

Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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A. R. A. Convention Dry Literally, but Not Metaphorically

AT THE recent convention of the American Railroad Association, mechanical section, two things were noticeable, one being that the absence of old King Alcohol did not seem to interfere with the pleasure of the delegates. We hold no brief for prohibition, but certain it is that a good time was had by the large majority without the Red King's presence and his death was more talked over than mourned. The other point of note was the large attendance at the committee meetings and the highly technical character of the reports. Time was when the technical, analytical type of report was unusual, but it would seem that now is the day of the technical man in the mechanical departments of our railroads. Much information of value was presented in these reports and we give elsewhere in this issue some additional excerpts therefrom. These are supplementary to the reports of the convention printed in earlier issues and they have been related, by means of appropriate comment, more particularly to the electric railway field.

Business Men Come to the Aid of the Utilities

CHICAGO business men have set an example which should be the signal for a like movement in every other community. Through their several associations, they have subscribed to a statement addressed to the Illinois Public Utilities Commission, which makes acknowledgment of the difficulties and handicaps under which the public utilities are functioning and urges that tentative orders be entered into to provide increased rates and immediate relief. They recognize that the paramount issue is service and that it is high time that politics be adjourned if the welfare of the public in its business and in its social pursuits is honestly to be fostered.

Not only is this statement a timely expression of guidance for the commission, but the latter will undoubtedly welcome such direct support of its recent action, though perhaps unpopular with the unthinking masses. For it has had too much of the clamor of adverse criticism and too little of the commendation from those who know.

This is the second great step that has been instigated in Illinois and may well be emulated elsewhere. Only recently the Illinois Commission held a series of general hearings on the financial difficulties of the utilities, at which a number of prominent bankers and business men made statements and submitted to cross-examination by attorneys representing the city of Chicago. The keynote of those hearings was that the lamentable condition of the utilities is very largely chargeable to the politicians, who have misrepresented them until nearly every one has lost faith in their securities and in their honesty of purpose. These hearings had a dis-

tinctly beneficial effect on the attitude of the newspapers and public toward the utilities—a new appreciation of the true situation having apparently dawned.

Chicago business men are to be complimented for their progressive and original action in these two instances. They are in the right. They have come to realize that the utility companies have not had a square deal. Looking out wisely for their own interests, they are taking active measures to correct the situation to the good of every one. They have realized that the well being of the utilities is to their own advantage. Now for an awakening to this realization elsewhere.

Facts About Figures— Figures About Facts

EVERY executive in the electric railway business deals with figures or compilations of figures. There is very evident self-interest in the figures to the men in the industry. There is also very evident self-interest in them to the man in the street. Expression of opinion to the contrary notwithstanding, such figures can be interpreted to the general public. Of course, the task isn't easy. Few men in managerial positions in the industry are capable of doing it. That isn't their job. They are not publicists. On occasion the job has been done and done well.

The point is that it isn't done often enough. Few people are followers of Dryasdust. History may be history, but as between the romanticist and the realist, we choose the romanticist. Facts untouched by art make dull reading. They fall on sterile ground. If you have a story to tell call in a man who can tell a story. Check up this man's work if necessary, but don't throttle his imagination. Publicity that involves the use of figures must be approached in the light of facts about figures and not figures about facts.

Entertaining an Angel Unawares

THE Fifth Avenue (New York) Coach Company employee who recently loaned a dime to the daughter of the President of the United States, when she was caught in the awkward predicament of finding her purse empty, performed a gallant act. He deserves the satisfaction which will be his and his descendants as they gaze on the gilt-framed note of thanks and returned dime reposing on the family parlor mantel. If he had been aware of Miss Wilson's identity, which he was not, he would have been merely lucky; as it was, he was fortunate. But this conspicuous act of courtesy is not exceptional; the vast army of electric railway platform men contains as large a proportion of gentlemen as any business or profession. Possibly the proportion is larger than in most businesses because service (in which courtesy is a large factor) is what these men deal in.

And to every chivalrous platform man is potentially due as tangible a reward as came to this bus conductor, although few will ever realize on this obligation so conspicuously. The stream of letters of appreciation of good treatment which flows from the public to the mail baskets of most electric railway managers shows that patrons know when they are well served.

The Water-Power Bill Becomes a Law

WHETHER urged by political expediency or convinced by further study that an earlier opinion was wrong, or whether he meant to do it all the time, President Wilson has tardily signed the water-power bill and, according to Attorney-General Palmer, negatived the pocket veto. We hope he has thus made this much-desired legislation a law.

The bill will provide a long-sought-for opportunity to develop economical power for our electric railways and industries. This legislation has had twelve years of rocky travel and there have been legitimate differences of opinion as to some provisions, but the result which is now the water-power bill provides a basis upon which water-power development may begin. If some details of the bill are unfortunate they can be changed as experience proves them so.

Most important, the bill gives recognition to the principle that the integrity of the legitimate investment in a utility of public service, such as water-power development is, will not be impaired if the public decides to take over the business. At the same time, by the fifty-year lease provision, the public is protected in case of future changed conditions.

This legislation should encourage and invite capital which is seeking an investment field rather than a speculation. The result will be a hydro-electric power business, on a sound basis, which will be a factor in the electrification of trunk lines, in economical power production for existing railways and industries and in coal conservation.

President Pardee Calls Attention to Some Live Facts

WE HAVE all heard and read a great deal and the ELECTRIC RAILWAY JOURNAL has printed much about the present condition of the electric railways. It might seem a bit unnecessary to say much more, but we believe President Pardee has presented so vivid and complete an analysis of the situation in his address before the National Electrical Credit Association that we are giving this week an extended abstract of that address. Every electric railway man should know the situation as portrayed here, be he shop man or president.

There are two new points which Mr. Pardee reports and which deserve special mention. These are the census figures on municipal lines, included for the first time in the 1917 census, and the New York commission's decision on service and its relation to fare in the Rochester case.

There should be no rejoicing over failure of municipally owned or operated roads, but it is a healthy situation for the industry as a whole to have the facts thus baldly portrayed. The writer recalls a discussion with a successful commissioner of public works in a town where municipal ownership held forth. He argued that

any community has the right to fix such rates as it desires on its municipal utilities and to make up any deficit by taxation if it considers this the best policy. Was his own utility making money? No. Did the people know that fact? No. Why? Politically inexpedient! In other words, while this man was really operating the property economically and well, the people were paying deficits by taxation, *but without knowing it*. His theory may have a logical foundation, but his practice has none except his own answer of political inexpediency. It is thus fortunate for the whole community that the facts with reference to municipal electric railways are impartially analyzed.

In the Rochester case the New York Public Service Commission, Second District, has given pronouncement to a principle long believed right by electric railway men. This is that service and rates should be proportional; that it is impracticable as well as unfair for municipalities to demand a service costing more than is paid for it. Public and utility are both fortunate to have their interests in the hands of a commission which sees facts thus clearly and acts as fearlessly. A second and equally important fact here emphasized is that the commission states it cannot order expenditures unless it is given the power to allow proportionate returns. In other words, here is one governmental agency which follows the recommendation of the London Advisory Committee, that governmental agencies should not assume to give orders unless they have the right to assume responsibility for the results.

New Coins Will Be of No Help to Railways

THE Senate bill proposing the coinage of a 2-cent piece, as well as other bills which may be or have been introduced to provide for 6½, 7 or 8 cent and other odd coins, can very well be opposed by the street railway companies. The demand for these coins has probably come from a desire to mitigate the inconvenience of multiple coins now required in the many business transactions which were formerly covered by the 5-cent piece. The street car fare is one of the most common cases of this kind, and there is evidence aplenty that rates of fare between 5 cents and 10 cents produce an inconvenience to street car patrons and in some cases have actually delayed traffic. For example, it is understood that in Chicago the benefits of speeding up traffic resulting from the skip-stop system were just about offset or lost by the installation of a 7-cent fare. Nevertheless, there are other means, better than the adoption of new coins, to overcome this handicap, and there are actual disadvantages to an increase in the number of varieties of small coins.

The question of fare collection, wherein the rate involves multiple coins, was thoroughly investigated and discussed at the annual convention of the American Electric Railway Transportation and Traffic Association at Atlantic City last fall, and it was the consensus of opinion of the transportation and traffic men present who had had experience in the matter of fare collections that the most effective means of handling fares involving more than one coin was the adoption and use of metal tokens. Upward of 100 of the more important properties throughout the country have acted upon this recommendation and are now using the metal tokens with satisfactory results.

Moreover, there are several marked objections to the

adoption of one or more new coins. One of these is the large number of registering fare boxes, aggregating now some 20,000 on more than 200 street railway properties, not to speak of the larger number of coin counting machines in use in the accounting offices of railroads, both steam and electric; banks, telephone companies and industrial concerns. Most of these machines would be seriously affected through the issue of a new fractional coin, since they are built to handle coins of the present denominations only and would have to be supplanted by new designs.

Again, the establishment of a 6, 6½, 7 or even 8 cent coin would probably tend to identify that coin in the mind of the public as being adequate for a fare on an electric railway in somewhat the same way that the nickel was formerly considered as the standard fare, whereas the new coin might be suitable in some cities but not in others. The more modern conception of a carfare is that it should vary with the cost of production rather than be inflexible. Briefly, then, present conditions favor the use of a metal token, the value of which may be changed to meet a changing rate of fare, rather than an attempt by government to issue one or more new coins to serve as substitutes to the obsolete nickel as a standard carfare.

Are Commutation Tickets Desirable?

ONE of the recommendations made in the somewhat elaborate report on electric railway service in Camden, N. J., by the committee on public utilities of the Chamber of Commerce in that city is this:

We cannot lay too much stress upon the advantages to the company that will accrue from the issuing of strip tickets sold at a slight reduction on the straight cash fare and the selling of school and commutation tickets at a competitive rate with the railroad fares from suburban towns.

There is some advantage, as we have said before, in the wholesaling of tickets, partly because the plan induces riding and partly because it is a convenience in collection, when the fare has to be paid by two or more coins. The advantages to the company of both of these points, however, are often exaggerated, especially in the minds of the public, and no railway can afford to give more than a few per cent reduction in the wholesaling of tickets to secure these benefits.

But the second claim of the committee of the Camden Chamber of Commerce is based on an entirely erroneous premise. However profitable it may be for a steam railroad, commuter traveling is not so desirable to an electric railway that the company can afford to make concessions to get it. The reasons for this are not far to seek. The business has to be done during the peak hours, and it is one-way business; that is to say, the cars travel one way full and the other way practically empty. On a steam railroad, where the coaches can be left in the terminal yard during the daytime and used on the outgoing trains at night, the same objection does not hold. But from every point of view on an electric railroad commuter transportation is about the most expensive that can be undertaken, and if an electric railway is so situated that this travel will naturally go to the steam railroad, so that the electric railway does the all-day off-peak business, such a division should be encouraged. There is absolutely no reason for an electric railway to reduce fares during rush hours in order to get peak-load business.

The Stormy Petrel of the Pacific

HUGH CALDWELL has taken the lid off of Hell out in Seattle. Mr. Caldwell is Mayor. He is that strange anachronism—a politician who threatens to carry out a pre-election promise. His promise was to inquire into the conduct of Seattle's municipal railroad. This he is doing with a vengeance. Among his shots there are some verbal duds, but there have been enough hits to cause considerable carnage. In consequence Seattle has a new sensation. The papers are full of it.

Mr. Caldwell, formerly Corporation Counsel, knows a real deficit from a paper profit. He said the municipal railway was being run at a loss when others contended differently. When he became Mayor, Mr. Caldwell set out to prove this. So well has he succeeded that Seattle is preparing to go to a 10-cent cash fare or 6½-cent ticket fare on its municipal line.

But that isn't all. Far from it. Mr. Caldwell began to inquire into the jitney. He found that that pest was taking about a thousand dollars a day away from the electric railway by sniping passengers. To all practical intents and purposes he has eliminated the jitney. Some harsh words were passed in this war, but Mr. Caldwell has won. When the roads in Seattle were privately owned, liberty was license for the jits. With the roads under the city, the jitneys have license but no liberty.

Mr. Caldwell has taken still another step. He thinks that under municipal ownership at \$15,000,000 for the railway properties of the Puget Sound Traction, Light & Power Company the city paid \$5,000,000 or \$6,000,000 more than the property was worth. On this issue he and former Mayor Ole Hanson, during whose administration the road was taken over, have crossed swords. Mr. Caldwell seeks to know whether there is any legal redress for the city. Mr. Hanson has said that he considered the \$5,000,000 about which Mr. Caldwell is doing so much talking to be the price he paid to get rid of a nuisance. It seems that Mr. Hanson now considers the road worth only \$10,000,000. Anyway, says Mr. Hanson, the people by vote approved the purchase price. The railway management says the city offered the company a certain amount for the road, that the company accepted the offer, that it delivered the road to the city, and that it has lived up to its contract.

Now Mr. Caldwell's alibi is that as Corporation Counsel under Mr. Hanson he passed only on the legal formalities of the municipal ownership deal. His idea is to make the municipal road self-sustaining out of the earnings. Deficits are not to be made up out of taxes, and he is unwilling to increase the security back of the bonds so as to make them a direct charge against the city. In the event that the roads cannot be made to pay, then the city can apparently turn them back to the bondholders. A nice little game of heads I win, tails you lose.

Seattle has had a little more than a year of municipal ownership. Enthusiasm there ran high in the spring of 1919. Enthusiasm is again running high. This time, however, it is running in the opposite direction. As a famous advertiser once said, "there's a reason." The reason is that economic necessity plays no favorites. A road that starved to death at a 5-cent fare under private ownership will most certainly starve to death at a 5-cent fare under municipal ownership. A 5-cent piece is a 5-cent piece. If it was inadequate in private hands, it surely will prove so in public hands. The American political King Midas has yet to make his appearance.

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

Cleveland's Tayler Grant—After Ten Years of Trial

By Edward Hungerford

Can you take a trolley company, no matter how big or how strong it may seem to be, club it over the head for six years, catch it by the scruff of the neck and shake it, as a dog shakes a limp rat, and still have that trolley company render faithful and efficient and willing service?

Ask Cleveland that question. Cleveland has been through all of these remarkable processes of giving herself good urban transportation service—and somehow seems to have arrived at a definite conclusion that there is another way, infinitely better.

That way can be reduced to a single word—co-operation. In Cleveland they do co-operate, and so have won a civic peace if not a complete civic success with the eternally puzzling traction question. There is little peace in the rat-shaking plan of solution.

For ten years service-at-cost street railway operation has been under trial in Cleveland. At its outset widely heralded, the so-called Tayler grant plan can now be said to have made good, without much fuss or feathers or the blare of trumpets. The officers of the Cleveland Rail-

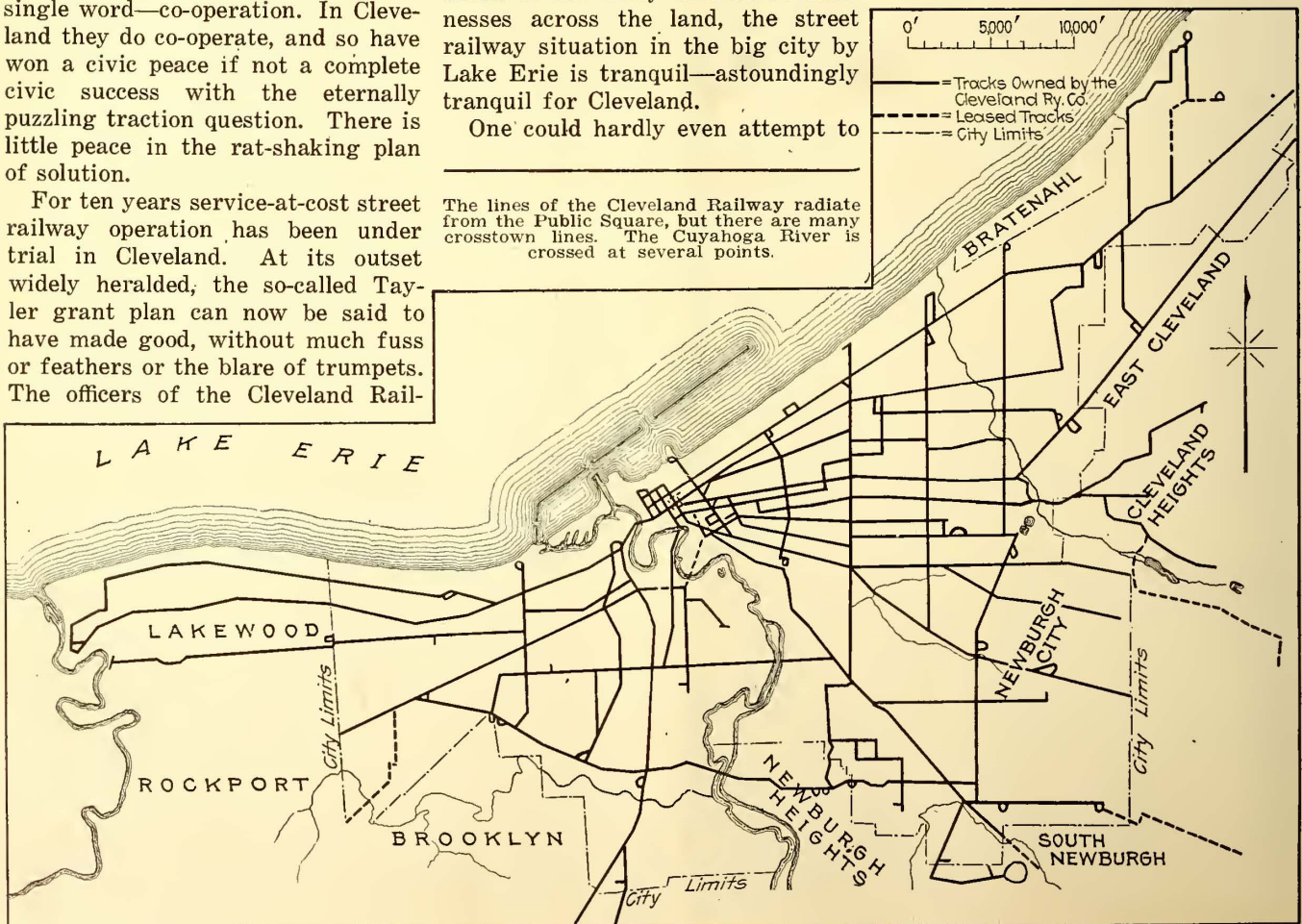
CLEVELAND and the Tayler franchise are the subjects of this week's article by Mr. Hungerford. He tells how, by the adoption of a service at cost franchise ten years ago, co-operation has followed contention to the benefit of both public and company. Problems there have been, including questions of labor and finance, but they have been successfully overcome.

way say that the plan has made good. The local newspaper men, sharpest critics at all times of the local traction situation, concur unreservedly in this opinion. The men, more or less expert, who have come in from outside to study it are also in agreement. And today, when the traction business is perhaps the most disordered of the many disordered businesses across the land, the street railway situation in the big city by Lake Erie is tranquil—astoundingly tranquil for Cleveland.

One could hardly even attempt to

The lines of the Cleveland Railway radiate from the Public Square, but there are many crosstown lines. The Cuyahoga River is crossed at several points.

make a bird's-eye picture of the perplexing traction situation across the land without having one's eye alight—almost at the very beginning—upon Cleveland. In the days when the street railway industry in America was in the very first flush of its strength and popularity that big town was already a trouble center. Mayor Tom L. Johnson had begun to mix things up. So, perhaps, after all, it is hardly more than fit and proper that today, while traction men all over the land are bemoaning their lot and the future of the industry is terribly clouded, the Cleveland street railway men, barring an occasional bump with their labor, are



having a reasonably happy time of it. John J. Stanley, the president of the Cleveland Railway, looks ten years younger than when I first met him—more than a dozen years ago.

Those were the days when the head-clubbing and rat-shaking performances were in full sway, with the late Tom L. Johnson as the head devil in charge of the inquisition. There were no half-way measures about the Honorable Tom. He came into the office of Mayor of Cleveland on the promise of gaining 3-cent fares for the folk of the town and he intended to keep his promise—give him full credit for that. It was as far back as 1903 that he was re-elected as the Big Watch-dog of the Sixth City and hardly a month thereafter before he started his second and real campaign for actual 3-cent fares on Cleveland trolley cars. The old Cleveland Electric Railway opposed him, of course. It was giving 5-cent fares with practically unlimited free transfers and priding itself that the service it rendered was without a superior in any other city of the land.

I shall not try to repeat here all the processes of the head-clubbing and the rat-shaking. Mayor Johnson was aided greatly in his campaign by the fact that many of the original franchises of the street railway company were beginning to expire. He had nine-tenths of public approval and the press on his side—one might almost say "of course" once again. And he had all the arts and resources of the skilled politician, plus a tremendously active brain and a winning personality. That was a hard combination for Horace E. Andrews (then president of the Cleveland Electric Railway), John J. Stanley and the other traction folks to overcome. And overcome it they never did—entirely.

Tom L. Johnson's methods were the methods that have been used in traction squabbles before and since. One of his pet clubs was that of competitive service. The Hylan scheme of establishing competitive motor buses had not then come into being, so Johnson established a rival trolley system on the west side of the town—the Forest City Street Railway company. His experience in Brook-

lyn and other communities in operating street railways here stood him well. He had nothing to lose and everything to gain in this experiment. And without a future to harrow his thoughts 3-cent fares on the Forest City cars became an easy concession.

In the meantime he had forced the older company into an experiment on 3-cent fares on about twenty routes, each about 2½ miles long. This experiment was abandoned after a fortnight of disastrous trial, and two days later (Feb. 6, 1905) a combination fare of 4 cents with-



John J. Stanley, president the Cleveland Railway, seated at the end of the directors' table at which he does all his office work, in preference to a desk. The bronze bell paper weight on the blotter before him is lettered on the rim, "Broadway & Newburg R.R. Co.," with which road it, like Mr. Stanley, saw service in the "mule power, horse power" days, more than thirty years ago. Mr. Stanley's first job was that of "hill boy."

out free transfer and 5 cents with that privilege was inaugurated by the Cleveland Electric Railway. In that same month the federal courts began to inject themselves into this highly political situation. They came to the protection of certain vested franchise rights of the old company, which, even before their decisions, had announced its desire to surrender all its existing rights for a new limited contract covering all the lines.

But such a sane and sensible and immediate solution apparently could not be reached in 1905. Contention followed contention, lawsuit led upon lawsuit, for more than two years, un-

til an organization known as the Municipal Traction Company, with Mayor Johnson as a prominent director, arranged to take over and operate the Cleveland Railway, which simultaneously was granted the so-called "security franchise"—twenty-five years for all of its existing lines at an established fare of 5 cents or six tickets for a quarter, while in exchange for its lease the Municipal Traction was to guarantee the Cleveland Railway 6 per cent on its stock.

For a time it seemed as if the Cleveland Traction troubles were at a rest. But, like Banquo's ghost, the thing would not down. This leasehold solution on being placed before the voters of Cleveland on initiative and referendum—oh, how those Ohioans do love initiative and referendum—was promptly voted down and the whole mess again thrown into the hands of politics. Once again, however, the federal courts intervened, and this time with force and definiteness and a thorough plan, which finally developed into the Tayler grant, of which more hereafter. Mayor Johnson died—he finally suffered the bitterness of defeat at the polls—and Cleveland mourned sincerely and turned for the moment from tractions to other engrossing things.

For fifteen years now I have been going to Cleveland at intervals of from three months to two years apart. It has been my fortune in all that time to study her street railway problem, not merely as one having a little more than a passing interest in transportation questions in general, but as a patron of her system—at all times and under practically all conditions. And fifteen years ago I can recall Cleveland's as even then a particularly good organism. Her cars seemed bigger, better ordered and more frequent than those of her less fortunate sister cities. The quality of the men who operated them was high indeed. The most of these had come as young men from the small Ohio cities and villages roundabout and they made the very best human material for the upbuilding of a traction force, strong in energy, in discipline, in loyalty, in enthusiasm—those things that in wartime we learned to call morale.

Recently I spent almost an entire day upon the street cars of the town. I rode early in the morning, in the middle of the day, late at night. They carried me south, east, west. They carried me in the hours when the great shops and offices of the town were receiving their workers and again in the evening when they were debouching them into the trolleys once again. The night time conditions of crowding were particularly abominable. These were bad enough in Euclid Avenue, but infinitely worse in both Broadway and in St. Clair. For Euclid Avenue is and will remain Quality Street for Cleveland, and so will continue to receive a special consideration, both from the city authorities, which are in actual operating control of the situation, and from the Cleveland Railway, which is the city's servant, and so, of course, must carry out its orders. Both St. Clair Avenue and Broadway come far from being Quality Street. Each is lined with the great industries which go so far toward the making of wealth upon Euclid, and when these industries in the late afternoon turn out their thousands of workers for the ride home there comes quickly a fearful problem of transport which one must say almost any traction company would find difficult to solve.

The Cleveland Railway does not seek to minimize this problem or the difficulties of its solution. After I had ridden upon his cars I went straight to the offices of Mr. Stanley and asked him to tell me quite frankly about these very conditions of overcrowding.

"They are very bad," he said, "and steadily getting worse. We are very proud of our cars here, proud of the men who operate them. But we realize, as any trolleyman who has made a study of the situation must realize, that the service today—in the dull hours as well as in the rush—is not only very bad but that it cannot easily be bettered. It is the non-rush hour service, however, that distresses us the most. In the old days it was the boast of this company that its service in the so-called dull hours was at least 50 per cent of that in the rush hours. In fact this was such a good ratio that it was officially recognized by Judge Tayler in making the city's contract with the railway company.

"But see now what really has happened," continued Mr. Stanley. "We have 900,000 people in Cleveland to-

day, as against a bare 500,000 ten or eleven years ago, and so have doubled our rush-hour service to keep pace with this great growth. But our dull-hour service remains exactly the same as when the city was one-half its present size, when much of it was established as a minimum of effective headway in many streets, and, as a result, people hang upon the straps all day long. We are carrying ten or eleven passengers to the car-mile as against seven before the coming of the Tayler grant, while the service ratio between the dull hours and the busy ones is as four to one. And the service suffers very greatly in consequence."

Actual figures bear out this statement on the part of the president of the Cleveland Railway. In ten years up to July, 1919, the population of Cleveland increased 57 per cent, its area 40 per cent, the miles of track operated 52 per cent, but the number of car-riders 178 per cent. Yet the midday service of the thirty-four lines that make the city system has had practically no increase in this time. I asked Mr. Stanley if the company was short of cars. He said that it was not; that it was building new equipment almost all the time—it is his particular pride that the Cleveland Railway has no car in its service today that is more than fourteen years old—and that his maximum service in rush hours was now well in excess of 1,250 cars. These are all cars of large seating capacity, operated on the pay-as-you-enter principle as they are bound down town and as pay-as-you-leave cars on the outbound trips—seemingly a most sensible sort of practice. The company has no single-truck cars whatsoever and does not contemplate buying any, even of the one-man, safety-car type. Mr. Stanley set it down as his very frank opinion that, good as these are for smaller communities, they are hardly suited to the great metropolitan cities of America.

Cleveland Is Not a Cheap Labor Town

From the one-man car to the labor problem is a short and an easy step. Cleveland is not a cheap labor town; not at any time—particularly not at this time. With Detroit it shared for long the honor of having the highest-priced platform men in the land and motormen and conductors in both cities now receive 75 cents an hour after one year of service.

These two lakeside cities have led in car wages for many years past, and with the enormous development of war industry and after-the-war industry in each of them are not apt soon to lose this distinction.

"Will the wage scales of this town ever come down so that the people will ride again at anything like their old riding costs?" I asked the big chief of the Cleveland trolley cars a little later when we were going over the various rates of fare that had obtained under the Tayler grant. He answered unhesitatingly:

"I doubt it very much. In all the traction history of Cleveland I can recall only one instance where we ever reduced pay. That was on a small unimportant line, at that time independent, where the wages once were actually brought down one cent an hour. When the line consolidated with us a few months later they quickly returned to standard."

Yet in this big industrial city of the Great Lakes district, where labor of every sort is at a very great premium and a lady complained to me that she had to pay her washwoman 40 cents an hour on the basis of a minimum eight-hour day and two meals on the house kitchen thrown in, the Cleveland Railway reports no labor shortage for its cars. True it is that its platform men are not of the small-Ohio-town type that first I saw when I began going out there. It is doubtful if these will ever come back to it again; the fascinations of the automobile and kindred manufacturing industries are far too great to be overcome in a moment. Yet they are of a type that is by no means to be scorned—a large proportion of them second-generation Americans, of Slavic blood, yet in their ability and their willingness paying high tribute indeed to the excellence of the public schools of Cleveland. They move the cars—and move them very well.

And if the Cleveland cars move very well how much credit shall one rightfully give the now famed Tayler grant—the all important document upon which the fundamental if not the very first service-at-cost plan was based? We are not going to take the time or space here to go into the details of this agreement between a traction company and the great city which it serves. It is enough here and now to recall that it first guarantees the stockholders of the property 6 per cent annually upon their holdings; second, that it creates an

interest reserve fund—a sort of barometer or gage which regulates the rate of fare, protecting thereby not only patrons in “fare-at-cost” but the company in the dividends guaranteed to it—and, third, permits the City Council, under the advice of the city-employed traction expert, Hon. Fielder Sanders, to supervise the operation of the cars. Nor is this last any empty privilege. The city of Cleveland has actual control of the operation of the great surface system in its streets. It makes both minimum and maximum schedules and holds the railway company to the proper operation of these schedules. It is the city government of Cleveland which in the long run determines that the dull-hour service shall be today but 25 per cent of that in rush hours, as compared with a much more generous 50 per cent a decade ago, and accepts full responsibility for such service.

In a word, it may be said that the city's control is positive upon all operating matters, but negative on every other question. It audits the company's accounts, approves all of its requisitions and may veto any of these. It does not merely content itself with schedules but even goes so far as to approve the type of cars to be used in its streets. If the Cleveland Railway should decide to use motor buses to supplement its present services either in the downtown or the outlying districts the city could veto such a step. Or, by silence, sanction it. As a matter of actual fact, it is not very apt to have this particular opportunity in the near future. John J. Stanley is not any more of an enthusiast for the use of motor buses in city transport than he is for the use of the one-man safety cars. He recalls rather distinctly an experiment which he once made with a bus line in a rapidly growing outlying district which was not ready for immediate trolley installation. He was quite satisfied when the district built itself to the point where the buses could be abandoned and regular honest-to-goodness trolley cars substituted for them.

1920 Answering 1910

Here, then, is the bridge upon which big and busy and perplexed Cleveland crossed from traction uproar into traction tranquillity, not at the time with entire confidence in the supporting structure. Federal Judge Robert W. Taylor, its architect and chief engineer, said at the time

he first laid it down, ten long years ago:

“Who knows what the cost of service in the city of Cleveland will be ten years from now? Three cents may be as extravagant a rate of fare as 10 cents would be now; 5 cents may be as low a rate of fare as 2 cents would be now. It all depends upon the cost of furnishing that thing which the people demand . . . Who can say that we now see the limit of the cost of the thing that is thus furnished? . . . What is the limit by way of added expenses to the

tightly fixed period of 3-cent fares—a charge of a penny being made for transfers, with the penny rebated in case the transfer was actually used—the fare has steadily advanced by carefully regulated steps until today it is 5 cents, with a penny for a transfer and no rebate, and without any definite prospect of remaining at that figure. In fact, there is abundant margin for increase. Cleveland's fares today are low—decidedly low as compared with most of her sister cities.

“Municipalities, the press and



The Public Square, at Cleveland, showing “Monument” loop in exact center, “Federal Building” loop on the left, and the “Forest City” loop in direct foreground. Street shown at left center is Superior Avenue, widest of Cleveland's thoroughfares. Note six tracks are laid in this street and people waiting between tracks at loading station. Street at right center of picture is the world famous Euclid Avenue.

furnishing of the thing that we must have. . . . ?”

That was 1910 asking a question of 1920. It is 1920 now, and we can answer the question—with the marvelous prescience of hindsight. We can answer in percentages—in fuel and in materials doubled and tripled in cost, in the average wages of the employees increased 142 per cent in a decade; the company had no difficulty whatsoever in getting all the small-town Ohio boys it wanted in 1909 at 24 cents an hour. Today, as we already have seen, they are getting 75 cents an hour, with a minimum day increased on May 1 from five hours to six, and no one is more glad of that than John J. Stanley and his fellow officers of the once-loathed “con-con,” as the newspapers used to love to dub it.

But the fares have also risen—of course. From a long and apparently

people generally believe that the Cleveland street railway system is the result of low fare,” avers Mr. Stanley, “when as a matter of fact low fare is the result of the system.”

Some other things as well are the result of the system. When I was in Kansas City on the same trip which took me to Cleveland I heard Colonel Kealy's plaint as to the tremendous bridge and bridge rental costs that had been heaped upon the Kansas City Railways. Long years before in the offices of the Brooklyn Rapid Transit system I had heard similar complaints of the annual imposts laid upon it for the use of the bridges spanning the East River to Manhattan, a service of inestimable value to the borough of Brooklyn. It is common enough practice. Yet the Cleveland Railway crosses the Cuyahoga ravine close to the heart of the city on one of the finest via-

duct bridges in the world at a total annual rental of nothing a year! It occupies for itself all of the four tracks in the sub-surface deck of the structure and so shortens the running time of its west side lines—each by a fractional time average and all in an aggregate impressive enough to be spread upon the pages of the Sunday supplements.

The Problems of the Future

Nor is it planned to charge the railway for its sole occupancy of the proposed subway terminals in the downtown heart of the city. For Cleveland, like pretty nearly every other American city that is beginning to achieve metropolitanism, is beginning to covet subways. No such scheme as that of New York, but rather a modified plan of Boston or Philadelphia underground railways—designed almost exclusively for terminal uses. With her exceptionally wide streets Cleveland need have but little fear for many years of congestion conditions, save in her downtown sections. It is worth recording, in fact, that the average speed of her trolleys reaches as high as 11 m.p.h., which is comparable with the 15 m.p.h. of the local trains in the New York subway. It is a factor which has saved her traction system from any extensive jitney competition.

Even the taxicab service of the city is a meager thing. And why not? One can leave the door of the Hollenden Hotel, downtown, step over to Euclid Avenue, board a car and get to the important Euclid Avenue station of the Pennsylvania Railroad, 2 miles distant, in less time than a cab can be called and taken there, and at a saving of from \$1.45 to \$1.95.

But downtown Cleveland's problem

of congestion is quite as bad as that of any other rapidly growing American city. Her wide streets avail her but little there. So she has planned, radiating from her ancient civic center, the Public Square, a series of underground loops for her trolley system and the interurbans which shall almost completely relieve the streets of them—at a cost of some \$15,000,000.

It was the most natural thing on earth to choose the Public Square for this terminal, just as it was chosen some years ago for the surface loop terminals of the various trolley lines that go out from it, south, east and west. The strong probability that the city's new union passenger station for all the steam railroads that serve her will be located upon the Public Square would seem to mean the retention of that open place as the actual as well as the titular civic heart of Cleveland.

Yet Cleveland, like most other American cities, is gradually moving her business district—in her case distinctly eastward. Already the records of the Cleveland Railway show that 65 per cent of the passengers of her west side cars alight at the Public Square as against but 17 per cent of those from the east side, and better judgment would seem to show that any subway loop system

that would best serve the transport needs of the entire city should embrace a territory as far east as East Ninth Street as well as the Public Square.

The Tayler Grant Satisfactory and Effective

These things are, however, in comparison with the main fact mere details. The main fact is, it seems to me, that the Tayler plan has worked—and worked exceedingly well. The city and the railroad company are satisfied. The fact that the grant was extended within the twelvemonth for another decade would seem almost of itself to indicate this. Not that the Tayler grant is without defects; some conservatives, however, still are a bit skeptical as to its complete success. It would have been well, for instance, if the Youngstown provision for permitting a return on capital expenditures equal to the actual cost of obtaining the money for them might well have been written into the contract at the time of its extension. But the point is that Cleveland pays for the service that she gets and saves a tremendous amount of time and energy by not quarreling over every detail of it.

If folk hang upon the straps of Cleveland's cars at mid-day it is because she herself has so willed it. She can change that condition at any time she so wishes by the very simple process of paying for the privilege. She can see to it that her trolley men are as well paid as those of Detroit—or much better paid—by the same simple process. It is the city that decides. The railway company is merely the agent for the execution of its desires. Its job is competency in that agency, and seemingly it measures up very well indeed to that job.

THE NEXT ARTICLE in this series by Mr. Hungerford will relate to Detroit. Although a neighboring lake city to Cleveland, Detroit has recently rejected the service-at-cost plan in operation in Cleveland and is providing a municipal system. Mr. Hungerford's comments on the situation there should prove most interesting.



New High Level bridge spanning the Cuyahoga Valley, just west of the Public Square, Cleveland. In the foreground is the old Superior Viaduct. There were two tracks on the old viaduct, which were in the center of the roadway; there are four tracks

on the new bridge, on a deck separate and apart from the main roadway. The old viaduct had a swing draw to permit the passage of shipping in the river; the new bridge has sufficient clearance for the passage of the largest boat on the lakes.

Condition of the Electric Railways*

The Electric Railway Essential, but Credit Poor—Census Shows Municipal Ownership Not the Answer—Transportation Salesmanship Should Be Encouraged—New York Decision on Sound Basis—Optimistic as to Future

By J. H. PARDEE

President American Electric Railway Association

THE electric railways of this country have suffered during the past three years a particularly severe accident. They have been run over by a long train of economic conditions, war requirement conditions and war price wage and inflation conditions. Some succumbed and passed away almost immediately, others lingered in severe pain for a short time and then gave up and were buried in the Potter's Field of wrecked business, but a great majority have exhibited a strength of will power and latent energy which have up to this time preserved functioning powers. They are scattered about this country in the hospitals of business, undergoing treatment by state commissions, municipal officials and public doctors and nurses of varying degrees of experience and motives.

Lack of credit is the basic cause of the present condition of electric railways and the restoration of credit is the major task of those engaged in the stupendous job of rehabilitating this essential industry. By the term credit I mean credit in its broad sense, the credit springing from resources and stability which attracts capital for expansion and economical operation of business. You will notice that I have used the word "essential" in referring to this industry. This is because all the evidence goes to show that the street railways are an absolute necessity to all American cities of any considerable size and that their function cannot be performed completely or well by any other form of local transportation.

This fact was particularly and clearly brought out in the evidence presented last year in Washington to the Federal Electric Railways Commission appointed by President Wilson; all witnesses of whatever leanings testified that the electric railways were a necessary and indispensable part of the economic and social scheme of our country. It is further evidenced by the action of Mayor James Couzens of Detroit, himself a motor manufacturer and fully familiar with all the possibility of motor transportation, in inducing the city of Detroit to bond itself for \$15,000,000 to be spent, not on motor buses, but in providing electric railway track and equipment.

And if they are a necessity, they must in some way and by some method be continued. There is no lack of those who proclaim in strident voices that the system of private ownership and operation of these roads has broken down under the conditions imposed upon it and that the only salvation for the service is that the state or the municipality shall take them over and operate them. Now, I am not so sure but that, from the selfish standpoint of the owners, public ownership is the easiest way out. I am, however, firmly convinced that from the standpoint of the public it is the worst way. The owner, surrounded by the protection of the law, would

be assured of realizing a fair price for his property, and this sum, whatever it might be, could without question be readily invested in enterprises many times more profitable than electric railways have been or have any likelihood of being.

CENSUS BULLETIN SHOWS MUNICIPAL RAILWAYS OPERATE AT DEFICIT

But what of the public? Would it be assured of better service? Would it be assured of more economical and efficient operation? Would it be assured of the development of these local transportation systems in pace with the public requirements? There is nothing in the history of our government to show it. I have just been looking over, with more than ordinary interest, the report of municipally operated electric railways for the year 1917, included for the first time in the *Census Bulletin* of the United States Bureau.* It makes interesting reading for the electric railway executive used to the strict accounting methods imposed upon him by the Interstate Commerce Commission and the various state utility commissions, and it would be most interesting for you gentlemen to scrutinize the devious methods of accounting, which if employed by business concerns would ruin credit with you and bring disaster to the factory employing such methods. The statistics of some nine roads are given, but the figures for one—and this one is operated by the State of North Dakota and not by any small municipality—are excluded in figuring the total because information was not available. Of the remainder, two report no charge because of interest on funded or unfunded debt, and but three report taxes, two in such small amounts as to indicate that they are but a pittance compared with what a privately owned company would have paid, although in each and every case the public treasury is being deprived of a substantial sum through public ownership. And with all of these favorable omissions the eight lines show a deficit for the year of \$141,000 out of total operating revenues of \$1,682,000, while the ninth road, not included in the total because of lack of information, had a deficit in operating expenses. But two of the nine roads had any net income. In the case of the Tacoma line this paper surplus is accounted for by a "donation" of \$5,100 from general taxes and by the failure to include any adequate sum as the road's contribution toward taxes. The famous San Francisco Municipal Railway was among the roads reporting, and, separated from its cloak of municipal ownership propaganda and put into the bald and incontrovertible figures which the United States Census Bureau insists upon, the result of the year's operation shows a deficit of \$103,908. Seattle's latest venture, the operation of the city's principal street railway system, is not among the nine roads. Had it been

*Abstract of address before the National Electrical Credit Association, New York, June 17, 1920.

an even worse showing would have resulted, since the report of the City Comptroller, made at the Mayor's instance, shows a deficit of something more than \$500,000 for the first year's operation of this property.

There is nothing here to indicate improved economy and improved efficiency in public operation of electric railways. There is nothing anywhere to show that they are better managed or run at less cost. The truth is that the high cost of labor and materials and of money, which have made it impossible for the privately operated railways to continue to furnish service at the old price, are just as potent in the case of the public operated lines and that the effect of these higher costs is the same in both cases. Because the great majority of railway mileage is privately owned and privately operated the public has in fact been receiving service for a number of years at very much less than its cost. This is obvious. Were the utilities publicly owned the entire investment charge could be represented by obligations of the communities or by obligations secured by the properties themselves, represented by bonds. The interest on such bonds must be paid in some way or a default would result. If revenue was insufficient, then the communities would perforce, if they continued to operate the property, make up the deficiencies from the public treasury. You cannot expend money unless you receive it from somewhere. The old adage is true, one cannot lift himself by his own bootstraps. The private owner has no such recourse. A large part of present capital is represented by stock and not bonds, and when revenue was insufficient the first charge to be lopped off was the owner's return, so that in the case of practically all electric railways return is anything connected with the past but unconnected with the present.

It is very evident that there must be a new deal before the investor will again sit in the game. It is not enough to point to the growing number of electric railway companies that have been permitted to increase their fares. These increases have in almost all cases come long after the time when they were first needed and have only been sufficient to meet operating costs. They have been granted to prevent financial and physical collapse of the service. Many of them are possible only through the waiving of contract provisions, and in only a few instances is there any real assurance that they mark a new attitude by the public toward the utility.

DAY OF SPECULATION IS PAST

Electric railway transportation has been withdrawn from the realm of speculation and is now hovering in midair, preparatory, I trust, to a landing in the fields of assured investment. The original electric railway investor took a chance of the loss of his money, because there was nothing in the law of the land, or in the code of business ethics, or in the thought of the public, which denied him the right to enjoy the full profits of the enterprise. He has since been denied the profits but compelled to maintain the risk. The inevitable has followed. Warned by the experience of the original investor, the prospective investor has declined a risk when denied a profit. The development of public utility regulation has been along biased lines. It has operated to squeeze what have become known as undue profits out of the business, but it has done nothing to eliminate the risk. No one now wants the undue profits put back, but it is certain that if investment is to be again attractive the risk must join undue profit in the limbo of

forgotten things, and safety of investment and assurance of return must in some manner be provided.

Government securities are non-speculative, not because of any fiat of the Congress, but because they are safe. Similarly electric railway securities cannot be made non-speculative because of any law or ordinance, but must become so because they, too, are safe.

Fare increases are a necessary palliative to keep the electric railway patient alive until his case can be properly diagnosed, the real seat of the trouble located and a cure effected. By themselves they are not enough to restore the industry's credit. The same power, be it a public service commission or be it a city council, which has increased fares can decrease them, and there is nowhere assurance that such decrease will bear any relation to the needs and necessities of the enterprise. There must be a surer foundation for future relations between the public and public utility enterprise than this if private capital and private enterprise are to be retained. Ultimately the inexorable economic laws that govern all industry will prevail, in spite of anything that may be written into the statutes or contained in the pronouncements of commissions. Regulation is good or bad and will be good or bad as it follows or deviates from these economic laws, and it is because they have been violated that the utility is today lying supine after a social and financial storm, from which unregulated industry has emerged erect and unharmed. The fundamental error has been in the attempt to fix the price of a product without regard to its cost.

Deteriorated service has been the inevitable result and deteriorated service has led to a state of antagonism between the utility and the public, which is making the problem of readjustment doubly hard.

NEW YORK COMMISSION TAKES FIRM STAND

The Public Service Commission of the Second New York District handed down a decision the other day which expresses clearly and unequivocally this principle which I am trying to put before you. The commission has not as yet been given power to increase rates named in street railway franchises in the State of New York. This is the ruling of the New York State Court of Appeals, made in a case brought by the city of Rochester. The franchise of the company operating in Rochester contains a 5-cent fare provision, which the city consistently refused to waive. In consequence the service furnished by the company was substantially decreased in an effort to preserve a margin between income and outgo. The city complained to the Public Service Commission, which ostensibly has, under the law, the power to compel service, and the reply that the city received was in effect that the kind of service furnished must depend upon what was paid for it and that for the commission to attempt to prescribe service without being able to permit earnings sufficient to cover what it had prescribed was on the face of it a confiscation of property under the Fourteenth Amendment to the Constitution of the United States.

I think that in this decision we have in a nutshell the foundation principle of a new relationship between these public utilities and the public that they serve. It is unquestionably and properly the right of the communities to prescribe the service that shall be furnished by an electric railway company serving them, but there never has existed and never will exist a right which does not imply a duty upon the part of the person exercising

it. If any community prescribes service it is its plainly indicated duty to see that the revenue to pay for it is provided, either through the fares of the passengers or through some form of public contribution. And to "pay for it" means to pay all the costs, the cost of labor and the cost of supplies and the cost of taxes and public imposts, and the cost of maintenance and the cost of and return to the capital which created and which expands and extends the service. It is because this principle has been disregarded and the community exercised the right to prescribe and disclaimed any obligation to pay that the electric railway situation is today so tangled.

It is in putting the principle into practice that we run foul of that bugaboo of local conditions. I do not believe that any man, or any body of men, can sit down in a room and formulate any detailed franchise or agreement, law or commission order that will apply to all electric railways and all communities. When most people talk of "service at cost" they unconsciously or consciously, as the case may be, call to mind the Tayler agreement under which the Cleveland railway system is being operated. Underlying this agreement is the principle to which I have called your attention. Upon it has been built up a structure which has worked admirably in Cleveland. Cleveland has had service which was satisfactory to the car rider and has had low fares. But the Tayler agreement is not responsible for the fares; local conditions have permitted them. In a recent interview John J. Stanley, president of the Cleveland Railway, said: "The fares charged in Cleveland are no criterion of the fares that should be charged in other places." Similarly, it may be said that just because the particular details of the Tayler plan have worked well in Cleveland is no reason to believe that those provisions and no others must be included in all settlements. The much-heralded ability of the Philadelphia Rapid Transit Company to maintain service on the old rate of fare has just been disproven, as shown by a report of the Mayor's commission and the effort of the company to have the fares increased.

Let me say this: Personally, I do not believe that private enterprise has ever had a full opportunity to show what it could make of the electric railway as a helping factor in social and civic life and development. We talk of private operation of public utilities, when, in so far as electric railways are concerned, there is now, and has been for some time, no such thing. The power to regulate has always existed and it has for years been exercised, with constantly increasing rigor and severity, first through franchise agreements, then through the police power of the states delegated to the municipalities or to specially organized commissions, and the public has assumed more and more of the functions of management.

When the rate of fare was first written into a franchise, when the first service ordinance was passed, the incentive to a wholesome and improving spirit of merchandising was encroached upon, and under the stringent regulation now almost everywhere prevailing the opportunity to sell this service to the public, in the way that the merchant and the manufacturer sell their commodities so as to further their greatest use and distribution, has been withdrawn.

It should be restored! The electric railway industry is no longer a non-competitive business. It has always competed with pedestrianism. It is now competing with a new form of transportation—the motor vehicle. It is

not in "unrestricted" competition with the latter, as has so often been said. The competition is, on the contrary, highly restricted, but with the restrictions all upon the electric car, and the motor vehicle free to do what it chooses, how it chooses. I am not here to decry the motor vehicle or to suggest that any obstacles whatever be placed in the path of its development. If it is a better and cheaper means of furnishing local transportation to the communities of this country, then the sooner this fact is known, the electric railways scrapped and the motor vehicles substituted the better. The same energy and brains and initiative that have developed the country's magnificent system of electric railways, with an investment of \$6,000,000,000, can be depended upon to weld the motor bus into a properly organized and properly conducted "system" of transportation. For it is a "system" of transportation, and not isolated units of transportation, that every community needs.

TRANSPORTATION ON RAILS IS THE CHEAPEST AND MOST EFFICIENT YET DEVELOPED

But the motor vehicle cannot take the place of the electric railway unless the motor vehicle is competent to do the work, and all the work, that the electric railway does. This it has not done so far, and so far there has been no attempt to have it do so. The service now performed by motor vehicles is not the service performed by electric railways and the conditions under which motor vehicles operate are not those under which the electric railways operate. If, then, there is to be a test of the two means of transportation with the view to the elimination of one of them, the test should be conducted under the same terms and conditions. Most important of all, the motor vehicle should be compelled to provide *all* transportation, and not confine itself to that which is admittedly profitable and easy to handle. I have no fear of the results of such a test. Transportation upon rails is the cheapest and most efficient transportation that has yet been discovered. That leading apostle of gasoline, Henry Ford, in his much-heralded solution of the local transportation problem, retains the rails at the same time that he discards electricity, and if his contention as to the relative merits of gasoline and electricity be correct, then it is time to call a halt upon all the stupendous projects for steam road electrification that are under way and all the carefully thought out and extensive plans for hydro-electric development, sponsored by the nation, the states and private enterprise, and make gasoline furnish all motive power.

I have departed for a moment from my text to discuss this question of the motor vehicle, which is a most important one to the industry because it is so little understood either by the public or by the public authorities. At the first glance there seems to be no good reason why motor vehicles should not be allowed to compete how and where they will with electric railways, but an examination of the situation shows that this competition acts "to favor a few at the expense of the many." Thus in one of New York's neighbor states, where jitney competition is rampant, 325,000,000 passengers paid an extra cent on every fare in order that 105,000,000 passengers might ride in a jitney at a lower fare.

Motor vehicle competition is but incidental to the point that I am trying to drive home. No matter what may be done in the matter of regulating those vehicles which are competing in the business of a common carrier, the private automobile is undoubtedly here to stay,

and its operation still further removes the electric railway from the non-competitive field.

Every inhabitant of the country is a *prospective* customer of the electric railway. Whether he or she will become an *actual* customer depends, first, upon whether the service is a necessity, and, second, the degree to which it can be made a convenience. The time has come when the electric railway must "go out after business," just as the merchant and manufacturer must "go out after" it. It has got to make its goods attractive and it has got to sell them at a price which the customer will pay. This means that it must be given much the same freedom of action that the merchant and the manufacturer enjoy. It means that latitude must be given both in the matter of the fare to be charged and in the matter of the service to be given. Somewhere there is a fare and there is a service that will attract the greatest number of passengers and at the same time provide the full cost of the service. It may or may not be 5 cents. It may or it may not be 10 cents. It is certain that it won't be the same in all communities. Local conditions as to cost of labor and cost of power and cost of materials and as to difficulties of operation and as to the kind of service required forbid a standard, universal carfare.

FLEXIBLE RATES OF FARE ARE ECONOMICALLY SOUND

There are today in effect on the electric railways of this country more than seventy-five different rates of fare, while for the companies operating under service at cost agreements, with fares fixed upon the actual cost of the service, there are no two with the same fare. Furthermore, the base upon which the fare structure is erected shows a wide variation. Flat fares, ticket fares, the zone system with its many variations, distance traffic, commutation rates and the wholesaling of transportation are all being tried out and experimented with. Out of these many attempts to find a fare which, while paying the cost of the service, will attract the maximum of riders is coming a mass of information that is bound to make the task before the industry easier. To restrict the companies in their efforts by rigid fare provisions in laws, ordinances or even orders is to end an experiment that I firmly believe will prove to be for the ultimate good of both the public and the industry.

The interest of the public will be furthered and not jeopardized by the giving of this increased freedom of operation which I have urged. There is not and should not be prospect of speculative profits in the conduct of so vital and so necessary a public utility as an electric railway. But there should, in addition to assured returns upon the investment, be a reward for good management and good operation sufficient to attract the best kind of management and merchandising talent to make it worth the companies' while to furnish service and to inaugurate fares that will induce the greatest use of the facility. The fundamentals of the solution of the electric railway problem are simple enough. The capital in the properties entitled to a return must be ascertained by a process which will take into consideration all the various factors that have gone toward making these properties living and useful enterprises. The right of that capital and of capital afterward invested to an adequate and continuous return should be insured by a plan which provides for the recognition of return upon the capital thus ascertained as a legitimate cost of the service, for

the right of the communities to prescribe the service and the public's correlated duty to see that the cost of service is paid from fares or from public contributions. In addition, if this plan is to be workable, so as to secure the best service and the cheapest fares, then there must be an additional reward for management based upon its success in selling service.

PRESENT SITUATION ENCOURAGES OPTIMISM

Without public recognition of these fundamentals it will, in my opinion, be impossible to restore electric railway credit. I do not believe that the investor can be induced to loan his money upon any such basis of relations as that which now exists. I do not believe that he can be persuaded to assume all of the risks if he be denied the chance of profits properly coincident to such risks. The future of the electric railways as a privately owned and privately operated industry is in his hands and it is his requirements that must be met. It will little avail the public seeking his capital to evolve plans for the settlement of the problems which do not meet the investor's demands. Their approval by social reformers, professional and political "friends of the people" and experts of whatever kind and whatever inclination will not suffice. For the man with capital, and that applies to the workingman and rich man, wants either safety and assurance of return or he wants a speculative chance to reap a big reward. And because the electric railway utility cannot offer him speculative advantage it must offer him safety and assurance.

I believe that these facts are becoming known not only to the student of the electric railway problem but to the general public, and for that reason I am an optimist as to the future of the industry. The investigation conducted by the Federal Electric Railways Commission has done much to open the eyes of the people to the seriousness of the situation as it affects their interest and has given to them some knowledge of the disease and the methods that must be adopted for its cure. This process has been continued in the numerous supplementary investigations that have been made both as to particular roads and as to groups of roads. The country is ripe at this time for a lasting settlement of the electric railway problem.

What is needed is cool-headed, unselfish leadership and a still better understanding of the principles involved. It is the civic duty of all right-minded citizens to insist upon it that their representatives in legislative halls, in state commissions, in municipal councils and in all regulative bodies shall approach this problem with free and fair minds and shall cast aside all political petty prejudices which now befog many situations. The public wants sane and fair treatment of the problem, and as soon as officials are made to understand that the solution will come quickly. It is up to you gentlemen and gentlemen like you, interested in the future welfare of the public and the state, to do your part in insisting upon such a reasonable and fair course of action. The fact that your organization, that the Chamber of Commerce of the United States, that commercial and civic bodies all over the nation are interesting themselves in the state of the electric railways and are pressing for a settlement that will be removed from the realm of politics and prejudice and antagonism is to me indication that the clouds are breaking and that the sun of better days is soon to shine for a utility that is still vitally essential to the welfare of all our people.

The Engineer and the Right-of-Way

This Article Relates in Detail to the Steps Necessary in Locating Particularly a Transmission Line, but More Broadly It Is a Plea for the Utilization of the Training of the Engineer in Keeping Down Legal Costs

BY CHARLES RUFUS HARTE

Construction Engineer the Connecticut Company,
New Haven, Conn.

THE charter of a company, "its excuse for existence," is so largely a matter of law that the engineer as a rule has little to do with it until it serves as the legal authority for the actual work. But while the charter sets out in more or less detail, among other facts, the location and the construction to be followed, in most if not in all the states there is required in addition the approval of the public utilities commission, or its equivalent, or of the municipalities affected, before what may be called offensive construction can be started, and with this approval the engineer is greatly concerned.

Of course any person or group of persons may buy land or rights, and so long as they do not interfere with the rights of others may do on such lands or under such rights anything not unlawful they may choose without any legal formality. But they cannot lawfully use public land, nor can they exercise the rights of condemnation, nor in most states can they supply the public with their product until there has first been obtained a charter. And secondly, there is necessary the detailed approval of their plans, the latter generally requiring a public hearing, at which all persons interested may appear and be heard in opposition if they so choose. Provision is also made in this case for a possible review of the finding.

This matter of detailed approval is of vital importance, and the petition for it, the accompanying plans and the testimony to be given should have the most careful attention of both engineer and counsel. As a general proposition the facts presented should be as broad as

practicable, for the finding works both ways. The elaborate detail so desirable in the eyes of a certain class of lawyers and engineers does, it is true, fix the character of the work so that it cannot be interfered with. While this may be excellent in its effect upon the outsider it becomes a serious matter if, as is so frequently the case, it is desired to make changes before the work is completed. The extent of detail that is best must be decided by the probable conditions. If the general sentiment is unfriendly, so that court proceedings are likely, the location should be very thoroughly tied up to fence corners, buildings and similar definite references. In proportion as the likelihood of suits becomes small the "ties" can be made less exact. This does not mean that the line should be left entirely free, by any means, and after its definite location, and the positions of supports and the like have once been shown to

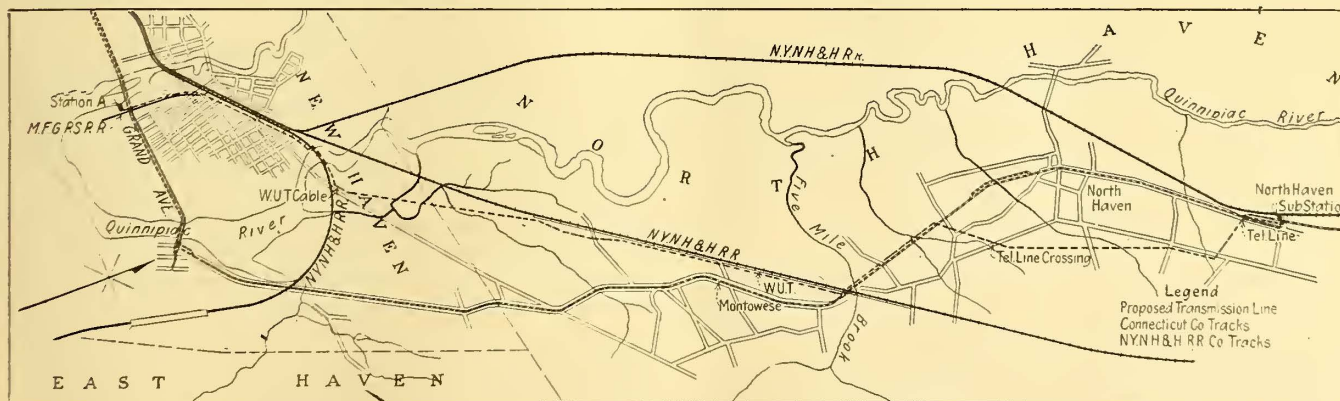
the owner, no change whatsoever should be made except with the consent of the latter. Difficulties with the adjacent owner or other troubles often make desirable if not necessary some modifications in the layout to which the land owner may be perfectly agreeable, but if the hearing plan showed locations definitely fixed, any change without another hearing or the written consents of all concerned by it may lay the foundation for annoying if not serious lawsuits at a later date.

HEARINGS REGARDING A PROJECTED LINE

The details vary somewhat in different states, but the general procedure consists in filing with the proper body

That is an excellent old adage which warns the shoemaker to stick to his last, but it should not be taken too literally, for while the shoemaker ought not to do much surgery, for example, some knowledge of first aid may well make easier work for the surgeon.

So in overhead construction, while it is highly desirable that the legal matters should be the care of the lawyers, it is quite necessary for the best results that the engineer have some general ideas as to the legal situations with which he is more or less concerned.



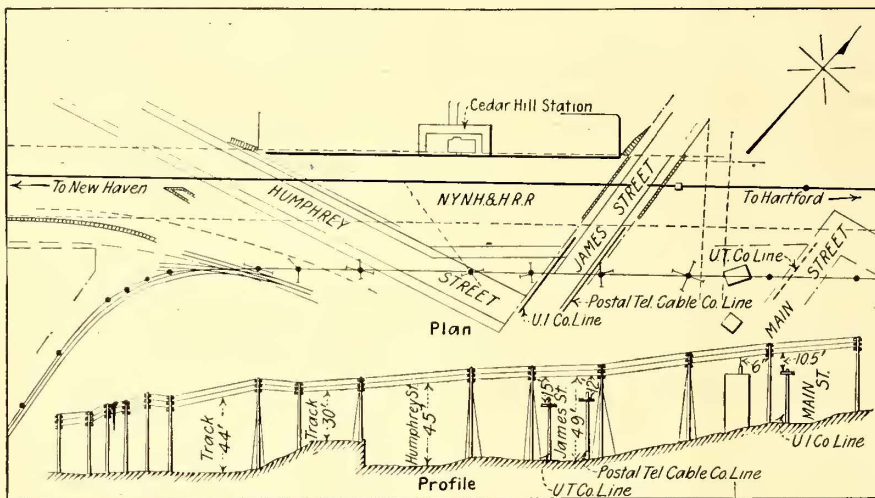
GENERAL PLAN OF TRANSMISSION LINE LOCATION

This and accompanying illustrations show samples of drawings useful in securing right-of-way.

a petition setting out that the company, being duly chartered, is entitled to locate and construct the line which is then described; that it has complied with the requirements, if there are any, such as securing the assents of abutters, or approvals of towns, boroughs and cities, etc., giving the facts in detail, and that it therefore prays a hearing be held and the plans be approved. The hearing can always be helped, and often can be reduced to a merely formal reading of the petition, by seeing the parties affected and explaining just what it is intended to do. The average citizen doesn't hanker after court proceedings, and is only too glad to avoid them when, as is the case if he has no objection to the location, his absence does not affect his rights. If on the other hand he does object, and his objection cannot be met by some minor change, the objector should be made clearly to understand that he should go to the hearing. If the company is justified in its stand it can always secure a favorable decision from a fair commission. If the objector has had a chance to present his case, and has been ruled against by third parties, he will usually accept the decision in good part. If he does not, his

has no real relation to the case except to throw doubt on the honesty and good faith of companies generally, but creates in the minds of others suspicions as to the project and drags out the hearing in consequence. Such rows can usually be straightened out eventually, but they are apt to cause delay and cost money, and too often provoke personalities which make bitter enemies for the company.

Objections are of all sorts. The great increase in the number of transmission lines in recent years has largely removed the fear, at one time fairly common, that a transmission line in the neighborhood necessarily meant full graveyards. There are still many who look on the line as on a boil, much better on the other fellow. Neither towers nor poles are unduly ornamental at best, but if there are good reasons for the location first of the line and second of the individual supports the layout will generally stand. In at least some of the states the fact that another or even a better location is possible is of importance only when it appears that the proposed location causes an actual and serious injury which another line would avoid without causing equal or greater injury to some one else. Here, as in all conferences, much tact and discretion are needed, and it is particularly unwise to attack a suggested line unless it is obviously too bad. If, as sometimes happens, you have to shift the line later on, it may be embarrassing to ask permission to locate on what you had previously argued was impossible. The best ground to take is that the location has been made after a careful study of the entire situation; that it is designed to meet the requirements of the company, and that it should not be altered unless it is clearly shown that the change is a material improvement. If in spite of this a change is ordered, an appeal can generally be taken to the courts, although the time lost in getting a decision will offset the



DETAIL PLAN OF TRACK AND WIRE CROSSINGS

"crabbing" does not begin to have the disturbing influence on the neighbors as the complaints of the man who has been "done" by the company.

The hearing is usually started by reading the petition, after which the company is called on to explain its plans, and then the remonstrances are heard. The less said by the representatives of the company, outside of answers to direct questions, the better. The petition should have stated the general facts, and the company representative is wise to offer to explain anything not clear, but to volunteer no information outside of that specifically called for. This requires tact, for while it is entirely possible to say almost nothing and yet leave all hearers well pleased, it is easier to tell altogether too much, and in addition leave the listeners wishing for horse whips.

LACK OF DISCRETION MAY RESULT IN "STARTING SOMETHING"

The reason for stinginess as to detail is the possibility of "starting something." Many a hearing, all but happily ended, has suddenly developed into a "parrot-and-monkey time" because of an apparently most innocent statement which served to remind some one present of that which otherwise had been forgotten. Very often this refers to the misdeeds of some other company, and

advantage of holding to the original layout unless the new line involves considerably greater expense in construction, operation or maintenance.

With the location and construction approved, the work of securing the necessary rights-of-way can be actively pushed. The successful right-of-way man should be several kinds of genius, but the ordinary variety of man can do very well if he has a little trading ability, is a reasonably good "mixer" and—a matter of particular importance—plays a clean game.

A shrewd, unscrupulous buyer may get much of the property desired at a very low figure, but the unpleasantness and ill will which are almost certainly the consequence are likely to prove in the end very costly indeed. For example: On a certain power line project the buyer, who was a pretty good judge of men, frightened many of the farmers by tales of the terrors of condemnation into practically giving away the desired rights, while to those whom he judged would not be bluffed were made all sorts of promises which, however, were all carefully kept verbal. As a matter of fact the condemnation rights of the company applied only to land required for the water power proper, and not to the transmission line. One wealthy owner who refused to be fooled or scared was gone around by a shift in the line and on

the face of things the work had been little short of wonderful. With the construction of the line, however, the facts began to get about. The company refused to recognize the promises, many of which in fact it could not fulfill if it had wanted to, for a favorite promise was one of light, heat and power for farms far away from any center where a substation might have had some economic excuse. The opportunity to begin evening up soon came. The company applied to the legislature to permit a necessary bond issue. It was granted the right, but with it came an amendment to the charter which provided that "neither said company nor its successors shall have or acquire by any purchase, lease or consolidation the right to condemn land for a pole line." Meantime a farm on which the line rights were apparently open to question because of the method by which they were secured had been bought by a man who at once notified the company to vacate and, as was later learned, since the neighbors were pledged not to sell a new location, this would force a relocation for ten or twelve miles at least. Luckily the title was better than it looked, but the ensuing lawsuit went to the supreme court of the state and cost all kinds of money.

A SQUARE DEAL IS ESPECIALLY ESSENTIAL

While the buyer should be absolutely fair in his treatment of the seller, he should be equally careful to protect himself and his company. Only a horse trade offers a better opportunity than a real estate deal to buy gold bricks. Without intentional malice a slip in the matter of legal practice may make necessary at a later date all sorts of court actions, and a "friendly readjustment" of the location without engineering supervision may literally put a serious kink in the line.

The customary practice in securing the location is to furnish the right-of-way man with plans showing the exact locations of towers, poles or other supports, together with the positions of any necessary guys, braces or anchors, and the lines within which clearing must be done. The location plan should carry this information as well as the names of the land owners, and blueprints from this serve the purpose admirably. It is well, however, to have the plan cut into sections showing but one owner on each. What the man being dealt with does not know about the conditions of location on his next door neighbors does him no harm, and often keeps him from trying his hand at a relocation, with consequent embarrassment to the buyer or the would-be locator or both.

MAPS ARE OF GREAT SERVICE IN SUPPLEMENTING PHRASEOLOGY

If the line has an adequate engineering organization it is well to have a series of such individual maps prepared, to be used first in buying the rights desired and then attached to the respective agreements or deeds, to show just what was secured.

As a rule the location is first secured through options, the owner agreeing, in consideration of a nominal but actual payment (usually one dollar) to convey the desired right at a stated price, on or before a given date, usually either thirty or sixty days later. This gives time in which to have the title searched, and while protecting the agreement to sell, leaves the company free to choose whether it will or will not purchase the rights. The option, if properly drawn and executed, is a contract, and the courts will compel fulfillment in case the owner tries to back out. Not infrequently when there

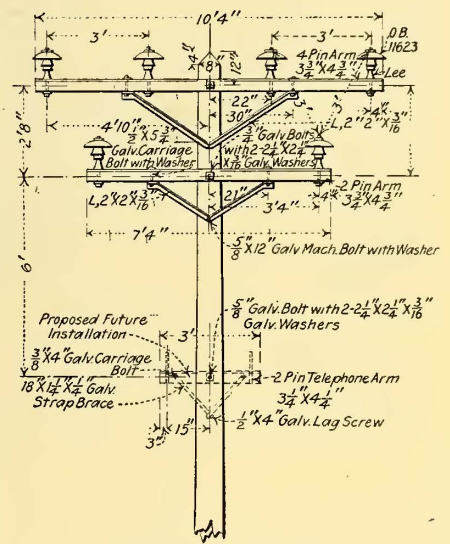
is trouble in securing the right-of-way it is possible by a relocation to get the necessary new rights and start construction long before the old location could be cleared up by condemnation. For this reason it is well not to convert the options into easements or deeds until the line is all secured, unless the time limit expires before that happy result is obtained.

In the matter of the physical location the engineer should rule absolutely. In securing the title the lawyer should be followed, but it is highly important that lawyer and engineer should each have a reasonable knowledge of the field of the other. He should clearly understand that, on the one hand, what may seem an unimportant change in the location may place an operating or maintenance burden on the line for all time, while, on the other hand, carelessness as to form may so cloud the title or limit the rights as to require an entirely new adjustment, often through long and costly lawsuits. This is true particularly if, as is apt to be the case, the flaw is not discovered until the line has been built and put in operation. Moreover it is essential that the engineer know a contract when he sees it, for unless the various agreements be good contracts it may be entirely possible for the land owner to withdraw his consent.

There are six things necessary to a proper contract, as follows:

1. There must be an offer, made in good faith, and an acceptance of that particular offer.
2. There must be a consideration, not necessarily large—quite commonly one dollar—but it must be of real value, and actually given.
3. In general, the agreement, or a reasonably definite memorandum of the agreement, must be in writing.
4. The parties must be legally capable of executing a contract; minors, drunken persons, persons of unsound mind or under conservators, corporations, married men under certain conditions, and married women under the common law are totally incapable or are restricted in their power of legally entering into a contract.
5. The agreement must be real; misrepresentation, fraud, duress, undue influence and certain legitimate mistakes permit one of the parties to avoid a contract.
6. The object of the agreement must not be forbidden by law or opposed to the policy of the law.

Of the six items, but three are likely to make trouble. Every now and then some buyer, finding he can get his option without the payment of any money, pats himself on the back, entirely losing sight of the fact that in consequence he has but a license which until the deeds pass may be revoked at any time. While nine times out of ten there would be no question, the tenth time some genius discovers the situation and makes trouble, which



DETAIL OF POLE TOP

may be exceedingly serious. On some railroad work with which the writer was connected such a piece of economy on the part of an old right-of-way man cost his company between twenty and thirty thousand dollars for the right to have the foundation of a long retaining wall extend *six feet* on the property, but at a distance about fifteen feet below the surface. This was a right which took from the land owner nothing he would ever want, and which as a matter of fact he was willing to grant for a dollar. As there were about twenty owners the buyer saved temporarily twenty dollars.

A less inexcusable error is as to the capability of the party. The options are usually secured before a careful title search can be made, and the buyer has to rely on statements which may be intentionally false, or may be made in perfectly good faith. Minors ordinarily look their age, and the facts can be readily dug up to verify an assumption that a person is under age. The condition of a man sufficiently "soaked" to be considered legally a drunken person is obvious—quite so in these days—as are many of those of unsound mind. However, there are many who should be under conservators who appear rational, and whose neighbors hesitate to term other than perfectly competent, who are permitted to transact their own affairs until they deal with a corporation of reputed wealth. Then friends spring up, a conservator is appointed, rights granted are declared illegal, and their "value" goes skyward. And as this usually happens just in the thick of construction a settlement is generally the cheapest in the end.

SOME SAMPLES OF THE STUMBLING BLOCKS WHICH MAY BE ENCOUNTERED

Corporations usually have the right to execute contracts as to land, but it is highly important that any agreement be signed by the proper official and sealed with the corporate seal. The first requirement is also true of other organizations, including states and minor political bodies. The buyer is legally held responsible for finding who is the proper person, and if the signer has not the lawful authority the paper may be worthless.

The capability of married persons is affected in some states. In Connecticut, for example, a man married before 1877, whose wife is still living, cannot convey land properly except as his wife joins with him, even though the land stands on the records in his name only. Particularly in the smaller towns and the country the man of the house is accustomed to do most of the business, and while aware that a regular deed should have the signatures of both himself and wife, takes it for granted that his signature is sufficient for an option or even an easement. A famous Connecticut case, the New Milford Power Company against Russell, hinged on such a transaction.

Misunderstanding of the terms, failure to have what the lawyers call a "meeting of the minds" of the parties, is less likely to occur when a reasonably clear option form and map are used in buying. Under these circumstances it is usually possible to make a satisfactory defence to the claim. Real trouble arises where an over-enthusiastic buyer cuts loose and limits his promises only by the sky. But here again, if option and map are clear and the seller can read, the contract will usually stand. In such cases, however, if the claimant is apparently sincere in his belief, it is the wise policy to make some compromise rather than have a neighbor who is convinced, however incorrectly, that the company "did" him.

As to the details of the buying, that requires largely trading instinct if the seller will not sign at once. What the rights are fairly worth should be determined in advance, and as many as possible signed up below or at that figure. Just how to deal with the others is a problem in human nature. Some want a general discussion of world and local politics before they will talk on the real business in hand; some want direct and continuous argument till the matter is closed; some must be visited several times; some can only be secured through the help of a friend, while a few can only be made to grant the rights desired by court action. By getting the easy ones first, however, the "holders-out" can often be persuaded not to be stumbling blocks to the scheme when so many of their neighbors have agreed to it, and as the number to be settled with diminishes, the limit of payment can be raised, although any material increase is an injustice to those who settled reasonably and should be given only when actually necessary.

H. C. L. Increases 7 per Cent

THE average living cost in American communities increased 7 per cent between November, 1919, and March, 1920, according to a preliminary announcement made on May 3, 1920, by the National Industrial Conference Board. This makes a total increase of about 95 per cent since July, 1914, and an increase of 21 per cent within the last 12 months.

Increases in the cost of each of the five major items making up the family budget, based on reliable information from retail dealers in food and clothing and from brokers and others in close touch with the real estate situation, were as follows:

	Increase March, 1920, Over July, 1914, per Cent	Increase March, 1920, Over November, 1919, per Cent	Average Pre-War Apportionment of Total Expenses, per Cent
Food	100.0	4.2	43
Shelter	49.0	8.0	18
Clothing	177.0	17.9	13
Fuel, heat and light	49.0	0.7	15
Sundries	83.0	4.6	20
Average	94.8	6.9	100

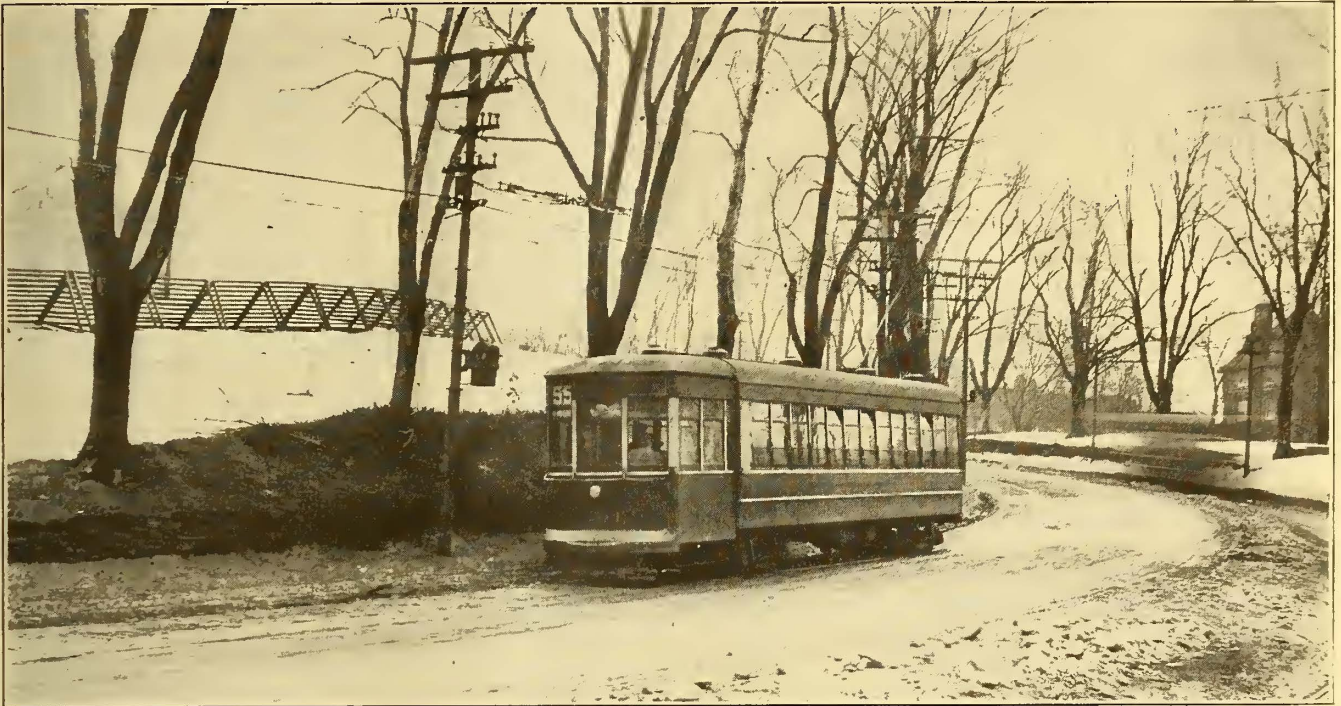
In estimating changes in the family budget the last column of the table shows pre-war expenditures based on a number of reliable investigations, including some of the United States Bureau of Labor Statistics.

Motor Vehicle versus Electric Car Transportation

IN AN address before the Optimists' Club of Los Angeles, on April 29, H. B. Titcomb, vice-president Pacific Electric Railway, discussed recent developments in motor transportation and compared the conditions under which motor vehicles and electric cars operate. The latter, he said, have to pay out annually about 30 per cent of their gross receipts for taxes, interest on the cost of their roadbed construction and maintenance for track and pavements, whereas the motor vehicles in California do not pay over 2 per cent of their receipts for these items, because the roads are maintained by the public. Mr. Titcomb then mentioned several improvements which the Pacific Electric Railway would make if it could prove that it was a profitable venture, but until competing means of transportation are taxed equally with the railways further electric railway development in Southern California seems doubtful.

Operating a 14-Mile Suburban Line on a Thirty-second Headway

Special Safety Record Has Been Established by the P. R. T. on a Line Whose Natural Characteristics Impose Several Service Operating Difficulties



AUTOMATIC SIGNAL PROTECTING GRADE AND CURVE, BRANCHTOWN HILL

THE lines of the Philadelphia Rapid Transit Company operating on Old York Road and serving Willow Grove Park carry on many days during the park season what is probably the largest volume of passenger traffic handled on any similar suburban line in the entire country. The route, from the center of Philadelphia to Willow Grove Park, is about 14 miles, and on heavy days cars are scheduled on thirty-second headway over the entire route, which means that with any lag in the line cars very frequently are running at two or three-second intervals.

York Road is double-tracked throughout, the tracks for most of the distance being on the side of the highway, but in some of the towns and at other locations the tracks cross to and are laid in the center.

In addition to the heavy street car traffic York Road is Philadelphia's principal vehicular outlet to the north, it being a direct continuation of Broad Street. The highway, therefore, carries an enormous automobile and truck traffic, adding greatly to the complications involved in operating the car lines with the tracks cutting in and out of the center of the highway.

Due to efficient operating methods and supervision the service has been operated for several seasons with a remarkable record for safety and regularity.

A most important factor in handling dense traffic under these conditions is rear-end protection. Recognizing this, the company's rules governing flagging were formulated with the utmost care and are rigidly enforced. Whenever circumstances require the stop-

ping of a car for any cause in excess of the time of an ordinary service stop the rules require that first thought must instantly be given to flagging to the rear. This is made a cardinal principle for all crews.

In every such case the conductor is required to hasten at once to the rear of his car at least 200 ft. to flag his follower, who, in turn, is required to protect the rear of his car in like manner, each conductor promptly assuming the responsibility of rear-end protection immediately upon arrival at the scene of delay.

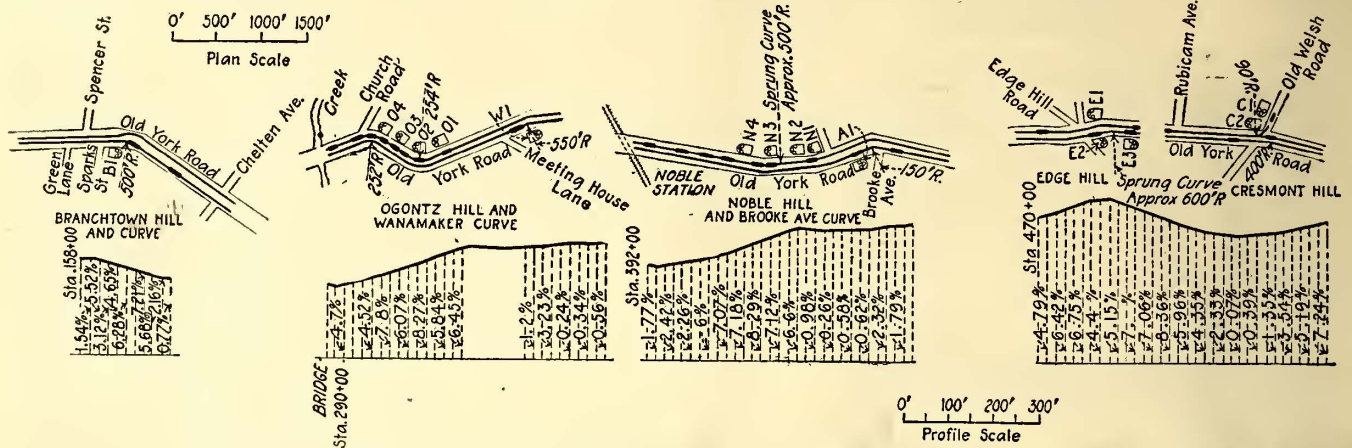
Wherever a grade is involved or the rail is known to be slippery, or where the view of approaching motormen is obstructed by curves, buildings, fences, trees, foliage, fog, snow or darkness, the flagging point is placed at such greater distance as in the judgment of the conductor will insure absolute protection against collision. Motormen are instructed that when vision ahead is obscured by fog, rain, sleet, snow, smoke or any other cause the car must be operated only at such speed as will permit them to stop within the limits of vision, and if the rail is slippery that fact must be taken into calculation and the motormen must govern themselves accordingly.

The rules provide that all passenger cars that are being transferred between depots or to terminals or moved to and from shops must be kept lighted during hours of fog and darkness, and under no circumstances are they to be operated by other than properly authorized motormen. A special set of rules is in force governing operation of utility equipment, such as freight.

milk, ash, coal, cinder, sand, sprinkler, lamp, newspaper, test, storeroom, supply, emergency and line cars, as well as snowplows and sweepers, all of which are required to be supplied with two red lanterns and two red flags for special flagging.

There are five locations on the York Road route where the operating problem is somewhat complicated

For this purpose Nachod automatic signals of the HD type, with overhead trolley contactor, were selected. These are two-line wire signals for the protection of following movements on double track and for double-track curve and grade protection. They are what is known as two-position home signals normal clear and are installed with one block overlap.



SIGNAL LOCATIONS ON OLD YORK ROAD LINE, PHILADELPHIA RAPID TRANSIT COMPANY, SHOWING SIGNAL NUMBER SCHEME

by grades in combination with curves. These five locations are known locally as Branchtown hill and curve, Ogontz hill and Wanamaker curve, Noble hill and Brook Avenue curve, Edge Hill and Crestmont hill. The accompanying profiles and plans show the grades and curves at these locations, at which, prior to the installation of signals, it was customary to detail special dispatchers, each patrolling a very limited stretch of track, to control traffic on the hills and curves.

In 1917 automatic signals, comprising sixteen separate blocks, ranging from 200 ft. to 1,500 ft. in length, grouped at the five locations referred to, were installed for the purpose of spacing cars as well as assuring extra protection on grades and curves.

Upon approaching a signal showing a green light and a green disk the motorman is permitted to enter the block with the assurance that there is no car between him and the clearing contactor, which is at the second signal beyond. But since these signals are installed only at points of known hazard he is instructed to proceed with proper caution and due regard to all other operating rules of the company.

Immediately the trolley wheel passes through the contactor a red light and a red disk replace the green as an indication to the next following car that the block is occupied. The motorman thus entering the block must immediately satisfy himself that the signal has operated properly, which he does by closely observ-

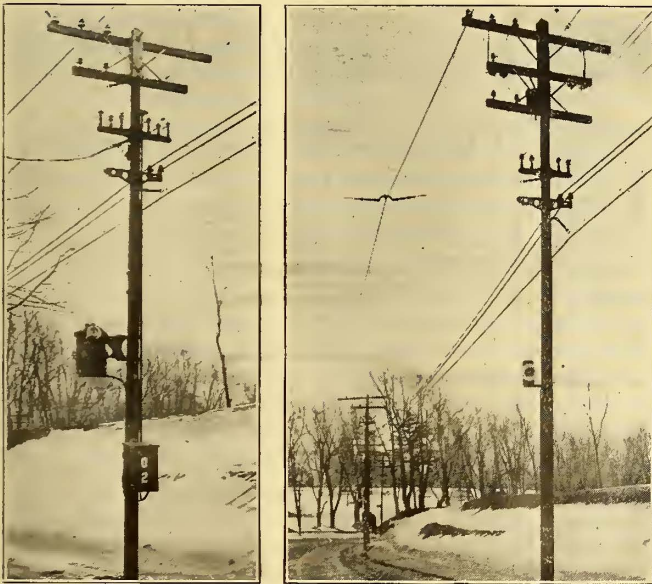


SIGNAL AND DOUBLE CONTACTOR PROTECTING REAR END. OGONTZ HILL

ing the white tell-tale light located in every case upon the first pole beyond the signal in a forward direction.

This white tell-tale or signal indicator operates simultaneously with the setting of the signal. If it lights up it is a positive indication that the signal has operated properly. If, however, it remains dark it must be regarded as a warning to the crew that the signal behind them may not have operated. In such a case the motorman is instructed not to stop his car or attempt to back up for the purpose of again passing beneath the contactor, but to continue through the block with proper caution and with the knowledge that the signal may be affording him protection from following movements. Should it become necessary to make a stop, however, other than an ordinary service stop, the duty immediately devolves upon the conductor to proceed a safe distance to the rear of his car in order that he may flag possible following cars, in accordance with the company's rules for flagging.

Upon approaching a signal displaying red and which does not clear within a reasonable time the instructions provide that the motorman will wait three minutes from



AT LEFT, AUTOMATIC SIGNAL, OGONTZ HILL. AT RIGHT, SIGNAL INDICATOR ON OGONTZ HILL

the time of his arrival at the signal, when he will be permitted to enter the block, proceeding with the greatest caution and the knowledge that his track may be obstructed.

When thus operating against a red light the assumption must be that there is line trouble in the block, rather than that there is some mechanical defect in the signals, and if vision ahead is obscured by fog, rain, sleet, snow, smoke, foliage, curves or grades, or any unusual or dangerous condition, the conductor will precede his car on foot at such distance as will insure absolute safety of operation, the motorman meanwhile sounding his gong at frequent intervals.

If power is off the line the signals will show red. At such times cars must under no circumstances be permitted to drift under a contactor. With power on the line the signals will operate whether the controller is applied or not when passing through the contactor.

There are two lights behind each signal lens, though one of them burns normally. Should this fail, however, the reserve lamp is automatically cut into circuit.

Should the lights fail to show, though the disk is observed to operate properly, car may enter the block provided the green disk appears in the normal way. At such times the motorman's instructions are to proceed with extreme caution.

Conciliation and Arbitration in New Zealand

CONCILIATION and arbitration practice in New Zealand is the subject of Research Report No. 23, recently issued by the National Industrial Conference Board, 15 Beacon Street, Boston, Mass. New Zealand was the first country to adopt definite legal measures with reference to conciliation and arbitration in disputes between labor unions and employers, it having introduced the system in 1894. Since that time there have been advances and changes, and a history of the developments in the legislation on this subject forms the principal body of this report.

The report points out that the conditions in New Zealand can hardly be likened to those in the United States, as New Zealand does not contain the large mining, metal and manufacturing industries so numerous in this country. The largest union is among transportation workers, while builders come next. The total number of union members has progressed from 45,614 in 1907 to 72,873 in 1915. The administration of difficulties with labor unions numbering no more than this in a population of approximately 1,000,000 cannot, of course, be compared with American conditions.

However, the analysis of the development of the situation in New Zealand is of interest as it shows the gradual progression toward an acceptance of a conciliation machinery, which must act before any arbitration is called for. In other words, certain officials have the power to create conciliation boards, consisting of representatives of labor and employers in the particular groups affected, whenever there is any labor difference. In case the conciliation board cannot agree upon a settlement, then appeal may be made to the general arbitration board of the country.

From 1894 to 1905 there were no strikes in New Zealand, while from 1906 to 1918 the greatest number per year was forty-six in 1914, while the average number has been thirteen in the period 1906 to 1918 inclusive. From 1910 to 1918 there was a total of 151 prosecutions for enforcements of awards and for strikes and lockouts.

Since the publication of this report one serious strike has occurred. An interesting fact, which may be merely a coincidence, but which may have a significance unappreciated in the United States is that this strike was a general strike on the railways and took place during the recent visit of the Prince of Wales, delaying his travel.

Calvin Tompkins, president the Material Handling Machinery Manufacturers' Association of New York, in a recent statement urged the more general use in freight handling of standardized unit containers. Such a container should be in the form of a demountable closed auto truck body, which can be readily transferred by cranes between railroad flat cars, auto chassis, warehouse floors and vessels. He suggests 5 tons as the size which would be most generally useful and refers to the use of such mountable bodies for railroad transport between terminals in Cincinnati as being satisfactory.

The New Water-Power Law

Permits Private Development of National Water Powers—Government Has Option of Renewal or Purchase at End of License Period

THE new water-power law, which was signed by President Wilson on June 11, at last makes possible private, state or municipal development of water resources on public lands and reservations. This law is one of the most important legislative acts passed by the last Congress, as it is expected to add at least 3,000,000 hp. to the national power supply and aid transportation by increasing the available power for electrification of railroads and railways and by adding several thousand miles to the mileage of navigable streams. It should also aid agricultural development by increasing the water-storage capacity for irrigation in arid regions.

The law creates a federal power commission to be composed of the Secretary of War, the Secretary of the Interior and the Secretary of Agriculture and gives the President the authority to name the chairman. This commission is authorized "to make investigations and to collect data concerning the utilization of the water resources of any region to be developed, the water-power industry and its relation to other industries and to interstate and foreign commerce, and concerning the location, capacity, development costs and relation to markets of power sites, etc.," on government lands and reservations. The duties of the commission not only deal directly with the development of the water power in any region but also with other features associated with the development of water resources, such as irrigation, navigation and the use of reservoirs for storage purposes and flood prevention.

The act permits the use of licenses in aiding such developments and its provisions are considered so reasonable and equitable that private capital is expected to be attracted. The commission is authorized to issue licenses to a private citizen or corporation or to any state or municipality for the purpose of constructing, maintaining and operating dams, reservoirs, water conduits, power houses and transmission lines necessary for the improvement of navigation, development and transmission of power or for utilizing the surplus water or water power from any government dam on any of the navigable rivers, public lands or reservations of the United States. The commission has jurisdiction over the licensee as to its accounting system, plans for development, construction features, etc., but the local or state regulating commission has jurisdiction as to rate and service regulations.

Preference is given a municipal or state applicant for a license and such an applicant pays no annual charge to the government, excepting in the case of a project on Indian lands, if the power developed is sold at no profit or used for municipal or state purposes. Licenses granted to individuals or corporations require them to pay the government an annual charge fixed by agreement. Such licenses cannot be transferred or sold excepting by permission of the commission.

The license fixes a time limit of two years, with one extension of not longer than two years, for beginning construction of the project, and also gives the licensee the right of eminent domain. Power contracts with consumers for a term of more than fifty years can

only be made with the joint approval of the commission and the local or state regulatory commission. In an emergency, such as war, the government reserves the right to take over and operate any project provided the licensee is compensated.

The horsepower that will be developed cannot have a very appreciable effect immediately on the national power situation, as the present cost of development and construction and the location of the larger and more cheaply developed water-power projects on reservations or land in districts lacking both dense populations and industries seem to indicate that, with the exception of the Pacific slope, railroad electrification offers the only large application for the utilization of such power. The railroads in certain districts of the Rocky Mountains are given an opportunity to develop the adjacent water powers, and no doubt the incidental advantages through increased irrigable land will mean prosperity for arid sections.

In the East and in the South many small water powers will now be developed on both navigable and non-navigable streams, and every horsepower added to our power supply through the development of hitherto wasted water resources means a reduction in power cost and fuel used and the release of rolling stock for the transportation of necessities other than fuel.

National Research Council Elects Officers

THE National Research Council has elected the following officers for the year beginning July 1, 1920: Chairman, H. A. Bumstead, professor of physics and director of the Sloane physical laboratory, Yale University; first vice-chairman, C. D. Walcott, president of the National Academy of Sciences and secretary of the Smithsonian Institution; second vice-chairman, Gano Dunn, president of the J. G. White Engineering Corporation, New York; third vice-chairman, R. A. Millikan, professor of physics, University of Chicago; permanent secretary, Vernon Kellogg, professor of biology, Stanford University; treasurer, F. L. Ransome, treasurer of the National Academy of Sciences. The council was organized in 1916 under the auspices of the National Academy of Sciences to mobilize the scientific resources of America for work on war problems, and reorganized in 1918 by an executive order of the President on a permanent peace-time basis.

Super Power Study Progresses

BY HIS signature on the sundry civil appropriation bill, President Wilson has made available the \$125,000 appropriation requested by the Department of the Interior to finance an investigation of and report on the super power scheme for the Northeastern Atlantic Seaboard region.* This means that an active study will be made and a report on the feasibility of the scheme, as well as suggested engineering methods of carrying it out, may be expected by July 1, 1921.

The work will be done under the supervision of the United States Geological Survey, George Otis Smith, director. An engineering commission will be created, of which W. S. Murray, the originator of the present plan, has already been appointed chairman and chief engineer. Mr. Murray has also been authorized to appoint the rest of his engineering commission, with encouragement to draw upon responsible engineers with field experience.

*See ELECTRIC RAILWAY JOURNAL, Feb. 28, 1920, page 435.

Interesting Points in A. R. A. Reports

Committee Reports on Car Wheels, Car Construction and Standard Methods of Packing Journal Boxes Have Points of Interest to Electric Railways

AT THE convention of the American Railroad Association recently held at Atlantic City a number of points came up which are of interest to the electric railway engineer.

One of these is the report of the committee on standard method of packing journal boxes, an abstract of which was given in the ELECTRIC RAILWAY JOURNAL for June 19. This was recommended for submission to letter ballot for adoption as recommended practice.

RECOMMENDATIONS ON JOURNAL BOX PACKING

This provides for saturating the waste at 70 deg. F. for forty-eight hours and then draining. The packing is to consist of three main parts:

(a) Inner—A rope of packing to be twisted tightly and placed in back of box, this to be well up against the journal so as to lubricate the fillet and keep out the dust.

(b) Main—To be applied (preferably in one piece) between the inner piece and the journal collar.

(c) Outer—Third piece of firmly twisted packing to be applied in wedge-shaped fashion at the bottom of the box, resting firmly against the main packing.

Some little discussion developed at the meeting relative to the third or outer piece, some claiming that it was desirable because it kept dust away from the inner packing and helped keep the latter in place up against the journal. Others claimed that it was undesirable in that it is readily displaced by the rotation of the axle and became forced against the journal cover, allowing the waste to hang out of the mouth of the box, thus draining off the oil.

REPORT ON CAR CONSTRUCTION

The committee on car construction presented an elaborate report dealing with many phases of the subject, of which those most pertinent to the electric railway field are the following:

1. *Axle Capacities.*—Present axle capacities increase by steps, which can be made more uniform by increasing the capacity of the axle with 5½ x 10 in. journals from 38,000 to 40,000 lb., the present dimensions being such that the allowable stresses will not be exceeded. It was suggested to add another axle with 6½ in. x 12 in. journals, capacity 60,000 lb., and bearing, wedge and box to suit.

2. *Calculation of strength of axle.*—The fundamental treatise on the M.C.B. standard method of calculating the stress in axles is given in the M.C.B. Proceedings for 1896, being one of the most notable contributions made by the association to the technical knowledge of the industry.

The committee this year has added some information in amplification of the original data as follows:

The committee on axles, in its splendid report of 1896, did not specifically cover the locus of the points of application of load for calculating the part of axle between wheel seats. In 1901 this was referred to in connection with a report on chemical composition of all steel car axles. It is desirable to put this question in such shape that uniformity in calculations be realized.

Frames above the journals of the same axle cannot spread more than 1 in., therefore the calculations for diameters

of axle sections between wheel fits should be based on length between center of journals plus 1 in.

The following may be considered a continuation of the 1896 axle report, the only addition being the assumed distance between load application:

$$\text{Allowable stress} = \frac{22,000}{1.26} = 17,460 \text{ lb.}$$

$$\text{Required diameter} = \sqrt[3]{\frac{M}{W} \times \frac{W}{S} \times \frac{32}{\pi}}$$

} As given in the 1896 Proceedings.

Values for standard axles, based on distance between load applications of "L" (distance between centers of journals) plus 1 in.

Axle	Capacity Lb.	L + 1 in.	M/W	W/S × 32/π
A	15,000	76 in.	15 00414—196X	8.751
B	22,000	76 in.	15.00414—196X	12.835
C	31,000	77 in.	15.49821—200X	18.085
D	40,000	78 in.	15.99228—2035X	23.335
E	50,000	79 in.	16.48535—2071X	29.170
F	60,000	80 in.	16.98042—2106X	35.003

Value of ratio (R) of $\frac{M}{W}$ at edge of cylindrical center portion, at inside of collar and at wheel fit 24 in. from center and arm of force (X) on which these values are based.

Axle	Near Center		Inside of Collar		At Wheel Fit	
	X	R	X	R	X	R
A	36½ in.	7.85014	15½ in.	11.91714	14 in.	12.23214
B	36½ in.	7.85014	15½ in.	11.91714	14 in.	12.23214
C	37 in.	8.09821	16½ in.	12.24821	14½ in.	12.59821
D	36 in.	8.66628	16½ in.	12.58365	15 in.	12.93978
E	36½ in.	8.92720	19 in.	12.55145	15½ in.	13.27630
F	37 in.	9.02622	19½ in.	12.77112	16 in.	13.55682

Resultant theoretical diameters, based on above tables, and standard method of calculation.

(Y = distance from center of axle.)

Axle	Near Center		Inside of Collar		At Wheel Fit	
	Y	Diameter in.	Y	Diameter in.	Y	Diameter in.
A	1½ in.	4.096	22¼ in.	4.707	24 in.	4.748
B	1½ in.	4.650	22¼ in.	5.348	24 in.	5.395
C	1½ in.	5.271	22¼ in.	6.050	24 in.	6.108
D	3 in.	5.870	22¼ in.	6.647	24 in.	6.709
E	3 in.	6.386	26½ in.	7.154	24 in.	7.289
F	3 in.	6.811	26½ in.	7.645	24 in.	7.800

Brake Power and Brake Beams.—An important question in connection with car design is necessary brake power. The present standard is that the brake power shall be 60 per cent of the light weight of the car based on 50 lb. unit cylinder pressure. Cars in which the ratio of light weight to loaded weight is very low will then have a very low brake power when cars are fully loaded. Cars in which this ratio is high have a relatively high brake power when cars are fully loaded. It is, therefore, deemed advisable to make a change and to base the total brake power of the car on 40 per cent of the sum of the light weight plus ¼ of the maximum allowable load, and to base this on 50 lb. unit cylinder pressure. This will serve more nearly to equalize the brake power on freight cars with average loads. The possible maximum per cent of brake power for the lightest cars would be 75 per cent of the light weight of car, based on 50 lb. unit cylinder pressure. The formula for brake power will then be as follows:

$$0.40 \left\{ \frac{W - w}{4} + w \right\} = 0.1W + 0.3w.$$

but not more than 0.75w.

in which W = Loaded weight of car, maximum.

w = Empty weight of car,

W-w = Maximum allowable load.

As this is based on 50 lb. air pressure per square inch in the cylinder and the maximum unit pressure may be from 85 to 88 lb. the maximum brake pressure will be 1.75 (0.1W + 0.3w), which, divided by the number of brake beams, will be the required deflection load per beam.

The brake beam set load, which should be somewhat within the elastic limit of the beam, should be approximately 1½ of this amount.

Recommendations.—(a) That the brake power on cars be as follows:

W = Loaded car weight, maximum,

w = Empty car weight,

N = Number of brake beams on the car.

Required brake power = $0.1W + 0.3w$, which for cars having four and six wheel trucks will be:

Axle	Brake Power	
	Four-Wheel Trucks	Six-Wheel Trucks
C	13,200+.3w	19,800+.3w
D	16,900+.3w	25,350+.3w
E	21,000+.3w	31,500+.3w
F	25,000+.3w	37,500+.3w

(b) That the brake beam deflection load be

$$\frac{1.75}{N} (0.1W + 0.3w).$$

(c) That the brake beam set load be $\frac{3}{N} (0.1W + 0.3w)$.

NOTE.—If the above is adopted the 12,000-lb. beam will be required as follows:

Car Class	Car Weight
4 E	All cars,
4 C	Less than 50,000 lb.
4 D	Less than 40,000 lb.
The 15,000-lb. beam will be required as follows:	
Car Class	Car Weight
4 C	50,000 lb. and over,
4 D	40,000 lb. to 60,000 lb.
4 E	Less than 45,000 lb.

(d) That the 6,500-lb. capacity beam be dropped from the standards and that the 12,000-lb. capacity beam be denominated as the No. 1 beam, and that the interchange rules should be amended to conform to the foregoing.

3. Slight changes are proposed in the dimensions of fillets of axles. These do not interfere with interchangeability.

4. Lugs for journal bearings have been increased slightly.

5. Quality of steel used in car construction.

The committee states that "the tendency to lower the requirements for elastic limit and elongation have endangered details which have been based on certain stresses; also the close adherence to requirements for ultimate strength and chemistry has caused rejection of material which was superior to material acceptable under the specifications."

Unit stresses commonly allowed for detail parts of cars made of steel, and which are subject to variable loads and occasional light shock, are 12,500 and 16,000 lb. per square inch. The minimum elastic limit should be double this amount, and the product of elastic limit and elongation should not be less than fifty times the allowable stress. As the test piece usually shows better physical properties than the casting or forging, the requirement for product of elastic limit and elongation should be increased by 50,000, making it fifty times the allowable stress plus 50,000. The reduction of area is considered secondary in importance. It should be seventy-five times the allowable stress. An addition of 50,000 for variation between test piece and the casting or forging may be made, but is considered unnecessary. The ultimate strength, content of carbon, manganese and silicon should be left optional, as the other requirements control these sufficiently and the restrictions used in specifications heretofore have caused rejection of good serviceable material.

The specifications should clearly circumscribe annealing and methods of making tests, the latter to insure uniformly comparative results from different laboratories.

The resulting specifications should be made optional for at least one year, to permit manufacturers to adjust themselves thereto.

Recommendation.—Provide specifications for all forged and cast steel used in car construction of two grades, based on fundamental requirements given below:

Grade of Steel	A	B
	Minimum elastic limit (lbs.)	26,000
Product of elastic limit and elongation	700,000	850,000
Product of elastic limit and reduction of area	975,000	1,200,000

The ultimate strength, carbon, manganese and silicon shall be optional.

Sulphur shall not exceed .05 per cent.

Phosphorus shall not exceed .05 per cent.

The elastic limit shall be determined by extensometer.

The elongation shall be measured in a length of 2 in.

Grade "A" steel shall be annealed if the carbon content exceeds 0.30 per cent, or if the manganese content exceeds 0.75 per cent.

Grade "B" steel shall be annealed if the carbon content exceeds 0.22 per cent, or if the manganese exceeds 0.65 per cent.

Pieces of irregular section and of less carbon or manganese content where shrinkage or other internal strains may be suspected should also be annealed.

Unimportant details may be accepted on surface inspection only.

REPORT ON CAR WHEELS

The committee on car wheels has recommended increasing the weight of the present 625 and 725 lb. chilled iron wheels to 650 and 750 lb. respectively, and that instead of stenciling the wheels with the tape sizes on the wheel, as is the present practice, a permanent record of this information be provided as follows: Five small lugs $\frac{3}{8}$ in. in diameter by $\frac{3}{8}$ in. high to be cast on inner plate near hub. As each wheel is taped the necessary number of lugs to be broken or cut off, those remaining to indicate the tape size.

The contour of the standard rolled wheel is recommended to be changed back to that which was standard previous to 1912, inasmuch as the present standard, which is identical with the cast iron wheel, has been found impractical to roll.

The committee presented a recommended practice for mounting both cast iron and steel wheels as follows:

1. Standard table of mounting pressure:

Axle	Wheel Seat Diameter	MOUNTING PRESSURE IN TONS			
		Cast Iron Wheels		Steel Wheels	
		Minimum	Maximum	Minimum	Maximum
A	5 $\frac{1}{2}$ in.	30	45	45	60
B	5 $\frac{7}{8}$ in.	35	50	50	70
C	6 $\frac{1}{2}$ in.	40	60	60	80
D	7 in.	45	65	65	85
E	7 $\frac{1}{2}$ in.	50	70	70	95

2. Wheels having flanges worn so as to take limit gages for remounting cast-iron wheels shown on M. C. B. Sheet 16-A shall not be remounted.

3. The thickness of flanges of wheels fitted on the same axle should be equal and should never vary more than $\frac{1}{16}$ in.

4. In mounting of wheels, new or second hand, the standard wheel mounting and check gage should be used in the following manner:

After one wheel is pressed into position, place the stop "A" or "B" of the check gage against the inside of the flange of the wheel with the thinner flange with the corresponding tread stop "C" or "D" against the tread of the wheel. Press the other wheel on the axle until the opposite tread stop comes in contact with the tread of the corresponding gage point "E" or "F" in contact with the outside of the thicker flange.

5. The wheel seats on all axles must be turned to uniform diameter throughout the entire length of each wheel seat and must be smooth and free from ridges so as to provide even bearing for the wheel fit throughout. The mounting of wheels on axles having the wheel fit tapered is not permissible. The wheels must also have a straight bore with the exception of the chamfering for not more than $\frac{3}{8}$ in. at the back hub face which may be allowed to facilitate application to axles.

6. Wheels should be mounted centrally on the axle. All axles should be center punched and some form of gage be used to measure the location of the wheel from this center punch mark. The central mounting of wheels is necessary in order to secure proper running of the wheels and to prevent hot boxes.

7. Wheels should ordinarily be fitted to (word "used" eliminated) axles and not axles fitted to the wheels. It is usually unnecessary to turn the wheel seat of second-hand axles unless they are found a tapered fit.

8. In mounting either new or second-hand wheels care should be used to see that the wheels are of the same diameter. In the case of new wheels, the wheels should be taped in order to check the tape size marking, and in no case should wheels of different tape sizes be applied to the same axle.

9. The alignment of axle lathe, the trueness of the cen-

ters and the jaws on boring mills should be checked frequently in order to insure proper mounting of the wheels.

10. While the wheels are being bored the high spots on the flange should be marked, and in mating the high spots should be put opposite low spots on the mate wheels.

In the discussion of the report of the committee on car wheels it was interesting to note that one or two large roads are beginning to adopt two practices long familiar and in general use on electric railways, namely, grinding out flat spots on chilled wheels and further grinding new wheel pairs before placing them in service.

It was evident that these practices were not a matter of common knowledge among the mechanical men present, and it would indicate that some form of intercommunication between the American Railway Association and the American Electric Railway Association might be desirable.

Saving Transportation Costs

Mr. Fritch Tells Club Members About Monthly Data Sheets, Saving on Peak-Load Costs and Effect of Automobile Competition

TRANSPORTATION formed the subject of a paper by Howard F. Fritch, assistant general manager Eastern Massachusetts Street Railway, presented at the May meeting of the New England Street Railway Club in Boston on May 27. In addition Lieut.-Col. Leonard S. Horner of the United States Air Service discussed the development of commercial aircraft and William Arthur of New Haven, Conn., outlined the importance of coal conservation as affecting the industrial activities of the country.

The term "transportation," as defined by Mr. Fritch, means first and last the association of the revenue derived to the cost of service. The application of this theorem requires, first, the collection of data and its study, and, second, the establishment of traffic schedules through the agency of these data.

The collection of data and the keeping of accounts for any system should be carried out with a clear idea of the ultimate purpose in mind, *viz.*, to obtain information which can be assembled in a convenient way and can be interpreted easily and quickly. To be of greatest value such data should be compiled and submitted for study within the shortest time possible. Often data which have been collected at considerable expense and then worked up have been found useless in helping to solve the transportation problem, because conditions affecting service have changed during the interim. On the divisions of the Eastern Massachusetts Street Railway the plan now followed is to draw up monthly accounts, which are then closed at the end of each month. These accounts include traffic census reports, passenger accounts and general expenditures.

The graphical method of representation has been adopted and has been found to be convenient, as by this means load curves and running expenses show more clearly any deviation from normal or preceding returns. These graphical charts and accounts are presented to the division managers not later than the fifteenth of the following month, and after a thorough study such changes as are deemed necessary are acted upon at once. By this monthly account system inefficient service is most easily remedied.

Schedules are drafted after a careful study of the data has been made and should show the way for improved handling of the transportation for the dis-

trict. Citing a concrete case, Mr. Fritch showed that in 1919 12 per cent was found to be the cost of extra expense outside of platform work. The tightening up of schedules, by eliminating layovers, together with the speeding up of runs, later resulted in decreasing this amount. In outlying districts, where the car interval is fifteen, twenty and thirty minutes, the introduction of the one-man car has proved to be advantageous, especially on short hauls.

ONE CAR-HOUR COSTS \$3.40

Careful study of data taken for rush hours discloses conditions requiring special attention in order to promote efficiency at greatest economy in expense as the chances for loss in revenue during rush hours are very great. In 1915 the peak load during rush hours on one short line was found to be 85 per cent greater than normal. On this same line it is now 120 per cent greater. During the rush period on a short line to a shipyard twenty-six two-man cars are required during one hour in the morning and one hour at night in order to give service. As the cost of running a two-man car for one hour in 1915 was \$2.20 (today it is about \$3.40) it is evident that a schedule requiring the use of many extras is an expensive one to operate.

To eliminate this excessive cost of operation several schemes have been tried, none of which can be considered entirely satisfactory. The staggering of work hours has been proposed and tried out in one or two instances. This scheme met with strong opposition on the part of the labor class and had to be abandoned. Constant study of carefully collected data furnishes the only means by which a proper solution of such a problem can be reached.

Unprofitable lines and the question of their continuance must depend upon reliable data and careful examination of facts collected in the field. In the case of lines under public control the abandonment of service is ordered if after an exhaustive study it has been found that the revenue derived cannot cover the cost of service. The decisions of the Eastern Massachusetts Street Railway have been reached only after a careful study of the assembled data.

EFFECT OF AUTOMOBILE TRAFFIC

Any discussion of the problem of transportation on street railway lines at the present time must include a consideration of the effect of automobile traffic. Statistics for the year 1904, before the great use of motors, show for a division of the Eastern Massachusetts Street Railway, on a basis of 100 per cent for the months of January, February and March, that the increase of travel on street cars for the months of July, August and September reached to 200 per cent. For 1919, on the same basis, the summer travel reached only to 130 per cent, presenting a striking instance of the effect on street car traffic of the automobile. In this connection the jitney has played an important part. Though eliminated for the time being in many districts served by the street car lines, it should be borne in mind that the jitney must be considered as a serious potential competitor of the street railway.

Mr. Masuda, the newly appointed chief of the street car section of the Municipal Electrical Bureau of Tokyo, Japan, is having his hands full of labor problems. The men want improved working conditions, but so far the proceedings have consisted largely in exchange of words, and demonstrations by the men.

The Bus for Special Service Only .

The Author Compares Bus and Safety-Car Operation from a Standpoint of Economics— Its Limitations and Inadequacies

BY KARL A. SIMMON

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

BUS transportation has been attempted from time to time in a number of localities in the United States, but we find few well-organized operating companies of any size in existence.

In London, England, the real home of the bus, there are approximately 4,000 buses in operation. But for the war there would probably have been many more. It is reported that in London the bus companies are not receiving adequate compensation and that they cannot continue on the present revenue. In spite of this limitation, the bus has demonstrated that it is a means of transporting human beings and that even at a higher cost of fuel it has a certain field.

The more common form of London bus is a double decker, with little or no protection against the weather



TABLE II—WEIGHT EFFICIENCY OF VARIOUS METHODS OF TRANSPORTATION

Method	Approximate Weight of Vehicle in Pounds per Passenger
Walk	0
Skates	5
Bicycle	50
Combustion-engine skates	60
Two-passenger motor-cycle	135
Double-deck new type London bus	175
Present type London bus	250
Single-passenger motor-cycle	260
Cable car	325
Double-deck safety car	335
Ford car, or so-called "jitney"	340*
American double-deck bus	400
Double-deck low-floor car	410
Standard safety car (single deck)	430
Light-weight gasoline street car	500
Small storage battery car	550
Large city car	575
Modern passenger automobile	600
Small interurban car	650
High-speed interurban cars	1,300
Gasoline-electric interurban car	2,000
Pullman parlor car drawn by locomotive	3,000

*Driver counted as a passenger.

With fuel at 25 cents per gallon the average fuel cost per mile is 5 cents.

The standard safety car, which weighs approximately 15,000 lb., consumes about 1.1 kw.-hr. per car-mile for



A DOUBLE-DECK BUS AND STANDARD SAFETY CAR REPRODUCED TO APPROXIMATELY SAME SCALE

for passengers on the upper deck. It weighs about 7,840 lb. and seats thirty-two passengers, a weight of 250 lb. per seat. A new type of bus is said to be available which will seat forty-six passengers and weighs only 175 lb. per seat.

The present London bus makes about 85 miles per day at a schedule speed of from 4 to 8 m.p.h. However, on the basis of an eighteen or nineteen-hour day the average distance covered is approximately 115 miles.

TABLE I—CHARACTERISTICS OF SEVERAL METHODS OF TRANSPORTATION

Mode of Transportation	Characteristics
Walking	Vehicle not employed; individual supplies necessary energy.
Roller chair	Vehicle employed; energy supplied by a human locomotive.
Skating and bicycle riding	Vehicle employed and the passenger transported supplies necessary energy.
Animal-drawn vehicle	Carriage employed, with animal as the locomotive or propelling power. The skid or drag logically comes under this classification.
Vehicle driven by stored energy	Under this classification might be considered the storage-battery car or a car driven by storage air.
Cable car	Vehicle employed; mechanical power supplied from a central generating station.
Self-propelled vehicle*	Includes such vehicles as steam-driven cars, using liquid or solid fuels, and combustion engines.
Electric propulsion*	Vehicle employed, and the equipment on the vehicle merely transforms electrical energy received from a rail or an overhead system into mechanical energy.

*Locomotives of respective types drawing passenger vehicles should be considered under these classifications.

propulsion only. At 1½ cents per kilowatt-hour at the car the energy cost is 1.65 cents per car-mile.

At first glance it would appear that the cost of energy for propelling a vehicle by gasoline is approximately three times that of electric propulsion. However, if we look into the matter a little further we shall see that the ratio is higher than this. With the cost of bus fuel at 5 cents per mile and an average load of twelve passengers the cost of fuel for the bus ton-mile is 1.05 cents, whereas with the safety car the energy cost per car-ton-mile is but 0.198 cent. In other words, the true ratio of energy cost in the two cases is 5.3.

But even if the energy could be produced on the bus by the gasoline engine as cheaply as it is delivered in the form of electrical energy to the safety car, the cost of energy for the bus operation per ton-mile would still be much higher due to the higher road resistance.

The above statements are made not to convey the implication that there is no field for bus operation, but simply to show the inherent handicap involved when the internal combustion engine is employed for transportation, especially since the introduction of the safety car. Established electric transportation cannot, of course, show the same profit as that produced by the free-running, unregulated bus, where the latter is unfairly permitted to enjoy the "cream of the traffic" without any of the tax burdens, regulation of schedules,

etc., which are imposed upon the railway. However, with regulation of operation and a partial highway tax buses have been operated successfully and provide transportation apparently satisfactory to the patrons. The indications are clear that buses will continue in favor regardless of their operating economy.

As an example of the last point, we may cite the Fifth Avenue bus line in New York City, which is patronized extensively, although the schedule is slower than that of the subway and the fare is much higher, but it is doubtful if bus transportation will meet the exacting requirements of the average American city as to speed, comfort and safety. During rush hours, even with all transportation systems in operation, accommodations are inadequate to transport all travelers in comfort. Under such conditions all will share the business. Again, in most large cities there are sightseers and others who enjoy riding in the open air. Further, bus routes which lie in thoroughfares not occupied by surface cars afford convenience to some people.

In view of the inherently higher energy cost, the necessity for well-paved streets, the greater congestion of streets that are already congested, the necessity for obtaining high-grade drivers, the short life of the buses and the continually increasing cost of fuel for internal combustion engines, even the most optimistic cannot hope to have the bus replace our urban or suburban surface railways or our subway and elevated railways.

In this connection the points which must be carefully analyzed by companies operating all-electric railway service are as follows: Density of traffic, location of existing transportation arteries, length of haul, class or classes of service rendered by other existing forms of transportation and value of bus transportation as a feeder to electric transportation. If the operation of self-propelled buses will produce a reasonable revenue on the investment, taking into account taxes, depreciation, obsolescence, operating expenses and indirect credit due to bus operation, then such a form of transportation should be operated by the railway as an adjunct to the traction lines.

In conclusion it will be interesting to note the characteristics of the several forms of transportation, a number of which are listed in Table I.

Table II contains a list of methods of transporting passengers, together with the weight of the vehicle per passenger transported. The latter figure is, of course, not a true measure of economy of operation, but it serves in a general way to show some of the advantages and disadvantages inherent in the several methods.

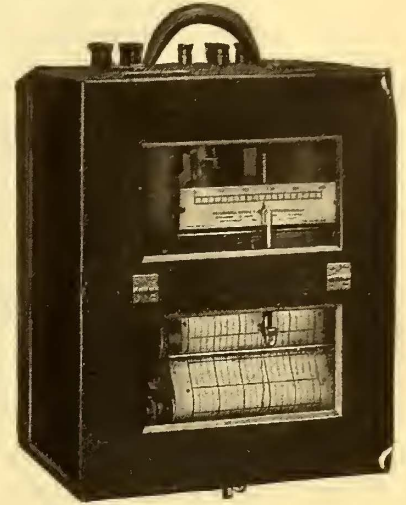
Electrification of Belgian National Railways

THE *Electrical Review*, London, reports that at a recent general meeting of a large Belgian manufacturing concern, the Ateliers de Constructions Electriques de Charleroi, the chairman stated that the company was perfectly equipped for eventually dealing with orders for plants for the electrification of the national railways, and in this connection the company has supplied first class plants to its subsidiary at Jeumont for the electric lines of the Midi Railway in France. However, the directors have estimated that the time is not opportune to think of general electrification of the Belgian railroad system due to reconstruction conditions. There are certain trunk lines which call for electrification, as, for instance, that between Brussels and Antwerp, which has been under discussion for twenty years.

Motor-Operated Graphic Instruments

IMPROVEMENTS have been made by the Westinghouse Electric & Manufacturing Company on its line of type M switchboard and portable graphic instruments. The principal change in these is in the pen-driving mechanism. Heretofore pens were driven by solenoids damped by dash pots, whereas they are now driven by a small motor actuated by contacts in the main circuit.

Damping is accomplished by means of permanent magnets on an aluminum disk attached to the shaft of the pen-operating motor. Flexibility is increased and the mechanical balance of the motor operating element is easy to maintain. The external resistance is in a compact unit form, so that interconnections can be made to allow any instrument to



MOTOR-OPERATED GRAPHIC INSTRUMENT

operate on a control voltage of 110 volts, direct current, or 25 cycles or 60-cycles, alternating current. A 220-volt, 25-cycle or 60-cycle control resistor may be used. The weight of the instrument is considerably reduced as compared with that operated by solenoids.

The case consists of a wooden frame with glass windows, so the entire mechanism can be seen without removing the case. The paper reroll is driven over an intermediate shaft in the clock, which in turn is driven directly from the motor. The rerolling operation takes place at each winding period and as a result the operation of the clock is not affected by the rerolling of the paper.

Trolley Contact Signal Operation

SINCE the publication of the article by Carl P. Nachod in the Jan. 3, 1920, issue of this paper, page 52, information has come to hand regarding the 1919 signal operating record of the road referred to. This article dealt with the rehabilitation and maintenance of an automatic block signal system on a Southern electric railway. This railway has eighteen blocks of trolley contact signals, or thirty-six signals in all, of one type.

Signal failures for 1919 averaged one per block in 42.7 days, due to all causes, but as only 43.5 per cent of those were due to the signals themselves failures from that cause would occur on an average of every ninety-eight days. The report from which this information is taken covers city operation under fairly heavy service, and the record is considered a good one for the method of operation employed and the type of employees available. Furthermore, the signals were not new, but were rebuilt by the railway company. Data of this kind are interesting for comparison with such records as are given on page 593 of the issue of this paper for March 20, 1920.

Letters to the Editors

Investigating Committees Should Utilize Electric Railway Libraries

BOSTON ELEVATED RAILWAY,
BOSTON, MASS., June 15, 1920.

To the Editors:

The article appearing in the May 29 issue of the *ELECTRIC RAILWAY JOURNAL*, page 1095, by H. B. Megargee, suggests an exceptional opportunity open for service by libraries of electric railway companies. If these companies would bring to the attention of the chambers of commerce in the various cities in the United States the mass of literature now in existence pertaining to the industry and encourage a serious study of transportation difficulties by the men appointed to the street railway committees before they make their reports a better understanding of the problems confronting railway executives would follow.

Until the list of electric railway transportation experts is scanned even an electric railway man hardly realizes that there are more than twenty-five individuals or firms specializing in this industry. The names of Col. B. J. Arnold, Col. Barclay Parsons, W. S. Twining, J. M. McElroy of England, J. E. Allison, F. B. Edwards, F. W. Doolittle, R. W. Harris, Prof. D. C. Jackson, Prof. A. S. Richey, John A. Beeler, Peter Witt and L. R. Nash come to mind, as well as such firms as Stone & Webster, Ford, Bacon & Davis, Jacobs & Davies and Sloan, Huddle, Feustel & Freeman, and there are many others in the field.

Do the chambers of commerce in most cities know that reports costing thousands of dollars have been made for Buffalo, Boston, Chicago, Cleveland, Cincinnati, Detroit, Fall River, Hartford, Kansas City, London, England; Los Angeles, Manchester, England; New Orleans, New York, Paris, Philadelphia, Pittsburg, Providence, Rochester, San Francisco, St. Louis, Springfield, Syracuse, Sydney, Australia; Toronto, Canada, and Washington, not to mention the articles that have appeared from time to time in the *ELECTRIC RAILWAY JOURNAL*, and that in these reports covering the investigations of the street railway systems are recommendations and suggestions applicable to any railway in the country?

These reports are not for sale over the counters of a book store and can only be had through the courtesy of the individual companies for which they were prepared. They cannot be found in public libraries, because the librarians have no knowledge of the existence of the reports and because they cannot be bought. Through co-operation of the firms and engineers mentioned, however, the libraries of the electric railway companies have these valuable reports and through their courtesy the libraries can produce literature upon schedules, service-at-cost plans, depreciation and valuation problems, corrugation, through-routing, subway-planning, appreciation of real estate, rush-hour problem, jitneys, types of cars, electrolysis, etc., from many points of view. No committee appointed by a governor, mayor or chamber of commerce need grope in the dark for matter pertaining to what apparently seems like a new problem, for the reports already in existence have analyzed the busi-

ness of transportation so thoroughly that perusal of the reports would suggest a possible remedy.

During 1919 the cities of Denver, Kansas City and Boston had special committees appointed to investigate the street railway situation. The Kansas City committee consisted of 100 men, the Denver committee of fifty-six and the Boston committee of six, and the gentlemen composing these committees undoubtedly will advise that the reports in existence regarding the street railway systems in other cities were of great assistance to them in rendering intelligent reports on their own cities.

That the managers of many electric railway properties must have realized the assistance street railway literature would be in investigations by their own engineers, traffic managers and legislative committees is borne out by the establishing of libraries, for today libraries are maintained by the electric railway systems in Baltimore, Kansas City, Milwaukee, Boston, New Jersey, Eastern Massachusetts and Cincinnati, as well as by the companies mentioned by Mr. Megargee.

L. A. ARMISTEAD,
Librarian.

Reunion Meeting Proposed

PORTLAND, ME., June 21, 1920.

To the Editors:

As neither the American Electric Railway Association nor the Accountants' Association makes any attempt to keep in touch with the "has beens," I have turned to you to make a suggestion. Speaking for myself, and yet with the feeling that it applies to others as well, I miss the friendships of those who helped to start the Accountants' Association, twenty-three or twenty-four years ago. Many of us are not now in the public utility business, and as the appeal of friendship is as strong as ever, we have no means of indulging it except through the course of special events, and it is such a special event that I wish to suggest.

I presume the Accountants' Association will have an annual convention this fall, and I would like to suggest that at that time arrangements be made to hold a dinner composed of, first, those who attended the organization meeting in Cleveland; second, those who have served the association as president since that time, and third, Henry H. Winsor of Chicago, first friend of the Accountants' Association, and Henry W. Blake.

I assume the association has the machinery that could put such a thought as this into motion, if any one else thinks well of it.

WALTER B. BROCKWAY.

Census Accident Data Encouraging

A BULLETIN from the National Safety Council directs attention to a report of the United States Bureau of the Census comparing the casualties resulting from electric railway accidents during 1917, 1907 and 1902. While street car fatalities increased exactly 100 per cent between 1902 and 1907, the increase between 1907 and 1917 was only 8 per cent. Non-fatal injuries increased 150 per cent during the first period and 20 per cent during the longer period.

In 1907 one person was killed for every 3,086,319 passengers carried on street cars and in 1917 one for every 4,393,572. In other words, based on the number of passengers carried, the electric railway accident hazards decreased approximately 33 per cent.

The Safety Council attributes this striking reduction in hazards in the face of a heavy increase in popula-

tion almost entirely to (1) the perfection of mechanical safety devices, (2) improved methods of operation and (3) the training both of the general public and of electric railway employees along safety lines.

Association News

American Executive Committee Meets

FIFTEEN members and guests attended a meeting of the American Association executive committee in New York City on June 23.

Secretary Burritt abstracted the minutes of the Jan. 7 meeting, held at Cleveland, which were approved, as were also the results of two letter ballots respectively approving the publication by the association of Harlow C. Clark's book on "Service-at-Cost Plans" and opposing the government coinage of a two-cent piece.

A resolution was then passed expressing appreciation of the action of the recently dissolved American Electric Railway Manufacturers' Association in turning over to the American Association the balance which remained in the treasury of the Manufacturers' Association. The amount, more than \$700, is for the use of the Committee of One Hundred. Another resolution transferred the rights of the association in the book on "Cost of Urban Transportation Service" to the author, F. W. Doolittle, who wishes to revise it. Still another resolution covered the making of a contribution to the building fund of the United States Chamber of Commerce. After explanation of the nature and work of the National Industrial Conference Board by L. S. Storrs and of the American Engineering Standards Committee by E. R. Hill, it was decided to apply for membership in these organizations.

A resolution of congratulation to Lord Ashfield on his accession to the British peerage was ordered sent, this being the first meeting of the executive committee since word of that event had been received.

The convention program was then discussed, a tentative form being presented. After full discussion of possible transportation difficulties in the way of getting exhibits to Atlantic City, it was decided to have the exhibit feature as usual.

The subject of possible changes in the plan of publication of the association magazine, *Aera*, was discussed. A memorandum, prepared at the request of the executive committee, giving some suggestions from James H. McGraw as to ways in which the cost of publishing the magazine could be reduced, was read by Mr. Burritt. An extensive report of the *Aera* advisory committee was also read. This advocated, among other things, the enlargement of *Aera* to standard magazine size. The report was approved.

Mr. Burritt then read statements regarding the publicity activities of the association and of the rapidly expanding work of the bureau of information and service, indicating the increasing usefulness of the association to its members. Among miscellaneous business a number of new members were elected and a report of the secretary for the year to date was received. After the meeting the committee lunched together at the Hotel Manhattan.

In attendance at the meeting were these members: President John H. Pardee, New York City; S. B. Hare,

Altoona, Pa.; W. H. Collins, Gloversville, N. Y.; W. I. Bartholomew, East Pittsburgh, Pa.; S. M. Curwen, Philadelphia, Pa.; C. L. Henry, Indianapolis, Ind.; L. S. Storrs, New Haven, Conn.; John J. Stanley, Cleveland, Ohio, and Secretary E. B. Burritt, New York City. Guests present included F. H. Gale, Schenectady, N. Y.; C. C. Peirce, Boston, Mass.; Martin Schreiber, Newark, N. J., and M. B. Lambert, East Pittsburgh, Pa.

Way Committee at Work

THE committee on way matters of the A.E.R.E.A. met at association headquarters in New York on June 14 and 15. The committee was unable to accomplish all of the work before it in two whole days, so it put in an evening session on each day, working until 11:30 on the evening of June 14. Those members in attendance were R. C. Cram, Brooklyn, chairman; W. F. Graves, vice-chairman, Montreal; E. M. T. Ryder, New York City; W. R. Dunham, Jr., New Haven, Conn.; H. Fort Flowers, New York City; H. A. Abell, Rochester; C. A. Alden, Steelton, Pa.; Victor Angerer, Easton, Pa., and E. B. Entwisle, Johnstown, Pa. Others in attendance were E. M. Haas, of the 1917 committee; G. C. Farkell, representing the A. S. T. M.; G. S. Vickery, Steelton, Pa., and J. C. Jameson, Springfield, Ohio.

The report of the subcommittee on curved heads for girder rails was presented, discussed and placed in form for presentation at Atlantic City. On subject No. 6, revision of standards and recommendations, G. C. Farkell gave the committee an interesting talk on the details of the proposed impression test for girder rails as proposed by the A. S. T. M. He exhibited specimens of rail sections upon which this test had been made and gave the committee considerable data relating to the comparisons of the impression with other tests, which indicate the tensile strength of the specimens. The discussion of this subject indicated that the committee is not ready to accept this test until further investigation can be made.

At the evening session on June 14 subject No. 3, progress on rail joints, came up for discussion, particularly in relation to the rapid use and development of the arc weld form of joint. Subject No. 1, complete standardization for track spirals, was also discussed at length. The form of the reports to be made at the Atlantic City convention was agreed upon.

On June 15 subject No. 4, revised specifications for plain bolted special trackwork, was considered in detail, and the specifications were revised as they will appear in the report of the committees. Subject No. 5, further investigation of wood block paving, was taken up on Tuesday and further consideration was given to the revision of the standards. Reports were presented on subjects 7a, 7b and 7c, covering data on safe limit of wear in rails and special trackwork. Subject No. 3, study of progress in rail joints, was considered further and a tentative report was read and subjected to criticism.

The complete report of the committee will be quite extensive, covering as it does many corrections and revisions in the Engineering Manual required by progress in the interim when little committee work could be done, due to war-time conditions.

The most important features of the report will be comprised in the recommendations on standard spirals, curved head rails and revision of designs for standard section 80, 90 and 100 lb. rails.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

Wage Offer Rejected

Aurora Company Offered Average of Twenty-two per Cent Increase—Fare Advance Necessary

In a vote taken on June 21 the employees of the Aurora, Elgin & Chicago Railroad, Aurora, Ill., decided, 573 to 12, to reject the wage increases offered by the company. The proffer of the company in general amounted to about 22 per cent. The men had demanded an increase of approximately 50 cents an hour, whereas the company's offer ran from 1 cent to 13 cents an hour. To make this concession, the company anticipated increases in revenue which it hoped to derive through increased business and through increases in rates on the Aurora and Elgin city lines, etc.

SOME DETAILS OF TRAINMEN'S SCHEDULES

Limitations of space prevent the presentation of the details of the entire wage schedule advanced by the company, but for trainmen on the city lines in Aurora and Elgin the new and proposed rates in cents per hour were:

	Present	Proposed
First year.....	40.2	52
Second year.....	41.4	54
Third year.....	43.8	56

For the third-rail division the scales for trainmen were:

	Present	Proposed
First year.....	48	60
Second year.....	51.6	64
Third year.....	52.2	67

Motormen and conductors on the Aurora-Elgin interurban were offered 60 cents as opposed to 48 cents and similar employees on the Yorkville interurban were offered 58 cents as opposed to 45.6 cents.

It is assumed that the rejection of the wage offer will be followed by further negotiations, although the company officials declare that they see no possible way of giving the men any further increase. Edwin C. Faber, general manager, said the company had done the best it could and was taking the chance that the Illinois Public Utilities Commission would authorize an increase in fare on the Aurora and Elgin city lines.

For the first four months of 1920, the gross operating revenue of the Aurora city lines was \$108,596 and the gross operating expense, \$114,537. For the corresponding period the gross operating revenue from operations on the lines within the city of Elgin amounted to \$76,922 and the gross operating expense, \$75,609. The taxes apportioned to this period of four months amounted to \$741, leaving a net income of \$572.

Joseph K. Choate, receiver, made the following statement:

As a basis for determining the greatest increase that it would be possible for the receiver to offer, we have made a forecast as to earnings and expenses for the year June 1, 1920, to May 30, 1921, based upon present rates of fare, on average weather conditions, and on the same general industrial conditions prevailing as at the present time. To this forecast of earnings we have added the estimated additional revenue that may be produced through an increase in commutation rates on the Chicago division of approximately 2.5 per cent, by increasing the rates of fare on the city lines of Aurora and Elgin to 10 cents cash and three tickets for 25 cents; by increases in freight rates and the development of freight business; by increases in excursion rates; and by increases in rental of tracks and facilities to other companies.

Simultaneously with the announcement of its wage increase offer the company filed application with the Public Utilities Commission for the increases in the fare on the city lines in Aurora and Elgin, indicated above. The present rate of fare in these two cities is 8 cents cash, seven tickets for 50 cents, or fifteen tickets for \$1. There is no opportunity to increase the straight passenger rate on the interurban line, since the present rates are equal to the maximum rates charged on the competing steam lines.

The freight rates are now practically equal to those charged by the steam line. By and large, the outlook as to the ability of the company to pay any higher wages than those offered is anything but bright.

Cities Confer on Wages and Fares

Representatives of the City Councils of Minneapolis and St. Paul, Minn., will confer over the situation presented by the proposal of the trainmen of the Twin City Rapid Transit Company to strike on July 1 unless their wages are advanced 20 cents an hour for eight hours and they receive double pay for overtime on Sundays and holidays.

Horace Lowry, president of the company, has notified the men that the company cannot meet this advance unless the operating companies are allowed a 7-cent fare in the two cities, now 5 cents, and that the men are asking too much.

Four ways are suggested by the city attorney for the Minneapolis Council to increase fares. In St. Paul the people have passed a measure by which the Council is authorized to advance fares under set conditions. These four ways are: By ordinance, by Council resolution, by a motion, and by adoption of a committee report.

W. O. Clure, general passenger agent, said June 18 at the meeting in St. Paul of the National Association of Comptrollers and Accounting Officers:

If the public will accept municipal ownership as the solution the company will be elated.

If we can get a fair price for the street railway system we will be glad to sell—to the city or anybody.

Quiet Campaign Expected

Not Much Enthusiasm Yet at Toledo Over Railway Grant—Mr. Doherty May Submit Measure

The campaign to be waged on behalf of the municipal ownership ordinances submitted by the Council of Toledo, Ohio, to the voters for a referendum on Aug. 10 will be a quiet one according to indications. At present it follows very closely the same path taken by the famous "ouster" ordinance last fall. The company has made no move to fight the ordinances with counter propaganda. Only one newspaper is supporting the ordinances. There is serious doubt that the ordinances will accomplish much if passed.

COMMISSION MEMBER STATES CASE

Chairman W. L. Milner, of the commission which spent six months in drafting a cost-of-service ordinance, finally rejected by Henry L. Doherty because of disagreement over the valuation of the railway property, said he believed the cost-of-service plan offered the city the best method of securing municipal ownership. He is quoted as follows:

I believe we could have municipal ownership sooner by the cost-of-service method as planned in our ordinance than by the direct route now before the people.

There will be such an endless mass of litigation, court fighting and tangles before we finally get municipal ownership of the railway that it would be quicker in the end to adopt some form of cost-of-service and municipal ownership combined.

This also appears to be the attitude of the railway company. There is little fear that the advocates of public ownership can select the paying lines of the present system and buy them through condemnation proceedings without such a claim for damages as to force the city to buy the entire system. The city attorneys have admitted that condemnation of portions of a railway system has very little if any precedence in any courts.

The outcome of the present municipal ordinances may be a warfare between city-owned buses and the railway. One of the ordinances provides money for acquiring a transportation system and the other for constructing one. Under the terms of the construction ordinance it may be possible to follow the plan of the municipal ownership commission and purchase about \$2,000,000 worth of motor buses to be operated by the city.

COURT ACTION LIKELY TO FOLLOW

If these were portioned out on various new lines and put into operation as competitors of the present railway system, the Toledo Railways & Light

Company, now operating under the protection of the United States District Court, might bring the matter into court. The original plan was to have buses as an auxiliary system to the railway to provide for extensions of service and to fill in gaps where new rails were to be laid, under the comprehensive scheme outlined by the commissioners.

The details of the plan were left entirely to the Council. It was suggested that a commission of three men be appointed to reroute the present lines and plan for the necessary extensions. If voters do ratify the twin ordinances it is doubtful whether the buses could be secured and placed in operation before the next summer.

Mr. Doherty made some plans to submit a cost-of-service plan of his own to the voters. He has one modeled after the Cleveland plan with sufficient signers to place it before the people. However, the Milner ordinance had so many good points acceptable to the general public that undoubtedly any ordinance on the cost-of-service plan would be patterned closely after it.

The method by which the city is to gain ownership of the lines is rather unique with the Milner ordinance. Under the process which it provides the city would own about 20 per cent of the property at the end of seven years. At the expiration of the twenty-five-year grant the car receipts would have paid off all the preferred stock and bonds of the company, and the city would have all the common stock and entire ownership of the lines. If, after the grant had been in operation ten years, the city wanted to renew the original grant an amortization fund would be set up seeking the same end on a slower basis.

This is the plan which Mr. Milner said would work out for municipal ownership sooner than the present plan before the citizens of Toledo.

Pittsburgh Wage Agreement Signed

Charles A. Fagan, S. L. Tone and W. D. George, receivers of the Pittsburgh (Pa.) Railways, and the officers of the trainmen's union on June 16 signed a wage scale agreement for the year ending May 1, next. It was over a new wage scale that the receivers and the men indulged in a controversy that lasted three months and threatened to precipitate a strike.

Since the acceptance by the men of a rate of 70 cents an hour, conferences to settle the working conditions have been in progress. Those conferences are now about concluded. It was learned that the working conditions will not include an eight-hour day.

Formal announcement of the contemplated increase in the fare from 7½ to 8½ cents has been made by the receivers. The increase will become effective on July 14. It is expected that all the resulting increase in revenue will be absorbed by the increase in wages.

Canadian City Is Strike Ridden

Railway in London, Ont., Offers to Sell to City at Value Determined by Arbitration

Service was restored on the London (Ont.) Street Railway on June 16. This marked the end of the second strike within six weeks and the third within eleven months. Two years ago the company applied to the City Council for the right to increase fares over the scale set in 1895—seven unlimited and nine limited tickets for 25 cents. Last summer to end a strike the Council authorized six and eight tickets, but a court order quashed the ordinance and the company reverted to the old scale. Some months ago the Appellate Division of the Supreme Court of Ontario sustained the Council's right to amend the fares agreement, but the Aldermen of 1920 are unable to agree on any policy whether for purchase or higher fares. The company is willing to abandon its franchise, which has five years to run, and to sell out at a value determined by arbitration.

THE employees had been working at a maximum wage of 44 cents. They demanded 65 cents and struck on May 1. On May 5 the Ontario Railway and Municipal Board took possession of the property at the request of the City Council and on May 6 restored service under a temporary arrangement with the men, who were guaranteed 44 cents an hour and whatever further amount remained from the proceeds of operation after fixed charges and other operating expenses had been met.

DEFICIT IN MAY \$101

The remaining days of May produced an actual deficit of \$101 on the 44-cent scale. Meanwhile the board engaged auditors to report on the financial condition of the company. The report submitted to the City Council showed that the old rate of fares will not produce sufficient revenue to pay any increase in wages, even if no provision is made for dividends or depreciation; that the entire amount of capital stock outstanding was paid for in cash or as stock dividends "properly declared out of earnings"; that the average dividends for the past twenty-five years have been 4.82 per cent per annum, of which 0.28 per cent was in stock; that since 1915 the whole amount of cash paid to the shareholders has been \$17,180 on \$637,480 of stock, and that no dividends were declared in 1918 or 1919; that in 1918 there was a deficit of \$48,268 and that in 1919 there was a loss of \$33,179.

The railway board acknowledges that it has no authority to change the fares or otherwise modify the agreement between the city of London and the company. This is taken as a precedent affecting the whole of Ontario. Neither is the board empowered to operate any property at a loss, as it has no funds with which to meet deficits. Consequently where there is no other recourse the board must abandon any property and leave a strike unsettled.

STRIKE RESUMED JUNE 7

The City Council on receipt of this report, which showed what scale of fares would be required for certain rates of wages, unanimously agreed with the men that the maximum pay should be 52 cents an hour, to be covered by fares of 5 cents cash with seven limited tickets for a quarter. While the legal draft of the agreement

was in preparation political haggling developed over the question of a vote of the people, and when the Council reached its adjourned session to enact the by-law a majority switched to the side opposing higher fares. The men then resumed their strike on June 7, and until June 16 the city was served only by trucks and other motor cars operating as 10-cent jitneys.

FARE ELECTION PROPOSED

The City Council at three special meetings failed to agree on any policy and the strikers, who acknowledged their urgent need for work, appealed to the railway board to withdraw a sufficient number of cars from service and to effect other economies through which to pay 48 cents an hour to the men retained. One-way service is now being given on former two-direction belts and other drastic curtailments have been made. In the interests of employees reverted to the spare list the union has appealed to the Trades and Labor Council. That body has forwarded to the City Council a request that an immediate special election be held on a six and eight for 25 cents proposal, such rates to be continued in effect only while the Ontario Railway Board remains in charge of the property.

STRIKE ON SUBURBAN LINE

The collapse of the strike parallels the result of a walkout of all operating staff men on the London & Port Stanley Railway, a high-speed radial owned by the city of London, in May. The men had been paid 48 cents an hour. They demanded an advance of 25 cents an hour, and in some cases the adoption of the McAdoo steam road scale. They were offered 52 cents by the operating commission, but rejected that and agreed to a board of conciliation. The board confirmed the commission's offer and the strike was at once called. Alleged sabotage followed at once when operation was undertaken with other crews. The line was patrolled by special forces and within a week the railway removed its embargo on freight. The men, by secret ballot, voted to return to work and manned the trains for a public holiday the next morning. They accepted the commission's original offer, but since have been given certain additional amounts, freight crews receiving 54 cents, while passenger train operators continue at 52 cents.

Chicago Business Men Urge Support of Utilities

Civic Associations and Clubs Lead Way in Effort to Show Utility Commissioners What Thinking Public Wants

Business men of Chicago are urging fair play for the utilities. A conference of the presidents of the various business associations and clubs of Chicago recently drew up a statement addressed to the Illinois Public Utilities Commission to urge the commission to immediate action in relief of the public utilities in the many cases pending before it, and to give the commission definite evidence of the fact that the thinking public is ready to indorse the orders of the commission in its evident necessity to grant increases in rates. This statement, as drawn up in conference, was submitted by the presidents to the governing boards of their respective organizations for approval before forwarding to the commission.

At the time of this writing the Chicago Association of Commerce, the Chicago Association of Credit Men, the Citizens' Association of Chicago, the Chicago Commercial Club, the Illinois Manufacturers' Association, the Traffic Club and the Union League Club had indorsed the statement and forwarded it to the commissioners. This presents to the commission the indorsement of organizations with a membership of more than 16,200 men. The statement follows:

STARVED UTILITIES A MENACE

There are now pending before the honorable body many applications by public utilities operating throughout the state for increases in rates and for other financial relief.

It is a matter of common knowledge and experience that the utilities operating in Illinois, and especially those in the city of Chicago, have been unable fully to meet the demands of the public for extensions and betterments to their properties and that, with few exceptions, the quality of the service rendered is unsatisfactory.

Our information is that conditions now obtaining will increasingly become worse unless immediate relief is afforded.

The financial status and need of the various utilities are well known to your honorable body, as well as the present state of the money market, which prevents even the stronger companies from obtaining additional capital in large amounts except at exceedingly high rates of interest. These conditions, as a matter of business judgment, will cause the utilities to make only the absolutely necessary extensions and leaves them totally unable to anticipate future needs.

This inability to comply with the demands for public service is not only a serious and continuing menace to the commercial development of Chicago but some of our citizens are in imminent danger of being deprived of necessary light and heat in their homes and transportation to and from their places of business or where they are employed.

Under the law the State Public Utilities Commission is vested with the general supervision of all our public utilities, including full responsibility for service, adjustment of rates and the finances of the operating companies.

We are well aware of the grave character of the questions with which the utilities commission has to deal and of the great injury not only to the private interests but to the public at large that may result from errors.

CASES MUST BE DECIDED SEPARATELY

The rates for service established by the commission must be reasonable both to the public and to the utilities, and a just and reasonable rate is necessarily a question of sound business judgment, rather than one of legal formula. The real test of the justice and reasonableness of any rate is that it should be as low as possible and yet sufficient to induce the investment of capital in the business. Such rate must often be tentative, since exact results cannot be foretold.

We realize full well that the case of every utility must rest upon its own facts.

We shall not enter into the realm of controversy as to the causes underlying the present condition of public utilities in Illinois, neither shall we offer any plan or plans for the solution of the many difficult problems continuously presented to this com-

mission. We do, however, earnestly urge the necessity of immediate relief, for we confidently believe that unless prompt action is taken even the present unsatisfactory public service cannot be maintained.

We respectfully suggest that, in all cases where it is impossible for the commission to give the case presented such an exhaustive consideration as will enable the commission to determine and prescribe a permanent rate or plan respecting the utility under consideration, tentative orders be entered covering experimental or temporary periods until such time as the experience of the commission or further investigation and deliberation will enable your honorable body to do complete and full justice in the premises.

Detroit Calls for Bids

Asks Tenders for Material and Supplies for Twenty Miles of Municipal Railway Line

Municipal activities at Detroit, Mich., have been started on a large scale with the calling for bids on approximately 20 miles of railway track comprising some of the much needed east and west crosstown sections of the proposed \$15,000,000 municipal electric railway system. The work for which bids are asked includes excavating, concrete foundation, ties, rails and all track equipment.

As a result of a conference between city officials and officials of the Detroit United Railway, a double-track will be built on Harper Avenue, the north track to be built by the company and the other by the city. By virtue of a grant from the township of Hamtramck before it became part of the city of Detroit, the Detroit United Railway maintains its right to a track on the north side of Harper Avenue. By authority of a resolution of the Common Council directing the company to move the single-track line to the center of the street and build a double-track, the right to build such double-track is claimed. Part of this line has been completed. It was the construction of the remaining section that was stopped by the direction of the Mayor.

In order to facilitate paving on Harper Avenue and to meet the views of the people of the locality the Detroit United Railway agreed to move the existing single-track lines between Van Dyke Avenue and Gratiot Avenue to the proper location for the north track of a double-track line.

With the city owning one track and the company the other, connecting up with the company's existing double-track, the question of operation will be left to the time when the city and the company are ready to operate.

The St. Jean line, the other line where the company's construction activities were stopped by the police and which forms a basis for a suit now in the United States District Court, will be completed by the city, the city taking over the work already done by the Detroit United Railway and paying for that work on a basis to be agreed upon later. It was arranged that the city be permitted to proceed with construction work at once, and that only a formal protest would be filed in the court by the Detroit United Railway in order to refrain from prejudicing the company's case now pending in the federal court.

The fact has been brought out that Michigan seems to have no legislation contemplating public ownership of such a utility as the city proposes to construct, and the Michigan Public Utilities Commission has asked the Attorney-General for an opinion regarding its powers relative to the project.

City May Finance Extensions in Milwaukee

According to reports in the Milwaukee papers there is a possibility that the city of Milwaukee may finance extensions to the lines of the Milwaukee Electric Railway & Light Company within the city limits.

A conference was held on June 17, 1920, at which there were present Mayor D. W. Hoan, John I. Beggs, president of the Milwaukee Electric Railway & Light Company; City Attorney Williams and representatives of the Public Land Commission and of the committee on the acquisition of public utilities. As a result of the conference the Mayor is reported to have announced that an understanding had been reached on the problems affecting the municipality and the company.

The suggestion was made at the conference that a plan be worked out by which, if the city proposes to purchase the railway lines at some future time, extensions needed at this time be financed by the city, the company to pay rental for the use of tracks thus built. This, it was claimed, would solve for the company the problem of financing such extensions and would provide gradually for city ownership.

It was also suggested that the city and the company co-operate with the public land commission on its zoning and arterial highway plans. It was pointed out that railways could be laid in the center of streets converted into boulevards. The laying of track through grassy plots in the center of wide highways would, it was thought, remove the interference of other traffic, speed up schedules, do away with the expense of paving and sprinkling the roadbed and make snow removal easier.

It is also reported that the interurban controversy referred to in the ELECTRIC RAILWAY JOURNAL of May 22, 1920, was discussed and hope expressed that it could be settled without causing an interruption of service.

Omaha Case Unsettled

Railway Commission Refuses to Go Into Ramifications on Cost of Living

The net result of the hearings during the week ended June 19 before the State Railway Commission, over a wage controversy between the Omaha & Council Bluffs Street Railway and its men, did not bring the disputants very far toward an agreement.

UNION WOULD WITHDRAW

After having filed an application before the commission, asking that body to assume jurisdiction, on the grounds that the men had voted to strike unless a demand for an increase of 13 cents an hour was granted, counsel for the union moved to dismiss the case when the commission declined to go into the ramifications of the high cost of living. Commissioner Browne said:

It is generally accepted that a complainant has the right to dismiss his own case. In this instance the board undoubtedly has further powers to continue the inquiry if it should decide to go ahead. I have no information what the attitude of the men will be and of course cannot express myself on that matter.

Chairman Taylor, in announcing the commission's determination to continue the hearing, held that evidence already taken indicated the possibility of an interruption of service. He added that the commission further considers it a duty to proceed. John L. Webster, counsel for the company, said:

I told the commission when it first took up the dispute that the union would only abide by its decisions if the decisions were favorable to the union, and the action today verifies my statement.

The company asserted its willingness to leave the matter to the discretion of the commission, but reserved the right to challenge its jurisdiction.

A. H. Bigelow, counsel for the union, stated that the scope of the hearing as now defined by the commission was such that he would be unwilling to have his clients bound by the result; that his clients are unwilling to be bound legally or morally by the results of an inquiry which ignores living costs.

HEARING WILL CONTINUE

The commission announced that it will subpoena representatives of the company and the men, and will continue the hearings in the interests of public policy. Some of the facts presented by the company follow:

Number of cars operated Jan. 1, 1919, 279; June 1, 1919, 291; June 1, 1920, 307, showing a continued increase of service.

Trainmen employed Jan. 1, 1919, 785; Jan. 1, 1920, 837; June 1, 1920, 858.

Week ending June 12, 1920, 59 applied for work as trainmen under present scale of wages.

More than 500 trainmen—76 per cent of the total—have expressed opposition to a strike.

During May, 1920, 652 trainmen worked twenty-five days or more, earning an average of \$155.53 for the month, the highest individual wage for that month being \$204.98.

The company's deficit for period of nine months ending April 1, 1920, was \$74,000, with nothing allowed for dividends on common stock.

Chairman Taylor of the commission, in his announcement that the cost of living should not enter the hearing, said:

We arrived at the decision that regardless of our personal feelings, there should be some tribunal to pass on the question of a standard of wages. The commission is restricted only to the question of service. The cost of living is not directly related to service, therefore it does not come within the scope of the commission.

Wants to Retain Railway

Announcement of Abandonment by Waupaca Company Inspires Effort to Make Road Pay

For the purpose of ending a long struggle with a losing railway the Waupaca Electric Service & Railway Company, which operates 5 miles of electric railway in Waupaca, Wis., served notice on the Waupaca City Council, the town of Farmington and the Railroad Commission of Wisconsin that on May 10, 1920, it would surrender its indeterminate franchise and abandon operation of the railroad.

This action was brought about by the fact that for several years the passenger traffic on the line has been insufficient to produce earnings adequate to meet the ever-increasing operating expenses, and because the various local authorities showed no disposition to grant relief. A certain freight franchise has been under discussion for a number of years, but has always been opposed and blocked by the city authorities for no legitimate reason that the company has been able to ascertain.

In addition to this, a paving project came up in which the city fathers refused to release the company from the paving obligation which it declared its inability to pay. On the contrary, the city served notice on the company that a certain street would be paved and that the railway would have to assume its share of the cost of such paving.

The company objected on the ground that the earning capacity of the road did not permit of this and that it was an unjust, unreasonable and uncalled for charge against any railway. The city authorities refused to follow the example of numerous other municipalities throughout the country as well as four in Wisconsin which have already eliminated such paving charges.

After serving notice of suspension of operations on the railroad, the commission on its own motion promptly set a hearing at Waupaca for May 6. At this hearing it was quite clearly demonstrated that the citizens as well as the community at large did not want to see the railway abandoned. Many suggestions were offered as to how to sustain the road. The city agreed to leave that part of the street occupied by the railway unpaved and filled in with gravel; also to draw up a freight franchise which would be acceptable by the citizens as well as the railroad company. This freight franchise is still in process of framing. Operation of the property has continued thus far and if the road can be made a paying proposition through release from paving obligations and ability to earn more money by carrying freight it is probable the railway will not be abandoned.

Utility Plank Urged

Arguments in Favor of Utilities to Be Presented Before Democrats in San Francisco

In the belief that the continued efficient and uninterrupted operation of all utilities subject to public regulation is essential to the nation's welfare, representatives of the three public utilities—gas, electric lighting and electric railways—will make a determined effort before the platform committee at the San Francisco convention to have a plank included in the democratic platform declaring for preservation of these utilities.

A committee, headed by Judge George A. Cooke of Chicago, conferred with leaders of the Democratic party on this subject at Washington recently. Arrangements were made for them to receive a formal hearing before the resolutions committee at San Francisco tomorrow.

The contention is made that all public utilities are faced with a serious crisis arising from the shortage of essential materials and the great increase in the cost of labor and material, and that any interruption to the public service of these utilities or any impairment of their ability to attract new capital would result in a national calamity.

It is further argued that the principle should be recognized that labor and capital engaged in the service of the public should receive such fair and impartial treatment as will attract their continued flow into these highly important industries. Leading men in these industries declare that the question involved is no longer confined to local situations, but is of great national interest and demands prompt attention and consideration.

Judge George A. Cooke, of Cooke, Sullivan & Ricks, Chicago, will present the arguments in favor of this plank before the resolutions committee.

Wheeling Wages Adjusted

At a meeting of the officials of the Wheeling district traction companies and the executive board members of the unions recently the annual wage scale and agreement were signed, granting the 600 employees an increase of an average of nearly 20 per cent with several working concessions asked for by the men. Under the arrangement just consummated the men agree to accept an increase of approximately 20 per cent with the understanding that they are to receive an additional increase on Aug. 1, if the fare of the traction corporation is increased.

Offer Made to Sell to City

The Colorado Springs & Interurban Railway, Colorado Springs, Col., proposes to renew the offer made about two years ago to sell the entire system and plant to the city of Colorado Springs, and accept in payment city bonds bearing interest at 4 per cent.

Duluth Defeats Municipal Ownership

The residents of Duluth, Minn., on June 21 voted down the referendum ordinance giving the Duluth Street Railway the right to fix its fares at not more than 6 cents. The vote was taken at a special municipal election. The result was 6,916 for and 7,373 against. The ordinance proposing that the city acquire the Duluth Street Railway lines by purchase or condemnation was also defeated by more than two to one. The result in this case was 4,121 for and 9,272 against. Herbert Warren, general manager and vice-president of the railway, says that the company is now placed in a position where extensions to and improvement in service will be made impossible on some lines. He indicated that service may be curtailed. Duluth voters at the same election turned down all but one of six special issues submitted. The proposal to issue bonds for a public market was the only one which carried.

Praise for Mr. Mitten

Richard Spillane, editor of the business and financial section of the Philadelphia *Public Ledger*, has jumped to the defence of T. E. Mitten, president of the Philadelphia Rapid Transit Company, as the result of a full page advertisement in the New Orleans *States* of June 12 by the New Orleans Railway & Light Company. The ad quoted from the recent committee report in Philadelphia. Interspersed were comments. Of Mr. Mitten and his work, Mr. Spillane says:

Everybody who knows anything about the P. R. T. appreciates the financial troubles Mr. Mitten has had to shoulder come from financial juggling that antedated his connection with the property and that financially and physically it was a wreck when he took control. That he was able to build it up to strength and efficiency on a 5-cent fare basis, waterlogged as it was and is with its "indulging securities," is remarkable—so remarkable as to have no parallel in present traction history.

Seattle Plans Rapid Transit for Business District

The city engineering department of Seattle, Wash., under City Engineer A. H. Dimock, has practically completed tentative plans for a subway and elevated trestle system of routing the cars of the Seattle Municipal Railway. Plans provide for the construction of two subways, and an elevated trestle in the downtown district, and reduction to a minimum, and possibly the entire elimination of the operation of surface cars in the business sections of Second and Third Avenues.

The plan also proposes operation of express trains from outlying points to the business district. Stations would be established in Ballard, the University section and other parts of the city. From each of these stations, express trains made up of cars assembled from various surface lines converging at the station would travel to and from the business district over the most direct route on special tracks and roadbed. In the congested district these trains would be operated through subways.

The plans have been turned over to Major Carl H. Reeves, Superintendent of Public Utilities, and D. W. Henderson, general superintendent of the Seattle Municipal Railway, who will study them from the point of street railway operation, and then submit their recommendations.

Montreal Preparing for Arbitration

J. A. Woodward, president of the Fifth Sunday Association, is the choice of the employees of the Montreal (Que.) Tramways as their member of the board of conciliation, which the men have asked the Minister of Labor to appoint to arbitrate with the tramways in the matter of demands for higher wages and other concessions.

The application for a board of conciliation under the Lemieux act comes from the men, following the refusal of the Tramways Commission, which is the authoritative body in effect on the other side, that the demands of the men for wages running up to 75 cents an hour could not be granted, and the refusal of the men to accept a counter proposition made by the commission. The men have not yet received a reply from the Minister of Labor as to their request for a board, but the Minister, following usual procedure, has asked the tramway for a statement of its side of the case, and when both cases are before the Minister the request will be decided.

The tramway has named H. V. Ville-neuve as its arbitrator. Justice Archambault has been selected as chairman.

East St. Louis Wage Arbitration Begun

The trainmen of the East St. Louis and Belleville divisions of the East St. Louis & Suburban Railway, East St. Louis, Ill., have presented the following demands to the company for increase in wages and improvement of working conditions:

1. Eight-hour day.
2. Minimum wage of 87½ cents an hour.
3. Conductors to be allowed additional half hour to check up fares at the end of the day's run.
4. Extra men to be guaranteed a minimum wage of \$125 per month in place of \$80.

An arbitration committee has been selected by the employees and the management consisting of L. V. Walcott, former Assistant State's Attorney, chairman; David M. Walsh, representing the employees, and C. E. Smith, consulting engineer of St. Louis, Mo., representing the company.

The first meeting of the committee was held on June 3. Representatives of the union explained their demands. The basis of the proposed new wage scale as brought out in the testimony was a yearly budget worked up for a family of four. Using present prices for rent, food and clothing this was computed to be \$3,000 a year, or \$250 a month.

The railway was not ready to present its side of the case and the arbitration committee adjourned for ten days.

Dayton Employees on Strike

A strike of conductors and motormen on June 20 put all the electric railways in Dayton, Ohio, out of operation, with the exception of the Oakwood line which connects the southern part of the city with the central section of Daytonview. The roads affected are the People's Railway, the City Railway, the Dayton Street Railway and the Dayton, Springfield & Xenia.

The strike followed the failure of the employers and employees to agree upon a wage scale. The men had asked for an increase of 40 per cent in wages. On the other hand, the companies had requested the city to authorize a higher rate of fare in order that the wage increase might be covered. The city declined to accede to this request. It insisted that the companies settle with their men first.

An increase of 20 per cent had been offered the men, but this was rejected. The present rate of pay is 50 cents an hour. The men demanded 70 cents. The compromise offer of 60 cents was made by Valentine Winters, representing all the companies affected. He declared there can be no arbitration as the companies decline to operate the roads at a loss.

Employees of the Oakwood road are not organized.

Private Operation Suggested for Municipal Road

Tacoma's municipal electric railway is in dire straits. This has been suspected for some time, but it comes out now that the road showed a deficit of \$84,603 for last year. As the road is only 8 miles long this is at the rate of about \$10,000 a year per mile of line or about \$7,000 a month if one prefers to look at the matter that way.

This situation with regard to the municipal railway has been a cause of deep concern to Jesse W. Silver, commissioner of finance. The road was rebuilt on credit and Mr. Silver has before him the disagreeable task of confronting the creditor with only an excuse to offer and no cash. The creditor is the Emergency Fleet Corporation. That body advanced \$232,400 for double-tracking the line. It expected the return of this sum at the rate of \$40,000 a year.

Mr. Silver has evolved the idea that the railway be leased to a private individual. Although the line as before mentioned is losing \$84,603 a year the optimist who has offered to take over the road and manage it feels he can make it pay. He has confided to Mr. Silver that he can save \$57,752 in one fell swoop by reducing the number of employees from seventy-four to thirty-nine. Owing to the civil service classifications, it is said that many employees on the railway are busy only at rush hours. The leasing arranging would be for four years, and the proposed operator stands ready to accept as his compensation a percentage of the profits over a fixed amount. Mr. Silver will recommend the plan to the Council.

News Notes

Wages and Fares Increased.—Employees of the Brantford (Ont.) Street Railway have been granted an increase in wages of 15 per cent. This means 46, 48 and 50 cents an hour for first, second and third year men, respectively. The municipal commission which conducts the road has also put a straight 5-cent fare into force in order to provide against a deficit through the wage increase.

Danbury Line Readjusts Wages.—The wages of the employees of the Danbury & Bethel Street Railway, Danbury, Conn., have been readjusted by agreement between J. Moss Ives, the receiver of the company, and the men. Trainmen will receive 55 cents an hour, with 65 cents to operators of one-man cars. During the probationary period of six months new men will receive 50 cents an hour, with 60 cents to the operators of one-man cars.

Cambridge Subway Funds to Be Used.—The Department of Public Utilities of the State of Massachusetts has been petitioned by representatives of the Boston Elevated Railway for authority to use the balance of \$4,456,000 remaining from the purchase of the Cambridge Subway. It is planned to expend these funds in extending the elevated structure at Forest Hills, costing about \$1,000,000; extend the yards and storage facilities at Everett, costing about \$500,000; \$1,500,000 for the payment of West End Railway bonds maturing Aug. 1, and the remainder to be used for the payment of short-term notes.

Wages in Butte Advanced.—Motormen and conductors employed by the Butte (Mont.) Electric Railway were granted an increase in wages on June 3 of approximately 8 cents an hour, or 75 cents a day. The new scale, which was fixed at a series of conferences, is 65 cents an hour for the first six months, 68 cents an hour for the second six months and 73 cents an hour thereafter. All motormen and conductors have been with the company for more than a year and therefore received 73 cents an hour instead of the original 65 cents. The union agreed to abolish a 15-cents-an-hour bonus for overtime. The contract runs to May 1, 1921.

Revision of Schedules Will Mean Fare Increase.—It is said that Street Railway Commissioner Fielder Sanders, of Cleveland, Ohio, has advised the special committee that granting the men's demands for straight runs will mean an increase of 3 cents in the rate of fare. He estimates that the force will have to be doubled to comply with such a request. His staff of

engineers and accountants have in preparation a report which will be submitted to the committee, after which public hearings on schedule revision will be held. Officers of the company and representatives of the employees will be called to testify.

Mediation Over Wages in St. Louis.—The Public Service Commission of Missouri recently decided to assume jurisdiction of the controversy over wages between the receiver and the employees of the United Railways, St. Louis. The commissioners will sit as a board of mediation and arbitration at the City Hall, commencing June 24. Both the receiver and the officials of the union representing the employees have signed a stipulation to submit to the ultimate findings of the commissioners. The demands of the men for wages of from 75 to 85 cents an hour, with an actual eight-hour day, were rejected by Receiver Rolla Wells. The men are now receiving 50 to 60 cents an hour.

Industrial Commission Allows Wage Increase.—Motormen and conductors of the Colorado Springs & Cripple Creek District Railway, Colorado Springs, Col., were granted a part of their demands for increased wages in findings and awards returned recently by the State Industrial Commission. The men originally asked for an increase of 12 cents an hour. Following the filing of the petitions with the industrial commission the company granted an increase of 5 cents an hour to the motormen and conductors. Following this action the men altered their demands to read: Two-men cars, 52 cents, 55 cents, 57 cents; one-man cars, 55 cents, 58 cents, 60 cents. The industrial commission granted the following wage scale: Two-men cars, 48 cents for first three months, 51 cents following nine months, 53 cents after first year; one-man cars, 55 cents for first three months, 58 cents following nine months, 60 cents after first year.

Municipal Ownership as It Is.—The J. G. White Management Corporation, New York, N. Y., is sending to security holders in its properties a reprint published by the Illinois Committee on Public Utility Information of the speech delivered in March, 1920, by Ole Hanson, former Mayor of Seattle, on municipal ownership. It was under Mr. Hanson that the local railway lines in Seattle were taken over. When he became Mayor, Mr. Hanson believed that the only outcome of the agitation in relation to street railways and probably electric power was municipal ownership. He thinks differently now. He said in his speech: "If after a time it becomes impossible for a utility enterprise that has honestly and conscientiously expended the public's money in creating or developing or building a gas plant or an electric plant or a street car plant—if the time comes that they cannot operate, it is impossible for them to get by—there is only one way, we must raise the rate so that they get by, or we must refund to them the money they put in the enterprise."

Programs of Meetings

Central Electric Railway Accountants' Association

The Central Electric Railway Accountants' Association will hold its summer meeting at the Hotel Ottawa, Ottawa Beach, Mich., on July 10. The program will be announced later.

Central Electric Railway Association

The program has been announced for the annual meeting of the Central Electric Railway Association at Hotel Ottawa, Ottawa Beach, Mich., on July 8 and 9. The session on July 8 will open at 10 a.m. The session on July 9 will open at 9:30 a.m. It is suggested to the members living at a distance that the trip be made in special interurban cars.

The Terre Haute, Indianapolis & Eastern Traction Company has arranged to furnish a special car to be operated between Indianapolis, Ind., and Niles, Mich., and the Michigan Railway has arranged for a special car between Kalamazoo and Macatawa, Mich., on July 7. The trip between Niles and Kalamazoo, Mich., is made by steam railroad and transfer between stations must be made at those points. On the return trip the party will remain in Kalamazoo on the night of July 9, continuing the trip on the following morning.

At the morning session on July 8 the following paper will be presented:

"The Manufacture of Wrought Steel Wheels," by George Atwell Richardson, of the Midvale Steel & Ordnance Company. A complete description will be delivered of the manufacture of steel and steel products.

The session on the afternoon of July 8, which will convene at 2 p.m., will be an experience meeting contributed to and participated in by representatives of the member companies.

On the morning of July 9 the following papers will be presented:

"Interurban Electric Railways, Their Problems and the Solution Thereof," by Robert M. Feustel, president of the Indiana Service Corporation, Fort Wayne, Ind.

"City Electric Railways, Their Problems and the Solution Thereof," by A. C. Blinn, vice-president and general manager of the Northern Ohio Traction & Light Company, Akron, Ohio.

The presentation of these papers will be followed by a written discussion or a general oral discussion on either or both by members of the association.

Members are requested to reserve their rooms in advance of the meeting, and in reserving accommodations at the hotel at Ottawa they are urged to be sure to state that they are attending the meeting of the C. E. R. A. All requests for reservations should be addressed to Charles H. Seelbach, manager, Hotel Ottawa, Ottawa Beach, Mich.

Financial and Corporate

Stock Sold at Home

Wisconsin and Missouri Companies Find Buyers for Their Securities Among Their Customers

Public utilities in both Wisconsin and Missouri have been successfully conducting campaigns for the financing of extensions among their customers. In St. Louis, Union Electric Light & Power Company placed \$1,000,000 of 7 per cent preferred stock on sale Nov. 18, 1919, price par, purchase limited (until some thirty days ago) to book customers of the company. When the issue was placed on sale, through advertisements in St. Louis papers and papers published in the territory outside of St. Louis served by the Union Electric, St. Louis brokers were advertising the company's earlier issues of 7 per cent preferred at 97 to 98.

COMPANY CREATES MARKET

In December the company advertised that it would offer any shareholder's stock for resale, at par, and without making any charge for the service. Since then brokers have been unable to get hold of any of these shares. Holders wishing to realize on them have brought or sent them to the company's securities department and within twenty-four to forty-eight hours have got cash for them at par. The company has resold, from Dec. 15 to May 31, 2,382 shares in this way for 185 holders. These shares have been bought by 558 new investors. Meanwhile, from Nov. 18 to May 31, the company sold \$656,500 of its third million of 7 per cent preferred at par for cash and \$60,100 at 102 on a ten-payment plan—a total of \$716,600.

Through this campaign the company on May 31 had 3,683 preferred stock shareholders, most of them book customers of the electric service department. By protecting its shareholders through its securities department, the company has steadily maintained a par home market for its preferred stock. The total sales, including resales, from Nov. 18 to May 31 were \$954,700 while the over-all cost of selling was said to be slightly over 5 per cent. This compares with a cost of 1.231 per cent over-all cost of selling the first \$2,000,000 of Union Electric 7 per cent preferred in 1917 and 1918 and with 2.049 per cent, the quoted over-all cost of selling \$3,600,000 of the Milwaukee Electric Railway & Light Company's five-year, 7 per cent bond-secured notes between Dec. 18, 1918, and Sept. 18, 1919.

The large volume of resales in St. Louis is attributable by observers to a speculative spirit visible there during the past winter.

Less than 1 per cent of the more than \$5,000,000 of securities sold to home investors in Milwaukee during the past three and one-half years has been brought back for resale, in which the holder got dollar for dollar.

The experience in Wisconsin as regards sales compares very closely with that in St. Louis. One of the most recent cases is that of the Wisconsin Gas & Electric Company, which placed \$500,000 of five-year 7 per cent notes and \$500,000 of 7 per cent preferred stock on sale at par for cash on March 18, 1920. On June 2 more than \$400,000 of the notes and more than \$200,000 of the stock had been sold at an over-all cost of approximately 5½ per cent.

1,000 WISCONSIN BUYERS OF Wisconsin Gas & Electric "SAFE HOME SEVEN PER CENTS"

One thousand Wisconsin investors—more than 300 of them women—have bought Wisconsin Gas & Electric Company "Safe Home 7 Per Cents" in 70 business days. More than 600 of the 1,000 live in Milwaukee. Milwaukee and its suburban cities now have over 4,500 investors in Wisconsin Gas & Electric Company and The Milwaukee Electric Railway & Light Company. The two companies have over 8,000 investors in Wisconsin—including several hundred of their 4,700 employees.

While they last—and they are going out steadily—you can buy Wisconsin Gas & Electric 5-year, 7 per cent Gold Notes in \$50, \$100, \$500 and \$1,000 sizes, and 7 per cent preferred stock in \$100 shares, at the Company's offices in Milwaukee, Racine, Kenosha, Watertown, Whitewater, Burlington, South Milwaukee and Cudahy. The Notes come due and will be paid off in cash March 1, 1925. Their interest is payable March 1 and September 1. Preferred stock dividends are payable April 15, July 15, October 15 and January 15. This stock—preferred both as to dividends and assets—has first claim on the Company's dividend earnings up to 7 per cent each year, and shares equally with the common stock all dividends paid over 10 per cent in any year. Its safe 7 per cent income, with its chance to earn one or two per cent more in good years, make it an especially desirable permanent income investment. Holders of the 5-year Notes can, if they wish, exchange them at par for shares of the participating preferred stock, on any interest date to September 1, 1924.

Wisconsin Gas & Electric Company and The Milwaukee Electric Railway & Light Company are closely associated, under common ownership and management. The region they serve, embracing the Milwaukee metropolitan district and eleven counties surrounding the Milwaukee district on the north, west and south, is the richest, most populous and fastest-growing portion of Wisconsin. They have been able to finance most of their growth during the past four years, running into millions of dollars, by selling their 7 per cent notes and preferred stocks to Wisconsin investors. They have been given this magnificent home endorsement, during a period when other American utility companies found it difficult and often impossible to get new capital, because from their beginning—T. M. E. R. & L. Co. in 1896 and Wisconsin Gas & Electric in 1912—THESE COMPANIES HAVE KEPT FAITH WITH THEIR INVESTORS. Because they are legitimately capitalized and honestly managed, they have been able to meet every obligation on the due date, earn regular dividends and pay liberal wages under fair working conditions, while charging lower rates and fares than similar utilities in most other states.

Mail orders for Wisconsin Gas & Electric Company notes and preferred stock should be addressed to, and remittances made payable to, WISCONSIN GAS & ELECTRIC COMPANY, Securities Department, Public Service Building, Milwaukee, Wisconsin. Bank draft, certified check, postoffice or express money order should be sent with mail orders. Prompt delivery of notes or shares will be made by registered mail.

The Milwaukee office, Public Service Building, is open 10 p. m. to accommodate those who cannot come during the day.

Wisconsin Gas & Electric Company

APPEAL TO WISCONSIN INVESTORS

These home financing advertising campaigns are utilized to make the public acquainted with the needs of the utilities as public servants and their rights as companies of private investors. They have undoubtedly increased the good will asset of the companies. They have, moreover, by "selling the company" to its home public, helped to increase the profitable sales of electrical and gas appliances, as well as the state-regulated sales of fans and electric service.

\$22,500,000 Equipment Plan

One Hundred and Eighteen Electric Cars and Two Electric Locomotives Included in Proposed Financing

Approval of its \$22,500,000 equipment program is asked by the Southern Pacific Company in an application filed with the California Railroad Commission on June 11. Of this great expenditure for the improvement of the equipment and service of the company only a portion is to be allocated to the use of the company's systems, both steam and electrical, in California. The company states that it will identify at the hearing just what equipment is to be used exclusively in California service.

EQUIPMENT TRUST PROPOSED

The application recites that the company has entered into an agreement with Harry E. Righter, Andrew S. Hannum and the Commercial Trust Company under which the company leases the equipment needed for its service for a consideration of \$22,500,000, of which only \$15,000,000 will be issued at this time, payable in annual installments of \$1,250,000 each on June 1 of each year from 1924 to 1935 inclusive. The obligation carries with it the payment of dividends semi-annually June 1 and Dec. 1 of each year at 7 per cent, payable in New York without deductions for taxes other than federal income taxes.

DETAILS OF EQUIPMENT

The trust agreement shows that the equipment list includes seventy locomotives of different patterns, two electric locomotives, 2,000 box cars, 1,000 stock cars, 500 automobile cars, 1,000 flat cars, 250 ballast cars, sixty-five cabooses, twenty steel coaches and thirty steel baggage cars.

Electric equipment listed shows twelve motor cars for the Fresno Traction Company, fifteen for the Stockton Electric Railroad, twenty-two for the San Jose Railroad and sixty-nine for the Pacific Electric.

The California Commission is empowered to pass on the financing of equipment for intrastate use.

Net Earnings of P. R. T. Decrease

The Philadelphia (Pa.) Rapid Transit Company reports earnings as follows:

	May 1920	1919
Operating revenue...	\$3,379,183	\$3,984,982
Operation and taxes	2,406,209	1,982,980
Operating income...	972,974	1,102,001
Non-operating income	37,742	41,836
Gross income.....	1,010,716	1,143,838
Fixed charges.....	817,455	807,489
Net income.....	\$193,261	\$336,348
Five Months Ended		
	1920	1919
Operating revenue...	\$15,475,744	\$14,211,333
Operation and taxes	11,077,954	9,801,611
Operating income..	4,397,790	4,409,722
Non-operating income	198,310	230,522
Gross income.....	4,596,100	4,640,244
Fixed charges.....	4,083,158	4,045,645
Net income.....	\$512,942	\$594,599

Reorganization Planned

Security Holders of Suburban Line at Toledo Apparently Prepare to Foreclose

Bankers and individual holders of the \$300,000 of first mortgage 5 per cent gold bonds of the Toledo & Maumee Valley Railway, which matured on March 1, 1920, have started a movement to reorganize the company and take control from the Maumee Valley Railways & Light Company, a Doherty organization which has been operating the railway since 1913.

Frank R. Coates, president of the company, at the time the bonds became due, addressed a letter to all bondholders in which he offered to extend the time of the bonds one year on a 5½ per cent basis with option of a second year's extension, in order to allow the company to make up the deficit incurred in the last two years of operation. The bonds which were defaulted both as to principal and interest were issued under the terms of the original indenture made to the Metropolitan Trust Company, New York, trustee, Feb. 15, 1895.

Franchises expired in June and September, 1919, and since then fares and service have been readjusted to take care of decreasing income. From a net profit of \$10,329 in 1915 to a deficit of \$28,199 in 1919 is the record of the company under increased costs.

The motor trucks and automobiles have cut into the revenues of the company during the last few years. A belt line connecting Toledo with Maumee and Perrysburg, two up-river towns on opposite banks of the Maumee River, is operated by the railway.

Another factor in the decrease of earnings is the competition of the Toledo, Bowling Green & Southern line, which brings Toledo passengers from Maumee and those who walk across the river from Perrysburg at a rate of 7½ cents, while the Maumee Valley line is forced to charge them 15 cents for the same 10-mile trip. This cheap fare for a long ride is only half a cent more than a straight city fare.

Marion M. Miller is chairman of the bondholders' committee. He is president of the Home Savings Bank, Toledo. Other members of the committee are Frederick W. Stevens, Charles L. Reynolds, John D. Biggers and George B. Storer, all of Toledo.

Santa Barbara Road Ready to Quit

The finances of the Santa Barbara (Cal.) Suburban Railway are in a serious condition and the company may desire to give up its franchise unless some measures are adopted whereby at least operating expenses can be earned. These facts were developed at an informal conference which State Railroad Commissioner Martin held with the City Council and representatives of the railway.

R. Sasche, chief engineer of the Railroad Commission, presented a report of

his investigations into the company's affairs. He said that the company was facing an annual deficit of \$40,000. He declared that there was no prospect of increasing the business of the company in Santa Barbara; that for five years this business had remained stationary, while the expenses have been steadily increasing, and would largely increase during the next few years when the corporation would be called upon to make replacements.

Mr. Sasche suggested that the city take over the property of the company. He also suggested that by raising the fare to 6 cents the revenues could be increased by about \$15,000 annually and referred to the possibility of installing one-man cars, but explained that to substitute the one-man car the company would be obliged to invest \$50,000, which would tend further to increase the financial problems which it faces.

Stockholders of the company are also stockholders of the Southern California Edison Company, and they have made up the loss occasioned by the railway from the earnings of the Edison company because the power company stockholders had hoped the railway would eventually be placed on a paying basis.

Default in Interest Announced

Interest will be defaulted on July 1 on the 4-6 per cent bonds of the National Properties Company, Philadelphia, Pa., secured by deposit of certain stock upon which the dividend ordinarily payable on June 15 was passed. An announcement dated June 8 said:

Owing to the fact that dividend upon the stock pledged to secure these bonds (4-6 per cent secured gold bonds of the National Properties Company) and which would have been payable in ordinary course upon the fifteenth day of June next, has been passed, the National Properties Company will be without funds to pay the interest due upon July 1st upon its 4-6 per cent secured bonds, and default in payment of interest will occur upon that day. It is necessary for the protection and assertion of the rights of the holders of these bonds and the conservation of the value of the security pledged that concert and unity of action should be obtained. The undersigned have consented to act as a committee for this purpose and for the protection of the interest of all of the holders of the said 4-6 per cent secured bonds who shall become parties to an agreement which has been prepared, dated June 8, 1920, an executed copy whereof is lodged with the depository hereinafter named.

Holders of said bonds are requested to deposit the same with the Pennsylvania Company for Insurances on Lives & Granting Annuities, at its office, 517 Chestnut Street, in the city of Philadelphia, the depository named in the said agreement, not later than July 10, 1920, at three o'clock p.m., when the right so to do will cease. Said depository will issue transferable certificates of deposit therefore. All registered bonds must be accompanied with proper transfers thereof.

As soon as convenient the committee will prepare a plan and submit the same to the depositing bondholders, who will be afforded the opportunity of withdrawing their bonds from deposit in case of dissent from the plan. It is essential that speedy action be taken and the committee urges upon each bondholder the necessity for a prompt deposit of his bonds under the agreement. Copies of the deposit agreement may be obtained at the office of the Pennsylvania Company for Insurances on Lives & Granting Annuities.

This statement was signed by Evan Randolph as chairman of a protective committee of the bondholders.

Mr. Hedley Disarms Critics

Riding Habit in New York Increasing—Declaration of Dividends from Earnings Not Unfair to Car Rider

Frank Hedley, president of the Interborough Rapid Transit Company, New York, N. Y., has a short article in the *Magazine of Wall Street* for June 12, in which he discussed some of the points brought out at the investigation of the Board of Estimate. He also gives interesting facts about the operation of the lines. In regard to the investigation, he says:

The proceeding was not one in which the companies could, of their own motive, put on witnesses, either to give direct testimony or testimony in rebuttal of that given by preceding witnesses. The Interborough could offer testimony only by courtesy of the board, not as a right.

It is, therefore, not surprising that (especially in view of the public statements and announcement of final settlement by many of the members of the board before the proceedings had much more than begun) the published account of the testimony should have given the matter a sinister coloring.

Commenting on the declaration of dividends, particularly in 1917, 1918 and 1919, Mr. Hedley says:

But whether the declaration of the dividends was wise or unwise this much should be said:

(a) The dividends were declared from earnings, not from capital, hence were lawful in every respect.

(b) No funds to the use of which the public had a right were used as dividends. If the company was unwise, it was at the expense of its security holders. To hold that the company should have used its money, earned from former years, to meet increased operating expenses due to the war is to hold that the car rider should not be expected to pay the added cost of his ride by an adequate fare, but that the added cost of his ride should be given to him out of the company's surplus at the expense of investors. There is no legal foundation for such a claim.

It is true that a more conservative dividend policy—if its wisdom could have been as clear then as now—would have strengthened the company's present position, but it is not true the car rider would have had any fair claim upon the company's reserve resources in disregard of the rights of investors.

Even had such dividends not been declared the problem of payment for the added cost of riding would still have arisen, a problem which can be solved equitably and right only when the car rider pays the proper cost of his ride.

Mr. Hedley also said that in 1872 the number of rides taken by every inhabitant of the city on an average was 147 a year. In 1910 it had increased to 221; in 1915 to 345; in 1919 to 370, and is now estimated to be about 380 a year.

New Interests in North American Company

Harrison Williams and associates have purchased a large block of stock of the North American Company owned by the Campbell estate and Festus J. Wade, St. Louis. At a directors' meeting, Festus J. Wade, A. B. Boardman, E. G. Burkham and Morton Jourdan, representing the Campbell estate and Wade holdings, resigned. The following directors were elected to fill the vacancies caused by the resignations and the existing vacancy: Harrison Williams, Clarence Dillon, George P. Miller, Edward H. Wells and Frank L. Dame. Mr. Dillon is connected with William A. Reed & Company, bankers, New York. Mr. Wells is with the Worthington Pump Works. Mr. Miller is a Milwaukee banker.

Six Dividend-Paying Roads in Massachusetts

Six electric railways in Massachusetts have paid dividends of at least 5 per cent for five successive years and have thereby made their bonds legal investments for savings banks.

The list includes the Boston & Revere Electric, East Middlesex, East Taunton, Fitchburg & Leominster, Union of New Bedford and West End of Boston. The only change from last year is the addition of the Fitchburg & Leominster Street Railway.

Of the companies named, only three are operating companies, the East Taunton, Fitchburg & Leominster, and Union. The remaining three are operated under lease by other companies.

Congress Failed to Act

Congress adjourned without enacting legislation changing the form of taxation for the local railways in the District of Columbia. This probably will result in the Washington Railway & Electric Company falling several hundred thousand dollars short of earning 6 per cent on its valuation this year. In raising the fare to four tickets for 30 cents, or 8 cents cash, the utilities commission stated that the balance of \$300,000 which it was estimated would be needed to permit the company to earn 6 per cent on its fair value should be made up by an act of Congress changing the method of taxing the companies. The proposal which the commissioners made to Congress was to abolish the tax on gross revenues and tax only net revenue in excess of 6 per cent.

\$401,017 in Taxes in Dispute

Suit has been brought by the city of Seattle, Wash., and the Puget Sound Traction, Light & Power Company, to enjoin King County from collecting \$401,017 taxes assessed in 1919 on the municipal railway. The city and the company contend that the railway was public property at the time of assessment, and therefore not subject to taxation, while the county holds that at the time of assessment, March 15, 1919, the city had not taken title to the lines and that the assessment was valid.

At the time the city purchased the railway lines of the Puget Sound Traction, Light & Power Company, it was agreed that in event the taxation was found valid, each should pay a proportion of the tax based on the time the property was in its possession. This would mean that the company would pay one-fourth of the tax, and the city three-fourths.

Former State Tax Commissioner Jackson admitted, upon cross-examining by Attorney Howe for the Puget Sound Company, that no other street railway property in the State was assessed at the time, March 15, 1919, when he assessed the Seattle railway system. All other street railway properties, he admitted, were assessed after

April 1. Attorneys for the company and the city contend that the ownership of the railway passed to the city before the date on which it legally could be assessed by the State Tax Commissioner.

Financial News Notes

\$98,584 Profit in Boston in May.—The Boston (Mass.) Elevated Railway operated at a net profit of \$98,584 in May. The net deficit to be overcome on May 31 was \$412,492.

Trolley Lines Discontinued.—The Malden-Revere and Malden-Salem lines of the Eastern Massachusetts Street Railway, Boston, Mass., have been discontinued owing to the inability of maintaining them on a paying basis.

Order of Sale Entered.—Judge George E. Hinman in the Superior Court at Norwich, Conn., has issued an order allowing Robert W. Perkins, receiver of the Shore Line Electric Railway, to dispose of all of the property of the company at public or private sale for junk or as the road stands for future operation. The order is understood to apply only to that section of the property from Flanders Corners, East Lyme, to New Haven.

Preferred Dividend Deferred.—At the recent meeting of directors of Republic Railway & Light Company, New York, N. Y., no action was taken on the regular quarterly dividend of 1½ per cent on the preferred stock. Although the earnings of the company for the last quarter have shown substantial increases over the corresponding period of last year, the directors felt that in view of pending financing the cash resources of the company should be conserved and used for necessary construction.

Foreclosure Proceedings Begun.—Papers have been filed in the Queens County Clerk's Office in an action to foreclose a mortgage of \$800,000 on the property of the New York & North Shore Traction Company, Roslyn, Long Island, N. Y. The company was compelled to suspend operations last February because the Board of Estimate of New York City refused to sanction an increase in fares. The plaintiffs in the action are the Citizens Savings & Trust Company and Edward V. Hale, Cleveland.

Large Bond Issue for Springfield Company.—Attorney B. W. Warren on behalf of the Springfield Street Railway has petitioned the Massachusetts Department of Public Utilities for authority to issue bonds for \$3,045,000. The money derived from these bonds is to be used for the payment of loans covering additions to the property, amounting to \$207,000; \$232,700 for working capital, \$75,000 for repayment

of loan for the purchase of the Woronoco Street Railway, \$300,000 for extensions to the property and \$2,230,000 for the retirement of funded debt.

Plan for City to Share Deficits.—Mention has been made previously in the ELECTRIC RAILWAY JOURNAL of the poor financial showing of the Gloucester lines of the Eastern Massachusetts Street Railway, Boston. So critical did the situation become that the trustees of the company served notice of their intention to suspend operation of the lines on June 20. In consequence a mass meeting was held at Gloucester on June 5. At that time residents went on record informally as being opposed to rendering any financial assistance to the company. As the time drew near for shutting down the road another meeting was called. This time the company, of its own volition, suggested that for the future the deficits be shared 50-50 between the city and the company. The proposed plan will not be retroactive. It will apply to the ensuing year. Up to June 15 the latest proposal had not been passed upon.

Permission for Refunding Issue Sought.—Rolla Wells, receiver for the United Railways, St. Louis, Mo., in a hearing before Special Master Lamm requested permission to issue receiver's certificates to the amount of \$4,000,000 to take up the bonds now due on the Broadway line and other securities maturing in the near future. Figures based on the expenditures of the United Railways up to June 16 and on the findings of the last fare order of the Missouri Public Service Commission, with an estimate of the expenditures for the remainder of the year, were submitted by the auditor for the receiver. The statement based on the Public Service Commission's order gives the gross estimate for the year at \$19,965,999 in revenue, total expenses \$16,311,522 and the balance \$3,554,477. A later estimate by the auditor for the receiver gives the receipts for the year at \$14,953,319, expenditures \$15,946,662, leaving a deficit of \$993,343.

Form of Detroit "Public Utility Bond."—According to a Detroitier who is well acquainted with the subject of stocks and bonds, the proposed "public utility" bonds of the city of Detroit, to be issued in connection with the construction of its proposed municipal railway system, are issued on the faith and credit of the city. While the municipal ownership provision of the charter states that the rate of fare must be such as to pay operating expenses, interest on the bonds and to retire the bonds themselves, the people cannot be forced to ride if the rate of fare necessary to do all this should be deemed excessive. Hence, if and when a deficit occurs, it must be met out of taxation. Another course would be to issue bonds against the property itself, but the issuance of such bonds is not possible except by approval of the people, to whom must be presented the terms of the franchise. Such a proceeding was not involved in the recent vote.

Traffic and Transportation

Ten Cents in Michigan

Wage Increase Predicated on Increased Fare—Maximum 62 Cents for City and 70 Cents for Interurban

It was noted in the issue of the *ELECTRIC RAILWAY JOURNAL* for May 29 that the trainmen of the Michigan Railway had demanded 75 cents and 80 cents an hour on city lines and 85 cents and 90 cents an hour on interurban lines, with double time for overtime work. As the company was unable to come to an agreement with the men, John F. Collins, vice-president and general manager, took the matter up with the Chambers of Commerce of the various cities and also the city authorities, advising them that it would mean bankruptcy for the railway to meet the demands of the men unless a substantial increase in rates were granted.

JACKSON MAYOR TAKES ACTION

The Mayor of Jackson called a meeting of the Mayors of Owosso, Kalamazoo, Battle Creek and Lansing, in which cities the company operates city lines. In consequence it was agreed that the wage question should be arbitrated and that the rate of fare should be referred to the Michigan Public Utilities Commission.

An arbitration agreement was drawn up whereby the company was to select one arbitrator, the employees another and the third was to be selected by the several Mayors. Justin Whiting, Edward Whittaker and Frank T. Bennett were the three arbitrators, respectively, so selected.

The Public Utilities Commission refused to set up a temporary rate for the various cities, but agreed to establish a permanent rate if the case were presented to it according to law by the railway and the officials of the various cities. As a result the company was compelled to take the matter of a temporary rate up with the individual cities.

CITY APPEALS TO COMMISSION

Battle Creek refused to grant the increase in fare requested. The city insisted that the Public Utilities Commission set the rate. After further negotiations the commission finally did set a temporary rate, which the Battle Creek City Commission later put into effect. The rate which the company is now charging on this temporary basis in the five cities of Owosso, Lansing, Jackson, Battle Creek and Kalamazoo is a 10-cent cash fare, with four tokens for 30 cents and 5 cents for children between the ages of five and twelve years. Kalamazoo offered the company a rate of three tokens for 25 cents, but owing to the fact that it was impossible to get this rate in the other cities

the company voluntarily agreed to cut the rate to that mentioned above.

The board of arbitration met promptly. It decided that motormen and conductors on city lines should receive a wage for the first year of service of 60 cents an hour and 62 cents an hour thereafter. Interurban trainmen were awarded 65 cents an hour for the first six months of service and 70 cents an hour thereafter.

WAGES DEPENDENT ON FARES

One of the conditions of the arbitration agreement regarding wages was that the company would be unable to pay the rate of wages awarded to the trainmen in any city where it was not able to collect the 10-cent cash fare, with four tickets for 30 cents. The company also stipulated that should any of the cities rescind the ordinance with regard to the rate of fare, the wages of trainmen in that city would go back to the old rate, which was 40 cents an hour for the first year and 42 cents thereafter.

Suburban Line Charges Seven Cents in City

A 7-cent fare on the lines of the Seattle & Rainier Valley Railway inside the city limits of Seattle, Wash., became effective on June 12, by order of the State Public Service Commission. Fifteen ticket tokens are being sold for \$1, according to a provision of the schedule, but these tokens do not carry transfer privileges.

The new schedule eliminates commutation tickets to Renton, which have been sold at the rate of two for 25 cents. The fare in either direction is now 15 cents. The present arrangement between the Rainier lines and the Seattle Municipal Railway regarding transfers will not be affected by the fare changes until the fare on the municipally owned lines is increased to 10 cents. It now costs a passenger who transfers from a city line to a Rainier Valley car an additional 3 cents when he presents his transfer on the Rainier car, and an additional cent when he obtains a transfer from a Rainier car to a city line. The new 7-cent fare is effective only within the city lines of Seattle.

The Rainier Valley lines are divided into three zones. The first zone terminates at the city limits at Amherst Street. It now costs 7 cents to ride to that point. Passengers who travel into the second zone, which terminates beyond the town of Bryn Mawr, continue to pay a 10-cent fare. Those who ride into the third, or Renton zone, pay the present 15-cent fare. Persons who ride between two points within either of the two outlying zones pay a 5-cent fare, as in the past.

Eight Cents in Portland

Oregon Commission Authorizes Increase After Failure of City to Extend Aid to Company

Fares in the city of Portland, Ore., were increased from 6 cents to 8 cents on June 15 by an order issued by the State Public Service Commission. The findings of the commission held that the new rate was necessary in order to increase the revenue of the Portland Railway, Light & Power Company to meet its expenses, since the voters of the city at the recent election failed to pass any of the measures planned to extend relief to the company.

Under the new rate tickets in books of fifty coupons are \$3.65 a book, an increase of 90 cents over the old rate. Tickets in strips of six coupons sell for 45 cents. School children will continue to ride for a 4-cent cash fare, with a book of twenty-five tickets for \$1.

VOTERS' ATTITUDE SCORED

The commission states that the failure of the citizens to adopt any of the suggestions put before them in the form of measures at the recent election is the indirect cause of the increase. Had the measures carried, the report states, the valuation of the railway system would have been lessened by several million dollars and reductions in operating expenses made possible which would have brought about a saving to car riders of several hundred thousand dollars.

The decision handed down by the commission followed nearly a year of consideration. The original application for an increase was filed by the company on Aug. 15, 1919. During the fall a vast amount of data was gathered and a thorough investigation of the company's receipts, expenditures and valuations made. As a result of these investigations the commission arrived at the conclusion that either greater revenue or less expense for the company must be provided, and chose the latter method as preferable if it could be brought about.

When the relief measures proposed by the commission and city officials were completely snowed under at the election on May 21 the company immediately pressed its claim for higher fares. These measures would have relieved the company of certain paving and franchise charges. Their defeat by the voters was decisive.

RAILWAY DIVISION ON OWN FEET

The suggestion that the profit which the company is declared to make from its electric light and power business be used to make up the deficit from the operation of the railway is not looked upon with favor by the commission in its report. On this point the commission said:

The principle of permitting one branch of a utility's operation to support another and totally different service is wrong. Finally, the facts before us show conclusively and beyond question that the light and power division of the utility is not financially able to be of assistance to the railway.

Eight Cents on Chicago Surface Lines

Utilities Commission Heeds Companies' Plea for Immediate Relief Pending Fixing of Permanent Rate

An 8-cent fare, effective July 1, was allowed the Chicago (Ill.) Surface Lines by the Illinois Public Utilities Commission in an order dated June 19. The commission held that the 6-cent fare, which had been in force since last December, was no longer adequate to meet the situation and that an 8-cent fare must be allowed "even if we were to hold against the applicants upon every doubtful question in this case." The necessity of rehabilitating the system's credit, the increase of \$6,000,000 in operating expenses incidental to the pay raise of 15 cents an hour to all trainmen on June 1 and the prevalent high prices for materials and supplies were given as reasons for allowing the increased rate.

THE commission held out one specific hope of fare reduction in the near future. It suggested that the city commute its share of the net receipts, which under the 1907 ordinances go into the city treasury, and that the companies be permitted to keep this sum, amounting to about \$2,000,000 annually, in return for a reduction in fares. Representatives of the City Council have indicated that no such relief may be looked for.

PROMPT ACTION NECESSARY

The latest order of the commission is another temporary arrangement. Final arguments in the valuation proceedings were presented on June 17, and as the record is quite voluminous the commissioners decided that relief should not be withheld while a study of the experts' figures was being made. Therefore, they said:

In the light of the record now before us and in the view of present economic and financial conditions \$10,500,000 is the lowest amount which can be said to represent a fair return upon the fair value of the property of the applicants used in the public service. This is a return of 7 per cent upon a valuation of \$150,000,000, of 7½ per cent upon a valuation of about \$140,000,000 and of 8 per cent upon a valuation of approximately \$131,000,000. It is not necessary that a complete valuation of applicants' property should be made to determine that the applicants are entitled to put in force a rate of fare which will produce the smallest return to which it can be said, in any view of the evidence, they are reasonably entitled.

It was estimated that the requirements for operating expenses, including reserve for depreciation, for the year ending Jan. 31, 1921, would be about \$42,600,000, and that under a 6-cent fare the gross earnings would be only \$47,000,000. This would leave about \$4,400,000 for return. Receipts for the same period under an 8-cent fare are estimated at \$55,800,000. After deductions for operating expenses and the city's share, the amount left for the companies would be about \$10,315,000.

FEARS SERVICE BREAKDOWN

The commission stated that the inevitable result of the continuance of the 6-cent fare would be the appointment of receivers for the property, the disruption of unified service in Chicago and great injury not only to the companies but to the public also. "Obviously, this will not inure to the public welfare," the order stated. It was set forth that in granting this relief at this time the commissioners had in mind the restoration of the financial credit of the companies and

that the applicants having been granted the full measure of relief sought by them would be expected and required to furnish to the people of Chicago adequate and efficient service. It was further stated that in determining the rate to be finally authorized in this proceeding consideration would be given to the steps taken by the companies to improve their service.

Discussing the rate of return, the commission said:

It is not reasonably possible to place upon the property of the petitioners used and useful in the public service a lower valuation for rate-making purposes than the sum of \$140,000,000, and 7½ per cent is as low a rate of return as should be allowed in this case under present economic and financial conditions.

A lengthy discussion was started by the suggestion of the commission that the city's share of the profits be commuted into a reduction of fares. Under the 1907 ordinance the city has collected in the past thirteen years about \$25,000,000 from the surface companies. The city has the right under the ordinance to commute a sum not exceeding its share of the net receipts for the previous year into a reduction in fares.

DISAGREEMENT ON VALUATION

Various figures on valuation were presented. A. L. Drum estimated that the reproduction cost at prices of April 1, 1920, was \$247,246,637, while the valuation averaged over a seven-year period was \$176,588,415. The "going concern" value was placed at \$33,236,187. The companies' experts would allow 17.93 per cent for depreciation, while the city's figure was 25.21 per cent. The companies also have in the renewal fund about \$10,000,000. The Surface Lines, however, asked the commission to allow a value of \$159,113,114, which is the amount of the capital account or purchase price brought up to date by the Board of Supervising Engineers. Witnesses for the city claimed that the value does not exceed \$129,000,000, eliminating various items such as money invested in property discarded since 1907. There was a difference of \$14,035,994 between the city and the company claims as to cost of reproduction.

At the close of the companies' case a memorial addressed to the commission was presented by the Chicago Association of Commerce and a number of other civic organizations asking that reasonable rates be established for all public service. This statement is represented in full elsewhere in this issue.

As soon as the decision of the commission was made known interest was revived in Mayor Thompson's plan for "people's ownership and operation" of the car lines. This plan has been under consideration by a special committee for several months in the hope that arrangements can be made for taking over the surface line in exchange for a new form of city security and giving service for a 5-cent fare. The city authorities have tried to block the companies several times in the courts, but all important rulings have sustained points decided by the commission. This has made the politicians turn to the 5-cent fare slogan in the hope that the Mayor's plan may be approved and that the State Legislature will be forced to pass enabling legislation.

Emergency Rise Sought

Pacific Electric Railway Applies for Increase on All Its Lines—Asks Seven Cents in Cities

Stating that its earnings for the year 1919 fell short by \$2,600,000 of meeting operating expenses and fixed charges, the Pacific Electric Railway, Los Angeles, Cal., on June 11 formally applied to the State Railroad Commission for an increase in fares over its entire system. The company asked permission to charge emergency rates pending the fixing of permanent tariffs.

The commission was asked to institute a thorough investigation of the system's operations, service, rates and general affairs with a view to arriving at a just basis for the fixing of permanent rates. In its application the company placed a valuation of \$75,000,000 on its property. It estimated that for the current year it would fail to meet operating expenses and fixed charges by more than \$2,400,000. It pointed out further that it had never paid a dividend on its capital stock.

The company asked permission to charge the following emergency rates:

Increase in all 5-cent fares in cities outside of Los Angeles, including Pasadena, Long Beach, Pomona, Riverside and San Bernardino, to 7 cents.

Fares in Los Angeles City to be increased by creating two zones inside the present 5-cent fare limit, the inner zone to extend approximately 2½ miles from the center of the city and to have a 5-cent fare, the second zone to cover the remaining portion of the present 5-cent limit territory and to have a 7-cent fare.

Fares between the center of the city and the outside zone, beyond the proposed 7-cent limit, to be 10 cents or five tickets for 40 cents, without restrictions as to use. School tickets in Los Angeles and other cities where local service is given by Pacific Electric lines to be increased from 2½ to 3½ cents a trip.

One-way interurban fares to and from Los Angeles to be raised 5 cents each and round-trip interurban tickets to cost 10 cents more each in connection with the increase of local fares in Los Angeles, upon which interurban fares are based.

The company also asks that the commission take cognizance of its application jointly with others for an increase of 23.91 per cent on its freight rates and asks that its freight rates be increased and adjusted to a parity of the freight rates on steam railroads competitive with its lines.

Relative to the company's application

H. B. Titcomb, vice-president of the Pacific Electric, said:

With only 5 per cent more employees in 1919 than during 1916, the payroll increased, comparing the two years, \$2,731,734, or more than 78 per cent. Recently an additional increase has been granted, so that during the next twelve months the payroll will show, on the basis of the same number of employees, an increase of 100 per cent, or \$3,500,000 over the calendar year 1916.

The Pacific Electric purchases all of its power from a power company, and the need of the latter for increased revenue has necessitated the Railroad Commission granting it an increase of its rates to its consumers, with the result that increased power cost to the Pacific Electric will be about 48 per cent, or in excess of \$500,000 a year.

In the company's application to the Railroad Commission is brought out the company's desire of getting its interurban trains off the street surfaces in the central section of Los Angeles. The company has stated its readiness to proceed with this work in large degree whenever permission is granted. In other words, notwithstanding the company's lack of earning power it is its belief that the situation justifies the extension of its elevated line from the rear of the Pacific Electric Terminal across the Los Angeles River.

Sliding Fare Plan Suggested

A new ordinance, providing for a sliding scale of fares, has been prepared for introduction in the City Council of Akron, Ohio, in which city the Northern Ohio Traction & Light Company operates. According to this ordinance all returns from fares will go into a general fund from which operating expenses, except maintenance, renewals and depreciation will be deducted.

If in any year there should be an excess of gross revenue over operating expenses, such excess each year up to 5 per cent of the capital value of the company is to be placed in a "maintenance and renewal" fund for the purpose of maintenance, renewals and replacements due to depreciation.

Any excess over the expense of operation and the amount applied to the maintenance and renewal fund is to be placed to the credit of an income fund, up to 7 per cent of the capital value, to provide an annual return on the capital investment. This is to be paid in semi-annual installments.

Revenue over and above the expense of operation and the amounts credited to the two funds named are to be placed in a reserve fund until it has reached the amount of \$400,000. When this amount has been reached, it is to be distributed as follows: 20 per cent to the company, 20 per cent to the city, and 60 per cent to a fund for the reduction of fares.

If at any time this fund exceeds an amount equal to 1 per cent of the number of passengers carried the previous year, the cash fare will be reduced 1 cent and remain at that point for six months. In case the fund falls below \$50,000 the rate will be increased 1 cent. The sliding scale will cover a range of fares from 3 to 10 cents. Other provisions of the plan follow:

Company to keep the paving in repair.
Council to route cars and fix schedules.
Council may order line extensions.
Council may designate the number of cars to be run.
City to appoint a utilities commissioner, whose salary will be paid by the company.

All disputes between the city and the company will be subject to arbitration.

Ten Cents Cash in Seattle

Council Prepared to Go Even Farther with Fare Boost Than the Mayor

An ordinance passed by the City Council of Seattle, Wash., provides for a fare of 10 cents on the lines of the Seattle Municipal Railway, with metal fare tokens for sale at 6½ cents each, or four for 25 cents; eight for 50 cents, or sixteen for \$1. Mayor Hugh M. Caldwell has signed the measure, which will go into effect on July 19. It was at first believed that the Mayor would veto the bill; in that case it was planned by members of the City Council to pass the act as a thirty-day ordinance rather than an emergency measure, when it will require only six votes to make it a law, without the Mayor's approval. Besides a straight 10-cent fare, the ordinance provides for a 7½-cent cash fare for each of two persons riding together, free transfers with cash or token fares; 3-cent fares for school children, except that two may ride for a nickel; ten school tickets for 25 cents.

THE metal tokens, costing 6½ cents, will be on sale on all cars in lots of four, eight and twelve, but not singly. It was on the point of where the tokens would be obtainable that the Council held up action, it being the general opinion that the tokens must be placed on sale on the cars. D. W. Henderson, superintendent of railroads, states that he believes no undue delay will result from the sale aboard the cars, but if this develops arrangements will be made to sell the tokens at downtown stores. An order has been placed for 2,000,000 tokens.

STEADY RIDERS FAVORED

The ordinance which was finally adopted by the Council replaced the former ordinance of Councilman R. H. Thomson, calling for 7-cent fare, with fifteen tokens for \$1. It was feared the 7-cent fare would unnecessarily delay traffic in the making of change. It is pointed out that the 10-cent fare, with sixteen tokens for \$1 for the regular car rider, will place a greater burden of maintaining the lines on the irregular or occasional rider.

According to figures prepared by Mr. Henderson, the increased fare will result in additional annual revenue of \$1,478,280, sufficient to operate the railway without loss and to pay the interest and meet the installments on the \$15,000,000 of obligations which the city incurred in the purchase of the system.

BIG REVENUE GAIN EXPECTED

Mr. Henderson figures that a loss of approximately 10,000 passengers a month will result from the increase in fares. He estimates 8,480,000 passengers will ride on the city cars a month on the 6½-cent token. This would bring in a monthly revenue of \$530,000. It is estimated that the number of persons expected to take advantage of the two-for-15-cent fare will provide revenue of \$5,000 per month.

The receipts from 10-cent fare passengers are expected to total \$30,000 a month. The total estimated monthly revenue under the proposed plan would be \$533,375, an increase of \$123,190 over the present monthly revenue of \$410,185. The additional revenue will represent a gain of 30 per cent.

The question of higher fares has been under consideration by the municipal

authorities for several months. Mayor Caldwell was at first opposed to any advance in the rate. He later advocated a fare of 6 or 7 cents as the most equitable means of providing relief to the city lines.

Three-Cent Transfers Soon on P. R. T.

Although no official announcement has been given out by the Philadelphia (Pa.) Rapid Transit Company, on the subject of increased fares, reports in the Philadelphia newspapers indicate that the proposed 3-cent charge for exchange tickets will go into effect on July 1. It had previously been stated that opposition of certain of the company's directors to the Mitten plan of a universal transfer charge would result in the P. R. T. asking for a flat increase in fare.

Opposition to a fare increase or to an extension of the transfer charge was voiced in a report submitted to the City Council on June 22 by Col. Sheldon Potter and William Hancock, city members of the company's board of directors. The report contended that it would be better for the company to go into bankruptcy than for the city to come to its rescue to preserve the present financial structure of the system.

It also protested against the form of the proposed fare increase, alleging that the term "5-cent fare" employed by Mr. Mitten means in reality "a fare of 5 cents for each zone traversed, and that is quite a new meaning, and one which would not surprise traction managers if they understood what Mr. Mitten was talking about." It was contended in the report that the 3-cent charge for "exchanges" would net the company an increase of \$3,000,000 a year, while the company needs \$5,000,000 merely to maintain the present standard of service.

Announcement was made on June 23 that the State Public Service Commission would immediately order the company to make a number of changes in car routing to relieve congestion in the business district. In addition, sweeping changes in automobile parking regulations will be made shortly. The changes in routing are the result of a comprehensive study by the commission of local traffic conditions.

Traffic May Be Speeded Up

Plan Successful in Detroit in Facilitating Handling of Railway Traffic May Be Tried in Milwaukee

The committee on acquisition of public utilities of Milwaukee, a public body consisting of representatives of the City Council and of others, has recently received the report of a special committee sent to investigate traffic conditions in Detroit. As a result of this report the Milwaukee police department will be asked to co-operate in expediting the movement of electric railway cars in the congested districts.

Industrial plants will be asked to co-operate with the Milwaukee Electric Railway & Light Company, by notifying the company of changes in working hours and in every other possible way. Attempts may later be made to arrange working hours in the various industrial establishments in the city so that the workmen can be handled either before or after the rush hours for office and business establishments. In other words, an attempt may be made to introduce the "staggered" hour system.

MAY TRY QUEUE LOADING

As a result of the study of Detroit methods, experiments may also be conducted at certain Milwaukee industrial plants with the "queue" plan of car loading, employees being asked to line up in boarding cars. If this is found to expedite traffic it will be tried out in the down town district during rush hours, as is done in Detroit.

The investigating committee found that for several years the downtown railway traffic in Detroit had been given preference over traffic arising from industrial plants. This policy made it necessary for industrial concerns in Detroit to place their hours of opening and closing at such times of the day that the Detroit United could furnish them the service which they desired, or else the industry had to take its chance with the regular service. This practice of separating the industrial peak from the downtown and office peak enables the Detroit United to obtain double use of practically all of its equipment during both the morning and evening rush hours.

The investigating committee points out, however, that the general working conditions in Detroit at the present time, namely, eight-hour shifts with twenty-four hour operation, are favorable for the staggering of working hours. The committee also points out that faster and more uniform loading of cars with less inconvenience and discomfort to passengers is made possible by the Detroit method of loading.

Six-Cent Fare Retained

After a period of uncertainty the British Columbia Electric Railway, Vancouver, B. C., has received permission to continue charging a 6-cent fare on its lines in Vancouver, New Westminster and North Vancouver. The

company was granted a 6-cent fare in July, 1918, under an agreement with the various Councils in the districts in which it operates, but this permission was granted only until a Public Utilities Commission to be formed in the Province of British Columbia could adjudicate upon the matter.

The commission last year started its hearings, but, owing to a political controversy, the commission was dissolved. In the meantime the railway lines of the company had been taken from the jurisdiction of the province and placed under the Dominion Railway Commission by an act of the Dominion Government.

Since the discontinuance of this act efforts have been made to have the company brought back under provincial jurisdiction, but since the commission was dissolved this would have the effect of throwing the company back on the terms of the original franchises, which provide for a 5-cent fare. The company opposed such a measure, and while the Dominion Government has removed the system from its jurisdiction, it has continued the 6-cent fare for another year by which time the provincial legislature may have appointed another commission to hear the matter.

Transportation News Notes

Eight Cents in Butte.—The Butte (Mont.) Electric Railway has been authorized by the State Public Service Commission to charge a straight 8-cent fare on its lines. The new rate went into effect on June 10.

Eight-Cent Fare Asked.—The Fairmount Park Transit Company, Philadelphia, Pa., has applied to the Fairmount Park Commission for permission to raise its fare from 5 cents to 8 cents. The company's line is 8 miles in length.

Wants More on Georgia Road.—Application has been made to the Georgia Railroad Commission by the Fairburn & Atlanta Railway & Electric Company, Fairburn, for an increase in fare from 6 cents to 7 cents in each zone. There are four zones on the company's line.

Higher Ticket Rate Authorized.—Ticket rates were raised on the lines of the Massachusetts Northeastern Street Railway, Haverhill, Mass., on June 16, under authority of an order issued by the State Department of Public Utilities. Under the new schedule six tickets are sold for 50 cents instead of five for 30 cents. Cash fares remain at 10 cents.

Trolley Freight to Be Discontinued.—The Eastern Massachusetts Street Railway, Boston, Mass., has announced the discontinuance of its trolley freight business. The reason given by the com-

pany for this move is that this department is unprofitable. The freight cars will be transformed into snow-fighting equipment.

Publicity for European Food Drafts.—The Interborough Rapid Transit Company, New York, prints in its June *Bulletin* a notice from the American Relief Administration explaining how food drafts, payable in Warsaw, Hamburg, Vienna, Prague and Budapest, can be bought and how much food will be furnished for \$10.

Labor Shortage Forces Shutdown.—The scarcity of labor in Jackson, Tenn., resulted in a suspension of service on the lines of the Jackson Railway & Light Company on June 14. The company was unable to obtain sufficient colored help to operate the boilers in power plants. During the past year it has been unable to obtain steady colored labor, although greatly increased wages are being offered.

Seven Cents on Jersey Line.—The Five Mile Beach Electric Railway, Wildwood, N. J., has been granted permission by the Wildwood City Commission to increase its fare from 6 cents to 7 cents. The company announced that it would have to suspend operations unless the increase was granted. Other towns along the line have given permission for an increase in rates and the matter is now pending before the State Board of Public Utility Commissioners.

Halts Long Island Increase.—Deputy Public Service Commissioner Alfred E. Barrett, of the First District, has issued an order suspending a proposed increase in fares which the Long Island Railroad, New York, N. Y. planned to put in effect on July 1. A thorough investigation of the proposed rate increase will be made by Commissioner Barrett. While the Long Island Railroad has the charter right to make a charge of 3 cents a mile, it must submit any rate increase to the commission.

Refuses London Increase.—By a vote of six to three the City Council of London, Ont., recently rejected a proposed bylaw to permit the London Street Railway to raise its fares to 5 cents and to sell seven tickets for 25 cents. On the proposed ordinance was to be based an agreement with the company, the increased revenue to go toward higher wages for the men and any surplus to be placed to the credit of the city as a special fund.

Higher Fare in Evansville.—The Public Service Commission of Indiana has authorized the Evansville Street Railway to charge a 6-cent fare with twenty tickets for \$1 for a period of sixty days. The new fare rate went into effect on June 1. At the end of the sixty-day period, the company's financial condition will be investigated by the commission, and it is expected that a permanent financial basis will be worked out at that time.

Orders Higher Power Rate.—Finding that the rate of 1½ cents a kw.-hr. for power furnished by the Monmouth

Lighting Company to the Jersey Central Traction Company, Keyport, N. J., is unduly low, the State Board of Public Utility Commissioners has ordered that the rate be increased to 2 cents. The board stated that it should not be construed that it obligated itself thereby to authorize an increase in fare which has been requested by the Jersey Central Traction Company to absorb the increased cost of operation resulting from the higher power charge.

Ten-Cent Fare in Danbury.—Ten-cent fares are now being charged on all the lines of the Danbury & Bethel Street Railway, Danbury, Conn. The increase in fare was made necessary by the wage increase recently granted to the employees. The company is selling twenty-five tickets for \$2. These tickets are good for all rides within the city limits up to 6.30 p.m. except on holidays and Sundays. J. M. Ives, receiver of the company, has announced that service throughout the system will be immediately improved.

Ten Cents in Santa Cruz.—By an order of the California Railroad Commission issued on June 9 the Union Traction Company, Santa Cruz, was authorized to increase its fare from 6 cents to 10 cents. The company was also authorized to sell books of tickets containing eight coupons for 50 cents. The company has been losing money, the loss in 1919 being \$6,074. The company is required to set aside in monthly installments \$15,000 a year to provide for depreciation and it is also required to submit a new scheme of accounting for approval by the commission.

Seven Cents in Springfield.—Fares on the lines of the Springfield (Mo.) Traction Company were raised from 5 cents to 7 cents on June 20 by order of the State Public Service Commission. Four tickets are sold for 25 cents, while the rate for children is placed at 3 cents. The new fares will remain in effect for seven months unless the commission later extends the time. The company must, at the end of six months from June 20, submit statements showing earnings and expenditures for each month in that period, including reserve set aside and net earnings available for interest charges, dividends and surplus.

Six Cents on Dallas Lines.—The City Commission of Dallas, Texas, on June 24 unanimously passed an ordinance granting the Dallas Railway a 6-cent fare. The measure carried an emergency clause and went into effect at midnight on June 25. It grants a straight 6-cent fare with universal transfer privilege as under the old franchise. Tickets outstanding are to be accepted as fares and new tickets are to be sold in convenient numbers at 6 cents each. The company obligates itself to buy fifty new double-truck cars within ten days to be put into immediate service.

Wants Curb on Buses.—The Worcester (Mass.) Consolidated Street Railway has forwarded to the State Department of Public Utilities a petition asking

that the department restrain jitney buses from interfering with its cars at white posts and from "stealing" passengers. The petition further asks the department to require jitney owners to file a \$1,000 bond for each passenger a jitney will hold. Under the new law that went into effect May 1, if any street railway objects to jitney regulations of any town or city it may apply to the public utilities commission, within thirty days of the passage of the law, for intervention against the practices of the competitors against whom the railway complains.

Will Ask Louisville Rise.—Recommendations that the Louisville (Ky.) Railway be allowed to increase its fare will shortly be submitted to Mayor Smith by the committee which has had the company's affairs in charge since the resignation of Thomas J. Minary, as president, several months ago. The committee is preparing its report prior to turning over the management of the company to James P. Barnes, recently elected president. Mr. Barnes is expected to arrive in Louisville about July 1. Last year the company applied to the City Council for an increase in fare from 5 cents to 7 cents. The application was denied, but the company was given to understand that if at the end of four months the system was still in need of additional revenue, the city authorities would entertain a second application for relief.

Must Continue Freight Service.—A petition of the Birmingham Railway, Light & Power Company, Birmingham, Ala., to discontinue its freight service between Birmingham and Bessemer and between Birmingham and Ensley on all shipments of less than carload lots, has been denied by the Alabama Public Service Commission. The company was granted an increase in its freight rates of 25 per cent. At a hearing before the commission J. S. Pevear, general manager of the company, testified that the road was losing approximately \$3,000 a month on its freight service to Bessemer and Ensley. He maintained that the loss was due to the heavy inroads of truck traffic on the company's freight business and stated that even an increase in rates would not put the freight service on a paying basis.

Wants 10 Cents in Portland.—Stating that the increase in wages recently awarded its employees by a board of arbitration makes necessary an immediate increase in revenue, the Cumberland County Power & Light Company, Portland, Me., has renewed its petition to the State Public Utilities Commission for authority to charge a 10-cent cash fare. At present a five-ride ticket costs 35 cents and the cash fare is 9 cents. On March 31 a petition was filed by the company asking that the fares be increased to 8 cents by ticket and 10 cents cash and a hearing was ordered by the utilities board. Counsel for the company later requested a postponement, in view of the fact that the employees were about to make a demand

for more wages. The deficit for the first five months of this year is \$147,694 and that for the last three years and five months amounts to nearly \$370,000.

Tickets Will Cost More.—Ticket fares on the lines of the Pittsburgh (Pa.) Railways will advance from 7½ cents to 8½ cents on July 15. The cash fare will remain 10 cents. Announcement of the increase follows the recent agreement, wherein the receivers of the company are to pay the trainmen a maximum hourly wage of 70 cents. The 70-cent rate just agreed upon, with the adjustments which will follow in the wages of other employees, will cause a wage increase of about \$1,700,000. It is expected that all the resulting increase in revenue will be absorbed by the increase in wages. The receivers state that they are not willing to adopt the policy of attempting to operate on an inadequate fare, for this would endanger the continuance of car service, necessitate the discontinuance of needed work on tracks and the abandonment of the idea of acquiring additional cars and carhouse facilities.

Seven Cents Not Enough.—H. M. Atkinson, chairman of the board of directors of the Georgia Railway & Power Company, Atlanta, Ga., declared at a recent hearing before the State Railroad Commission that a 7-cent fare would prove insufficient to meet the company's needs. The company has applied for an increase in fare from 6 cents to 8 cents. Mr. Atkinson gave a detailed account of the system's condition, declaring that it was unable to borrow money and that a crisis threatened in its affairs. He said that the company was unable to make any improvements and that the service would break down unless the increases were granted. The company has been compelled to countermand orders for material and machinery for improvement work amounting to \$1,732,040 because its income was insufficient to stand this expenditure. Preston S. Arkwright, president of the company, told the commission that the company faced a deficit this year of more than \$1,000,000 on the commission's valuation of its physical assets.

Approves Philadelphia Buses.—An ordinance to permit the operation of motorbuses by the Philadelphia Transportation Company has been passed by the City Council of Philadelphia, Pa. P. M. Raymond, representing the company, said there would be between twenty and thirty buses ready for operation at least by Sept. 1. They may be ready by Aug. 15. The ordinance fixes 5 cents as the maximum fare to be charged in each zone. It limits the franchise granted the company to fifteen years, but with the provision that after the expiration of five years the Council may terminate the franchise by giving the company two years' notice of that action; fixes a bond of \$50,000 to be furnished the city by the company, and requires the company to pay the city 5 per cent of its gross receipts of fares

annually, the minimum sum to be paid each year being \$7,500. Before commencing operation the company must secure the approval of the State Public Service Commission. The commission recently refused the application of a bus company for permission to operate lines which would compete with those of the Scranton Railway.

City Buses Lose Again.—The Appellate Division of the State Supreme Court on June 19 affirmed an order of Justice Lydon granting an application of Job E. Hedges as receiver of the New York (N. Y.) Railways for an injunction restraining Mayor Hylan, the Department of Plant and Structures and others from continuing to operate bus lines which parallel lines of the New York Railways. The lines affected by the decision were the Fourteenth Street Line, the Seventh Avenue-Delancey Street Line and the Eighth Street Line, which operates from the west side of Manhattan over the Williamsburg Bridge to the Plaza on the Brooklyn side. The court in its decision held "that the city, which accepted franchise money from two different lines of the New York Railways, had no legal right to enter into competition with those lines, running omnibuses in opposition." This is the second case in which the city's bus project has been held illegal. The Court of Appeals recently sustained the action of the lower courts in enjoining the operation of municipal bus lines in competition with the lines of the Brooklyn City Railroad. Arrangements have been made by the Brooklyn City Railroad to place additional cars in service on the lines formerly paralleled by the buses.

Wants Joint Freight Rates Abandoned.—The Buffalo & Lake Erie Traction Company, Buffalo, N. Y.; the Chautauqua Traction Company, and the Jamestown, Westfield & Northern Railroad, Jamestown, N. Y., have petitioned the Public Service Commission for the Second District for permission to discontinue joint freight rates between these three interurban electric lines operating between Buffalo and Jamestown and intermediate points. At a hearing before Chairman Charles B. Hill of the commission in Buffalo, recently scores of merchants and manufacturers appeared in opposition to the proposed tariff change. They contended that it would mean an increase of from 75 to 160 per cent in through rates between Buffalo and Jamestown and intermediate points. Under the proposed tariffs of the three companies the rate to various points would be a combination of local rates. Counsel for the traction companies contended that unless the through joint rates were canceled the companies would be forced to stop package freight and express business because of the low carrying charges now in force. The three lines make a specialty of carrying freight and express shipments from Buffalo to points in the southwestern part of the State.

Personal Mention

A. W. Hemphill in New Firm

Albert W. Hemphill has become associated with Gardner F. Wells as a member of the firm of Hemphill & Wells, with offices in New York City. Mr. Hemphill is well known to the electric railway industry through his work as a public utility engineer and his former connection with the properties of Stone & Webster. With Mr. Wells he will continue the practice of engineering, which he has hitherto conducted independently.

Mr. Hemphill was educated at the Massachusetts Institute of Technology and Haverford College. After graduating he was employed on steam railroad



A. W. HEMPHILL

construction work for about three years. He went with Stone & Webster in 1909 and remained with that firm for about six years. While with that organization he was employed in the reorganization of the Metropolitan Street Railway, New York, N. Y., for three years and for the remainder of the time was with the securities department. He left Stone & Webster to go with J. G. White & Company, Inc., and remained with that firm for about a year and a half in an official capacity. He then went into business for himself as a consulting engineer.

Mr. Hemphill is the son of Alexander J. Hemphill, chairman of the board of directors of the Guaranty Trust Company, New York, and is a brother of Clifford Hemphill of Hemphill, Noyes & Company, investment bankers.

Mr. Wells served during the war as manager of the division of transportation of the United States Housing Corporation, resigning early in 1919 to enter the consulting engineering field. For fifteen years Mr. Wells was connected with the Stone & Webster organization. During the greater part

of the period he served as an appraisal expert, making office and field examinations and preparing reports and appraisals of public utilities. A biography of Mr. Wells was published in the issue of Feb. 8, 1919.

Prof. Morrow Joins Staff

L. W. W. Morrow, assistant professor of electrical engineering at the Sheffield Scientific School, Yale University, has been appointed a special editorial representative on the staff of the *ELECTRIC RAILWAY JOURNAL* for the summer months.

Professor Morrow is a graduate of Cornell University. After teaching at that institution for two years he went to the University of Oklahoma, where he became director of the School of Electrical Engineering at the end of five years. While a resident in Oklahoma, Professor Morrow was secretary of the Oklahoma Gas, Electric & Street Railway Association and was also associated with various Oklahoma utilities in a consulting capacity. He joined the teaching staff at Yale two years ago.

Henry L. Doherty, president of the Cities Service Company, was honored by the employees of the Toledo Railways & Light Company and its other Toledo subsidiaries on the occasion of his fiftieth birthday anniversary on May 15. Employees under the leadership of F. J. Derge, assistant general manager of the Toledo Railways & Light Company, and E. R. Kelsey, advertising manager, gathered at each of the five principal power stations in Toledo and planted a Cornish elm. Each tree will be surrounded by an iron fence and bear a bronze tablet telling of the occasion.

J. S. Badger has tendered his resignation as resident engineer and general manager of the Brisbane Electric Tramways Investment Company, Ltd., Brisbane, Australia, on account of failing health. Mr. Badger is an American by birth. He was connected with the original Sprague Electric Railway & Motor Company, and later with the Edison General Electric Company, and served as construction engineer with a number of the early electric railway lines in the United States. About twenty-five years ago he accepted the position of general manager of the Brisbane tramway system, which under his supervision has been developed into one of the most important electric railways in Australia. Since taking up this work at Brisbane he has revisited this country from time to time. Mr. Badger recently returned to the United States and is now making his home in Monrovia, Cal.

A. L. P. Smith, purchasing agent of the Savannah (Ga.) Electric Company, has resigned.

H. S. Swan, treasurer of the Alabama Power Company, Anniston, Ala., has resigned.

Samuel A. Miller of Philadelphia, Pa., has been appointed assistant superintendent of the New Jersey & Pennsylvania Traction Company, Trenton, N. J.

R. A. Mitchell has been made treasurer of the Alabama Power Company, Anniston, Ala., succeeding H. S. Swan, resigned. Mr. Mitchell is also vice-president of the company.

W. P. McArdle has been appointed assistant auditor for the receivers of the Pittsburgh (Pa.) Railways. Mr. McArdle was formerly chief clerk in the accounting department.

Hugh F. O'Reilly, general foreman of the Broadway division of the New York (N. Y.) Railways, has been promoted to the position of acting assistant superintendent of transportation.

Howard V. Lee has been appointed general attorney for the Louisville (Ky.) Railway. Mr. Lee succeeds Frank T. Straul, who has been granted an indefinite leave of absence.

John M. Mellor, general manager of the Hartford & Springfield Street Railway, Warehouse Point, Conn., has resigned. Mr. Mellor has accepted a position as the New England representative of the Ohio Brass Company.

J. L. Beals of Pittsburgh, Pa., has been appointed superintendent of the Clarksburg division of the Monongahela Valley Traction Company, Fairmont, W. Va., succeeding C. H. Hardesty, who has been appointed general traffic agent of the company.

R. M. McCletchie has been elected comptroller of the Alabama Power Company, Anniston, Ala. Mr. McCletchie will have supervision of all accounting and finances of the company. The office of comptroller is a newly created one.

A. E. Dedrick has been appointed assistant to the comptroller of the Philadelphia Company, Pittsburgh, Pa., which owns the Pittsburgh Railways, the Duquesne Light Company, the Equitable Gas Company and other public utilities in and around Pittsburgh.

J. C. Davidson, formerly with Gibbs & Hill of New York, N. Y., has been appointed engineer of electrical traction of the Norfolk & Western Railway, with offices in Bluefield, W. Va. The electrification work of the Norfolk & Western was done by Gibbs & Hill, and Mr. Davidson while in the employ of that concern spent considerable time in Bluefield.

William J. Boucher has been appointed assistant supervisor of way and structures of the Eighth Avenue Railroad and the Ninth Avenue Railroad, New York, N. Y. Mr. Boucher was formerly connected with the Rapid Transit Subway Construction Company,

New York, and more recently with the Philadelphia Subway Construction Company.

Charles E. O'Donnell has been appointed superintendent of the Southbridge division of the Worcester (Mass.) Consolidated Street Railway to succeed William W. Walker, resigned. Mr. O'Donnell was formerly a car starter with the Southbridge division. Before joining the Worcester Consolidated Street Railway several years ago he was in the employ of the Connecticut Company.

Thomas E. Mitten, president of the Philadelphia (Pa.) Rapid Transit Company, is the subject of an article by William S. Dutton in the June issue of *System*. In the article, which is illustrated with a portrait of Mr. Mitten and with other photographs, the author describes the building up of the Philadelphia Rapid Transit System under Mr. Mitten's direction. Mr. Dutton sums up Mr. Mitten's success in the phrase that "nothing is too trivial for him to give attention to, just as nothing is too big for him to tackle."

Edward J. Cheney, chief of the division of light and power of the Public Service Commission for the Second District, has resigned to take up consulting engineering practice in New York City. Mr. Cheney will give attention to public utility problems, including rates, appraisals, public relations, design, construction, operation and management. While with the commission he was in charge of all general and technical questions concerning gas, electric and steam utilities and the service rendered by them. He is a graduate of the University of Minnesota.

William W. Walker, who for the past eight years has been superintendent of the Southbridge division of the Worcester (Mass.) Consolidated Street Railway, has been appointed superintendent of the Hartford & Springfield Street Railway with headquarters at Warehouse Point, Conn. Mr. Walker entered railway work in 1894 as a conductor with the Schenectady (N. Y.) Railway. He served with the company later as an inspector and continued in its employ for about ten years. He next was appointed a train dispatcher with the Berkshire Street Railway and a year later was transferred by that company to Westfield as an inspector of construction on the Western Massachusetts Street Railway. When the Western Massachusetts Street Railway was placed in operation Mr. Walker was appointed inspector of transportation. He was next transferred from Westfield to Springfield in the same capacity and was later appointed superintendent of the Blackstone Valley division of the Worcester Consolidated Street Railway. He was made superintendent of the company's Southbridge division in 1912.

Lesley C. Paul, who has been connected with the McGraw-Hill Company, Inc., and its predecessor, the McGraw Publishing Company, Inc., for the last

five years, has resigned from the editorial staff of the *ELECTRIC RAILWAY JOURNAL* to assume the position of technical editor in charge of railway publicity in the publicity department of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Mr. Paul was graduated from the Engineering School of the University of Colorado in 1915, and accepted a position in the field service department of the McGraw Publishing Company, Inc., publishers of the *ELECTRIC RAILWAY JOURNAL*, immediately following his graduation. He remained in the field service department until October, 1916, during which time he traveled over a large part of the United States in the interests of the company. He then accepted the position of assistant circulation manager of the company in charge of *ELECTRIC RAILWAY JOURNAL* circulation. He continued in that capacity until November, 1917, when he was appointed to the editorial staff of the paper in New York. In March, 1918, Mr. Paul was appointed editorial representative of the paper in Chicago, where he performed the duties of Western editor until January of the current year, when he returned to the New York office to assume the duties of civil engineering editor in charge of way and structures.

Obituary

George C. Wallace, a former official of the Paducah Traction & Light Company, Paducah, Ky., died at his home in Lexington, Ky., on June 7. Mr. Wallace had been ill for several weeks.

Charles Blizzard, third vice-president of the Electric Storage Battery Company, Philadelphia, Pa., died on June 12. Mr. Blizzard was born in Wisconsin fifty-six years ago. He became connected with the Electric Storage Battery Company in 1893.

Carl P. Berger, president of the Irvington Varnish & Insulator Company, died on June 15. Mr. Berger was one of the pioneers in the manufacture of insulation. He invented special machinery for varnishing cambric, silks and paper in continuous rolls, greatly reducing cost of manufacture and at the same time perfecting the product.

Whitfield P. Pressinger, vice-president of the Chicago Pneumatic Tool Company, Chicago, Ill., died on June 10 as a result of complications following an operation. Mr. Pressinger was actively engaged in the pneumatic tool and allied machinery industry for many years. He was general manager of the Clayton Air Compressor Company for seven years and became widely known through numerous activities in the American Society of Mechanical Engineers and the Compressed Air Society. He was born in New York City in 1871.

Manufactures and the Markets

DISCUSSIONS OF MARKET AND TRADE CONDITIONS FOR THE MANUFACTURER,

SALESMAN AND PURCHASING AGENT

ROLLING STOCK PURCHASES

BUSINESS ANNOUNCEMENTS

Railway Motor Market Shows Improvement

Shortage of Gears Handicaps Shipments, but Manufacturing Facilities Are Expanding with Demand

From last year's "low point" in the curve of railway motor sales this year's market to date shows a gratifying improvement. The rapid gain in popularity of the safety car affords the manufacturer of motors and control equipment the best present outlet for his products, the ratio being about three to one as compared with two-man car equipment. The number of motors bought during the past two years has not kept pace with the needs of growing populations and manufacturers are laying their plans for new shop facilities which will go a long way toward meeting the expected business of the coming year. The longer purchases are postponed the larger must be the concentration of orders when the equipment becomes imperatively needed, and next winter's orders are being counted upon to exceed those of the winter just passed.

LITTLE DELAY IN MOTOR SHIPMENTS

Deliveries of motors for car service are now on an excellent basis, the only handicap of serious import being the acute shortage of gears. Quotations of from forty-five to sixty days are common, and shipments of motors have been made in even shorter time under pressing circumstances. The factories are suffering from a scarcity of insulating material, and of linen in particular. Textile strikes and railroad workers' strikes have cut into reserve stocks of raw materials, but in comparison with many other electrical products deliveries are better in railway motors than is usually the case with other material.

In some instances where it has been impossible to obtain gears shipments have been held up three or four months. Labor troubles in the Naugatuck Valley are contributing their quota to the general disquiet as regards raw material supply, but the indications are that these will yield to exhaustion before many weeks. In fact, some of the mills in the lower part of the valley recently won a complete victory over the strikers, and this has led to some improvement in shipments. Deliveries of motors for safety car service have been maintained on a better basis than for other types of cars for the reason that one gear ratio is widely used in this class of service, permitting the accumulation of larger stocks of gears than where divers sizes are required.

Factory stocks of motors are not large

but the practice of maintaining, as one representative producer does, a stock of about fifty motors constantly at each of the works of the car builders proves very advantageous. This means that in a pinch a fair number of motors can be obtained for emergency service. No trouble is experienced in keeping deliveries of car control equipment well within the motor delivery dates. Motor prices are steady at present. These have advanced about 50 per cent during the past four years, or from \$1,200 to \$1,800 in a typical case covering two motors for safety car service. Inquiries are coming in well and the outlook for the fall business is promising.

Trolley Wire Ordering About Up to Normal

Mills Can Ship in Good Time, but Demand for Bare Is Turning Some Mill Capacity from Trolley

Manufacturers of trolley wire in general report that railways are not buying heavily at present, but as this is the slack season for orders such a condition is regarded as normal and a stronger wave of buying is looked for soon. Most of the demands on trolley wire are for replacement work, especially in the East. Western railways are in somewhat better financial shape and are able to undertake more new construction work because they have been more favored on rate increases.

Production in this line is about normal, with manufacturers able to fill orders subject to railroad delivery. One company, however, reported it was accepting virtually no new orders because the mills were drawing out trolley wire to small sizes of bare wire and insulating it in order to catch up on the tremendous backflow of orders for insulated wire. This company was therefore rather tardy on shipments of trolley wire, but deliveries generally are quoted fairly regular, at from three to eight weeks.

Raw material shipments are coming through in good shape, with high prices prevailing. The market on trolley wire has been holding steady. Rumors of possible price reductions are current, but manufacturers discount these reports and consider further cuts unlikely, with base copper now at a comparatively low figure, and high prices for labor and raw material the rule.

No cancellations have been noted. Railways are on the whole meeting their bills within the thirty-day limit, although this may be due in part to manufacturers exercising careful supervision of orders.

Production of Malleables Improving

Supply of Molders Is Still Short and Prices Are Tending to Mount Higher

Improvement is reported in the malleable castings field. Present production has been estimated at between 60 and 80 per cent of capacity, where only a few weeks ago reports placed it at around 50 per cent. The chief factor in keeping it down is the labor shortage, particularly in the molding department. Here there are not enough molders to keep the other departments going to capacity.

Turnover in labor is high, and because of that and the independence of the worker, rejections of materials and defective work have been vital factors in the cost of malleable castings. Overhead costs on mill equipment have continued regardless of the capacity under operation. Prices on the finished goods have been tending higher all spring and summer, although malleable pig-iron quotations are the same today as they were the first of March. At the same time the demand is increasing.

A coal shortage is looming up now to put a more unsatisfactory aspect on the situation, while fresh walkouts in certain railroad yards in the East contribute still further to the chances of poorer shipments of malleables. Customers are driven to use such substitutes as steel, forgings, brass and bronze for the malleables, and at present there is little difference in price, with the main item of labor overshadowing the base metal prices.

Sales of Electric Tools on the Increase

Some Factories Below Capacity, but Stocks Can Supply Reasonable Orders for Smaller Sizes

Healthy increases in the volume of sales of electric hand tools are reported from manufacturers of these specialties throughout the country. Railway car builders during the war placed heavy orders for this class of tool, and, because of long shipments and the general let-down in railway equipment building after the armistice, they were well supplied for the work in hand. It is expected, however, that recent plans for renewed activity in the railway field will result in further demands for electric tools. At the same time, this demand probably will be less than might at first be contemplated from reports in circulation concerning the large

amount of rolling stock to be purchased.

Sales this year have been heavy, but manufacturers have been able to keep fair stocks at their distributors' warehouses. It is still possible to make up shipments on $\frac{1}{4}$ -in., $\frac{3}{8}$ -in. and $\frac{1}{2}$ -in. sizes from district stocks, but large orders, and orders for other sizes, are requiring three to four weeks to fill. Tool factories are not producing up to full capacity in all cases, one at least being on a 75 per cent capacity and one on zero because of strike conditions at the mill. Raw material and labor shortages are responsible for under-production, it is reported. Motors have been very difficult to obtain in some cases, but with the use of motor trucks a sufficient quantity have been picked up to keep up to production schedule day by day.

Orders Drawn to End Eastern Coal Shortage

Interstate Commerce Commission Gives Preference to Open-Top Cars and Assures New York of Assistance

Within the past few days the coal supply question has loomed up in increasing seriousness, especially in the East. The situation has been considered as of so much importance that public officials and representatives of power and traction companies in New England and New York have gone to Washington to take the matter up directly with the Interstate Commerce Commission.

As a result, the Interstate Commerce Commission has ordered that, effective June 24, coal for New England shall have priority in transportation. This was issued on June 19, and with that order came one providing for the preferential use of open-top cars for coal loading, effective June 21, and to remain in force for thirty consecutive days. In addition a virtual embargo for a time has been placed on foreign exports of coal, so some relief in the domestic market may be looked for in this direction.

The situation in New York City is very acute, but assurance has just been given by the Interstate Commerce Commission that no public utility in that city would have to shut down for lack of coal. Public service corporations, it is stated, have coal enough to run them through the present week as a minimum, while certain of them can go for a week or ten days. Enough coal is expected by the end of the week to relieve the situation. Traction companies have been curtailing their coal consumption to the last pound and have been enabled to survive in that way.

In another week the probability is that sufficient coal will be given the right of way to care for the immediate needs of the Eastern States, and in due course those needs of the other states which may be acute will also be satisfied. Sufficient coal is at the mines, according to reports, but the car equipment is not able to handle it except with preferentials and embargoes.

Electric Sheet Supply Below Demands

Wage Controversy Likely to Affect Adversely Output of Sheets for Third Quarter

Electric sheet mills are following different paths in regard to receipt of orders for shipment beyond June 30. Certain allocations of output for the third quarter have recently been made, but it has been estimated that the quantity available will meet only about half the requirements of the trade. Where the remainder will come from is still to be seen, but it is hardly expected that production will be any better in the next three months than in the past three. At present a new freight tie-up threatens to make matters still worse. There has been some revision of prices, averaging around 15 per cent upward.

The wage agreement for sheet and tin-plate workers expires on June 30. From the deadlock which resulted from the meeting at Atlantic City last week of union sheet and tin mill owners and the Amalgamated Association, it appears that the operatives want no further conferences until the first week in September. Of course the owners may undertake to operate as non-union concerns or to take the other course and close down.

A 20 per cent advance in base rates of scale and a six-hour day have been demanded. If a walkout is declared on July 1, shipments of sheets will be further delayed than they are now. An estimate gives the Amalgamated control of about 40 per cent of the sheet and tin-plate mills, and in this number is a certain capacity in electric sheets. What the mills will do which have not already accepted allotments of their next quarter or half year capacity remains to be seen when there are further results from the agitation of the wage question.

Promotions in Westinghouse Railway Department

In a recent arrangement of the personnel of the railway department of the Westinghouse Electric & Manufacturing Company at East Pittsburgh five promotions have been made, as follows: W. R. Stinemetz is manager of the heavy traction section, with Franklin W. Carter in charge of both foreign and domestic negotiations; E. D. Lynch is manager of the light traction equipment section, with George Skipton in charge of negotiations; J. L. Crouse is manager of the new railway apparatus and supply section, and K. A. Simmon is manager of the safety car and foreign railway equipment section.

W. R. Stinemetz was graduated from Lehigh University in 1893 as electrical engineer. In 1897 he became associated with the Westinghouse company in the engineering school, leaving in 1899 to become electrical assistant to the chief engineer of the Third Avenue Railroad, New York. A few years later he re-

turned to the Westinghouse company, and, in 1905, was sent to Atlanta, Ga., to superintend the installation of one of the early single-phase roads. The next year he studied single-phase railway installations in Italy and France, and in 1912 became associated with the railway sales department.

Franklin W. Carter is a graduate of the Virginia Military Institute and after completing the Westinghouse engineering course he joined the railway sales department. During the war he served as lieutenant in the Rainbow Division abroad.

E. D. Lynch has just completed his tenth year with the Westinghouse company. He was first employed in the service department in Chicago, following his graduation from the Baltimore Polytechnic Institute in 1910. In 1911 he enrolled in the two-year graduate students' course and became a member of the railway and lighting department upon completing it.

George Skipton began his electric railway career in 1906, with the Indianapolis & Cincinnati Traction Company, which was the first single-phase interurban road. After graduating from Purdue University in 1913, he joined the graduate students' course of the Westinghouse company. Upon completing the course he was sent to the Niles Car Company and later to the Salt Lake & Utah Railway, where he had charge of the shops and the maintenance work. Mr. Skipton returned to the Westinghouse company in 1915, first with the railway and lighting department and later in charge of all equipment installation and trouble adjustments of the railway equipment section.

J. L. Crouse became associated with the Westinghouse company in 1893, leaving his position as superintendent of the Wilkesburg Division of the Duquesne Traction Company. He was first placed in the inspection department and later in the construction department, where he had charge of the electrification of the Brooklyn elevated roads. Later he had charge of field development on single-phase railway developments. In 1913 Mr. Crouse was made superintendent of electric shops, and four years later took up work in the executive department at East Pittsburgh.

K. A. Simmon entered the employ of the Westinghouse company in 1905 after graduating from the University of Minnesota. Railway control has been his special work for many years and he was head of the railway control section. Before his latest promotion Mr. Simmon was in charge of light traction engineering.

Rolling Stock

The City Council of Toronto, Ont., Canada, has authorized R. C. Harris, general manager of the Toronto Civic Railway, to purchase new steel street cars to the extent of \$200,000.

Beloit Traction Company, Beloit, Wis., has purchased four of the "200" type single-truck street cars from the Rockford (Ill.) City Traction Company. These will be rebuilt and used as trailers on the Beloit lines. One interurban car has been overhauled and put in service as an extra between Beloit and Waverly Beach.

The **United Railways of St. Louis, Mo.**, has let contract to the St. Louis Car Company to furnish 50 steel trailer cars for street car service. Seating capacity is sixty-four persons and the cars are 45 ft. long. No motors are to be provided. Entrance will be at center of car and on one side only. The amount of the bid was \$420,600.

Recent Incorporations

Houston, Bay Shore & Texas City Traction Company, Houston, Tex.—The Houston, Bay Shore & Texas City Traction Company has been incorporated with a capital stock of \$300,000. The incorporators are: E. Kennedy, Houston; A. B. Phillips, Texas City; S. D. Simpson, C. E. Truelove, J. B. Koster and W. D. Thornton.

Franchises

Tidewater Southern Railway, Stockton, Cal.—The Tidewater Southern Railway has received a new franchise to change its tracks from Virginia Avenue and W Street to a line along the irrigation lateral to Nellie Street, and thence to Ninth Street to connect with its tracks again.

Los Angeles (Cal.) Railway.—The Los Angeles Railway has secured from the Los Angeles City Council a franchise for the extension of its Western Avenue line from Melrose Avenue to Santa Monica Boulevard. The company was recently given a franchise for the extension of its Temple Street line from Spring to Hoover Street.

Philadelphia (Pa.) Rapid Transit Company.—An ordinance granting the Philadelphia Rapid Transit Company a franchise to build and operate an electric railway extension in Roosevelt Boulevard to the new Sears-Roebuck plant was passed by the City Council on June 22. The company has also received from the Council a franchise to build and operate a line in Erie and Hunting Park Avenues to connect with the Boulevard line.

Track and Roadway

Tri-City Railway of Illinois, Rock Island, Ill.—The Tri-City Railway of Illinois has been ordered by the Moline City Council to begin immediately the construction of a line in Twenty-seventh Street, Moline, from Fifteenth Avenue to Twenty-third Avenue.

Public Service Railway, Newark, N. J.—The State Board of Public Utility Commissioners has authorized the Pub-

lic Service Railway to remove its tracks from Park Avenue, East Rutherford, between Paterson Avenue and the tracks of the Erie Railroad.

Hamilton (Ont.) Street Railway.—The Hamilton Street Railway plans to construct an extension to its line.

Hydro-Electric Power Commission of Ontario, Ottawa, Ont.—The Hydro-Electric Power Commission of Ontario, which recently took over the lines of the Sandwich, Windsor & Amherstburg Railway, Windsor, Ont., has made arrangements to double-track the line in London Street, Windsor.

Indiana Service Corporation, Fort Wayne, Ind.—The Indiana Service Corporation, successor to the Fort Wayne & Northern Indiana Traction Company, plans to rebuild the tracks on Wells Street, Fort Wayne, and to lay double tracks on this street, on Clinton Street and on West Creighton Avenue.

Detroit (Mich.) United Railway.—The Detroit United Railway has received permission to lay a single-track line in Harper Avenue, Detroit.

Waterloo-Wellington Railway, Waterloo, Ont.—The Waterloo-Wellington Railway has been refused permission to extend its line from Bridgeport to Guelph. The Ontario Legislature has also denied the company the right to issue \$40,000 debentures for every mile of single track to be built.

Utah Light & Traction Company, Salt Lake City, Utah.—The Utah Light & Traction Company has petitioned the City Commission for a franchise to lay a track on South Eighth Street parallel to its track on Indiana Avenue. It plans to remove the track from the latter thoroughfare.

Professional Notes

A. J. Bibighaus, consulting engineer, has opened an office at 530 Hamilton Street, Allentown, Pa. He has been connected with several large corporations as an electrical and mechanical engineer, including Thomas A. Edison, Inc., Ingersoll-Rand Company, Phillipsburg, N. J., and the electrical department of the Bethlehem Steel Company.

The **California Engineering Company** has opened offices at 131 Leidesdorff Street, San Francisco, Cal., for investigating and reporting on problems in civil, electrical, mechanical, hydraulic and marine engineering fields; also the organization, development and management of engineering projects. Paul B. McKee is president of the company and Paul R. Parker is vice-president and chief engineer.

Midstates Engineering Company, Chicago, Ill., has recently incorporated as consultants, specializing in industrial, power and plant engineering. The equipment and commercial division activities will be directed by J. H. Milliken, while the engineering work will be executed by R. J. Gaudy, president, known through his activities with the Sessions Engineering Company.

Trade Notes

The **Economy Fuse & Manufacturing Company, Chicago**, announces the appointment of F. L. Easton as district sales manager of its Denver (Col.) office; 205 Commonwealth Building, succeeding R. M. Olsen, who resigned recently.

The **St. Louis Malleable Casting Company, St. Louis, Mo.**, is making improvements at a cost in excess of \$500,000 which, when completed, will increase its capacity 100 per cent. These are expected to be completed during the summer.

B. G. Prytz has resigned as president of the SKF industries, Inc., New York City. He has been elected managing director of the parent company, with headquarters at Gothenburg, Sweden. F. B. Kirkbride, vice-president since the organization of the company, has been appointed president to succeed Mr. Prytz.

The **Hays School of Combustion, 1412-14 South Michigan Avenue, Chicago**, has published a book entitled "Opportunities for the Combustion Expert," in which it gives consideration to the subject of preventable waste of fuel and the installation of mechanical apparatus to check the amount of fuel used.

The **Service Casting Company** has recently been organized at Blanchester, Ohio, and will specialize in making small gray-iron castings for the trade. The foundry has been in operation since Feb. 1, 1920, doing contract work. The personnel consists of R. H. Huyett and Charles N. Secrist, both of wide experience in foundry and machine practice.

Cleveland Twist Drill Company, Cleveland, made some remarkable records in drilling cast iron and steel at the recent Atlantic City convention of the American Railroad Association, mechanical section. The following was done with cast iron: Style of drill, milled high speed; size of drill, 1½ in.; peripheral speed in feet per minute, up to 235; feed per revolution, 0.100; speed of drilling, 72 in. a minute.

New Advertising Literature

Grates.—George S. Herrick, Syracuse, N. Y., has issued a thirty-two-page booklet on Herrick shaking grates.

Hydraulic Turbines.—The Wellman-Seaver-Morgan Company, Cleveland, Ohio, describes and illustrates some of its hydraulic turbines in bulletin No. 43.

Insulating Materials.—Miniature Catalog 5-A-1, on "Insulating Materials and Supplies," is being distributed by the Westinghouse Electric & Manufacturing Company.

Expansion Joints.—The Griscom-Russell Company, 90 West Street, New York City, is circulating bulletin No. 1010, describing its G-R expansion joint for use on low-pressure steam lines.