present plans of the commissions go through. In the sessions of the commissions and Henry L. Doherty, held on May 25 and 26, it looked as though they would not agree on the final terms of valuation and several other important questions. Mr. Doherty offered his lowest figure of \$9,000,000 as valuation of the property to be contingent upon the agreeable settling of all other disputed points.

JUDGE JOHN M. KILLITS of the federal court left Toledo to attend the Methodist Episcopal conference at Des Moines until June 1. Before leaving he sent word to the two commissions appointed by him to draft ordinances looking to permanent settlement of the railway troubles of Toledo that he would not alter their work before presenting it to the Council. He said if it was finished before he returned to the city that the proposed ordinances should be sent to the Council for immediate action. In his letter to the Mayor and Council he says:

I have followed the activities of each commission sufficiently to be thoroughly convinced that the members of each body have been devoted to the work of preparing from their respective standpoints the best settlement of the railway problem which the circumstances afford, having regard to the interests of the community and to justice to the owners of the property.

It was not intended in appointing these commissions to interfere in the slightest degree with the legislative power of the city, but the ambition was to bring to the solution of the problem the efforts of patriotic and thoughtful men whose work might be received by the city as advice from competent quarters.

Mr. Doherty agreed on a provision allowing the securities of the company to be sold at as much as 10 per cent below par to secure cash funds for betterments and extensions, provided they should come together on all other points now in dispute. He said he feared this measure would only tax the car riders as they might have to pay interest on an inflated value.

FINANCING DIFFICULT NOW

The difficulty which has come up over the section which the commission is trying to put into the ordinance providing for the cost of power to a "rate comparable with that of other cities of similar size and based upon cost of production in a modern and up-to-date power plant," may not be compromised. Mr. Doherty contends that his companies come under the control of the State Public Utilities Commission and therefore the provision is entirely unnecessary and that, as it stands, it interferes with the rulings of the commission. He has indicated that he will not yield on this question.

He has also told the commissioners that the new rules laid down by the Federal Reserve System regarding financing may make it impossible to secure the \$2,000,000 he is pledged to bring into Toledo for betterments and improvements. He offered to get the \$500,000 initial payment to these funds and then if the \$1,500,000 couldn't be secured later make a forfeiture of \$150,000 to insure good faith.

The commission at its last settlement approached Mr. Doherty's figures on valuation up to \$8,000,000. It first stood firm for the Goodwillie-Riggs valuation of \$7,100,000, but later raised this to \$7,500,000 and then jumped another \$500,000 to try to get an agreement. Mr. Doherty has come down from \$16,000,000.

A new angle was developed in the sessions when Mr. Doherty brought up the matter of bus competition. He insisted that the commissioners include a provision in the ordinance which would not allow the city to demand service on any car lines in excess of that of any competing line, such as buses. He takes the stand that the car riders would be forced to pay higher fares for the service and the earnings of the company might be jeopardized if unfair competition were permitted to exist parallel with any of the car lines.

Mr. Doherty also asked for a provision in the contract to be made so that the city and company would agree

that whatever capital value is arrived at in the cost-of-service plan should become the pleading of the city in any condemnation suit. The company would agree to admit the same valuation in such a course of action.

The mooted questions may be passed on to the Council for final settlement before submission to the voters. The Council has twice voted to throw the company off the streets so that favorable action to the company in any negotiations with that body is practically precluded.

The Municipal Ownership Commission has its draft ready for the Council, but will withhold its presentation till the cost-of-service measure is submitted. The commissioners feel that to send it on its way alone might subject it to too much criticism and too much fire from all quarters. It is designed to give the voters an alternative to the cost-of-service plan.

It is understood that the plan has been drawn so as merely to create a large bond issue for a transportation system. This leaves the kind of system, routing and problem of street cars or buses up for settlement upon the basis of later developments.

The commission has placed itself on record as opposing the purchase of the railway properties as a whole. Certain lines may be bought through condemnation and then auxiliary bus service added to the system.

Both measures will probably be submitted to the people of Toledo by July 1.

Receivership May Close Bus Controversy

Chicago Motor Bus Company and Chicago Stage Company Have Fought for South Side Franchise Since 1916

The Chicago Motor Bus Company is in receivership. This fact has been noted before in the *ELECTRIC RAILWAY JOURNAL*. The real significance of this move, however, is that the receivership may bring to an end the controversy, which has been waged since 1916 between the company and the Chicago Stage Company for the right to operate a bus line on the south side of Chicago. The receivership was brought about as a result of the request of the holders of the four-month 6 per cent notes, amounting to \$128,000, which fell due on Jan. 16, 1920. These were not paid at maturity and the holders demanded their principal.

IN 1914 the Illinois Public Utility Commission granted a certificate of convenience and necessity to the Chicago Motor Bus Company for the operation of a bus line on the north side. After long delay buses were placed in operation during 1917 and they have continued to operate since that time. The fare charged is 10 cents. In 1916 the bus company applied for a certificate of convenience and necessity for the operation of a bus line on the south side. It was this appeal which precipitated the contest between the Chicago Motor Bus Company and the Chicago Stage Company, for the stage company promptly filed an intervening petition opposing the application of the bus company and seeking a certificate of convenience and necessity in its own behalf. The grant which the Chicago Stage Company sought would have au-

thorized it to operate a bus line over practically the same route covered in the application of the bus company. After a protracted hearing of the case by the Public Utilities Commission an order was made Jan. 8, 1918, granting the application of the stage company and denying that of the bus company. The commission gave as its principal reason for the order that the stage company through prior experience and the technical skill of its officers and directors and by reason of its financial ability, was in a position adequately to serve the public need for motor bus transportation.

The bus company promptly appealed from the decision of the commission to the Circuit Court of Sangamon County. This court affirmed the decision of the commission. From this court the bus company then appealed to the Supreme

Court, which in turn handed down a decision on Feb. 20, 1919, wherein it reversed the Circuit Court's decision and set aside the orders and decisions of the commission.

The bus company then made formal application for a certificate based upon the decision of the Supreme Court, setting up the claim that this decision left nothing for the commission to do but grant the application. However, the commission interpreted the Supreme Court's decision as meaning that it should give the case further hearing, since the court did not question the jurisdiction of the commission, but rather set aside its orders for the reason that these orders seemed unreasonable.

Also, there was no positive direction in the decision of the Supreme Court to grant the certificate to the bus company.

So the whole controversy was reopened before the commission and the cases of the bus company and the stage

It is impossible to escape the conclusion that the type of motor bus in use in Chicago by the bus company is largely responsible for the unquestioned inability of the bus company successfully to operate it from a business and financial viewpoint.

The commission said that it was forced to conclude that the only element of value behind the \$25,000,000 of authorized capital stock of the National Motor Bus Corporation was the \$1,000,000 of capital stock of the Chicago Motor Bus Company. This, it pointed out, had an extremely doubtful value in view of the result of operation during the past two years and because of the fact that the commission had authorized the execution of a mortgage of \$200,000 against all the real estate and tangible property of the bus company.

The commission found that the bus company had not been successful financially and was not the proper corporation to be entrusted with a certificate of convenience and necessity.

On the other hand, the commission determined that by reason of the long

Michigan Men Want Increase

Jackson, Battle Creek, Kalamazoo and Lansing, Mich., are threatened with a suspension of electric railway service on June 1, when the wage agreement between its employees and the Michigan Railway expires. The men in these cities have asked for 75 and 80 cents an hour on city cars and for 85 and 90 cents an hour on the interurban lines, with a further demand of double pay for all overtime and double time for Sundays and holidays and for any time in excess of six consecutive days. James F. Collins, vice-president and general manager of the company, protests that the company cannot earn the money under present rates to pay the increase.

As far as Jackson is concerned, the City Commission there takes the stand that so long as patrons of the company in Kalamazoo ride for a 5-cent fare, Jackson should not impose an increase over the present 6-cent fare on its people. Mayor Bennett of Jackson has proposed that representatives of the people of the four cities, the company and the employees talk matters over. A 6-cent fare was granted to the Michigan Railway in Jackson two years ago. The Council at Kalamazoo refused to increase the fares at the time they were increased in Jackson, but later submitted the question to a referendum. The proposal secured a majority vote, but not a two-thirds vote, which is said to be required in Kalamazoo. The company has been inclined to question the need for a two-thirds vote, but attorneys for the city have insisted that such a vote is necessary.

In Battle Creek the Michigan Railway is collecting a 6-cent cash fare with tickets at the rate of five for 27 cents authorized by the City Commission on Sept. 22, 1919. It is understood that in Battle Creek the 6-cent fare has proved inadequate and that the company is now operating there at a loss. Mr. Collins in a communication to the City Commission of Battle Creek characterized the situation as extremely serious. He said that a material increase in fares was absolutely necessary in order that railway service in Battle Creek may be continued. In June, 1919, a 6-cent fare was granted in Lansing.

Strike Threatened in Salt Lake

Demands for wage increases and changes in working conditions which, according to the company, would aggregate an addition of more than \$376,000 to the annual operating expense of the Utah Light & Traction Company, Salt Lake City, were formerly presented to the management of the company by a committee representing the men in a series of conferences which terminated recently. The conferences were arranged for the purpose of formulating a working agreement to replace the present one, which expired May 1. The company met the demands of the men with a proposal to arbitrate the principal points at issue.

STATEMENT OF OPERATION OF CHICAGO MOTOR BUS COMPANY

	Six Months Ended Dec. 31, 1918		Three Months Ended March 31, 1919	
	Amount	Per Bus-Mile in Cents	Amount	Per Bus-Mile in Cents
Gross Earnings				
Revenue from transportation.....	\$244,495	35.79	\$92,119.80	30.54
Special bus revenue.....	385	.06	78	.03
Advertising revenue.....	4,175	.61	.....	.....
Total transportation revenue.....	\$249,055	36.46	\$92,197.80	30.57
Non-operating revenue.....	562	.08	426.60	.14
Total revenue.....	\$249,618	36.54	\$92,624.40	30.71
Operating Expenses				
Maintenance of way and structures.....	124	.03	60	.02
Maintenance of equipment.....	72,439	10.60	30,795	10.21
Depreciation reserve.....	22,131	3.23	9,886	3.28
Gasoline expense.....	29,856	4.37	12,464	4.13
Conducting transportation.....	84,083	12.31	35,362	11.72
Traffic expenses.....	2,125	.31	367	.12
General and miscellaneous expenses.....	30,186	4.42	14,981	4.97
Taxes.....	8,952	1.31	3,885	1.29
Total operating expenses.....	\$249,901	36.58	\$107,800	35.74
Net earnings (loss).....	283	.04	15,175	5.03
Fixed Charges				
Interest on funded debt.....	5,491	.80	3,165	1.05
Interest on unfunded debt.....	983	.15	158	.05
Discount on funded debt.....	3,650	.53	2,156	.72
Total fixed charges.....	\$10,125	1.48	\$5,479	1.82
Net income (loss).....	10,408	1.52	20,654	6.85
Revenue bus-miles.....	683,209	.....	301,620	.....

company were consolidated. At the conclusion of another long hearing the Public Utilities Commission again reached the decision, on Jan. 20, 1920, that the certificate of convenience and necessity should be granted to the stage company and denied the bus company. In drawing up its order this time the commission went to some length to explain its reason for this decision.

In the first place it declared the type of equipment used by the bus company to be new and experimental and of such character that the maintenance cost would always be so large as to forestall the possibility of reasonable earnings. In this connection it compared the maintenance cost of the bus company, which ran from 10.21 cents to 11.92 cents per bus mile, with the similar cost of the Fifth Avenue Stage Company, New York, which was stated to be 3.96 cents per bus-mile but for a larger number of buses. In this connection the commission summed up its opinion in the words:

experience and technical skill of its officers and directors and its sound financial backing the stage company was in a better position properly to serve the public and that it proposed to use a type of bus which had proved itself in New York to be thoroughly satisfactory and economical.

Within thirty days after the order of the commission favoring the stage company the bus company again appealed the case to the Circuit Court of Sangamon County. However, it is thought that the appointment of the Central Trust Company of Illinois as the receiver on March 18 may influence the withdrawal of the case from the court. It is understood that the Chicago Stage Company stands ready as soon as the litigation is cleared away to begin at once the establishment of a motor bus line on the south side.

An operating statement is presented of the bus company for the six months ended Dec. 31, 1918, and for the three months ended March 31, 1919.

Mayor's Committee Reports

Radical Recommendations Made in Philadelphia—Corporate Changes Suggested—Higher Fare Possible

The special committee of eleven members appointed by Mayor Moore last month to investigate the transportation situation in Philadelphia rendered a report on May 25. The most striking recommendation, probably, is a rearrangement of the corporate structure of the Philadelphia Rapid Transit Company, by which a new company would be organized "owning outright, as well as operating, all of the facilities of the present separate companies."

PRESENT SERVICE UNSATISFACTORY

The committee in its report deploras the present inadequate transit service and limited trackage in Philadelphia, but admits that the existing company is handicapped in many ways and particularly by its present leases. Multiplicity of companies, it says, results in federal excess profits taxes which the underlying companies have succeeded in imposing on the operating company to the injury of its resources for service, and the separate interests of the several companies prevents a unification of operation based solely on the convenience of the public.

The report then recommends among other things: (1) A valuation by the Public Service Commission, (2) consideration of the practicability of the organization of a new company that would "own outright as well as operate all of the facilities of the present separate companies" with duty to increase trackage, (3) the creation of a financial plan providing for proper development of the new company, (4) the operation of a city's high-speed lines in conjunction with the surface system, (5) a study of the city's transportation needs by experts, to be made at once so that if legislation is needed application can be made to the next Legislature for permissive legislation.

FARE INCREASES FORECAST

In conclusion, the committee makes a number of interesting financial observations. To the general public the most vital is a suggestion that raising fares would be the only way to help out the company in its present financial condition. But before such fares are raised the committee believes the city should insist the stockholders of the operating company should forego their dividends; further, that the city should recognize the existing rentals and interest obligations as a first charge against the net revenues, and the company, from the surplus income, should pay a sum at least equal to the interest upon the city's investment in the Frankford elevated and other facilities to be leased by the city to the company.

The immediate recommendations include the rerouting of cars, the better control of vehicular traffic, limitations upon parking privileges and the creation of traffic thoroughfares.

On the question of competing bus lines the committee shows no enthusiasm. The question of the proper sphere of bus operation should be studied by the experts, the committee adds, at a later time.

Franchise Referred to Committee

The City Council of Lima, Ohio, has voted to refer the proposed franchise with the Ohio Electric Railway to the franchise and light committee, the city solicitor and attorneys of the citizens' committee, who are to confer with officials of the railway and report back to the Council. The representatives of the company are urged in their conference with the railway men to come to an agreement (1) as to the return agreeable on the investment, (2) the valuation of property and (3) the rates under the light franchise. They are further urged to make recommendations to the Council.

Ten Per Cent Wage Increase in Kansas City

Philip J. Kealy, president of the Kansas City (Mo.) Railways, called in a committee of the employees of the company on May 17 and announced an increase in wages amounting to about 10 per cent, effective on June 1, applying to all the company's employees. Mr. Kealy said the new average wage of trainmen would range from \$120 to \$180. The increase was voluntary. Mr. Kealy said:

From August, 1917, to December, 1918, the employees of the company were under the domination of union agitators, and continual disturbance and lack of harmony resulted.

The total increases in wages in that period and by such methods was about 8 cents an hour. Since January, 1919, there has been no dictation by professional agitators and this is the fourth increase in wages in a year.

Under the present scale a trainman receives 45 cents an hour the first three months, gradually acquiring 50 cents an hour after three years. Under the increased scale, Mr. Kealy said, a new trainman would receive 50 cents an hour the first three months and after three years would get 55 cents an hour.

Administrative Engineering Course at Sheffield

A course in administrative engineering, leading to the degree of Bachelor of Science, has been added to the undergraduate courses of instruction offered by the Sheffield Scientific School.

The object of this course is to prepare men for executive and managerial positions for which a knowledge of engineering principles and methods is requisite. The course is not intended for students who expect to become professional engineers in the field of design and construction, or for students who expect to fill executive positions in which a knowledge of engineering is required equivalent to that ordinarily gained in any one of the regular engineering courses.

The work of the first year is a general preparation for the special work of the last three years of the course.

People Held Responsible

Federal Court Sets Aside Des Moines Wage Award—Future Moves Problematical

Responsibility for the present railway condition in Des Moines, Ia., was placed squarely upon the people of that city in a decision rendered by Judge Martin J. Wade of the federal court in which he set aside the findings of the arbitration board which recently granted the employees of the Des Moines City Railway an increase to a maximum wage of 70 cents per hour.

WAGE AWARD REDUCED

Judge Wade further set 60 cents as a fair maximum wage to be paid as long as the revenues of the company will permit it. Any unexpected revenues are to be applied as wages over the 60-cent rate. The present maximum is 57 cents. In rendering the decision Judge Wade said:

If a just wage cannot be paid to the men the people of Des Moines are to blame. If they do not get proper service it is because they refuse to pay for proper service. If conditions develop so that all street car service must stop no one will be responsible except the people of Des Moines.

The condition of the Des Moines City Railway and of the receivers for the Des Moines City Railway is fully known to the people of Des Moines and to the employees of the company. There is no dispute so far as the matter before the court is concerned. Neither the city of Des Moines nor the employees can make any claim that the company is earning enough money to pay the wage award, and to pay other operating expenses, and fixed charges provided in the franchise ordinance.

There are four parties before the court, the city of Des Moines, the employees, the Des Moines City Railway and the mortgagees and creditors. The company is insolvent. It was insolvent when the franchise was granted in 1916. The people of Des Moines then knew it was insolvent, and in the franchise expressly provided for the payment of interest upon the mortgage and general indebtedness. At the time when the franchise was granted the mortgaged indebtedness of the company was \$2,725,000 and the general indebtedness was \$1,287,719.

The people who voted for the franchise had full knowledge of this indebtedness because it was fully discussed in the press and at public meetings, I am advised. The people of Des Moines also provided in the franchise for further indebtedness for extensions to meet the demands of the public.

THERE CAN BE NO CONFISCATION

This corporation and the stockholders of this corporation have never received any dividend or profit since this franchise was granted in 1916, nor for a long time before; nor are the stockholders demanding dividends now.

I have held several times that I have no power to take the interest due upon the indebtedness and apply it upon the wages of the men, because in that event the mortgage would be foreclosed and the owner of the property would be deprived of every dollar of investment therein. The court has no power to deprive a man or a corporation of his property in that way.

Just what turn the trouble will now take is problematical. Ben Wiley, business agent for the men, says for the time at least there will be no strike and that regardless of Judge Wade's ruling the men will consider that they have earned the additional 10 cents from the date of the arbitration board's decision.

As explained in the ELECTRIC RAILWAY JOURNAL for May 22 the umpire in the wage arbitration, while admitting the right of the men to more money, stated the revenues were insufficient to permit the pay increase he suggested.

Pittsburgh Labor Situation Very Threatening

Men Refuse to Submit to Arbitration—Receivers Cite Men's Obligation to Exhaust Peaceable Methods

Several conferences have been held by Charles A. Fagan, S. L. Tone and W. D. George, receivers of the Pittsburgh (Pa.) Railways, with the wage committee of the motormen and conductors looking to a settlement of the demands of the men in so far as the working conditions are concerned. These involved an eight-hour day, one day off in seven, free transportation, more straight runs and elimination of all swing runs; time and one-half for Sundays and holidays, extra allowances for time when no transportation work was being performed, etc. The purpose of this effort was to clear up all questions at issue except those of wages. The men have refused thus far to discuss any of their demands until the wage rate is settled.

INASMUCH as the recent decision of the Public Service Commission, together with the budget of expenditures for the years 1920, 1921, 1922 and 1923, prepared by the valuation board, representing the commission, city and company, results practically in a service at (less than) cost by the company, the city authorities requested financial statements from the receivers of all expenditures prepared for 1920. On receipt of these an effort was made to eliminate an amount sufficient to create a balance to be made available for increased wages.

Owing to decreased maintenance during the war, resulting in pressing necessities therefore during the present year, the company's management has been compelled to refuse to acquiesce in the city's suggestion for a material curtailment in the program for maintenance and repairs for the current year.

MEN REFUSE ARBITRATION

The present attitude of the city is one more of temporary expediency and a complete reversal of its continued, insistent and frequent complaints for the past three years for more expenditures on maintenance, facilities and service and that regardless of the critical times and shortage in materials, labor and funds.

The disposition of the public officials is evidently similar to that in other cities in wage adjustments where the officials freely co-operate for higher wages in case the funds therefor are provided from a source other than the city treasury. As it was impossible in the present situation to lend any funds available, the municipal officers had no recommendations to make.

The receivers then called another conference with the wage committee. They offered the men a wage scale of 59, 63 and 65 cents (this is an increase of 5 cents an hour). It was suggested by the receivers that if this was not accepted all questions at issue be arbitrated in accordance with the by-laws of the men's organization. The receivers named S. E. Duff as their arbitrator. Mr. Duff is a consulting engineer of Pittsburgh and past president of the Engineers' Society of Western Pennsylvania.

The men have refused arbitration. Whether there will be a strike on June 1 depends upon the attitude taken by William B. Fitzgerald, vice-

president of the Amalgamated Association, who is on his way to Pittsburgh. It was Mr. Fitzgerald who requested the men to return to work last year after they had been on strike for more than a week; he told them on that occasion that "it is either a case of your returning to work or forfeiting your charter in the international association."

The present contract of the employees expired at midnight on May 1. They voted to strike on that date when the receivers told them they were unable to grant the demands or add to the present wage scale. Mayor Babcock and the City Council promised the men that if they would postpone strike action, the city authorities "will see that you get a material increase in wages." The men agreed to postpone the strike. The thirty day postponement expires at midnight next Monday, May 30.

The receivers, when they called the attention of the men to the fact that they must, in compliance with the laws of their own constitution, submit to arbitration, replied through their wage committee that they construed the activities of the Mayor and the City Council as "arbitration." There the case stands.

The letter of the wage committee to the receivers follows except for the introduction:

At a meeting of our executive board on May 24 we gave careful consideration to your letter of May 22, in which you embodied your ultimatum of 59, 63 and 65 cents an hour as the wage to be paid motormen and conductors from May 1, 1920, to May 1, 1921, with the working conditions remaining the same as they now are.

We note that in your letter of May 22 you state that the 10 per cent increase given the men April 1 had marked the limit of your ability to grant a further increase without being compelled to increase the fares. In looking over the figures presented by you in your budget to the Mayor and the City Council we feel that you have greatly overestimated your liabilities, as has been shown by men holding prominent city positions.

We therefore feel that you are in position to pay the motormen and conductors a higher rate of wage than you have as yet offered, and we, therefore, must advise you that we regard the wage offered by you as being insufficient and not acceptable as it does not come anywhere near what the men are contending for.

As to your proposal that in case the motormen and conductors refuse the above wage, you are willing to submit all wages in dispute to a board of arbitration, we wish to state that, in agreeing to the postponement of our wage controversy for thirty days, this was arbitration and we so advised our men at our meetings held on April 27 and 28.

The receivers, quoting from the constitution of the Amalgamated Associa-

tion, replied that "the offer of the receivers to increase the wages of the conductors and motormen to 59, 63 and 65 cents an hour having been eliminated from the situation through its rejection by you in your letter of this date, we stand upon our offer of arbitration. That offer of arbitration was first made by us, orally, at one of our conferences in April and was renewed in our letter of May 22. It is based upon Sections 111 and 112 of the Constitution and General Laws of the Amalgamated Association." The receivers then quoted from the official Amalgamated constitution.

Wage Matter Awaits Fare Action

Final action by the Detroit (Mich.) United Railway and the city is being awaited by the motormen and conductors on their request for increased wages. The joint agreement committee representing the men advised that this be done so as to learn the outcome of the company's efforts to obtain an increase in city fares.

E. J. Burdick, assistant general manager, has asked the Council for permission to charge a 6-cent fare. This, it was maintained, must be collected to enable the company to pay its employees the wage scale that it was intended to offer. The company has offered to permit an accountant employed by the city to have access to the company's books. A statement of the company's present finances was presented to substantiate the company's claim.

The matter was taken under consideration by the Council, but no definite action resulted beyond telling Mr. Burdick that the matter could not be considered until a formal application for fare increases was placed before it. The opinion was voiced informally by one Councilman that the matter was one for the courts instead of the Council to settle. Officials of the company contend, however, that the fare increase can be made by the Council's assumption of power to fix fares in the Kronk ordinance. This measure was passed by the Council to restrain the railway from increasing fares. Although still in force this ordinance is held to be invalid by Corporation Counsel Wilcox, of the city.

According to the figures presented by Mr. Burdick an increase of 1 cent in city fares would increase the company's revenue by about \$3,300,000, while the increased scale of wages would cost the company approximately \$2,600,000. The balance, it was indicated, should go to the company to help pay the usual 8 per cent dividends, considered necessary to maintain the company's financial integrity.

The scale of wages which the Detroit car men voted to accept calls for 70 cents an hour for the first three months service, 73 cents during the next nine months and 75 cents for men employed one year or more.

News Notes

Trenton Men Defer Strike.—The employees of the Trenton & Mercer County Traction Corporation, Trenton, N. J., who presented demands for an increase in wages and were turned down by the company, have decided to continue working at the old rate and not go on strike. The company informed the men that no raise of any size could be granted this year.

Wage Increase in Dallas.—The Dallas (Tex.) Railway has announced an increase of 4 cents an hour to all conductors and motormen in its employ. The increase will take effect immediately. The wage for motormen and conductors will be the same. The new rates follow: First three months, 46 cents an hour; next nine months, 48 cents an hour; after first year, 50 cents an hour.

Wages Will Be Arbitrated.—The union men employed by the Eastern Massachusetts Street Railway, Boston, Mass., have accepted and ratified the working conditions section of their desired new agreement and have voted to place in arbitration the demands for a maximum wage rate of 75 cents an hour, the eight-hour day, time and a half for overtime, Sundays and holidays and one day off in fifteen days, with pay.

Connecticut Men Want Increase.—Members of the Amalgamated unions on the Connecticut Company, New Haven, Conn., through the State Conference Board, have requested a new contract, beginning June 1, which calls for a 75-cent flat hourly rate of wages, the eight-hour day and regulations as to running the one-man cars. The present schedule is a 50 cents an hour maximum, a ten-hour day and varying regulations, according to local conditions.

Municipalization Urged for Staten Island.—A request for the municipalization of the electric railway, electric lighting and power service in the Borough of Richmond, New York, N. Y., has been made in the form of a petition from citizens of Staten Island to the Board of Estimate. Immediate and favorable action on the plan of Commissioner Grover A. Whalen was urged on the ground that the situation at present on Staten Island constitutes a grave public emergency. Both electric railways on the island suspended service, but one of them has resumed under an increase in fare and protection by the court from interference by the city with its service.

Cities Urge Utility Legislation.—Legislation providing for state control of public utilities, through a regularly

constituted Public Utilities Commission, was urged by the League of Texas Municipalities, which has just closed its annual convention in Dallas. Resolutions were adopted asking the Legislature to enact such legislation at the earliest date possible and outlining legislation desired, which will include electric railways and other utilities.

Improvement Program Approved.—The directors of the Cleveland (Ohio) Railway Company, at a recent meeting, approved the improvement program calling for the expenditure of \$1,000,000 which was passed by Council several months ago. The operating report for March shows that 33,617,647 passengers were carried, an increase of almost 20 per cent over the corresponding month last year. The interest fund now amounts to \$584,706. It must reach \$700,000 before a reduction can be made in fare.

Berkshire Men Want More.—Demands for a new wage scale which will bring the pay of motormen and conductors on the lines of the Berkshire Street Railway, Pittsfield, Mass., to a figure in excess of \$5 a day are now in the hands of C. Q. Richmond, the general manager. The demands are incorporated in a new working agreement which is to become effective when the present one expires June 1. After Mr. Richmond's answer has been received a conference will be held for the purpose of considering the matter further.

Unable to Agree on Third Arbitrator.—Unable to agree upon a third member of a committee to arbitrate the demands of conductors and motormen by the East St. Louis & Suburban Railway, East St. Louis, Ill., the two members chosen, C. E. Smith, consulting engineer of St. Louis, representing the company, and David Walsh, chosen to represent the employees, voted recently to adjourn sine die. The 1919-20 agreement between the employees and the company expired on May 1. At the date of expiration it was agreed to arbitrate through the committee of three, officials electing one member, the union a second and the two to choose a third.

Another Company for the Open Shop.—The Grand Forks (N. D.) Street Railway has served notice on its employees that after June 1 the company will operate its property on the open-shop policy. The present contract expires on the date mentioned. In a statement to its employees the company said: "The company contends that the open shop is based on one of the principles upon which American freedom rests—the right of every man to work as he will, without interference or intimidation, so long as he obeys the laws of his country. We have had to refuse local applicants employment due to their unwillingness to become members of the association. We are not antagonistic to labor unions and differ with them only when they seek to deny the constitutional rights of others in this land of equal opportunity."

Programs of Meetings

New England Street Railway Club

The annual outing of the New England Street Railway Club will be held this year at Montreal. The plan is to take the train from Boston on the evening of June 28, spending June 29 and 30 at Montreal, and return from Montreal on the evening of June 30. The program of these two days is to be announced at the meeting of the club on May 27.

American Institute of Electrical Engineers

The thirty-sixth annual convention of the American Institute of Electrical Engineers will be held at the Greenbrier, White Sulphur Springs, W. Va., June 29 to July 2, 1920. Seven technical sessions are scheduled. Opportunity has been provided for recreation and entertainment by leaving the afternoons open for the many entertainment features which are being arranged by the convention committee, including dancing, teas, card parties and other special functions for the ladies, and the usual golf and tennis tournaments, baseball and other special events.

American Railroad Association, Mechanical Section

The second annual meeting of Section 3, Mechanical, American Railroad Association, will be held at Atlantic City, N. J., June 9 to 16, inclusive. The sessions will be convened in the Greek Temple on Young's Million Dollar Pier. The headquarters of the association will be at the Marlborough-Blenheim Hotel. The program of reports or papers for the six sessions of the convention has been arranged as follows:

June 9. General committee, including nominations, mechanical stokers, stationary boiler plants.

June 10. Fuel economy and smoke prevention, auxiliary or safety connections between engine and tender, electric rolling stock, scheduling and routing systems for locomotive repair shops, superheater locomotives, snow-fighting apparatus.

June 11. Locomotive headlights and classification lamps, feed water heaters for locomotives, locomotives as a big investment, locomotive boilers, engine terminals, train resistance and tonnage rating.

June 14. Autogenous and electric welding, specifications and tests for materials, standard and recommended practice, repair shop layouts, amalgamation, standard blocking for cradles of car dumping machines, packing of journal boxes, co-operative research bureau.

June 15. Passenger car rules of interchange, prices for labor and materials, depreciation for freight cars, arbitration, tank cars, brake shoe and brake beam equipment.

June 16. Couplers and draft gear, car wheels, car construction, safety appliances, loading rules, train brake and signal equipment, train lighting and equipment, subjects.

Financial and Corporate

Deposit Time Extended

Satisfactory Progress Being Made
Toward Reorganization of San
Francisco-Oakland Railways

Howard Throckmorton, who has been acting in behalf of the reorganization committee having in charge the affairs of the San Francisco-Oakland Terminal Railways, Oakland, Cal., in the securing of deposits of subsidiary securities of that system in assent to the proposed plan for the reorganization of the company, announced on May 6 that already 60 per cent of these were in the hands of the committee's depositaries.

MANY HOLDERS ASSENT

There are outstanding in all \$20,500,000 of notes and bonds of the company, and of these there had actually been deposited \$9,200,000, of which \$200,000 were notes. The others pledged would bring up the amount to the 60 per cent mentioned. Mr. Throckmorton stated that he had everywhere met with a disposition on the part of the security holders to co-operate with the reorganization committee, but the securities are widely held and much time is necessary to reach them all. For that reason the time was extended by the committee for receipt of securities under the plan from April 15 to June 15.

The reorganization now under way was undertaken at the instance of the California Railroad Commission and by virtue of an enabling act passed at the last session of the Legislature. Appraisal was provided for, and the appraiser appointed has been working for some time back fixing the values of the properties as of some date in 1918, all improvements actually made and money spent on such since to be added to the appraised value. This report is promised within sixty days, when a long step will be made toward reorganization. There are other matters to be taken up, such as the securing from the east bay cities of an indeterminate franchise.

NOTES HAVE MATURED

The notes outstanding are of two kinds, one that is known as the Halsey loan of \$2,500,000 and the Tidewater loan of \$1,500,000. There is also due and gradually being paid off interest on the company's obligations of \$1,750,000. The Halsey and Tidewater loans have already matured. Other maturities are the Oakland Traction 6 per cent bonds, which were due in 1918, amounting to \$1,121,000; an issue of equipment notes of the San Francisco-Oakland Terminal Railways of \$120,000, and an issue of \$95,000 of notes of the Oakland Traction Company.

There are 262 miles of standard gage city, suburban and interurban lines included in the San Francisco-Oakland System.

Housing Corporation Will Dispose of Its Richmond Property

The Richmond & Seven Pines Railway, the only road owned by the United States Housing Corporation, is about to be sold under the rules requiring the termination of the Housing Corporation. The corporation built more than 100 houses at Seven Pines and acquired the railway so as to supply the needed transportation to Richmond, some 8 miles away. The residents of Seven Pines are mostly commuters who go to Richmond for business, but there is also in Seven Pines a government shell filling plant, now used for storage but to be sold for factory or other use.

The physical property of the railway at the time of its purchase was appraised at \$134,441, and while operated by the Virginia Railway & Power Company earned in nineteen months, gross, \$115,150. All of the bids but one so far have been for the railway as scrap property. One bidder wants to take over the line as a going concern and hopes to buy the houses, land and other development. This plan is preferred by the Housing Corporation.

Referendum on Dividend Matter

Common Pleas Judge David H. Thomas, on May 19, refused an injunction against the referendum on the increase in dividends of the Cleveland (Ohio) Railway from 6 to 7 per cent. Attorneys for the company stated that the case will be appealed. It will depend upon the decision of the higher courts as to whether the ordinance, providing for the increase, will be submitted to a decision of the voters on Aug. 10, 1920. In rendering his decision Judge Thomas, among other things, said:

While the court is not dealing with the construction of the state constitution, it is dealing with the fundamental law of the city of Cleveland, and it is the court's judgment that this law should be liberally interpreted to the end that the manifest purpose of the city charter may be realized. The commissioners who framed the charter might readily have foreseen that a clerk through inadvertence, fraudulent purpose, or error in judgment, would wrongfully certify a petition as sufficient, which was in fact insufficient, and that the jurisdiction of the court would be invoked to make the correction.

Was it ever the thought or intent of the commissioners who wrote the charter, or the electors who adopted it, that the operation of so important and zealously guarded a feature as the referendum should be subject to the hazard of absolute accuracy of a single official, in the performance of a ministerial duty? Can it be contended that a greater right follows from the inconclusive decision of the inferior official, the clerk, than from the conclusive decision of the superior and appellate official—the court? We do not think so.

Prospects Very Uncertain

Disintegration of Rhode Island Properties Likely Unless Unfair Competition Is Curbed

Bondholders of the United Traction & Electric Company, included in the system of the Rhode Island Company, Providence, R. I., are reported to have adopted the view that there will be no reorganization of the Rhode Island Company under the charter of the United Electric Railways, until jitneys and buses are regulated. It will be recalled that at the recent session of the Legislature of Rhode Island the program of bills looking toward the reorganization of the company and the granting of relief failed in part. Among other things the Legislature did not provide for jitney regulation, as had been asked by the company.

BONDHOLDERS IN AGREEMENT

The view of the situation as expressed by the bondholders of the United Traction & Electric Company has been ratified by bondholders of the Rhode Island Suburban Railway. The matter now goes before the stockholders of the United Traction & Electric Company. It is understood that the resolutions which have been adopted by the security holders call for the reorganization of the Rhode Island Company under the five acts passed by the General Assembly when jitneys and buses have been brought under proper supervision.

Despite the trend which these events indicate, it may be finally decided to proceed with the reorganization and continue the agitation for jitney regulation.

Justification for such a course, if adopted, would lie largely in the fact that the legislation already passed is estimated to eliminate \$400,000 in charges against the railway.

The situation confronting the Rhode Island Company was reviewed at the fifth annual convention of the Rhode Island Bankers' Association on May 19. Walter F. Angell and Richard B. Comstock explained the conditions in the way of a successful reorganization of the company. They appealed to the bankers for assistance in bringing the competitors of the railway under public supervision.

MINORITY RULE FLAYED

Mr. Comstock is reported to have gone so far as to predict that unless the jitneys were brought under proper supervision, the electric railway properties would have to be taken over by the State or be scrapped. Mr. Angell declared that government in this country is being directed by the organized minorities. He cited the case of the railway legislation before the last session of the General Assembly. In this connection he said that 350 licensed jitney men thoroughly organized had succeeded in scaring the Legislature and had prevented the passage of the bill to place the jitneys and buses under regulation.

Thousands of Home Investors

During the last three years the Milwaukee Electric Railway & Light Company and Wisconsin Gas & Electric Company, Milwaukee, Wis., have sold their new securities to nearly 7,000 Wisconsin men and women. A surprisingly large percentage of these investors paid for their securities with money which they kept in hiding; in several such instances the sums thus brought out of hiding and put into circulation ran into thousands of dollars.

This year and next these companies have to raise several million dollars to finance urgently needed additions to their properties. The Wisconsin Gas & Electric Company is now selling \$500,000 of five-year, 7 per cent convertible gold notes and \$500,000 of 7 per cent participating preferred stock. The Milwaukee Electric Railway & Light Company needs \$7,000,000 to \$8,000,000 this year and next to meet increased demands upon its plants. The companies, so far as possible, wish to get this new capital at home. The reasons they give are as follows:

1. Large investors generally throughout the country, because of the high federal income taxes, have withdrawn from the market for public utility securities, preferring to invest in tax-free securities.

2. This fact has shifted the logical market for public utility securities to the field of small investors, with relatively small incomes subject to federal taxation.

3. Taken together, the two above facts make it necessary for a utility security issue to find at least ten times as many buyers as heretofore.

4. Clean, strong companies, with good earning and property records, like these, can reach a large number of small potential investors at least cost in their home territory. Indeed, the cost of reaching the necessary large number over a larger area by direct advertising would be prohibitive.

5. These companies have learned by experience that by using this method, within their own State, they can get new capital as needed at a cost which the Wisconsin Railroad Commission, regulating their service and their financing, is willing to approve as in the public interest.

6. By this method every dollar of selling cost is expended in Wisconsin and every dollar of interest and principal earned by the securities sold is paid out in Wisconsin.

7. The enlisting of several thousand new home investors in large Wisconsin business enterprises tends to stabilize the position not only of those enterprises but of all business investments against social and industrial unrest. These companies have become convinced that the surest way to protect the existing order of business is to open the way for a majority of the industrious and thrifty men and women of the State to share in the earnings of the larger corporations.

Birmingham Notes Extended

The committee representing the holders of the 6 per cent two-year gold notes of the Birmingham Railway, Light & Power Company, Birmingham, Ala., which came due on April 1, has entered into arrangements with persons interested in the company for the extension of these notes for two years from April 1, 1919, to April 1, 1921, at 7 per cent interest, together with interest on the overdue coupons at 6 per cent. The April 1, 1919, coupon will therefore be paid at 6 per cent and the Oct. 1, 1919, and April 1, 1920, coupons at 7 per cent, together with interest on these overdue payments at 6 per cent.

Thomas J. Walsh, chairman of the committee, explains the situation as follows:

We were especially fortunate in the Birmingham situation in that the difficulties were due merely to local complications, and we are advised that for the past six or eight months all criticism of the company on the part of the city officials has been removed and the company seems to have been restored to its former excellent standing. The court has, however, continued the receivership. Negotiations, we are informed, are now pending between the company and the city looking to some modification of the fixed fare clauses of the franchise, whereby the company may be enabled to earn a fair rate of return on its investment at all times in the future.

The company is showing very satisfactory improvement in earnings both gross and net compared with a year ago, and for the twelve months ended March 31 the increase in net earnings over the corresponding period in 1919 was more than \$250,000.

The interest on these notes is to be advanced by the protective committee representing the American Cities five-six per cent collateral trust bonds, under which collateral mortgage the stock of the Birmingham Company is pledged, it being necessary to do it in this way as the court would not allow the company to pay the interest on account of other payments ranking equal or prior to this interest charge. The American Cities Company purchases the coupons for its own account, thus safeguarding the equity which it now owns in the property and which was jeopardized so long as there existed any default on these notes.

New coupon sheets will be attached to the deposited notes, and it is believed to be for the best interest of the owners of the notes that they remain on deposit with the committee until satisfactory arrangements have been made for the payment of the principal thereof, or, in any event, until the receivership has been terminated.

Steps Taken Toward Condemnation

Definite steps were taken by the City Council of Seattle, Wash., for the purchase of the Seattle & Rainier Valley Railway when the Council recently instructed Corporation Counsel Walter F. Meier to prepare an ordinance for condemnation of the property. An appraisal of the property by members of the Council and engineers of the city utilities placed the approximate value at \$900,000. The company is demanding \$1,668,000. As there seemed no chance to compromise, the Council decided to let the courts fix the price.

Mr. Richey to Value Knoxville Property

Albert S. Richey will value the entire property of the Knoxville Railway & Light Company, Knoxville, Tenn., for the Railroad & Public Utility Commission of that State. J. H. Perkins, Birmingham, Ala., will represent the company. Mr. Perkins also acted for the Memphis Street Railway in the valuation of that property. Both the Knoxville and the Memphis properties are controlled by the American Cities Company. In the Knoxville valuation the city has the right to appoint an appraiser at its own expense to represent it. The representative of the city will have equal rights with those of the company representative. The city has not yet announced its representative. The valuation is being conducted to ascertain the base upon which rates for both light and power and for fares shall be based.

Two Roads Show Surplus in 1918

The eleventh annual report of the Nebraska State Railway Commission contains financial statistics for the year ended Dec. 31, 1918, pertaining to the six operating electric railways. These six companies own 201 miles of single track and lease 14.67 from lessor non-operating companies. The total equivalent single-track mileage open bed is 15.75.

Only two of these companies had a surplus at the end of the year, although three paid partial dividends on either their common or preferred stock, or both. The average dividend rate, however, for the State was less than 2 per cent on an outstanding capitalization of \$12,489,000.

Further details as to operating revenues and expenses and other statistics of operation, including traffic statistics, car-mile statistics, etc., are included in the following table:

Year Ended Dec. 31, 1918	
Number of companies	6
Stocks and Bonds:	
Capital stock issued and outstanding:	
Common	\$12,039,500
Preferred	\$6,244,500
Bonds issued and outstanding	\$11,750,000
Number of shares authorized	226,000
Number of stockholders	875
Authorized capital stock	\$22,600,000
Assets:	
Structures and roadway	\$16,724,406
Equipment	5,789,352
Lands, buildings, fixtures, etc.	883,622
Material supplies on hand	408,182
Cash and current assets	755,397
All other assets	2,961,892
Total assets	\$27,621,598
Liabilities:	
Capital stock issued	\$12,489,000
Bonds outstanding	11,369,000
Loans and notes payable	131,799
Audited vouchers and accounts payable	213,104
Taxes and interest accrued and not yet paid	88,408
All other liabilities	3,330,287
Total liabilities	\$27,621,598
Earnings:	
Passenger revenue	\$3,723,854
Other revenue	457,396
Gross earnings from operation	\$4,181,250
Expenses:	
Way and structures	\$442,167
Equipment	245,257
Traffic	6,793
Transportation	2,017,210
General and miscellaneous	378,149
Total operating expense	\$3,089,576
Net operating revenue	1,091,674
Non-operating income	27,329
Gross income	\$1,119,003
Deductions from gross income:	
Interest paid	\$740,698
Taxes paid	370,217
Dividends	237,119
Reserved for depreciation	10,616
Additions and betterments for year	53,623
Total deductions	\$1,412,273
Deficit at end of year	\$293,270
Traffic statistics:	
Revenue passengers	73,510,318
Non-paying passengers	19,865,685
Total passengers	93,376,003
Revenue car-miles run	13,487,504
Car-mile statistics:	
Operating revenue (cents)	31.04
Operating expenses (cents)	22.92
Net income (cents)	*0.09
Passenger traffic (total)	6.93
Car-miles per revenue passenger	0.183
Miles of track owned	201.085
Leased track operated	14.669
Total trackage in state	215.754
Total single-track mileage operated	266.564
Total number of motors owned	1,214
Total number of all other cars	44

Seattle Is Economizing

Ticket Warrants Suggested as a Means of Future Financing—Economies Being Worked

A new method to finance the Seattle (Wash.) Municipal Railway has been suggested to Mayor H. Caldwell by city Comptroller Harry W. Carroll. He plans "bargain sales" of street car tickets in blocks of not less than 100 5-cent tickets at a discount representing the 5 per cent interest which the banks would charge for handling railway warrants. In that way the interest would be paid to those who ride on the cars. This could be done, Mr. Carroll said, by selling blocks of \$5 worth of tickets redeemable in a year for \$4.75 and \$5 blocks redeemable in two years for \$4.50.

Mr. Carroll says the suggestion is based upon the representation of the superintendent of municipal railways that certain economies in the operation of the railway will result in a decided reduction of expenses and will eventually enable the railway to maintain itself in a solvent condition. Mayor Caldwell will present the suggestion to the City Council.

D. W. Henderson, superintendent of the municipal railway, in a recent letter to Mayor Caldwell, protested against the suggestion of City Treasurer E. L. Terry that the department be placed on a warrant basis on June 10. Mr. Henderson submitted a statement showing that the railway deficit during April was \$37,000 less than in March. He states that, with other economies being initiated, it is expected the deficit for the month of May will be materially reduced. Mr. Henderson reports that the department has been able to reduce car-hours so as to effect a saving of \$8,000 monthly. The operation of the jitney regulation ordinance is also expected to increase the returns of the railway.

Eastern Massachusetts Abandons Twelve More Miles

The trustees of the Eastern Massachusetts Street Railway announced on May 18 that, beginning June 1, the following lines of the system would be discontinued: Melrose Highlands to Saugus Center, Linden to Saugus Center, Malden Square to Linden, Linden to Revere and the Park Avenue line in Revere. The trustees stated that the operating loss was further aggravated by the necessity of large expenditures for rehabilitation in the near future.

Fred A. Cummings for the company said that the residents of Saugus, Malden and Melrose have been informed that notices of discontinuance will be posted in the cars to take effect June 1. Mr. Cummings said:

The 12 miles comprising the several lines have been under observation for some time, and it was soon discovered that the volume of traffic did not meet the bare operating expense. In other words the cost has been greater than the revenue.

All the lines are in the Chelsea district, in which there has been a large deficit for some time. The trustees feel that the only way to avert the deficit is to discontinue

such lines. Of course, in this section a number of persons will be seriously inconvenienced. The public officials of Malden have asked for a conference with the road officials Thursday afternoon in the hope that something may be done to continue the lines.

Evidence Presented in Foreclosure Case

The presentation of evidence in the foreclosure suit against the Chattanooga Railway & Light Company, Chattanooga, Tenn., was completed on May 8. The court announced that the final argument would be heard the following morning. E. D. Reed, general superintendent of the company, occupied the stand for most of the day. He reviewed the history of his connection with the company since 1909. Much of his testimony had to do with the operating agreements between the railway and light departments of the company for the joint use of property.

It was brought out that the light and power department has been a much better paying investment than the railway department. While the net revenue of the railway department in 1910 was considerably more than that for the light and power departments, in 1913 the net revenue of the light and power department was greater than that of the railway department for the same year. After the use of the hydroelectric power had begun in 1913, 18 per cent of the power received to the company's transforming stations was used for railway operations and the remaining 82 per cent for light and commercial power purposes. Mr. Reed stated that the depreciation of the railway property since 1914 had been \$800,000 to \$1,000,000. In addition to the mortgage involved in the present suit, the company has been paying interest on approximately \$1,700,000. The aggregate of interest paid in the past six years was \$1,500,000. The court has under consideration various applications of the receivers with respect to the appropriation of moneys for the payment of taxes, tolls, etc.

Suburban Bonds to Be Paid.—The \$1,000,000 of first mortgage bonds of the Detroit, Rochester, Romeo & Lake Orion Railway, included in the Detroit (Mich.) United Railway system, which mature on June 1, will be taken up from the present holders upon presentation at the office of the Central Union Trust Company, New York.

Shore Line Electric Railway Has Deficit.—Robert W. Perkins, receiver of the Shore Line Electric Railway, Norwich, Conn., has filed with the clerk of the Superior Court a list of the claims given to him against the company, as its receiver. They aggregate \$4,798,133. The receiver also filed a statement showing that a deficit of \$78,506 resulted during the six months' period ended April 1.

Receiver's Certificate to Be Refunded.—Judge Foster of the United States District Court has authorized J. D. O'Keefe, receiver of the New Orleans Railway & Light Company, New Orleans, La., to issue \$750,000 of receiver's certificates. The receiver has stated that the certificates can be disposed of at par and interest. The proceeds will be used to take up a like amount of certificates which fell due May 15.

Manila Company to Issue Preferred Stock.—The New York Stock Exchange has been notified that the Manila Electric Railroad & Lighting Corporation, Manila, P. I., proposes to increase the authorized preferred stock from \$2,000,000 to \$3,000,000 and to change the dividend rate on the present authorized stock from 7 per cent to 8 per cent. The company has no outstanding preferred stock at present, although \$2,000,000 of such stock was authorized by its charter.

Abandonments Sought in Trinidad.—Abandonment of railway service on Pine Street between Arizona and San Juan Streets and the removal of the railway tracks from Pine Street between State and San Juan Streets, is contemplated by the Trinidad Electric Transmission, Railway & Gas Company, Trinidad, Col. In the application which it has made to the Public Utilities Commission, the company asserts there is practically no revenue derived from the operation of the lines.

Abandonments and Relocations Proposed.—The Quincy (Ill.) Railway, included in the Illinois Traction System, has applied to the City Council of Quincy for permission to take up its tracks on Broadway between Third and Fourth Streets and on Front Street between Broadway and Main Street. The company desires to discontinue service entirely on these lines. It has further applied for permission to take up one track of the present double-track system on Third Street between Spring and Oak Streets and to relocate the remaining single track in the center of Third Street between Spring and Oak Streets and to operate the same as a single-track line. The petition was referred to the railroad committee of the Council without discussion.

Financial News Notes

Seek to Use Renewal and Replacement Funds.—The Memphis (Tenn.) Street Railway has asked permission from the State Utilities Commission to invest its renewal and replacement funds for new construction at the rate of \$5,000 a month without applying to the City Council for that privilege.

Long Island Road Suspends.—The Babylon Railroad suspended service on May 15. The road extends from the Long Island Railroad at Amityville to the steamboat dock at the foot of Fire Island, Babylon. There are 8 miles of standard gage track, with catenary trolley.

Traffic and Transportation

Interurban Pleas Heard

Indiana Companies Present Case for 3-Cent Rate—Large Increase in Costs Shown

Petitions of the Indianapolis & Cincinnati Traction Company, the Union Traction Company of Indiana and other interurbans operating within the State of Indiana came before the State Public Service Commission at hearings on May 18 and 19. The roads had applied for a general increase in fares to a basic rate of 3 cents a mile. The present basis is 2½ cents a mile.

The case of the Indianapolis & Cincinnati Traction Company was presented by C. L. Henry, president of the company. Mr. Henry called attention to the tabulation of figures of six national banks in Indianapolis which showed that from September until May the bank loans increased from \$49,981,000 to \$64,156,000, while the deposits had practically remained at a standstill.

Mr. Henry said he did not believe that any Indiana interurban would be taken into the groups for which the Interstate Commerce Commission is to fix rates under the Esch-Cummins law. He pointed out that the groups are to be considered as a whole and that single lines are to receive no consideration, outside of loans and rentals, if they are unable to operate under the rates to be fixed by the federal commission.

COAL PRICE ADVANCE SHOWN

Summarizing the operating cost increases, Mr. Henry showed that his company now is paying 45 cents a ton more than contract price for its coal; that after Sept. 1 coal will cost \$1 a ton more, "if we can get it at all"; that coke for the heating of cars will cost \$1 a ton more and that general expenses will amount to approximately 25 per cent more than three months ago. He said that the company now is earning only a little more than one-third of what it is entitled to earn on a reasonable per cent basis of return on a \$8,000,000 investment. He said that if the company could obtain barely enough money to squeeze through "the present financial storm" it would be satisfied.

Arthur W. Brady, president of the Union Traction Company of Indiana, presented the case for that system. Mr. Brady declared that under the plan the company proposes the fare would be only 2.85 cents a mile when tickets are purchased. This would be a 4 per cent increase over the present fare. Cash fares would be computed at the rate of 3 cents a mile, but each passenger would be given a rebate check, redeemable at any of the company's ticket offices, which would bring the fare down to 2.85 cents a mile.

The company is now charging at the rate of 1½ cents a mile for commutation tickets. It seeks to have the commutation books put on a basis of forty rides for twenty-five one-way full fares. At the 2.85-cent rate this would increase the commutation rate to 1.78 cents a mile, Mr. Brady said. During Mr. Brady's testimony he brought out the fact that the company

would like to build a new power plant, purchase new steel cars, eliminate sharp curves and install additional block systems, but that it could command no capital with which to do so.

In reply to a question by Commissioner Paul P. Haynes, as to what would be the general effect if one of the larger interurban systems were to fail, Mr. Brady said that he did not like to talk panic, but that if one of the large tractions should fail now it would be taken as further signs of financial stress, and that if the people should become alarmed, "No one could tell what would happen." He asserted that it would be a very serious thing for Indiana.

Dallas Must Have More

Company Asks City Commission for 6-Cent Fare—Can Obtain No Credit Without Increase

Responding to a request of the municipal authorities of Dallas, Tex., for a statement of the needs of the Dallas Railway, Richard Meriwether, vice-president and general manager of the company, has submitted to the City Commission a petition for a 6-cent cash fare on the company's lines. Mr. Meriwether asks a charge of 1 cent for each transfer and of 3 cents for each school ticket. This action follows a letter recently sent by Mr. Meriwether to the commission, going into detail regarding the company's revenues and explaining that additional revenue was necessary for continued operation.

In asking for a fare increase Mr. Meriwether declared that the records showed that the company had been able to earn less than 4.6 per cent annually on its approved property value since the beginning of operation under the present franchise. Reports of the company covering 1919 show that if a 6-cent fare had been in effect its earnings would have exceeded the 8 per cent authorized return on the invested capital. Cash fares numbered 42,011,571. At 1 cent each this number amounts to \$420,115. The company made \$462,000 or approximately 4.5 per cent during 1919.

Mr. Meriwether declared that the company had not been able to furnish the necessary additional equipment to keep pace with the growth of Dallas and "were it not for the splendid and broad-minded attitude of the citizenship of Dallas, it already would have resulted in such demonstrations from the people as would be hard for those responsible to the public to withstand." The letter declared the company had not been able to meet its responsibilities to its employees in the wage matter. It also cited the fact that records show an appalling increase in the number of accidents.

CREDIT UNOBTAINABLE

Referring to the company's inability to obtain credit, Mr. Meriwether said:

The financial history of the company is such that it is without credit and, therefore, is now and will be unable to meet the demands for additional equipment and extended service until the company's credit has been established, through its ability to show a fair return on its property value.

We have employed in the train service, as motormen and conductors, about 300 new men since Jan. 1, where ordinarily in years past we employed approximately 200 new men during an entire year. This enormous labor turnover can be traced to the fact that the company has been unable to earn a sufficient amount to permit of paying our

employees the wages which we know and feel they are justly entitled to, the result being continual unrest and change in the personnel of our forces.

In his first letter notifying the commission that the company was in need of additional revenue Mr. Meriwether pointed out that the company was without funds for needed extensions and improvements. He said in part:

The economic and financial situation has changed so materially since this company began to operate under its present franchise on Oct. 1, 1917, that it has been a struggle to perform our obligations under such franchise, which limits the maximum fare to 5 cents, with twenty-two tickets for \$1. Because of this situation the Dallas Railway has not been able to meet the constantly mounting costs of operation (due to large increase in prices of labor and material) and to earn such a fair return on the investment as to make it possible for this company to refinance its maturing obligations. This situation has continued, until now we find ourselves entirely without the credit necessary to refinance early-maturing obligations, or to secure the money needed for improvements and extensions.

As the records in the office of the supervisor of public utilities will show, the Dallas Railway has earned on its approved property value for the thirty months beginning Oct. 1, 1917, and ending March 31, 1920, a return of less than 4.6 per cent. We have earned during this period \$501,357 less than we are permitted to earn under the existing franchise.

Every economy possible has been practiced in operating the property, consistent with the rendering of good service and the maintaining of the physical property in good condition. Every suggestion of the city has been followed and no stone left unturned to try to accommodate our facilities to the unusual demands made upon them, due to the rapidity of the city's growth and activity in the last three years.

The very material increase in the volume of our business (resulting, of course, in greater gross receipts) has been more than offset by the market increase in cost of material and labor. As an indication of just what this increase has been, our average cost of operation per car mile for the first three months under the existing franchise (October, November and December, 1917) was 14.9 cents per car mile and our maintenance charges 2.4 cents per car mile. For the three months of January, February and March, 1920, our average operating costs were 24.8 cents per car mile and our maintenance charges 3.8 cents per

car mile, or an increase of 66 per cent in operating costs per car mile and 50 per cent in maintenance costs per car mile."

The volume of traffic handled by our present facilities has about reached the limit, if we are to keep up the standard of service now being given. This traffic is increasing constantly, and even now the service is not all that we would like it to be. In fact, we are losing business, due to the shortage of equipment, and the patience of our patrons is often taxed on account of the inadequacy of the service, especially during the rush hours.

It is our belief that it will require the expenditure of not less than \$2,000,000 within the next three or four years for the purposes enumerated above, if we are to keep pace with the growing demands of the city for transportation and if we are to be able to furnish to the citizenship the transportation service to which they are justly entitled.

We have maturing on June 15, 1920, \$1,000,000 of 7 per cent notes. We shall do our very best, but the refunding of these notes under conditions now existing in the financial world and in view of this company's failure to earn a fair return upon its investment now appears impossible.

The present plight of this company is not different from that existing in all parts of the country, with reference to street railway properties.

With these facts before you we feel that you will recognize the importance of something being done at once, looking to the placing of the company in that position necessary for it to re-establish its credit and in order that it may survive and give the character of service required by the city of Dallas.

Statistics of fare increases and of abandonments were included in the letter.

Two Cents a Mile on D. U. R.

Fares on the interurban lines of the Detroit (Mich.) United Railway have been raised to 2 cents a mile. The increase affects the Pontiac, Orchard Lake and Flint divisions and the Rapid Railway and the Jackson & Chicago Railway. Fares on the Detroit, Monroe & Toledo Short Line Railway, which were raised some time ago, are not subject to the general increase which was recently announced.

The advance in rates was made under the provisions of the so-called Smith act, passed at the 1919 session of the Michigan Legislature. This measure gives to the railways earning less than \$8,000 a mile authority to charge 2½ cents a mile on their interurban lines. The Michigan Supreme Court recently upheld the statute's constitutionality. The court has granted the plea that was made by Attorney-General Groesbeck for permission to argue for a rehearing of the case.

Would Continue 7-Cent Fare

The period for the charging of 7-cent cash fares on the Buffalo, N. Y., lines of the International Railway will expire on June 1, under a decision of the Public Service Commission for the Second District. If the higher rate is to continue the commission must make a new order. This will be opposed by the municipal authorities, who contend the income to the company under a 5-cent fare would now be sufficient to pay operating expenses and a fair return on the investment because the International Traction Company has been eliminated as the holding company for the International Railway.

Herbert G. Tulley, president of the International, believes the company

needs a higher fare than 7 cents because the increase of 12 cents an hour granted all employees has absorbed the increase obtained when the fare was raised 2 cents. It is also pointed out by President Tulley that few passengers are paying 7 cents, since nearly all the car riders are buying tickets at the rate of four for 25 cents or 6½ cents a ride, with free transfers. The company has announced that it will continue to collect the 7-cent fare after June 1 unless stopped by law.

One-Man Cars Indorsed

Indorsement of the one-man car on New Jersey lines has been given by Philander Betts, chief inspector of the Board of Public Utility Commissioners in a report to the commission on this type of car. The report was made following a complaint lodged with the commission by the International Brotherhood of Blacksmiths, Drop Forgers and Helpers of Trenton. The report is of particular interest to all communities in which the Public Service Railway operates, as this company proposes to install cars of this type.

The report carries two important recommendations. The first is that whenever these cars, fitted generally with cross seats and a seating capacity of from thirty to thirty-five persons, are operated in New Jersey the maximum number of adult persons to be carried in each car at one time shall not exceed fifty. Another recommendation is that after July 15 all these cars shall be provided with a removable guard rail, so located as to prevent passengers from being crowded against the operator of the car and also to prevent the occupation by passengers on the car of at least a portion of the front platform.

The labor men who protested against the cars being operated in Trenton declared them a "deadly menace to the lives and limbs of the community" and that too much responsibility was placed upon the one man who operates each car.

Fare Case Goes to Higher Court

In the application of Corporation Counsel O'Brien for a writ of prohibition to prevent the Brooklyn (N. Y.) Rapid Transit Company from raising its 5-cent fare to 8 cents, which was to have been argued on May 20 before Justice Tierney of the Supreme Court, all the interested and contending parties agreed to have the matter go to the Court of Appeals, the highest tribunal in the State.

Lindley M. Garrison, receiver of the Brooklyn Rapid Transit Company, called attention to the fact that Public Service Commissioner Nixon had written a letter to Mayor Hylan assuring him that the commissioner would not attempt to grant the company's request for an increase of fare until after the proper courts had passed upon the matter.

Corporation Counsel O'Brien said that although the commissioner's let-

ter was an evidence of good faith he would prefer to have a court order granting the prohibition, which would stay an increase of fare pending action by the highest court. Then Mr. Garrison, on behalf of the company, and Terence Farley, counsel for the Public Service Commission, both said they had no objection to the court entering an order granting the city a writ of prohibition against the proposed increase of fare. That, they said, would be about the quickest way of getting the matter before the Court of Appeals. Justice Tierney reserved decision.

Six Cents in Fort Worth

A 6-cent fare was placed in effect on the city lines of the Northern Texas Traction Company, Fort Worth, Tex., on May 19. In announcing the advance in rates, George Clifford, general manager, stated that the company had decided upon a program of improvements and betterments in service that would entail an expenditure of fully \$1,000,000. Mr. Clifford recently appeared before the City Commission, declaring that additional revenue was imperative if the company was to continue its present service and to make needed improvements and extensions.

Under the city charter of Fort Worth the company is authorized to charge whatever fare may be just and reasonable. The city cannot inaugurate new fares, but after the fares have been put into effect it may decide if they are reasonable, and if found unreasonable it may take action to compel a reduction.

In outlining the program of improvements Mr. Clifford explained that these had already been considered by the Boston office of Stone & Webster and had been approved. The improvements to be undertaken include the extension of several lines and the double-tracking of others; the building of many additional sidings and extensions to carhouses, and the building of new carhouses on the North Side. It is also planned to increase the number of cars in service 32 per cent before Dec. 1. Congestion on Main and Houston Streets will be relieved by the diversion of a large amount of traffic to Throckmorton Street.

Ten Cents on Municipal Line

The Board of Public Utility Commissioners of New Jersey has allowed the Ocean City Electric Railroad to increase fares from 7 cents to 10 cents. The increase was granted, the board says, to relieve the residents of Ocean City from the financial burden of a deficit through operation of the system. The new rate went into effect on May 28.

The Ocean City line is the only municipally-operated electric railway in New Jersey. It was taken over by that city when the company announced that it was unable to run the road any longer at a profit.

In the order allowing the increase the commission says that while the new

rate is exceptionally high and under normal conditions might tend to discourage travel to an extent which would defeat its purpose, it is probable that during the season of operation, when Ocean City is filled with summer visitors, it will not greatly deter those who would be inclined to use the road. It is also pointed out that if the road were operated at a deficit the expense would have to be defrayed by a comparatively small number of taxpayers. No protests were made against the increased fare.

Transportation News Notes

Will Grant 7-Cent Fare.—The City Councils of Menominee, Mich., and Marinette, Wis., in a joint session recently decided to allow the Menominee & Marinette Light & Traction Company, Menominee, to charge 7-cent cash fares. Ten tickets will be sold for 50 cents and ten children's tickets for 30 cents.

Sanctions One-Man Cars.—The City Council of Wilmington, N. C., has approved the use of one-man safety cars on the lines of the Tidewater Power Company. An ordinance barring the operation of such cars within city limits has been rescinded. The company plans to purchase a number of "safeties" in the near future.

Ten Cents on City-Owned Line.—Fares on the lines of the Norton, Taunton & Attleboro Street Railway, Norton, Mass., have been raised to 10 cents. Tickets good for fourteen rides each are sold for \$1 each. The road was taken over some time ago by the municipalities of Norton, Taunton and Attleboro. The fare was formerly 7 cents.

Rides Cost More in Rome.—Car fares in Rome, Italy, which were originally 2 cents and were lately raised to 3 and then to 4 cents, have been raised to 6 cents from 8 o'clock in the morning until 10 o'clock at night, after which they will be 8 cents. Those who, going to their work before 8 a.m., used to pay 1 cent, will pay 3 cents henceforth. Cabmen have also doubled their prices.

Denies Knoxville 7-Cent Fare.—The Tennessee Railroad & Public Utilities Commission has denied the application of the Knoxville Railway & Light Company for an increase in fare from 5 cents to 7 cents. The company's petition for authority to charge 2 cents for each transfer was also refused. The commission has ordered an appraisal of the company's property.

Canadian Company Wants Increase.—The Hamilton (Ont.) Street Railway, which at present sells eight tickets for

a quarter good during workingmen's hours, has announced that it cannot make any improvements in the service at the present rates of fare. Unless it is allowed to charge a straight 5-cent fare at all hours it is financially unable to do any of the things the city asks.

Will Raise Ticket Rate.—A revised tariff schedule has been filed with the State Department of Public Utilities by the Massachusetts Northeastern Street Railway, Haverhill, Mass., under which the ticket rate will be raised from 6 cents to 8½ cents. All reduced rate tickets will be discontinued. The cash fare will remain at 10 cents. It is proposed to put the new schedule into effect on June 15.

Protection Asked for Buses.—An ordinance designed to give the same safety zone protection to auto buses by police as is given to electric cars has been introduced in the City Council of Toledo, Ohio. Bus drivers had reported to the Council that they had been ordered by police not to stop within 120 feet of a street intersection. The ordinance committee will investigate conditions before making any report on the proposed measure.

Wants 8 Cents in Muskogee.—The Muskogee (Okla.) Electric Traction Company has filed an application with the State Corporation Commission in Oklahoma City for authority to increase fares. The present fare in the city proper is 5 cents. The company asks an increase to 8 cents, with 4 cents for half-fares. Fares to points outside the city, which now have a higher fare than 5 cents, would also be increased in proportion.

Railway Runs Jitneys.—The Eastern Massachusetts Street Railway, Boston, Mass., has been obliged to go into the jitney bus business to take care of the people who live in Squantum. Electric car service to and from Squantum was suspended a year ago last January and transportation since that time has been maintained by means of jitney service supplied by an individual. On May 22 the jitney service was stopped for some unknown reason.

Wants Postmen Carried Free.—City Solicitor Ralph Levinson, of Steubenville, Ohio, has brought suit in the Common Pleas Court against the Steubenville, East Liverpool & Beaver Valley Traction Company for an injunction restraining the company from charging uniformed mail carriers fares in alleged violation of its franchise. A temporary restraining order has been issued by Judge Carl H. Smith. The plaintiff charges that charging mail carriers fare will cause citizens in general to suffer from delay and confusion.

Traffic Increasing in Louisville.—The Louisville (Ky.) Railway is handling a large volume of business at the present time due largely to the spring racing season and the opening of the parks. Forty-five thousand people attended the Kentucky Derby on May 8.

Opening of the parks on May 9 has also increased night travel, while the attendance at both amateur and professional games is very large. The new boxing law goes into effect in June. There will probably be many big nights, as Louisville was for many years an important boxing center.

Seven Cents in Atlantic City.—A. J. Purinton, receiver of the Atlantic City & Shore Railroad, Atlantic City, has announced that the 6-cent fare will be increased to 7 cents on June 11, that fares on the Crosstown line will be raised from 5 to 7 cents, that the price of 100 strip tickets to Longport will be raised from \$6.50 to \$7.50, and that transfers will cost 3 cents each. A year ago the company was given the right to raise the fare from 5 to 6 cents. The receiver states that the increased cost of operation this year aggregates \$103,893.

Compromise One-Man Car Fight.—One-man cars will be withdrawn from service on the Main Street line in Richmond, Va., by the Virginia Railway & Power Company. Large double-truck cars of the old pattern will be substituted in an endeavor to improve traffic conditions, officials of the company stated after a lengthy conference with the committee on streets of the City Council. Although the company remonstrated, arguing that the change in service will not help the situation, the committee prevailed upon the officials to try the plan of removing the "safeties" for the present.

High Water Delays Traffic.—Inter-urban roads in Texas have suffered much from recent high water. The Northern Texas Traction Company's line between Dallas and Fort Worth suffered two washouts and traffic was stopped for nearly two days. The Tarrant County Traction Company, Fort Worth, reported a washout between Fort Worth and Cleburne which put that line out of commission for some time. The Waco branch of the Texas Electric Railway, Dallas, reported a slide on its line near Ferris which delayed traffic for some time. All lines are now in commission and traffic is moving as usual.

Six Cents in Shreveport.—The Shreveport (La.) Traction Company has been authorized to raise its fares in Shreveport on June 1 from 5 cents to 6 cents, the new rate to remain in effect to Dec. 31, 1923. This action was approved by the voters of the city at a recent referendum election, the proposition being carried by a majority of 42 votes out of a total of 1,824 cast. Coincident with the putting into effect of the increased fare, the company is pledged to increase wages of employees from a maximum of 40 cents an hour to a maximum of 60 cents an hour and also to operate more cars and otherwise to improve the service.

New Jitney Rules for Rockland.—The board of selectmen of Rockland (Mass.) have adopted new rules for the opera-

tion of jitneys in that town. The regulations provide that no license shall be issued to any person who is not a citizen of the United States. The jitneys must also be run on regular schedules filed with the selectmen and a bond of \$500 shall be deposited for motor vehicles having a capacity of five people and \$100 for each passenger in excess of five. The rules forbid the operators of the jitneys to allow more people to ride in the jitneys than the number designated on the bond, or allow any to stand or sit on any running board, step or fender.

Temporary Resumption on Staten Island.—Partial service was restored on the lines of the Staten Island Midland Railroad, Richmond Borough, New York, N. Y., on May 21. The cars were operated for a few hours only, the purpose of service resumption being to avoid forfeiture of the franchise. The five lines of the company ceased operation last January, when permission to charge a 7-cent fare was refused. The company went into bankruptcy, and until May 21 not a car traveled its route. At 11:01 p.m. the ninety-day limit fixed in the franchise would have expired, and if no cars had been run up to that time failure to do so would have nullified the franchise.

Opposes Atlanta Increase.—In a message to the City Council of Atlanta, Ga., on May 16, Mayor James L. Key opposed the plea of the Georgia Railway & Power Company for increased passenger fares and recommended that the city attorney and the assistant city attorney be instructed to appear before the State Railroad Commission, where the company's plea now is pending, "and oppose all increases asked for," by bringing to the attention of the commission matters dealt with by the Mayor in his message, "and such other facts as are relevant to the case." Mayor Key contended that a further increase in fares was not justified by the increase in operating costs.

Carmen Informed on Accidents.—In the trainmen's room at the carhouse of the Tampa (Fla.) Electric Company, J. M. Bird, superintendent, has posted a chart showing by days the accumulated number of accidents for the month. On this chart appears the similar curve for the corresponding month of 1919. This places a picture before the men of the trend of accidents, and it is believed that it serves to stimulate care in operating cars so as to keep the curve for the current month underneath that for the previous year. The chart also carries another curve showing the accumulated number of derailments by days and a third showing the number of trolley breaks.

Seven Cents on Penn Line.—The Lehigh Valley Transit Company, Allentown, Pa., operating between Allentown and Philadelphia, has received permission from the State Public Service Commission to raise its fares from 6 to 7 cents per zone with an advance

of 1 cent per zone on commutation tickets and of 5 cents on Allentown-Emaus round-trip tickets. The commission changes the schedule it made last October and says the company established necessity of more money to maintain its efficiency as a public utility. The operation during the calendar year of 1919 resulted in a deficit of \$51,115 and even under the increased rates there may be a deficit this year to the amount of \$96,000.

Seeks Immediate Relief.—According to a recent statement of Theodore H. Bruener, attorney for the Grays Harbor Light & Power Company, Aberdeen, Wash., the earnings of the corporation have been inadequate for the past seven years. The taxes paid by the company in the period 1913-1919, both years inclusive, have been more than the net earnings. Mr. Bruener has asked the State Public Service Commission to ignore the protests of the municipality of Hoquiam against the proposed increase in fares in Aberdeen, Hoquiam and Cosmopolis and to allow the company to put the new rate into effect at once. The tariff under dispute would raise the rates from 5 cents to 6 cents in the three cities and from 10 cents to 12 cents on two interurban lines,

May Raise Youngstown Rate.—Youngstown, Ohio, is facing a 9-cent fare under the operation-at-cost and municipal-supervision plan adopted some time ago for the Youngstown Municipal Railway. Recently the management of the municipal lines made a request for an increased allowance for both operation and maintenance. After a conference between officials of the company and members of the street railway committee of the City Council it was reported that the company had asked for an increase of 2 cents per car-mile in the maintenance allowance, while it was shown that an increase of more than 4 cents per mile in the operating allowance would have to be made to cover the recent advance made in the wages of employees. Records showed, it was said, that the maintenance and operating costs exceed the total revenue by a little more than 3 cents per car-mile. During the month of April there was a large deficit which reduced the amount in the stabilizing fund below 100 per cent.

Will Raise Grand Rapids Fare.—A 7-cent cash fare with sixteen tickets for \$1 will become effective in Grand Rapids, Mich., on June 20, as the result of an agreement between the special railway committee of the City Council and the officials of the Grand Rapids Railway. Coincident with the increase in rates the company will make a number of changes in car routing. The changes in service and fare would have gone into effect June 1 except for a ruling made by City Attorney Ganson Taggart that the change would have to be made by ordinance. In accepting the new fare the company agrees to keep a separate account of all money expended for new equipment and betterments and subtract this

amount less a reasonable depreciation from the valuation to be decided upon when negotiations for a new franchise get under way. General Manager Louis J. De Lamarter told members of the committee the company operated at a loss of more than \$20,000 during April and that the loss for the first four months of the present year exceeds the loss for the previous twelve months.

Six-Cent Fare in Little Rock.—An ordinance has been passed by the City Council of Little Rock, Ark., granting to the Little Rock Railway & Electric Company permission to raise its fare from 5 cents to 6 cents. An ordinance previously passed by the Council and providing for a similar increase was recently rejected by the company. The new ordinance grants the company the right to collect a 6-cent fare for one year, providing the granting and accepting of the ordinance shall not be taken as a renunciation of the company's right to surrender its franchise under the laws of the State. It is provided that the ordinance shall not affect any of the conditions, terms or obligations of the franchise, except as expressly set forth in the measure. It is provided that at the expiration of the year all the provisions of the original ordinance granting the company its charter, in regard to rates to be collected, shall be automatically in force and effect; provided the company may at any time apply to the Council for a further adjustment as its conditions may require. The company is given thirty days in which to accept the ordinance, which becomes immediately effective upon its acceptance by the company.

Will Raise Cincinnati Fares.—W. C. Culkins, Street Railroad Director of Cincinnati, Ohio, on May 18 notified the City Council that fares on the lines of the Cincinnati Traction Company would advance from 7 cents to 7½ cents on June 1. In his letter to the Council, Mr. Culkins said that for the months of March and April the gross receipts lacked \$64,099 of being sufficient to provide for the cost of service. Under these circumstances the company is required to increase the fares. In Mr. Culkins' opinion three elements contributed to bring about this condition: The switchmen's strike, which necessitated the purchase of coal at prices 100 per cent in advance of contract prices; increased wages and cost of material used in the maintenance of way and equipment, and excess in wages of trainmen over the budget allowance due to needed additions in service and development and physical obstacles which delayed the operation of double-track cars on certain lines which could have reduced expenses and increased service. Following the reading of Mr. Culkins' letter, Councilman John H. Sheehan asked the Council to take action to prevent the company from increasing its fares. Mr. Sheehan alleged that the company had discriminated in its dealings with the public.

Personal Mention

Foreign Post for Mr. Clapp

Vice-President East St. Louis & Suburban Made Chairman of the Victorian Railway Commission

Harold W. Clapp, vice-president of the East St. Louis & Suburban Railway, East St. Louis, Ill., and vice-president of the E. W. Clark & Company Management Corporation, has been tendered and has accepted the position of chairman of the Victorian Railway Commission, Victoria, Australia. Mr. Clapp has set no definite date for his sailing, but he expects to wind up his affairs in this country so that he can sail with his family in time to undertake his new duties about Sept. 1.

The position offered Mr. Clapp in Australia is generally conceded to be



H. W. CLAPP

a most attractive and desirable one. The Railway Commission, composed of three members, has full charge of the executive, operating and engineering problems connected with all of the railways in the State of Victoria. The Victorian Railways are government-owned and comprise more than 4,000 miles of track, with a gross revenue of approximately \$50,000,000. Some 250 miles of suburban track in and around Melbourne are electrified, but the major portion of the system is steam, with further electrification plans pending.

Mr. Clapp is admirably fitted to meet the responsibilities involved in his prospective work. Although a United States citizen, he is a native of Australia, where his father was managing director of the Melbourne Tramways & Omnibus Company. For four years the younger Mr. Clapp was superintendent of motive power of the Brisbane Tramways. With the operating experience thus gained he came to America nineteen years ago. His first position in this country was with the

General Electric Company, with which he remained for about six years, during which period he represented the company in connection with its interests in the Interborough Rapid Transit Company, the Hudson tubes and the New York Central System, as well as in several other large operating companies. During this period he also had charge of the equipment of the West Jersey & Seashore branch of the Pennsylvania Railroad.

STEAM RAILROAD EXPERIENCE

After leaving the General Electric Company he was employed for five years by the Southern Pacific Company, for which he had charge of the reconstruction of the Oakland, Alameda and Berkeley division. His experience with both the General Electric Company and the Southern Pacific System took him at times out of the electrical field and into the steam railroad field. This steam railroad experience will now serve him in good stead.

Following his association with the Southern Pacific he served as manager and later as vice-president of the Columbus Railway, Power & Light Company, Columbus, Ohio. In this position he established a most enviable reputation as an operating executive. His load dispatching arrangements, store-room system and car inspection methods were important features which attracted wide and commendable attention from other executives. Since resigning from the Columbus properties in January, 1919, he has been associated with E. W. Clark & Company, paying particular attention to the East St. Louis group of properties, and directing the solution of many of the intricate problems which in the last few years have confronted all public utility properties.

F. D. Burpee, superintendent of the Ottawa (Ont.) Electric Railway, has been appointed manager of the company.

A. D. McPherson, assistant auditor for the receivers of the Pittsburgh (Pa.) Railways, has been promoted to auditor to succeed J. A. Mead, resigned.

A. J. Tobin has been appointed superintendent of the Ottawa (Ont.) Electric Railway. Prior to his new appointment Mr. Tobin served as chief inspector of the system.

O. M. Sewell, president and general manager of the Porto Rico Railway, Light & Power Company, San Juan, Porto Rico, has resigned. Mr. Sewell has returned to his home in Atlanta, Ga., and will engage in private business. He has had charge of the affairs of the company for the past eight years.

W. S. Finlay Leaves I. R. T.

Superintendent of Motive Power Joins American Waterworks & Electric Company as Vice-President

W. S. Finlay, Jr., superintendent of motive power of the Interborough Rapid Transit Company, New York, N. Y., has resigned. Mr. Finlay has been elected a vice-president of the American Waterworks & Electric Company, New York. The latter company, of which H. Hobart Porter, general manager of the Brooklyn City Railroad, is president, operates a number of waterworks, power stations and other public utilities.

Mr. Finlay was born in Hoboken, N. J., in 1882. He received his early education in the public schools of Brooklyn, and was graduated from Cornell University in 1904, with the degree of mechanical engineer. Shortly after graduation he entered the employ of the Interborough Rapid Transit Company as an assistant on the staff of the late H. G. Stott. Mr. Finlay's first work with the company was identified



W. S. FINLAY, JR.

with the construction of the Fifty-ninth Street power station. He later assisted Mr. Stott in doing experimental and research work in connection with schemes for that station's development and the promotion of its efficiency. In 1907 he was placed in charge of construction work involved in increasing plant load.

In 1909 Mr. Finlay left the Interborough to go into engineering work with the New England Engineering Company. Subsequently he became associated with his father, W. S. Finlay, Sr., in commercial work, returning to the Interborough in 1915 to take charge of the installation of turbines and auxiliary mechanical equipment necessitated by the extensions to the subway and elevated systems. Upon the death of Mr. Stott, Mr. Finlay was appointed his successor as superintendent of motive power. In that capacity he, in addition to supervising operation of the power-generating system of the company, has had charge of the engineering and construction work coming within the scope and control of the department.

Mr. Day in Control

Engineer Heads Ohio Electric Railway Under Reorganization Plan—
New Directors Chosen

A reorganization of the official personnel and the board of directors of the Ohio Electric Railway, Springfield, Ohio, and subsidiary companies was announced on May 18. Under the reorganization plan Charles Day, of Day & Zimmerman, Philadelphia, Pa., becomes president of the system. J. Harvey McClure, recently elected vice-president, continues in that capacity. H. V. Gilpin remains as general manager, while F. A. Healy, secretary-treasurer, and J. A. Pogue, assistant secretary-treasurer and purchasing agent, continue in those positions.

The old board of directors has resigned and the following men have been elected members of the board: Charles Day, John E. Zimmerman, Philadelphia; George J. Roberts, East Orange, N. J.; J. H. McClure, Lima, and Paul C. Martin, H. V. Gilpin and F. A. Healy, Springfield. Members of the old board replaced are: W. Kesley Schoepf, Walter A. Draper, A. Benham, H. Sanders, Cincinnati, and Marshall Morgan, Philadelphia.

Charles Day, who becomes president of the company, is senior member of the firm of Day & Zimmerman, Philadelphia, which took over the management of the system on April 1 last. Mr. Day was born at Philadelphia on May 15, 1879. Shortly after his graduation from the University of Pennsylvania, in 1899, with a degree of mechanical engineer, he entered engineering work in Philadelphia, becoming a member of the engineering firm of Dodge & Day two years later. During 1901 he was assistant superintendent and engineer of works for the Link Belt Engineering Company. Later he installed cableways at the Gatun Dam of the Panama Canal. During the past few years he has devoted himself especially to the construction and equipment and to the management of industrial plants, electric light plants, railroads and other public utilities. During the war he served as a member of the production committee of the Emergency Fleet Corporation at Philadelphia.

J. Harvey McClure became connected with the Ohio Electric Railway when the system was taken over by Day & Zimmerman. At that time he was given the title of vice-president in charge of operation. Mr. McClure was formerly general manager of the Citizens' Traction Company, Oil City, Pa., where he achieved a notable record as an efficient operator. A biography of Mr. McClure was published in the *ELECTRIC RAILWAY JOURNAL*, for April 10, 1920.

Paul R. Goldy of Mount Holly, N. J., has been appointed general manager of the Burlington County Transit Company, Hainesport, N. J., to succeed Edwin C. Davis. This is the second time that Mr. Goldy has been made

general manager of that company. He was the first to hold that position, having been with the company when the road was built. Later he was with the Riverside Traction Company before it was taken over by the Public Service Railway. Still later he was employed by the Emergency Fleet Corporation in Philadelphia. Maurice B. Comfort of Moorestown, N. J., one of the directors of the company, has been acting as general manager since the resignation of Mr. Davis.

J. A. Meade Enters Business

Auditor for the Receivers, Pittsburgh Railways, Made Vice-President of Fruit Exchange

John A. Meade, auditor for the receivers of the Pittsburgh (Pa.) Railways, has resigned to become vice-president of the Northwestern Fruit Exchange, with headquarters in Seattle, Wash. Mr. Meade has been succeeded at Pittsburgh by A. D. McPherson, heretofore assistant auditor, before leaving for Seattle Mr. Meade



J. A. MEADE

was tendered a dinner by the officers and employees of the Pittsburgh Railways.

Through the study and the practical application of business principles Mr. Meade has made himself an authority on economic, financial and corporate matters. In addition to handling the complex details of the auditing department of one of the largest electric railway systems in the country, he has served on a number of occasions as a consultant on accounting and tax questions for several concerns engaged in manufacturing and mercantile enterprises. These varied activities, broadening in their influence, have well fitted him to undertake his new work of extending the fruit industry of the Northwest.

Mr. Meade, who has devoted most of his career to the service of the Pittsburgh traction system, was appointed auditor for the receivers in April, 1918. His work as auditor had to do with the accounting and financial functions of a system operating 600 miles of track and carrying over 250,000,000

passengers annually. The Pittsburgh Railways is made up of some 200 separately incorporated companies, many of which maintain their corporate existence.

Following the receivership several inquiries were begun involving rates of fare, wages, cost of service, return on capital and valuation. A historical appraisal dating back to the incorporation of all the underlying companies was continued for almost two years. Mr. Meade was called upon to compile much of the information asked for by the appraisers. He spent many days testifying and explaining the data. His clear grasp of the many questions involved and his opinions and advice as to the complex financial problems won the commendation of the various commissions.

Mr. Meade was born in Pittsburgh in 1879. At the age of sixteen he entered the employ of the Pittsburgh, Allegheny & Manchester Traction Company as a water boy. In 1897 he became a clerk in the office of the division superintendent of the United Traction Company. When in 1902 the United Traction Railways he was made general bookkeeper of the consolidated lines. Two years later he was made auditor of disbursements of the group of properties controlled by the Philadelphia Company.

Obituary

Ralph G. Hemingray, president of the Hemingray Glass Company, Muncie, Ind., died in Covington, Ky., on May 11.

Thomas N. Ashford, former superintendent of the Lockport (N.Y.) Street Railway, before the lines were taken over by the International Railway, Buffalo, N.Y., is dead. He was seventy-eight years old.

John S. Brewer, died recently at his home in East Orange, N. J., after an illness of several weeks. Mr. Brewer lived for sixty years in Chicago, Ill., where for many years he was in the railway supply business. He retired ten years ago.

George S. Starbird, inspector of railroad appliances for the Interstate Commerce Commission in Illinois and Indiana, died on April 27 at his home in Urbana, Ill. He was sixty-three years of age and for fifteen years had been in the service of the Government, being well known to railway and interurban officials in Illinois and Indiana.

Charles W. Johnson, assistant director of engineering for the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., died recently after a short illness. Mr. Johnson was born in 1874. He entered the employ of the Westinghouse Company in 1907. He was appointed assistant director of engineering on Jan. 1, 1920.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Federal Relief from Railroad Tie-Up

Interstate Commerce Commission Acts to End Freight Congestion by Suspending Car Service Rules

In an effort to relieve the nationwide freight congestion and car shortage, the Interstate Commerce Commission on May 20 issued to the railroads of the country three orders relating to the handling of freight.

Service order No. 1 suspends all rules and regulations as to car service and directs the carriers to forward traffic by the most available routes without regard to the routing made by shippers or by carriers or to the ownership of cars.

Service order No. 2 suspends all car service rules and orders the relocation of open-top cars from Western territory to Eastern territory, naming the number of cars which each carrier must send East each day. This order relates to the roads operating west of Chicago.

Service order No. 3 is similar to order No. 2, except that it applies to Eastern roads and orders the relocation of box cars from Eastern and Southeastern territory to Western territory. The order stipulates the number of cars daily that must be moved.

Order No. 1 also provides for the charging of the rate of freight applicable over the route indicated in the bill of lading or shipping instructions, regardless of the fact that a higher or lower rate may be applicable via the route over which the shipment actually moves.

Coal Output Decreases

Car Shortage and Labor Troubles on Railroads Largely Responsible

Electric railways are obtaining sufficient coal only with great difficulty. The reserve stock of most electric railway companies which have been fortunate enough to accumulate any at all, is rapidly dwindling.

Production of coal for the week of May 15 decreased 319,000 tons as compared with the previous week, according to the United States Geological Survey figures, indicating that production was the smallest since the week of April 24.

Car shortage at the mines is one of the causes, and this has been brought about by labor trouble on the railroads.

The long-continued condition of lack of transportation has so increased costs that prices of bituminous coal have generally been raised from 25 to 50 cents per ton, but problems of price are of secondary consideration. It is reported

that none of the large Eastern coal companies has been able to keep up contract shipments, with the result that buyers have offered fabulous prices for mine-run coal.

Reports from various electric railways are to the effect that a few cars of coal, usually amounting to a one or two-day supply, are being received occasionally, but in every case the coal has been in transit or held up at nearby points. The situation will continue to be serious until steam railroad labor troubles have been smoothed out and

conditions brought back as close to normal as is possible. Foremost in the minds of electric railway executives is the difficult problem of accumulating during the next ninety days enough reserve for use during the winter in addition to keeping enough coal on hand for operation throughout the summer season. Drastic measures are now being taken by the Interstate Commerce Commission which authorities in the coal industry believe will bring much-needed relief to electric railways and utilities.

Longer Deliveries on Power Auxiliaries

Material Shortages Handicap Manufacturers of Power Plant Auxiliary Equipment

Manufacturers of power plant auxiliary equipment, like many others, are trying to get out production in the face of material shortages beyond their control. Cast iron, steel and pig iron are especially hard to obtain in some plants in the East, although efforts are being made to improve the situation. One maker of feed-water heaters has a good stock of steel shells on hand, but is very low on castings. A manufacturer of small turbines for pump driving, small generator service, etc., has been able to establish a nominal stock of prime movers for lighting work on a small scale; but in general, stocks are very low. Deliveries on small turbo-sets for auxiliary work quote six to seven months and on feed-water heaters for power plant service, about four months. The smaller-sized heaters required for supplying service water to car houses, shops and industrial plants can be had in some cases in less than a fortnight. Special equipment, of course, runs into much longer figures.

Very few inquiries or purchases of new equipment of the auxiliary class are being handled for electric railways at present. One reason for this is the marked tendency of operating companies of small and medium size to enter into contracts for the purchase of their electrical supply from central station or transmission systems. Industrial plants, electric utilities and marine buyers are providing the makers of steam plant auxiliary apparatus with a diversified business, but a slight falling off has been noted in demand during the past month or so. Notwithstanding the fact that many plants are several months behind on orders, there is a disposition to welcome new business at present, and in some lines no prospect of price reduction appears sufficiently evident to justify postponement of inquiries. It is not expected that auxil-

iary turbo-pump or turbo-exciter prices will go lower at present. If the price of copper should decline, the price of heaters would probably reflect the movement.

In both heaters and turbo-auxiliaries prices have advanced this spring as a partial offset to the drop which came last year. Wage increases and higher raw material costs have been met without so far being obliged to return to the war-time maximum. No serious labor shortage exists in typical plants visited by the representative of the *ELECTRIC RAILWAY JOURNAL*. Some plants complain of under-production. Others find labor conditions much less disturbing than the shortage of pig iron and castings. One manufacturer stated that while he labors under a rather high turnover, he is more concerned at the moment about transportation conditions than about employee relations. In one shop tool-makers were cited as a class of men receiving wages in excess of the value of their production, but by and large, conditions are far from bad compared with the cost and annoyance of inadequate transportation. Boat shipments are a great help in the seaboard and river manufacturing centers. Replacement orders are being handled well.

Equipment Wanted in Ecuador

The manager of the *Compañía Nacional de Tranvías* of Quito, Ecuador, South America, writes under date of April 24 that that company is considering the construction of an electric railway line 30 km. in length and would like to get in touch with manufacturers of grooved girder rail and other electric railway equipment. The company may be addressed at Casilla de Correo No. 248, Quito, Ecuador.

Battery Cars for Export

Demand Increasing in Latin-American Countries—Deliveries Hold Up Business

Prospects are bright for doing a considerable amount of business in the Latin-American countries with electric storage battery cars. Although business has been poor during the war years, inquiries are now being received and much business is expected to result during the year. At present in the smaller cities in the Latin-American countries, mules are used for hauling cars, and according to reports the high cost of feeding and maintaining mules is largely responsible for the installations of electric storage battery cars which have been made.

In a typical case, it is intended to replace cars of the mule-power type by storage battery cars and thereby save a considerable amount per day.

Westinghouse Net Earnings Increase

Sales Billed Decrease—Unfilled Orders April 1, 1920, More Than \$71,000,000

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., in its annual report, issued May 22, for the year ended March 31, 1920, shows a slight increase in net earnings.

Gross sales billed for the year amounted to \$136,052,092, as compared with \$160,379,943 for the year ended March 31, 1919, a decrease of \$24,327,841.

Net income available after deducting all expenditures, depreciation, taxes and other charges amounted to \$15,206,341, as compared with \$15,059,008 for the previous year. For the year ended March 31, 1920, this is equivalent to \$10.16 a share earned on the combined preferred and common stock outstanding of \$74,812,650 as compared with \$10.05 for the previous year.

Following is a condensed comparative statement of operations for the past two years:

	YEAR ENDED MARCH 31	
	1920	1919
Gross earnings — sales billed.....	\$136,052,092	\$160,379,943
Cost of sales — cost of manufacture, including depreciations of property and plant and all selling, administration and general expenses and all taxes....	120,972,262	144,667,402
Net manufacturing profit	\$15,079,830	\$15,712,541
Other income.....	1,721,334	1,623,262
Gross income from all sources.....	\$16,801,164	\$17,335,803
Interest charges.....	1,594,823	2,276,795
Net income available for dividends and other purposes.....	\$15,206,341	\$15,059,008

The property and plant account, representing real estate, buildings, equipment, etc., shows a reduction as compared with the previous year due in part to the sale of certain plants which were engaged mainly in the manufacture of munitions. The negotiations for the sale of certain investments in

foreign companies, referred to in the previous report, were completed.

The development and extension of the business together with the increased costs of operation due to higher wages and higher prices for raw materials have required a large amount of additional capital. These requirements were met in part by the sale of certain investments in other companies, principally foreign holdings, and in part from surplus earnings retained in the business.

Current demand for the products of the company is in excess of its present plant capacity and a continuation of this demand will make necessary further additional facilities and still larger working capital. The value of unfilled orders on April 1, 1920, was \$71,156,732.

Metal Market Situation

With the virtual halt in rail freight traffic of many of the raw materials, the copper market is a bit softer than a week ago. While the larger producers are unwilling to shade 19 cents for so-called May delivery, some of the smaller producers have been interested in prices as much as ¼ cent under 19 cents for small tonnage for nearby use. The demand is not very active, but some electrical manufacturers have availed themselves of the relatively low price offered by the outside market and have taken some for immediate delivery, where transportation has been at hand, at 18.62½ cents delivered. Small amounts of the metal have been offered as low as 18.35 cents at refinery.

The labor situation at the copper mines is very unsatisfactory, one mine having closed this week. Others are badly curtailed in their output.

In zinc the market is steady under little demand. It is not expected that the present stock will last the manufacturers long, although because of curtailed output, it is dragging out pretty well. Prompt is quoted at 7.90 cents.

Lead shows little activity, especially for June and July. Leading prices are 8.50 cents, New York, with the outside market asking 8.80 cents.

British Tramway Orders Power-Saving Recorders

The Arthur Power Saving Recorder Company, New Haven, Conn., has received an order for its recorders from the London Metropolitan Electric Tramways, Ltd., which is to be completely equipped with this device. This tramway is part of the general system administered by Lord Ashfield (formerly Sir Albert Stanley). A committee of three officials from the properties were in this country last winter for several months to study American methods and apparatus in connection with electric and street railways. The committee consisted of D. J. Spencer, general manager, London Metropolitan Tramways; A. R. MacCallum, chief mechanical engineer, London Underground Railways, and C. J. Shave, chief engineer, London Omnibus Company.

Rolling Stock

Montreal Tramways, Montreal, Que., Canada, on May 22 is reported to have lost eighty old cars in a fire which destroyed a carhouse valued at \$5,000. The damage to the cars is estimated at \$45,000. None of the cars had been in operation for more than ten years.

Track and Roadway

Dayton & Western Traction Company, Dayton, Ohio.—Valentine Winters, president of the Dayton & Western Traction Company, has informed the Montgomery County Commissioners that improvements will be made on his road to cost about \$500,000 as soon as it is possible to purchase the steel. Other improvements are also needed and will be made if the commissioners grant an extension to the franchise, which expires in 1922. An application for a fifty-year extension was made some time ago, but action was deferred. President Winters asserted that the road would have to be abandoned if it is not improved.

Central Texas Electric Railway, Waco, Tex.—E. H. Prescher of Clifton, Tex., has been added to the board of directors of the Central Texas Electric Railway, which will build and operate an electric interurban line from Waco to Temple. Mr. Prescher is a large landholder in Bosque County.

Androscoggin & Kennebec Railway, Lewiston, Maine.—The Androscoggin & Kennebec Railway, formerly the Lewiston, Augusta & Waterville Street Railway, contemplates improvements to the roadbed of its Bath division to cost \$25,000. Alfred J. Sweeney, general manager, announced the improvement program after an inspection trip over the division. The company will lay new 80-lb. steel rails and will alter the curve on its main line on North Street. The material has already been ordered. The company will shortly place several new cars in service.

Northern Texas Traction Company, Fort Worth, Tex.—George Clifford, general manager of the Northern Texas Traction Company, has announced that the company will make improvements and extensions to its system to cost \$1,000,000. The company's program includes the double-tracking of the Hemphill Street line from Magnolia Avenue to Hawthorne Street, double-tracking Polytechnic line from Tyler's branch to the city limits, extension of single track on Commerce, from Sixth to Weatherford; on Railroad, from Hemphill to Wheeler, and on Wheeler to Daggett; on Throckmorton, from Eighth to Tenth; on Monroe, from Eighth to Tenth, and on Texas, from Monroe to Jennings; discontinuance of the use of Ninth Street; building of many additional sidings and extensions to car houses; double-tracking

one-half mile of Summit Avenue line, south of Texas Street.

Lynchburg Traction & Light Company, Lynchburg, Va.—It is proposed to extend the Jefferson Street line of the Lynchburg Traction & Light Company to Ninth Street.

Power Houses, Shops and Buildings

British Columbia Electric Railway, Vancouver, B. C.—The British Columbia Electric Railway will start work shortly on a new station at Marpole, on the Lulu Island interurban branch, and also on a new transformer station which it will erect at Powell and Rogers Streets for the British Columbia Sugar Refining Company. The two structures will cost about \$15,000.

Georgia Railway & Power Company, Atlanta, Ga.—The Georgia Railway & Power Company will install a fifty-mile transmission line between Lindale, Ga., and Gadsden, Ala., to connect with the transmission lines of the Alabama Power Company.

Bloomington & Normal Railway & Light Company, Bloomington, Ill.—The Bloomington & Normal Railway & Light Company is erecting a large storage tank on land recently purchased on South Lee Street across from the power plant. The tank is to be used by the company for cooling water and reconverting it for the use of the large boilers at the power plant.

Boston (Mass.) Elevated Railway.—The Boston Elevated Railway is negotiating with a view to the purchase of a tract of land in Forest Hills between Hyde Park Avenue and the New Haven tracks, on which to erect a repair shop.

Brooklyn Rapid Transit Company, Brooklyn, N. Y. is in the market for a 5-ton and for a 15-ton overhead crane.

Northern Texas Traction Company, Fort Worth, Tex.—The Northern Texas Traction Company will erect new carhouses at North Side, Fort Worth, as a part of its \$1,000,000 improvement program.

Trade Notes

Toledo Bridge & Crane Company, Toledo, Ohio, announces the removal of its New York office from 52 to 29 Broadway. Arthur Appleton, district manager, is in charge.

Arnold Electric Tool Company, New Haven, Conn., announces that J. N. La Point has been elected president of the company, succeeding Frederic Levere, who recently resigned.

United States Copper Products Corporation, Cleveland, Ohio, manufacturer of seamless brass and copper tubes, has opened an office at 1123 Broadway, New York City.

Hanff-Metzger, Inc., New York, N. Y., general advertising agents, announces that Francis Juraschek, formerly of the advertising staff of this paper, is now in charge of the technical department of this company's advertising work.

Page Steel & Wire Company, New York, N. Y., on May 15 removed its offices to suite 1054 Grand Central Terminal. This is the office of the American Chain Company, with which the former company has been consolidated.

Ernest C. Van Winkle, formerly assistant engineer, construction department of the Chile Exploration Company, New York, has become connected with the Ford, Bacon & Davis Company, New York, in the capacity of valuation engineer.

Mack Molding Company, Newark, N. J., was recently organized by Frank M. Kirkner, formerly sales engineer of the Condensite Company of America, and Kenneth W. Macksey. The company has established a factory at Little Falls, N. J., where it will manufacture custom molding from condensite, bakelite and redmanol.

The Hygrade Lamp Company, Salem, Mass., has consolidated its shipping and sales departments. G. F. Gibney, formerly Salem manager of the American Express Company, has been placed in charge of stock of shipments. He will also be responsible for all finished lamp stock inventories and as the business of the company expands will perform the duties of traffic manager.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., announces that John C. Jones, manager of the Salt Lake City (Utah) office of the company in that city. Mr. Jones has been in the Salt Lake office of the Westinghouse company for nine years. W. A. Mosher, formerly sales engineer for the company in Salt Lake City, will succeed Mr. Jones as manager of the Salt Lake office.

Roller-Smith Company, 233 Broadway, New York, N. Y., has appointed F. R. Ryan as district manager of its Chicago office, located at 739 Monadnock Block. Mr. Ryan has been connected with the company's Chicago office since January, 1919, in the capacity of sales engineer. He graduated from Notre Dame in 1913 and also attended the University of Illinois. In the past he has served the Commonwealth Edison Company as electrical testing engineer, the Sanitary District of Chicago as electrical engineer, the Krehbeil Company of Chicago and also the Signal Corps of the United States Army. Mr. Frankel, assistant sales manager of the Roller-Smith Company, will continue to have his headquarters at the Chicago office.

Material-Handling Machinery Manufacturers' Association, New York, N. Y., at a special meeting of the board of governors held on May 3 in New York appointed twelve committees. With F. W. Hall, commercial manager Sprague Electric Works, as chairman, the main

engineering committee will be composed of the chairman and one additional member of each of the six sub-committees which are to be representative of the six divisions of the material-handling industry, as follows: Cranes, hoists and winches, gravity and power conveyors, elevators, industrial trucks, bulk-handling machinery, and miscellaneous equipment. The association announces that the chairmen of the remaining eleven committees are as follows: E. Logan Hill; Lucian C. Brown; Charles A. Rohr; James A. Shepard; J. B. Flynn; C. A. Luster; Francis L. Stuart; F. S. Chacannes; W. B. Clarke; Calvin Tomkins and A. J. Barnes.

Walter E. Hinmon, as announced briefly in *ELECTRIC RAILWAY JOURNAL* for May 15, has resigned his connection with the National Railway Appliance Company and with Holden & White, Inc., to become sales manager of the L. J. Risk Real Estate Company, Detroit, Mich. Mr. Hinmon dates his connection with the electric railway field back to 1897, when he became superintendent of the Dayton & Western Railway, Dayton, Ohio. He resigned in 1900 to become a salesman for the Ohmer Fare Register Company, continuing in this work for a number of years. Subsequent changes in his connections brought him into the field as salesman for the Cooper Heater Company and the Peter Smith Heater Company. After this he formed a partnership with O. E. Quinton and went into the railway supply business to handle the street-car heaters manufactured by the Jewel Stove Company, Detroit. Hinmon, Quinton & Company was later consolidated with Holden & White, Inc., of which Mr. Hinmon became vice-president. Then when this company was purchased by the National Railway Appliance Company Mr. Hinmon continued his active sales work in the railway field and served also as a director of the holding company as well as vice-president of the subsidiary. Mr. Hinmon leaves an almost universal acquaintance among railway operating men to take up his new activities.

New Advertising Literature

Air Reduction Sales Company, New York, N. Y.: Bulletins describing welding torches, regulators and gages.

L. Best & Company, New York, N. Y.: Catalog of grinding machinery, abrasive dies and cloth and grinding wheel dressers.

Midas Trademark Bureau, Chicago, Ill.: A booklet, "Chasing Trademark Rainbows," consisting of fingertip facts on originating trademarks and on how to protect them.

Underfeed Stoker Company of America, Detroit, Mich.: Bulletin on design and operation of heating furnaces by Nelson G. Phelps, M. E., dealing with combustion of coal, waste heat boilers, furnace design and stoker application.