Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

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What We Are Trying to Do

WE ADMIT, or claim, a special purpose in the present issue. If possible, we want to arouse a little plainer talk in the industry which will bring about a better comprehension of the real rock-bottom problems confronting the electric railway industry today. We desire most of all to contribute our bit to leading a discussion of what concrete, actual, homely acts each of us individually and collectively may do to bring about a sound, safe business of satisfactory transportation service.

Speaking particularly of urban and interurban systems, we are very optimistic as to the ultimate outcome. But we believe that the goal cannot be reached until each and every one of us is fully conscious of his own obligation and duty and acts accordingly. Every extra effort brings the day of success nearer. This duty is not to be taken in the narrow sense, as meaning only day to day technical tasks, but also in the broadest sense of service to the industry. We must each realize our relation to the industry and the relation of the industry's success to our individual success, to put it selfishly.

We have therefore devoted a large part of this issue to a discussion of the outlook of the industry, but more particularly to a visualization of the obligation, and the opportunity to act in response to the obligation, of each of us in his own limited sphere and as a part of the whole.

Most of us were raised in the industry. It is our very life. We have followed it through the days when difficulties were mainly engineering and construction, rather than public relations and financial. And we have enjoyed a profitable and pleasant business.

Are we going to be any the less men of courage because the problems today are different? Are we going to allow to stand as justified the accusation of one prominent public utility commissioner that utility men come before commissions "with a whining voice and a suppliant attitude"? Are we ashamed of our business?

No! By the shades or living selves of Frank J. Sprague and Oscar T. Crosby and their mates, we believe this industry is still composed of men with backbone, men who will work and are capable of tackling any problem. The trouble is that some of us seem to have been gassed, and as we came to and saw the crowd going by have got in the habit of talking about what the other fellow can do to help us back on our feet.

What we need most is to help ourselves first. Without deprecating efforts at public appreciation of the situation, a most necessary work, we need more inside effort. We talk about wanting to be a business like other business, so let's start out and act that way. Now, the first principle of most business is to increase production, decrease expenses and sell the goods at a fair profit. On electric railways that means more riders at less cost and at adequate fares. Let's talk more about our side of this problem—not so much about what the public should do, but what we can do. If we handle our end of the problem correctly the American public will, by our very acts, be forced to take its right action.

No one is perfect, and this journal does not claim immunity from criticism in this regard. But in this issue we have tried to assemble some articles and statements, long and short, from various representative men of the industry, the public and the related interests, with these chief aims in mind, to start more "peppy" discussion, to get a little more inside the industry talk, to see how we can do our job better, to study our own obligation to the industry, to see how far the public actually has an obligation, to show how closely knit is our own individual success with that of the industry and, above all, to show how each of us can do things in our daily work and in our relations with the public to make for real progress.

Let's All Pull Together

LET'S get our shoulder to the wheel. We all say the railway must come out all right in the end, but the harder we work now the sooner will that resumed success be realized.

Did you ever see a gang of roustabouts doing a seemingly impossible human task? Hear their singsong, "Heave! heave! heave!" as they all pull at once, with only one purpose, to get that job done. No matter how hard the labor, it's a happy singing gang and the spirit is contagious.

We need a little more of that too. We need the

best in each of us. Are we giving our best thought and efforts to the common problems of the industry or are we pulling each in his own direction? Are we doing all we can to lend courage and inspiration, to bring about unity of effort?

What are you going to do about it individually? Action is what is needed—your action—our action, and, most of all, concerted action.

We are all a little baffled that the various suggested remedies aren't made effective. Is it because we are waiting for the other fellow to make them effective? Let's get together with him and work with him. It's our problem, not the other fellow's. He's not interested, many times. What we must do is pull together for our own ultimate salvation.

What Can We Do?

YES, what does the industry need and what can we do are the practical questions. We hope some answers will be found in the following pages, or that, at least, some answers may result from these and subsequent discussion. The views expressed have been solicited by this paper and represent every branch of the industry. We believe that they are all constructive and furnish general and detailed suggestions of the ways in which each and all of us can help to put the industry back where it belongs.

Of course, we need the public's comprehension—not sympathy, for we aren't down yet, rather we're coming up—and we will get that comprehension as we deserve it and work for it. But fundamentally, our first line of attack is the business itself—more revenue from higher fares is necessary, but we must not forget that more revenue can come also from more sales and decreased cost by maximum operating efficiency. There are ways of doing these things and we can each help.

We can give definite acknowledgment of our own obligations.

We can express our confidence in the future of the industry.

We can each help sell the needs of the industry to our individual acquaintances and convince those that we meet that the prosperity of the community is bound up with a prosperous transportation system.

We can get behind big movements and utilize every instrument for better transportation.

Precedents are all right when they are good, but we must have courage to discard them when better ideas and methods are available.

The "Electric Railway Journal" wishes to acknowledge its own deep obligation, to put its shoulder to the wheel and do its share to work for the realization of the aims of the industry.

Wanted: A Handbook of Technical and Allied Organizations

THE number of technical, scientific and related societies is increasing so fast and their names are used so much that it is becoming ever more customary to use abbreviations in referring to them, as our English brethren have done for so long in the same field. It's a knowing engineer these days who can recognize all of the abbreviated titles, many of which are so similar as to invite confusion. In the railway field we have the A. R. A., the A. E. R. A., the A. R. E. A., the A. E. R. E. A., etc. The schools don't teach the alphabet any more, but it looks as if they would have to take it up again, at least for part of the population. And then the societies are changing names so rapidly that even the members have a hard time keeping up to date. At the recent A. R. A. convention we heard reference to the American Railway Association, the Master Mechanics' Association and the Master Car Builders' Association, all of which, now comprehended in the American Railroad Association, went out of existence in name but not in fact during the war-period régime.

All of this preamble is simply to point to the need, voiced recently to the writer by a prominent engineer, for some kind of a "Baedeker" for these societies. It would have to be an annual, if not a monthly, adequately to keep within speaking distance of accuracy. Possibly the new Federated American Engineering Societies will tackle the problem. Anyway, somebody ought to do it. Such a compilation should show, among other things, for each society, its history, purpose, plan and scope of work, organization, nature and requirements for membership, relation to other societies and government bureaus, publications and address of secretary.

A clear concept of the nature and field of each society on the part of all would prevent some of the duplication of work that well-meaning committees lay out for themselves, or have laid out for them, when similar work is being well done by pre-existing agencies.

The Coaches Can't Do It All

WHEN you see a football team on the field pushing its way toward the goal and victory you never think of the coach. It's the men on the team who must do the fighting at the showdown.

The railway industry has about 5,000 coaches and 300,000 players; isn't it about time for the teams to take the field? When it comes down to facts, every employee is interested in the railway industry, financially and morally, simply because it supports him and has done so for years, and now that the industry is up against it it's his duty to jump in and win the game.

It's difficult to predict what would occur if every employee in the railway industry, realizing his vital influence in molding public sentiment, became an active player and bucked the line with all his strength. Three hundred thousand boosters sifted among 100,000,000 neutrals and 50,000 knockers and demagogues could turn the tide of public sentiment in a hurry.

Why not institute a Railway Drive and pour out the truth about conditions? Every employee realizes conditions in the industry, but has not had brought home to him his selfish interest in getting improvements. Let's have teamplay in work and in publicity and a real

game. Every player should "talk it up" and put "railway pep" into his conversation with the rooters.

Let the coaches remain on the side lines while the teams tear up the dirt of ignorance and prejudice.

Now Is a Good Time to Get Out of that Rut

THE engineer has often been characterized as a narrow specialist, necessary of course, but procurable at a very moderate wage. This was partly his own fault, because he often, maybe usually, allowed his interest in things and their laws to absorb him to the exclusion of people and their ways and whims. Now this condition is rapidly changing; the master mechanic and the civil engineer in the electric railway field are taking an active interest in car schedules, for example, while the power plant man is helping to save energy as well as produce it.

The writer was greatly pleased recently to find an eminent rolling-stock superintendent keenly alive to the problem of collecting a new fare involving several coins. Really, that's an engineering problem. At another point an engineer of power was applying analytical methods in studying car operation for maximum economy; also an engineering proposition. And this thing works the other way round, too. If the manager sees his engineers taking an interest in general transportation matters he will reciprocate, "vicey versey and the same," as a once well-known character in fiction was wont to say.

The hard sledding which the industry has experienced of late has caused all departments to pull together as never before. If anybody is still in a rut he ought to get out of it now or quit.

The Electric Locomotive Was Born Grown Up

THERE is an important element of difference between the development of the steam and the electric locomotive. The former grew up with transportation, the latter had to be designed and put into immediate competition with a rival perfected through decades of gradual evolution. The term "perfected" is used here, of course, in a "Pickwickian sense," for the steam locomotive has made some of its most remarkable progress during the past few years, and its rate of change in this regard is as rapid now as ever in its history. Mr. Basford's paper at the A. R. A. Mechanical Section convention furnishes convincing statements along this line. At present it is making up for lost time, like the boiler in the stationary steam power plant, and the lessons learned in power plant practice are being applied on this traveling power plant with great reduction in coal consumption. On the whole, however, progress has been slow and steady. On the other hand, the modern electric locomotive isn't more than fifteen years old.

These remarks are made because, as one hears of occasional trouble with this or that electric locomotive, he is apt to conclude hastily that this type of machine is not up to the job. Not so, however, for in spite of some high maintenance costs the machine as a class is performing splendid service, often overloaded beyond reason and each individual doing the work of several steam engines and doing it better. Just think where the electric locomotive would be today if it, too, could have started back in transportation year 1.

Chicago Is Grappling with the Automobile Problem

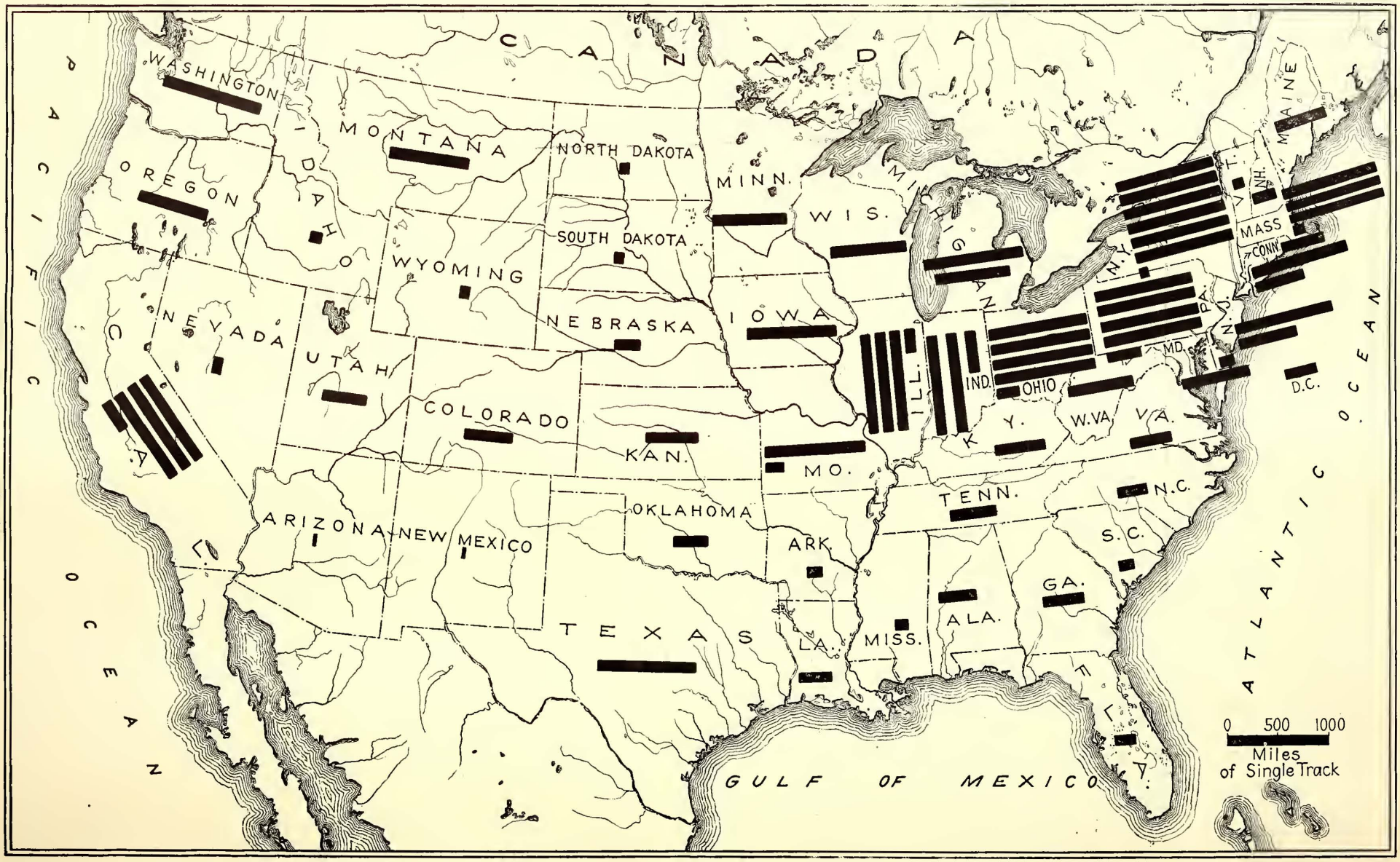
RECENT action of a committee of the Chicago City Council in recommending the prohibition of all vehicle parking in the congested downtown district calls attention to the serious problem which is presented to local transportation companies in all large cities. The Chicago anti-parking ordinance of 1917, prohibiting the parking of vehicles along car line streets in the Loop territory during morning and evening rush hours, was considered revolutionary at the time, but proved an ideal measure for the benefit of the traveling public. Studies made during the first few months of this experiment showed that the saving in time for cars using the downtown streets was 5,000 minutes during the three rush hours of the afternoon. The police were zealous in its enforcement, and the records of the automobile court showed that scores of drivers were being penalized every day for violation of the ordinance. Later on the police traffic squad was reduced in number, and with changes in the courts there was a slowing up in arrests and fines. Meanwhile, thousands of automobiles were added to those already using the streets and serious congestion resulted.

There was another Chicago ordinance which permitted vehicles to stand in one place as long as thirty minutes on streets other than those where cars were operated. The result was that such streets were used as public garages, and if an automobile owner was at all fearful of arrest he would have his car moved a few feet before the thirty-minute period expired. The police found it practically impossible to prosecute such cases successfully. It is now proposed to extend the anti-parking prohibition to all downtown streets between the hours of 7 a.m. and 7 p.m., and the police officials are hopeful that with a general understanding that there will be no place to leave cars in the downtown territory drivers will find parking places outside or use regular garages. An immediate relief in congestion is expected.

Other cities have adopted measures of various kinds to regulate vehicular traffic with a view to the more prompt movement of passenger cars. In some places the one-way traffic rule has been found effective. In others the width of sidewalks has been reduced so as to leave a wider space for vehicle travel or necessary parking. In certain cities pedestrian traffic is regulated and persons waiting for cars are guarded by safety islands, while controlled signals direct the movement of vehicles.

All these measures are good in their way and undoubtedly help to attain the object of serving the great mass of the traveling public. Even one-way traffic has its limitations, however, and a recent suggestion to inaugurate such a plan in Chicago led to the objection of experts that congestion would be intensified by the change. Local conditions govern in this particular as in many others. If streets are narrow or have only one car track it is sometimes better to have all traffic move in a single direction. If, however, the normal course of travel is two ways on a given street the situation can hardly be improved when it is necessary to direct a considerable proportion of the vehicles around three sides of a square so they may enter from the proper direction under a one-way rule. Haphazard attempts to regulate traffic without careful survey are bound to make confusion worse. Traffic must be made to fit conditions rather than try to have conditions adjusted to suit traffic.

How the Electric Railway Enters the Life of Each State



The above map indicates graphically the single track electric railway mileage in the various states. Here is an industry which has in each state become an important part in the economic and social life, in many states a vital part. Is it conceivable that the men in and behind this industry can do else than succeed in the work of maintaining it as an essential service to the community and at the same time of obtaining from the public of the community a recognition of its true character and value?

Situation Is Fundamentally Sound

The Paramount Position of the Electric Railway in Local Transportation Service Has Been Unaffected by Bus Development—Commissions and Public Are Realizing the Necessity for Fair Treatment of Utilities—Advantages of Individual Action and Co-operation Through Association Are Presented

By JOHN H. PARDEE
President American Electric Railway Association

AFTER the distressing period from which the electric railway industry is emerging it is a pleasure to be able to strike a note of optimism as to its prospects. I believe that the future looms much brighter; that there is reason to take hope, and that our time of greatest gloom has passed away, not soon to return.

This impression comes, not from a study of the financial statements of the companies, which are still too liberally dotted with red to provide much encouragement, nor from a contemplation of the physical condition of the roads, which, due to the impossibility of securing new funds for rehabilitation, is in most cases deplorable, but it comes from a firm belief that the great public of the United States is coming to a better understanding of the electric railway problem as it affects itself and the companies and is disposed to enter into settlements which will continue the utility in a higher state of efficiency and will recognize the rights of those whose money is now being used and of those whose money is now being sought for the furnishing of an essential public service.

The situation has resolved itself into one in which the main object of both the public and the companies must be the restoration of electric railway credit. Except in a few isolated cases, municipal ownership and operation is not under serious consideration. The state operation of the Boston Elevated and the Massachusetts Eastern railways has brought increased and not decreased fares. The city of Seattle, which, rather than grant the necessary fare increases to a private company, purchased and began the operation of the city system, has been forced to a 10-cent base fare in order to cover the cost of the service. The people of San Francisco, where municipal operation is conducted under exceedingly favorable circumstances, are gradually awakening to the fact that there is no virtue in the slogan "Municipal Ownership" that enables operation at less than cost and that a low fare is there being maintained at the expense of reserves, which are necessary to the future welfare of the property. Detroit, pledging its credit for a $15,000,000 bond issue to secure a half-way municipal system, finds that service is no better and that something more than mere political expediency is necessary to the provision of local transportation. It is apparent to any one who will seriously consider the situation that electric railway transportation is still a necessity to all of our communities of any size and that it must be provided through the agency of private enterprise and private capital. The serious business of both the public and the companies is therefore the adjustment of the business of these utilities and their relations with the communities, so that the confidence of the investor will be reawakened and that flow of capital, without which public utilities in growing communities cannot long exist, will be resumed.

Motor Vehicle Not to Be Feared

I have no fear that the motor vehicle will intrude itself into the situation to an extent that will imperil the usefulness of electric transportation upon tracks. In this connection two recent occurrences stand out in bold relief. It is of the greatest significance that Mayor Couzens of Detroit, himself an automobile man, whose long term as general manager of the Ford Motor Company gave him a knowledge of the possibilities of the internal combustion engine and who has had wide experience with the extended use of the cheapest and most adaptable car on the market, totally and utterly rejected the motor bus as a means of providing transportation, although every interest dictated that he should adopt the best and cheapest method in his attempt to compete with the Detroit United Railway. Of equal significance is the fact that Henry Ford himself, while advocating a self-contained vehicle propelled by a gasoline engine for interurban use, clung to rails and refused to entrust his new device to rubber tires.

Nowhere in the United States is the motor vehicle giving a complete system of local transportation in any but the very small communities. Faced with the choice between street railways and the jitney, the Massachusetts cities served by the Eastern Massachusetts Street Railway have unanimously decided in favor of the former and have eliminated the latter from their streets. I have no doubt but that the city of Bridgeport will make a similar choice.

Those cities in which unrestricted jitney competition is now permitted must, in my opinion, soon make a similar choice. I do not believe that the electric railway can hamper the development of the motor vehicle. I do not believe that it should do so if it could. I do believe, however, that the motor vehicle has no greater rights than the electric car, and that it should not, and ultimately will not on its part, be permitted to interfere with electric railway development. There is almost unanimous opinion among those who are familiar with electric railway affairs, and I speak now not of the owners and operators of the properties but of those who

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represent the public in their regulation, that local transportation should be a strictly regulated monopoly. Only in this way can the communities receive that full and sufficient service to which they are entitled. To introduce into the situation the element of competition is to revolutionize the entire theory upon which the relations of the companies and the communities are based and to make necessary an entirely different policy in the treatment of all transportation utilities.

Co-operation, Not Competition, of Rival Systems

It is certain, from the public standpoint, that the motor vehicle can never properly perform its task so long as it is operated in competition and not in co-operation with the electric railway. The experience in those cities where jitneys are most prevalent is that the service as a whole has not been improved or extended, but that there is a surplus of service on certain routes and in certain sections and an augmented dearth of service on other routes and in other sections.

If no other rule is applied than that which has for many years been established in connection with the construction of new steam railroads, the managers of the electric railways will have little cause to fear jitney competition. In all states possessing modern systems of public utility regulation it is the "convenience and necessity" of the public that dictates whether or not a new steam line shall be built. Competition, ruinous alike to the owners and to the public, has taught the people a lesson in relation to steam road construction. The useless waste of funds involved in the setting up of competing lines where none were required and which finally resulted in bankruptcies and consolidation, adding to the capitalization upon which in some manner a return must be earned, has caused the states to be wary of transportation schemes which serve no useful purpose. From this lesson the communities must borrow wisdom and ultimately recognize, first, that the motor bus in local transportation is a common carrier, subject to all the duties of a common carrier, and, second, that only when the power lodged in the regulatory authorities is insufficient to force the rendering of adequate service by an existing carrier is it to the public interest to set up a competing carrier, the operation of which duplicates expense as well as service and in the long run will impose an unwarranted burden upon those who depend upon local transportation service in their business and social life.

These are fundamentals of the situation which must be thoroughly appreciated and understood if we are to speculate as to the future of the industry. The chaotic conditions which exist in many cities and in many towns are not conducive to dispassionate consideration, and they make it difficult to take a broad view of the field and to realize that ultimately the outcome will rest upon principles rather than upon merely local disturbances. Such a broad view establishes, to my mind, first, that the service performed by the electric railways is essential; second, that it cannot adequately be performed by any other known means of locomotion, and, third, that it must be performed by private enterprise and through the use of private capital.

If this be admitted, then the necessity of restoring electric railway credit is apparent, and it is equally apparent that such restoration can be accomplished only through the recognition by the people of the fact that private capital cannot be coerced, that it must be assured of fair treatment and a fair return, and that private enterprise will be serviceable to the public only if it be given latitude for the initiative which is its distinguishing feature and rewarded in accordance with the efficiency with which it performs its task.

Impress These Truths on Public Mind

The real work before the electric railway industry today is that of impressing these truths upon the public mind. A start has been made. The attitude of the public toward the industry is more favorable today than it has ever before been in the history of the electric railway business. There is a keen realization that these companies are in distress and that they must be given relief. The position of the state commissions is in the main distinctly helpful. Many of these bodies have had completely to change their viewpoint in order to acquire a realization of the truth that their duty is as much to protect the companies from the effect of causes over which they have no control as it is to protect the public from any acts of the companies, but I think it may be safely stated that there are few public service commissions which do not now clearly see the necessity of building up and strengthening the companies in the public interest. The attitude of the city authorities is also becoming more favorable. It is not difficult to pick out numerous communities whose officers have yet to learn that the preservation of local transportation service and not the furthering of political ends is the thing most desired by the public. But to offset this deplorable state of affairs there are many gratifying instances where intelligent, helpful, public-spirited action has come from city councils and commissions and where there is earnest effort to arrive at an equitable and just basis of relationship.

"The public is willing to listen. It wants to understand and it is our business to make sure that the public shall understand. The great mass of information released through the deliberations of the Federal Railways Commission has had an effect which it is hard to overestimate. Unfortunately that commission has not yet reported its findings to the President of the United States, but even if it never reports, the industry will still be the gainer, because, through the publicity secured, the facts of a lamentable situation are now known, and the public has come to realize that the question is not one which concerns the owners and operators of the properties alone, but that it intimately concerns every man, woman and child in the entire country."

What the Association Is Trying to Do

In these circumstances the crying need is for a real understanding of the problem to be solved, both on the part of the railways and upon the part of the public.

The American Electric Railway Association does not and will not propose a universal panacea which is to cure all the ills that afflict the industry and which will

prevent it from performing its full duty in the public interest. The case is too complex to make its cure possible by any one remedy. But through its deliberations and its investigations the subject has been greatly clarified and there has come into being a body of opinion within the industry which if it can be transmitted to the public and the public's representatives gives promises that the electric railway problem will be settled and will be settled correctly.

The association should lead the thought of the industry in this particular, as in many others. Through it there should be rendered available for every electric railway executive in the country the best thought of the industry. I am convinced that the association can perform no greater service than by frequently bringing together in conference the men whom we have all grown to regard as our leaders and by spreading before the country their conclusions as to the vexed problems before us.

The public is willing to listen. It wants to understand and it is our business to make sure that the public shall understand. The great mass of information released through the deliberations of the Federal Railways Commission has had an effect which it is hard to overestimate. Unfortunately that commission has not yet reported its findings to the President of the United States, but even if it never reports the industry will still be the gainer, because through the publicity secured the facts of a lamentable situation are now known and the public has come to realize that the question is not one which concerns the owners and operators of the properties alone, but that it intimately concerns every man, woman and child in the entire country.

Let us continue to extend, as we are now attempting to do, that process of public information. There are many channels open to us. The public utilities have had a prominent place upon the program of two successive conventions of the Chamber of Commerce of the United States. Other national organizations have welcomed speakers representing the industry and have given them sympathetic hearings. The opportunity for presenting our case is unlimited. The local manager who does not take advantage of the present frame of mind is remiss in his duty to his company. It is not necessary that he should be an orator. It is sufficient that he should be informed, that he should believe in his cause and that he should place the facts before his hearers.

This is not the time for pessimism. The discouragement and rebuffs of the past must not be allowed to interfere with our present task. The process of public misinformation has been a long one. That the electric railway situation is today so widely misunderstood is largely our own fault. That intangible something known as public good will is to be gained and kept only by continually keeping up the process of public information. It is hard, discouraging, many times a thankless task, but it is worth while.

Membership in the Association a Privilege and a Duty

The association can and should lead, but the association's usefulness depends upon the co-operation of the electric railways of the country, and it can be of no greater use than these railways make it. When it speaks for the industry it should speak for all the industry. When it acts for the industry it should act for all the industry. It has performed a great work, but it is capable of performing a much greater one. Whether it will do so depends upon the support that is given it, and for this reason and because the national aspect of the electric railway problem underlies all local questions, and because public sentiment spreads as the ripples on a millpond, I consider that membership in the association is not only a privilege but a duty for every electric railway in this country and in Canada.

The Industry Merits Our Best

Shun Expediency—Get Together—Do Not Bemoan Conditions, and Thereby Attract Mediocre Ability

By EDWARD DANA
General Manager Boston Elevated Railway Company, Boston, Mass.

THE industry with which we are identified is relatively young. It came into being because of an impelling necessity for its service.

That necessity was so fundamental that its early years were marked by unlimited optimism with regard to its future.

That optimism was responsible in large measure for the period of trials from which we are now surely emerging.

That optimism resulted in a disregard of sound economic laws, with the result that there was overexpansion of facilities and a price arbitrarily fixed for the commodity for all conditions and all places.

Those of us who have lived during the recent years' struggle appreciated the hopelessness of the situation as an effort was made to postpone the day of reckoning.

We cannot unmake the past, but now that the fallacies of the past are gradually being righted we can get together with both feet squarely on the ground and restore the industry to its rightful place in the eyes of those whom it serves.

The impelling necessity for street railway service exists today as never before. Its growth has created the arteries of transportation by which cities flourish and its service must continue no matter how many other means to the same end come into existence.

The industry has developed big men and given others opportunity and careers. The future success of those who have chosen it for their talent is dependent upon the future success of the industry itself.

If we belittle its importance, bemoan its past and despair of its future it will attract the mediocre, whereas it merits the best.

Above all, let us shun expediency as the solution of its every-day problems.

Whether it be the eight-hour day, request for service not justified by traffic offered or excessive payments for snow removal, paving, etc., let us talk the same language and stick to the facts and merits of the case, whether with the labor organizations, the utility commissions or local authorities.

The fundamentals are the same everywhere, and whenever these are disregarded for expediency we perpetuate the errors of the past which have been so harmful to the industry.

What Bankers Will Demand and How They Can Help the Industry

Assurance of No Reduction of Rates for Long Period; Safeguarding of Principal and Interest of Outstanding Securities—Bankers Can Teach Public Desirability of Healthy Utilities and Render Financial Aid in Temporary Emergencies

By F. H. RAWSON
President Union Trust Company, Chicago

THE unsatisfactory financial condition of many electric traction companies, as well as other utilities, is well known. Their unhappy condition is due to the very large and constantly recurring wage increases necessarily granted to all classes of employees and to the high cost of every kind of material, such as copper, steel, motors, etc., which enter into electric traction. Coal has also increased greatly in price. These advanced costs have not been met by a corresponding increase in the rate permitted to be charged, or, if a rate increase has been granted, it has been after long delay and in an amount insufficient to keep pace with the increase in wages and other costs. The result has been the inevitable. Companies have struggled bravely on until their expenses became greater than their revenue, with the result that a large number of well-managed properties have been thrown into the hands of receivers and others brought dangerously near the brink of financial disaster.

Several billion dollars of traction bonds, as well as those of other utilities, have been distributed to investors by the strongest banking houses in the United States and many millions of such bonds are held by banks. A few years ago such securities were in high favor and the men who had the courage and foresight to plan and build street car lines were acclaimed public benefactors and received the thanks of the community. All this has changed. A few of these companies were in the hands of unscrupulous promoters, and in some instances the companies and the cities in which they operated were exploited for the benefit of the promoters, so that for twenty years or more these few examples have been used by politicians for vote-getting and campaign purposes, and it has been the popular cry for them to denounce traction companies, telephone, electric light and gas companies, styling those operating them as enemies of the public. Politicians are constantly berating the companies and their service and holding out the inducement that, if elected, they will be able to reduce fares or rates. Many a mayor and alderman has ridden into office on this platform. The result is obvious. Investors have been scared away and the credit of the companies seriously impaired or ruined. The companies have been unable to interest capital and the service has naturally deteriorated. A great change in public opinion is now evident throughout the country. The first and best example of this is the intelligent and constructive legislation recently passed by Congress respecting steam railroads. The great experiment of government operation of railroads has clearly demonstrated to the public the futility of expecting good service or cheaper rates from companies politically operated. Public opinion, as reflected by newspaper editorials from every section, is rapidly coming to the conclusion that private operation under rigid and intelligent control is conducive to good service and reasonable rates. State utility commissions everywhere are listening with favor to petitions for much-needed rate increases, not only for electric car lines but also for telephones, electric light, gas, etc.

As an evidence of the intelligent thought being given by public utility commissions, and their desire to safeguard not only the public but investors as well, I quote a few lines from the recent decision of the Public Utility Commission of Illinois in granting the petition of the Chicago Surface Lines for an 8-cent fare:

"The rates hereinafter authorized are just and reasonable rates and are no more than are necessary to enable the petitioners to earn a fair return upon the value of their property actually employed in the public service."

Before there can be much betterment of service the credit of these companies must be permanently restored, and this will take time. Investors must be shown that if they purchase utility securities issued to supply money for obtaining additional equipment or building trackage not only will their interest be earned, with a safe margin, but the principal also will be paid upon maturity, and that while they hold these securities they will not see them steadily decline in market value, due to the attacks of the politicians and newspapers. Investors will not hasten to purchase utility bonds until they are satisfied that the rate-making bodies will continue in force rates adequate thoroughly to rehabilitate the credit of these companies.

One very necessary rule which I hope to see public utility commissions adopt is that when they grant an increase in rates they include in the announcement the statement that there will be no reduction in the rate for a period of at least two years. This would go farther than anything I can think of to make such securities attractive investments. Wage agreements are made usually to cover one or two years and contracts for materials can be more advan-

"One very necessary rule which I hope to see public utility commissions adopt is that when they grant an increase in rates they include in the announcement the statement that there will be no reduction in the rate for a period of at least two years. This would go farther than anything I can think of to make such securities attractive investments."

tageously made on a long time basis. Securities are issued to run for a period of years, and for these and many other reasons it is most important that the companies and investors be able to know a long time ahead what revenue they may expect.

Due to the nature of their business, bankers have a broad viewpoint of financial matters and are in a better position than the average business man to see ahead and correctly forecast conditions. Before bankers will again recommend these securities to the investing public, take them for collateral or make loans to the companies they are going to insist that the present outstanding securities and any additional bonds be safeguarded, both as to principal and interest, and that rate-making bodies allow a rate of return equal to that paid by other well-secured investments. Upon this point the Illinois commission well said, in its Chicago traction decision:

"A return which would have been regarded as reasonable under pre-war conditions is no longer reasonable under the economic conditions resulting from the world war."

At the present time the best and most attractive securities are selling to yield the investor anywhere from 7 to 8½ per cent and any utilities yielding less than these rates will not sell today in competition with other securities.

In addition, sufficient income must be assured to meet not only all operating expenses but also to enable the companies to set aside an adequate sinking fund to take care of the bonds when they mature, and, at all times, the revenue must be sufficient to maintain the property in the best of condition and to keep it free from obsolescence.

Municipal authorities and public utility commissions, when issuing franchises, have not paid much attention to the interests of the investor. They have given their attention largely to protecting the interests of the user of the utility and have not concerned themselves about those furnishing the money. Public utility commissions now recognize their dual duty in safeguarding investors as well as users of the properties and it is encouraging to note that this viewpoint is now being generally recognized. That the Illinois commission had this clearly in mind is shown by the following from a recent ruling:

"The commission in granting this relief at this time had in mind the restoration of the financial credit of these companies. The applicants, having been granted the full measure of relief sought by them, will be expected and required to furnish the people of Chicago adequate and sufficient service.

"The inevitable result of the continuance of the 6-cent fare will be the appointment of receivers for the property of the petitioners, the disruption of the unified service in Chicago and the great injury not only to the companies but to the public also. Obviously this will not insure the public welfare."

Good and adequate service goes hand in hand with the high credit of the companies. One cannot exist without the other and the commission fully recognized this, as evidenced by that part of its decision above quoted.

".....the most important and best thing bankers can do is to bring home to the public, by intelligent teaching, the fact that it is vitally interested in the proper maintenance of utility companies. Another and perhaps equally important thing that the up-to-date banker should do is to render financial assistance to these companies to tide them over temporary emergencies."

The public is also becoming convinced that it is much more to its interest to have adequate and up-to-date service than the inferior quality which, of necessity, follows where the revenues are not sufficient.

The other question, "What can bankers do to help the industry?" I would answer by saying that to my mind the most important and best thing bankers can do is to bring home to the public, by intelligent teaching, the fact that it is vitally interested in the proper maintenance of utility companies. Heretofore the attitude of the people toward utilities has been one of indifference, largely brought about by lack of appreciation of what the public's needs are. The average man on the street thinks that if he can procure a street car ride for 5 cents, with a transfer thrown in, he does not have to concern himself as to whether or not the company is getting enough revenue from his nickel properly to maintain itself. A little thought on his part will bring him to the conclusion that if the revenue is not sufficient it will not be long before the service will reflect this condition; that he will not get about as quickly or as comfortably as he can in other cities which afford proper protection to the traction lines, and that it is only a matter of time before the service will be discontinued entirely, or seriously interrupted. This is equally true in the case of the electric light, gas and telephone companies.

The general public has concerned itself little about the financial condition of the companies, thinking always of the addition in the cost of the service and paying too little heed to what would happen if such service were cut off. If it were cut off for even a short time, with the prospect of its not being renewed, it would not be long before there would be a widespread business depression in that vicinity. Factories would of necessity close down, men would be out of employment and general chaos would follow. No one is in a better position to spread this propaganda than bankers.

Other Things that Bankers Can Do

Another, and perhaps equally important, thing that the up-to-date banker should do is to render financial assistance to these companies to tide them over temporary emergencies. In many instances during the past few years bankers, individually and collectively, have loaned money to these companies to tide them over emergencies. In many cases these loans would not pass muster if judged by the usual credit standards demanded in good banking practice, but the banks have looked at the question from the point of public policy more than as a credit risk, realizing the havoc and ruin that would follow the shutting off of street car, gas or electric service through lack of money. Many of these companies would have been on the verge of having to close down had not the banks come to their rescue with loans, enabling them to pay wages due and to pay for material, thus permitting them to continue to function.

The writer vividly remembers, a year or two back, of having been called to a meeting of representative bankers, called for the purpose of advancing money to help

out a large utility company. The writer's bank had never enjoyed a deposit account or any business relation with that company, but, nevertheless, cheerfully entered into an arrangement whereby all the bankers present agreed, pro rata, according to their size, to advance the money necessary to keep the company going until its revenues were increased by order of the utility commission. Had this company been allowed to go to the wall no one could foresee the misery and loss which would have resulted, and in most cases it would have fallen heaviest on those least able to bear it. There have been many such instances as this and no banker should hesitate to loan a reasonable amount of money to these companies where there is a good chance of getting it back, realizing full well that if the bank does not, it might suffer a greater loss from the damage and panic which would ensue.

Bankers appreciate the high character of the men conducting public utilities and the many handicaps and great strain they have been laboring under since 1914. Rarely do these men receive from the public proper recognition or commendation, but signs everywhere point to better times ahead for traction lines and other public service corporations. Public sentiment is becoming more and more pronounced in favor of a square deal for them, and rate-making bodies are quick to reflect the public's changed attitude. Managers of utilities and investors therein have reason to expect from now on better treatment at the hands of the public and a return to something like their former prosperity. There can be no general prosperity in the country if the railroads and utilities are not permitted sufficient rates to enjoy a high credit and to give good service. When this condition is brought about one of the principal causes of the present unsettled condition of this country and Europe will be removed.

The Public Has a Moral Obligation

The Author Defines the Duty of the Public Concerning Public Utility Service, with Particular Reference to Street Railways—At No Time in Their History Has This Responsibility of the Public Been More Important

By RICHARD T. HIGGINS
Chairman Connecticut Public Utilities Commission

ANY general analysis of utility problems must be based upon a proper conception of utility service, its character, importance and necessity for the general public welfare.

The organization and operation of a public utility company and any exclusive or special privileges granted to it are primarily for the purpose of furnishing to the people, within the scope of its activities, a necessary public service at reasonable rates, rather than as a business enterprise for the purpose of speculation or large financial profits.

The success of a public utility accrues to the benefit of the general public, as well as to the officers and stockholders. The interested parties in a utility operation are the stockholders or investors, the officers and employees and the general public. A duty and a moral obligation devolve upon all of the parties for the successful operation of the enterprise, which can only be a success by their active co-operation in the faithful performance of their respective duties and obligations. If the parties are antagonistic to each other it is bound to operate to the detriment of the service and to the detriment of their individual and collective interest.

Active co-operation consists in something more than one party telling the other what it should do without defining and trying to fulfill its own proper task. There should be more constructive and less destructive criticism, more intelligent effort on the part of all to perform their respective duties and less tendency to transfer the blame to the other fellow.

The most important and active duties and obligations are naturally imposed upon the utility company, its officers and employees who are in immediate charge of its operation and upon whose efficient management and loyal service in a public enterprise its success must largely depend, and without which its failure is inevitable.

Business enterprises and particularly utility companies are today contending against abnormal conditions and are confronted with many new and perplexing problems requiring strong, broad-gage, business men, familiar with their duties, to shape the policies of the enterprise and direct its operation and, in the case of utility companies, having in mind at all times that the rendition of public service is the object for which the company exists.

It is my purpose in this paper to discuss briefly and informally the duty of the general public in connection with street railway operation. No line of utility service has been more seriously affected by recent conditions or is in a more precarious situation at the present time than street railways.

Space will not permit in this article of an extended diagnosis of all the street railway ills or a specific designation of the partic-

"It is therefore of first importance that state legislatures and municipalities granting street railway franchises enact remedial and protective legislation for the benefit of the great mass of people who use or would use street railways as a means of transportation.

"Failure to give such protection reduces or entirely wipes out the value and importance of a utility franchise and nullifies the legislative intention in issuing the original grant."

ular cause or causes producing the present unhealthy effect. We know that the street railway industry in this country generally is struggling for existence, and unless all parties unite in the co-operative performance of their respective duties many of the companies will be compelled to suspend operation, thereby depriving the people of that particular line of public service.

What are the duties of the general public? They may be summarized as follows: To realize that the operation of a public utility is for its particular benefit and that the rendition of adequate service at reasonable rates depends on its co-operation and patronage; to obtain intelligent information of the financial and other conditions of the utility, its needs and requirements for efficient operation; to afford protection against unwise and destructive competition and to afford relief from unjust and unnecessarily heavy legally imposed burdens, whether in the form of taxation or otherwise, and at all times to exhibit an active interest in the success of the utility as an integral and important part of its own general business.

"Every urban community will agree that street railways are a public necessity and that their suspension or abandonment, notwithstanding the automobile possibilities, would be a public calamity and every student and observer of street railway operation must agree that street railways cannot be successfully maintained if the public service automobile is permitted to operate as a free lance along its lines of road."

It is not reasonable to expect that the individual or unorganized public will voluntarily assume responsibilities or effectively perform meagerly understood collateral duties. The general public must act through its organized bodies, such as legislatures and their administrative branches, municipalities and civic, business and commercial organizations. The positive duty must be in, or the result of, a governmental act.

Street railways are operated by virtue and under authority of special grants and franchises issued by state and municipal governments for the benefit of the people. So long as the particular utility is an absolute public necessity the governmental agencies which created the utility corporation should enact such protective and remedial legislation as will enable it properly to perform its public duty.

The great and important motive power back of any enterprise, whether public or private, is finance, and a utility company without sufficient capital or unable to earn a fair return on the capital honestly invested and required for extensions and betterments, after paying operating, overhead and fixed charges, is not in a condition to render adequate service at reasonable rates.

It may be claimed that the logical conclusion is to increase the rates to a point necessary to produce the required revenues, but in the case of street railways the expensive collateral statutory burdens, the competition of unregulated and less burdened transportation agencies reducing the volume of street railway business and the more or less unresponsive attitude of the traveling public, such an increased rate is liable to become a prohibitive rate, resulting in decreased rather than increased revenues.

It is therefore of first importance that state legislatures and municipalities granting street railway franchises enact remedial and protective legislation for the benefit of the great mass of people who use or would use street railways as a means of transportation. The particular legislation would depend upon existing state and local conditions, but in general should involve relief from unnecessarily heavy taxation based upon corporate value or gross receipts without regard to net revenue; relief from the imposed duty, at present existing in many of the states and communities, requiring street railway companies to construct and maintain a large portion of the public highways and bridges for the special benefit of other users of the highway, including competitors, and protection against unfair and unauthorized competition in its occupied territory. Failure to give such protection reduces or entirely wipes out the value and importance of a utility franchise and nullifies the legislative intention in issuing the original grant.

The extent of protection and the restrictions, obligations and limitations imposed upon the competition must to a certain degree depend upon public sentiment and the public necessity for a continuance of street railway service. If street railways are no longer an absolute necessity it is because the automobile in its various forms and classifications has taken their place and is rendering or able to render short-haul passenger transportation service adequate for public needs, satisfactory in character and at reasonable rates, under all climatic conditions.

While privately owned automobiles have naturally affected the volume of street railway traffic, the only class that can be considered or controlled in connection with street railway problems is the jitney or automobile bus, carrying passengers for hire. This mode of conveyance is meeting with considerable popular favor and has become an important factor in both urban and suburban transportation.

Motor Bus Has No Place as Competitor of Street Railway

I believe the jitney or automobile bus has a legitimate place in supplying public transportation service, but not on the lines and territories served by and in direct competition with street railways.

Every urban community will agree that street railways are a public necessity and that their suspension or abandonment, notwithstanding the automobile possibilities, would be a public calamity, and every student and observer of street railway operation must agree that street railways cannot be successfully maintained if the public service automobile is permitted to operate as a free lance along its lines of road.

The unrestricted and unlimited competition of automobile service would also have a tendency ultimately to destroy its own efficiency and self-supporting earning power.

Before throwing electric street railways into the discard by permitting gasoline street automobiles to usurp their place, the public should consider carefully the consequences and the adequacy, dependability and permanency of the substitute service. There is a constantly increasing demand and supply of electricity for power

purposes, and if in the next few years the present reports of the limited supply of oil and gasoline should be fully realized we might find that gasoline in sufficient quantity could not be obtained, or its price might be so high as to prohibit its use as the motive power for public service automobiles.

If we permit or compel the discontinuance or abandonment of street railway service and later discover that we are without adequate or practical service to take its place it will take millions of dollars and years of time to rectify the mistake. It should be forestalled by proper legislation at this time.

The powers and discretion conferred upon public administrative tribunals should be so exercised as to assist as far as possible in maintaining the utility at its maximum efficiency. If necessary to increase rates the rates should be increased before the company becomes financially embarrassed and the property allowed to deteriorate. Deferring maintenance is not only an expensive but a dangerous policy to pursue.

Street railways, if they are to continue serving the public, need assistance, and that assistance cannot be rendered in the form of punishment or antagonism; they need the active, friendly and intelligent co-operation and assistance of the public through its business, commercial and civic organizations. It is incumbent upon these organizations to become informed upon this line of public transportation and its necessity, needs and means of relief. Public sentiment is a controlling element and public sentiment should be formed by intelligent information which these organizations can obtain and disseminate.

The Responsibility Is on the Public for the Maintenance of Good Service

If enlightened public sentiment demands jitney or automobile bus instead of street railway service it means the decline and ultimate abandonment of street railway service, excepting in large metropolitan centers, and a tremendous financial loss to present investors in street railway securities. This is a question the general public will have to decide, and it is extremely important that it decide correctly and with a full understanding of all the facts.

In any event I believe that automobiles carrying passengers for hire should come under public regulation as to rates, service and schedules, not only for the protection of the traveling public but for the protection of their own industry and investment.

There are many legitimate uses to which our public highways may be subjected, and it is essential that no one use be permitted to so dominate or congest the streets that other legitimate users will be debarred from access to or safe utilization of such streets.

At no time in the history of street railways has so important a responsibility rested upon the public—the responsibility of determining whether street railway service shall continue or terminate.

In conclusion, I will quote from a recent decision of the Public Utilities Commission of Connecticut: "From an analysis of the history and development of street railways the commission is led to the conclusion that even though the motive power may change, as it has in the past, the essential features of a street *rail* way will remain. For more than seventy-five years street railways have operated along a predetermined course, on *rails* or tracks, with every new form of motive power."

Hostility of Public Often Due to Misunderstanding

Claim Agents Are in an Excellent Position to Keep Informed of Public Feeling—Employees Should Be Taught to Boost

By R. E. McDOUGALL

General Manager New York & Harlem Railroad, Surface Lines, and Past-President American Electric Railway Claims Association

ELECTRIC railways have gone through some hard, lean years, and while other lines of business and the men connected with them have prospered financially, most of us find ourselves not as well off as we were five or ten years ago. It goes without saying that this is because of the financial condition of our respective companies. For years past it has been a popular game to knock the electric railway. All sorts of fiction concerning them has been circulated and allowed to go unchallenged.

No other public utility should be permitted to lead the electric railway in the community it serves, and if the company's employees are boosters for their company no other utility will lead. If the men who get their bread and butter from a company do not boost for it and try to make it popular and successful no one else will.

No employee of an electric railway is better informed as to how his company stands with the public than the claim agent and his representatives. If any soreness or grievances exist against his company the claim agent is sure to learn of it as quickly as any other. He and his men are in close contact with the public and complaints are continually being made to them by the road's patrons on all manner of subjects, such as service, equipment, conduct of employees and conditions in general. He has every opportunity to learn the reasons for any such feeling and usually finds that it is due to petty annoyances, such as service interruptions, incivility or discourtesy on the part of employees, failure of the company to fulfill promises regarding little things that have been called to its attention, etc.

From such contact with the public, the claim man sooner or later comes to the conclusion that the company's standing and many of its troubles are due largely to indifference of its employees, and many times of its officers, as to what the public thinks or wants. He finds that the people who are generally boosters for community advancement are often against the railways and take no interest in the electric railway situation and know very little about it. They are knockers because they have no knowledge of the facts. When acquainted with the actual conditions they are quick to grasp the situation and willingly stand up for the company and champion it when in the right.

The claim agent realizes that in the past company officials and employees were too busy with other matters to seek the good will of the public, and, in consequence, the public has become unfriendly. The good will of the public must be secured if electric railways are to take their proper place in the business life of each community served. This can only be done through the united effort of the railway men themselves.

The Interests of the Railways and of the Manufacturers Are Identical

Their Common Interest Should Lead to Co-operation—The Pendulum of Public Opinion Now Swings in the Proper Direction—Manufacturers and Railways Must Rise Together

By CALVERT TOWNLEY
Assistant to the President, Westinghouse Electric & Manufacturing Company

BECAUSE a large percentage of contact between street railways and the manufacturers has to do with the purchase and sale of apparatus, material and supplies, in which there is ever present the inevitable discussion of prices, an important fundamental fact is frequently forgotten, namely, that except in the matter of price for the manufacturer's product, the interests of the railways and of the manufacturers are identical in every respect. Prosperity to the railway means prosperity to the manufacturer. Adequate service from the railway means improved labor conditions for the manufacturer. A high standard of product from the manufacturer means reliability of service to the railway.

The electrical manufacturer is in general one of the substantial industries in his community and as there is always a trolley company serving that community their common interest should uniformly lead to co-operation which will frequently prove very effective.

"Prosperity to the railway means prosperity to the manufacturer. Adequate service from the railway means improved labor conditions for the manufacturer. A high standard of product from the manufacturer means reliability of service to the railway."

A large per cent of the street railway troubles of the past have arisen from ignorance of or indifference to the street railway problems on the part of the public, where the active interest of even one prominent industry would have materially helped the situation. This sort of co-operation, local and direct, has not been availed of in the past as fully as it might have been. In fact, the opportunities for it have been more or less neglected in favor of general co-operation in national matters through our national organization, but the opportunities that offer are pregnant with possibilities.

The old saying that "it is always darkest just before dawn" has been again confirmed in the street railway industry, as might have been expected, and through long continued energetic effort the pendulum of public opinion now seems to be swinging in the opposite direction. It was natural that following the old horse car days the transformation to electric propulsion and the rapid expansion of city lines, coupled with the building of interurbans, focused public attention on the magnitude of the industry and on the large profits, real or imaginary, which the promoters of trolley transportation were making, while the accompanying benefits to the communities served were either minimized or, being taken as matters of course, were lost sight of. It has only been by the repeated presentation of many severe object lessons of actual or threatened discontinuance of service that the value of trolley transportation to a community has begun to be recognized, so that instead of having to go on the rocks or receiverships, there seems now to be a reasonable expectation that the companies will be allowed to earn sufficient revenue to pay their operating expenses and charges.

Speaking in the language of our golf enthusiasts, a big bunker was cleared when the street railways got away from the 5-cent fare, which at one time seemed to have been established about as firmly as the laws of the Medes and Persians. However, there is much yet to be done before the industry will again be on a sound basis, and there must be no letup in the united effort of all interested parties if we are to reach that goal. In the first place the deep-seated and erroneous impression held almost universally by the public that a franchise is a valuable asset contributed by the public must be dissipated. Under the conditions prevailing when the street railway industry was started, namely, perpetual franchises, no regulation, unrestricted issue of securities and fares fixed by the railways themselves, such franchises were assets of great value, but under the present condition, reversing all of these specifications, a franchise is a liability. Because an unprofitable street railway can neither move away nor shut up shop its franchise is a burden which a private industry does not have to bear, and as compensation for the assumption of such a burden by the utility there must be a counterbalancing asset if the business is to be economically sound. Just what form this asset should take is open to debate, but as the burden of liability caused by the franchise is one imposed by the public it would be reasonable to have the corresponding asset likewise supplied by the public and thus might take the form of definite laws which should clearly put upon the regulating commission the duty of establishing such fares as may be necessary to insure security for the present investment and to attract new capital when necessary.

Just as it has taken a long time to get away from the nickel fare so will it take a long time to eradicate the misleading ideas about the value of a franchise, and this only emphasizes the necessity for continued co-operation between railways and the manufacturers.

I am one of those who believe with Thomas Jefferson that "that nation is governed best which is governed least." I am distinctly opposed to paternalism and believe that the government should keep its hands off industry and allow the free play of the natural laws of trade. In confirmation of this view it is an interesting commentary to note that, during the past few years, when abnormal and in fact unexampled prosperity has prevailed throughout the land in all unregulated industries, our transportation corporations—regulated industries—have been starving to death. I therefore main-

tain it to be an obvious conclusion that while none of us expects the principle of regulating public service corporations to be abandoned, it is cowardly not to face the facts, and it must be admitted that as it has been practiced regulation has failed.

In discussing the possibilities of co-operation by the manufacturers, it is sometimes suggested that one form it might take is a reduction of the prices of their products. Looking at the matter from the standpoint of a street railway operator, it is my judgment that although this is a natural suggestion, it is a mistaken one born of a desire to economize and of the same parents as are the objections offered by municipalities to the payment of an adequate street railway fare. Any one who is familiar with large commercial enterprises and who investigates the matter will have to admit that the profits on electrical products are relatively small as compared with those of a major per cent of other comparable industries. To throttle the electrical manufacturers as the street railways have been throttled, by bringing pressure to bear to reduce their already moderate returns, would be to cramp development and encourage stagnation. If any change at all were to be made I believe it would operate to benefit the street railway companies if manufacturing profits could be increased, although under the prevailing severe competition it is quite unlikely that such an increase will occur—and so far as I know no one seriously expects it.

The writer began his connection with the manufacturing industry more than thirty-two years ago and during the intervening time hardly a year has gone by that it has not been proposed to "standardize" apparatus. Some one has announced that we have now reached a period when little further progress can be expected and therefore standardization is in order. The absurdity of such a policy will become evident to any one who will take the trouble to review the forward steps that have been made from year to year in the production of improved machinery and appliances, without which the street railway industry would today be in a very much worse condition than it is. Of course this does not mean that there should be no standards, but these should be limited to the dimensions of obviously essential parts and also to such electrical characteristics as methods of rating, of testing and other subjects such as are treated in the standards of the American Institute of Electrical Engineers. There should be the utmost freedom allowed in design so that the industry may reap the benefits of all advances in the art.

In general, it is fair to say that the trolley outlook has improved over what it was a year ago and the prospects for still further and greater improvement are encouraging provided that every effort possible be continued and that the closest and most efficient team work between the industry itself and the manufacturers be systematically promoted.

Stores Service Has Unrealized Possibilities

A Vital Element of an Operating Company, Generally Overlooked—Real Organization Allows Department to Function Properly and Be of Great Service

By M. T. MONTGOMERY
General Storekeeper for the Receivers, Pittsburgh Railways, Pittsburgh, Pa.

THE railway systems are up against it in every way and it is time every department and every man in the industry pulled together toward better conditions. Some of the departments have been forced to improve their methods because they were directly concerned with transportation and everybody was watching for a chance to jump on them, while we of the stores department have always been considered incidental.

Now is the time for the stores department to show what it can do—the whole industry is howling for materials, cost reductions and labor saving devices and our department, it seems to me, is the one that affords the transmission to make things go. In past years, with normal markets and easy money, it was not necessary to invest money in large stocks or worry about deliveries or material substitutes, but now—well, you know conditions without any more talk, and since purchases are based on stock on hand in our department we are always mixed up in the troubles.

Let's make up for lost time and show what our department means to the railway industry. The industry supports us, so it's only right for us to be selfish enough to help support it through efficient service.

Headwork and co-operative effort can accomplish a great deal, and in the line of head work we should start with a concise plan for our department by which to give service and regulate materials and supplies in spite of "no stock on hand," which, like the poor, we have always with us. We can measure our progress by the reduced number of refusals from material supply houses.

Locally our "Stores Department Calendar," shown below, is the concise plan by which we work, and with it and a pull together, we hope to accomplish wonders. Without going into detail I will outline a few "high spots" in our plan and its working.

Aim—Service

- Care and delivery of materials when and where required.
- Removal of all surplus materials and scrap
- Keeping tabs on progress through cost of operation.

A—STORING

- Location of stores and yards.
- Physical arrangement of stock. Consider.
  - Bin layout
  - Maximum visibility
  - Packaging
  - Proper piling
  - Cleanliness
- Division of stores into sections in charge of stockmen
- Responsibility concentrated
- Inventories
  - Monthly stock counting
- Short Cuts
- "Labor Savers"
  - Everything potentially on wheels
  - Steubing lifting trucks—Platforms
- Portable elevators
  - Sprague electric hoists on tracks
  - Barrel racks
  - Locomotive crane
  - Street crane
  - Gravity carrier — Roller coaster
  - Ballast ships
  - Cement sack baler
  - Counting scales

B—RECEIVING

Individual receiving cars
Description tags
Testing—Rejections
Material not O. K., put in "disposition room," pending adjustment
Freight bills

Short Cuts

"Labor Savers"
Stenciling machine
Electric branding iron

C—ISSUING

Car supply schedule
Exchange sheets—one old for one new part
Filling requisitions simultaneously
Analysis of unfilled requisitions—daily
Hurrying materials
Following up hurries
Manifesting
Every shipment checked before delivery
Issuing material over counter for shop use.

Short Cuts

"Labor Savers"
Fanfold manifesting machine
Color tabs for follow ups

"Stores"

D—ACCOUNTING

Stock books — perpetual chart of performances
Errors localized
Price record
Cost accounting
Shop orders

Short Cut
Accuracy

E—PICKUP

In conjunction with the operating department conduct semi-annual pickup trips to every point where material is handled and turn back into stock all usable or repairable materials. This activity is in charge of men representing the stores and operating departments. These pickup trips include the collection of scrap as well.

F — OBSOLESCENCE

Go over stock twice a year and dispose of items which became obsolete through change of design or equipment by sale or scrapping.

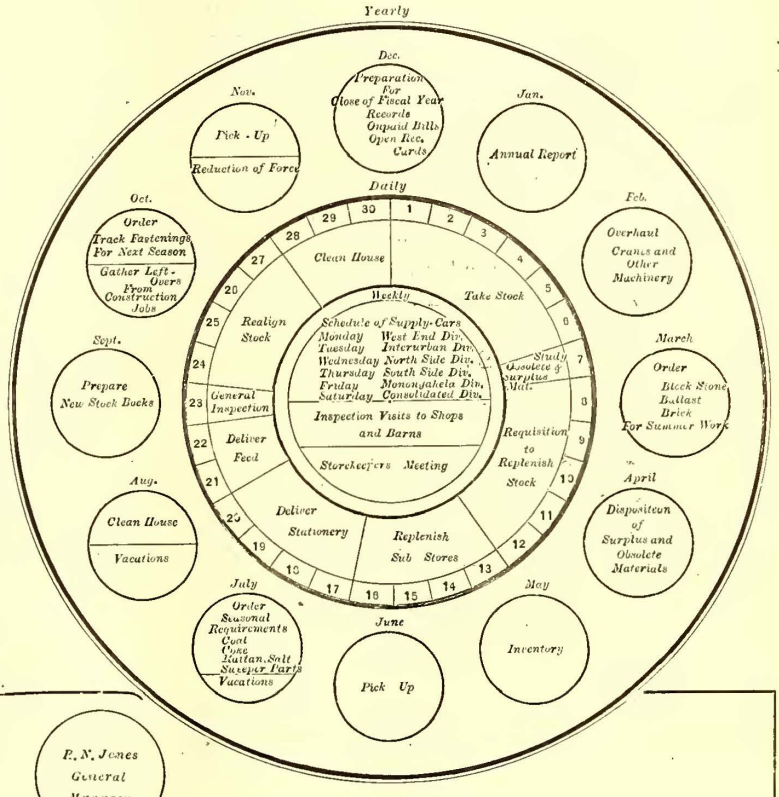
G—SCRAP

Put non-ferrous scrap in crucible shape. A scrap dock for ferrous scrap is located in our railroad yards.

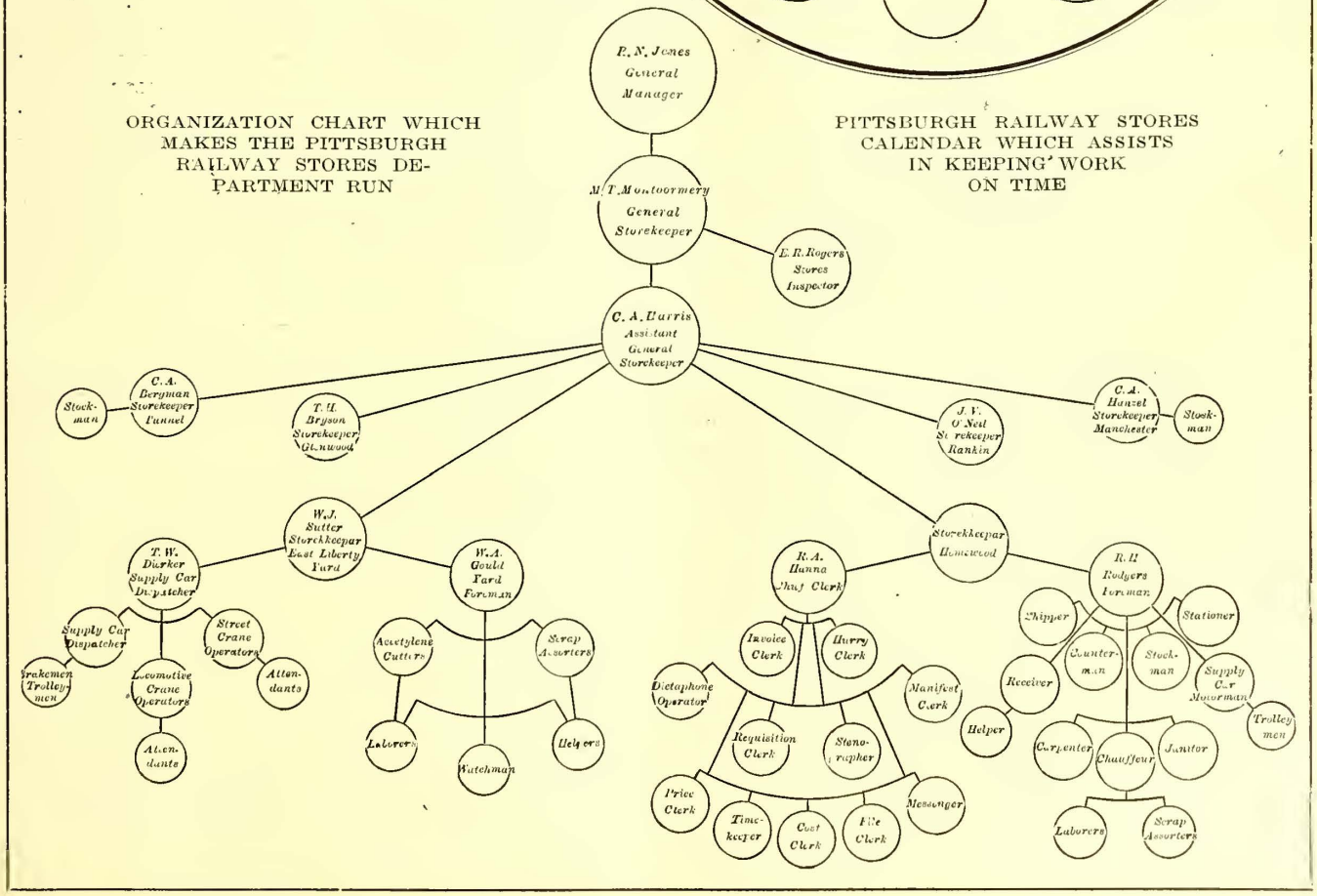
Short cuts

"Labor Savers"
Scull cracker
Alligator shears
Oxyacetylene cutting outfit

While after all the success of any undertaking depends as much on the planning of the work as the headwork of those doing it, without co-operation success will not be achieved. We also groom our boys for bigger jobs, helping them to look ahead. We give them incentive to do just a bit more than they are paid for and we share our responsibilities with them. We look to them for suggestions and these are discussed. If credit belongs to any one of our force he gets it. Our organization—see chart herewith—is flexible. Merit is



ORGANIZATION CHART WHICH MAKES THE PITTSBURGH RAILWAY STORES DEPARTMENT RUN



PITTSBURGH RAILWAY STORES CALENDAR WHICH ASSISTS IN KEEPING WORK ON TIME

always recognized and the ambition of all those of our forces is fostered, helping them to achieve still better results. The stores department, being in close touch with all its brothers, needs co-operation. We found great help in exchange of ideas at storekeepers' meetings and daily shop visits. We aim to see each foreman and listen to his story. Personal touch is just as important in our line of business as in salesmanship. Our craft should get a boost through the proposed section of the A. E. R. A. and by exchanging ideas be mutually benefited.

Each road has its own problems and peculiarities, which are more or less details, but the main issue—the procuring and handling of materials—causes us in our properties perhaps less trouble than in most others, because we work according to a prearranged and concise plan and our stock books.

During these troublesome days, when shipments are overdue and the markets uncertain, it is more than ever necessary to have a record showing actual rather than theoretical conditions, based on ledger or card entries.

We find our stock books and calendar our panacea for all ills which may befall a storekeeper.

Let's Dig Ourselves Out

The Engineer Can Do Much More with His Tools—Engineers Must Also Exchange More Intimate and Detailed Experiences

By R. H. DALGLEISH
Chief Engineer the Capital Traction Company, Washington, D. C.

THE editorial in the June 19 issue of the ELECTRIC RAILWAY JOURNAL "We Are in Our Own Pit; We Must Dig Ourselves Out" expresses the condition confronting every engineer and equipment man in the electric railway field today.

Conditions generally have been bad and hard to master for some time, but now they are getting better and can only improve in proportion to our effort to improve them. There are several ways to improve conditions, but the most important way, in my opinion, is the use of labor-saving tools. A careful study made to determine where labor-saving tools can be used to the best advantage is one of the most important jobs for the engineer today.

The mere installation of labor-saving tools, however, does not complete the work of the engineer, but he must see that they are operated in such a way as to get the most out of them. I know of a few cases where expensive labor-saving tools have been installed and then so poorly handled that less than 50 per cent of what they were capable of doing was got out of them. It was quite true that this 50 per cent was better than had been done without labor-saving tools and seemed to satisfy the engineer in charge. Most of us have a few labor-saving tools and some of us are well equipped, but are we getting out of these tools all that it is possible to get out of them?

The proper use of labor-saving tools is as important as installing them, for there are few cases where a study has been made of these tools that it has not resulted in increased production.

The welded rail joint is another item that should not be overlooked by the maintenance man today. We all know the life of the track depends on the joints and with welded joints this life can be greatly increased. Loose joints are also eliminated, as is also the expense of continually tightening them. So much joint welding has been done in the past few years that there is considerable information available on this subject. I have found that regardless of the type of welded joint used the success of the joint depends almost entirely on the workmanship. It is therefore important that this work be carefully inspected before the paving is laid in order that the workmanship may be kept up to the high standard required for this class of work.

We do not find many engineers today who are reluctant to give information about the results obtained in their work, but sometimes they do not take the time to go into detail enough to make the information of the most value. Now is the time for the engineers to get together and find out what the other fellow is doing and tell him what you are doing.

There is an opportunity for the manufacturer, also, to help the equipment men by the standardization of the wearing parts of equipment. I fail to see the necessity for the absolute lack of interchangeability of the wearing parts of motors produced in the past few years. This one situation necessitates carrying in stock wearing parts for every type of motor used on any property, few of which can be used on any two types of motors even of the same horsepower.

We are told that standardization of motor parts will hinder the development of new motors. I do not agree with that, but feel that if a serious attempt were made to standardize much good would be accomplished. It would of course be necessary for the equipment men to use the standards and not require special apparatus built to meet their particular needs.

The ELECTRIC RAILWAY JOURNAL is doing a great deal of good for the industry in the articles appearing in each issue of particular interest to the engineer. These articles frequently show improved methods of doing work that is well worth considering. Frequently work is done a certain way because we are in the habit of doing it that way, but it is not necessarily the right way. It would therefore seem that the important thing to do today is to find out if your way is the right way, or merely the way you have been in the habit of doing things.

The Influence of Facts and Figures

A prominent electrical railway manager in a Western state, under date of July 3, writes to the publishers of this paper as follows:

"Though I am often struck by the exceptional merit of articles appearing in the ELECTRIC RAILWAY JOURNAL, I have seldom taken the trouble to tell you my good opinion of them, but the editorial in the June 26 issue entitled 'Facts About Figures—Figures About Facts' is really a little gem.

"'History may be history, but as between the romanticist and the realist, we choose the romanticist. Facts untouched by art make dull reading.'

"I really believe that if the story of street railways during the past ten years had been consistently told by street railway executives with the thoughts you have expressed here as guides, the street railway industry would have escaped most of the troubles that have been so heavy upon it."

The Future of the Electric Railway

Interurban Roads Must Develop the Maximum Freight Business—The City Public Must Determine for Itself If It Wants Low Fares or If It Will Continue to Pay Some of Its Taxes Through Railway Fares

By E. G. LEWIS
Chairman Indiana Public Service Commission

THE war and the disturbed financial and economic conditions which have followed in its wake have created a most trying condition for the public utilities. This is particularly true for (1) central-station heating plants, (2) interurban and street railways, and (3) gas utilities, in the order stated. The increased costs of coal and labor, if the upward trend continues, must result in a great number of central-station heating plants being abandoned. Three such in a total of seventeen have been abandoned in the State of Indiana during the last year and two more petitions for abandonment are now pending.

The gas situation has been made especially acute by the extension of the automotive industry, with the result that the owners and operators of 8,000,000 motor-driven vehicles, to say nothing of other gasoline and oil-driven engines, are bidding high prices for oils which are essential to the production of gas. This situation may be met without serious difficulty, although it calls for radical readjustments of rates for gas which even a year ago could not have been predicted.

It has been prophesied that similar readjustments will have to be made in water, electric and other utilities. This brings the consideration of serious conditions to the street and interurban railways.

Taking the interurban railways first, Indiana has been conspicuous as one of the important interurban railway districts of the country. It is difficult to forecast their future. The main lines of passenger and freight traffic in this part of the country were originally marked by the old stage routes. These were later paralleled by the steam roads, which gradually replaced the stage lines and primitive trucking facilities. In the period 1890-1905 these steam roads were paralleled by electric interurban lines, which in turn took the purely local passenger business of the steam railroads. Because of the large bulk of this business and the low operating costs in the matters of labor, coal, etc., the passenger business was sufficient to meet the revenue requirements on these lines of distribution, and very little, if any, attention was paid by these companies to the possibilities of freight business, although there was a development of what might be termed fast local freight and express. Now we see these lines being paralleled again by concrete and brick highways, constructed under state and federal aid, and in addition the advent not only of the passenger vehicle but also that of the truck, with its development from a single unit to multiple units.

It has been the theory of the Indiana commission, in which most of the Indiana interurban officials concur, that probably the greatest amount of revenue was to be obtained by keeping interurban passenger fares a fraction below the fares of the competing steam railroads; that is to say, while the steam roads have been operating on a 3-cent fare, the Indiana interurban roads have been content until very recently with the 2¾-cent fare. The coal shortage, which began with the miners' strike in November, 1919, and which was brought to a most acute stage in the spring of 1920 by the unauthorized but nevertheless far-reaching strike of the trainmen, forced the price of coal to unprecedented heights. This fact, together with the continued upward trend of wages, placed the Indiana interurban roads under the necessity of abandoning all ideas of continuing the original ratio of passenger fares. The result is that within the last two months a number of them have knocked at the door of the commission with a request to have fares placed on an equality with the competing steam railroads. Showings are such that the 3-cent fare will undoubtedly prevail generally. It is the opinion of interurban men and commissioners who have studied the interurban problem that such lines may not profitably exceed the competing steam railroad fare. If the latter remains at 3 cents and costs of coal and labor continue to mount, and at the same time local traffic, both passenger and freight, turns away from the interurbans to the new state and federal highways, certainly the future of the interurban railroads does not look promising.

There seems to be but one avenue open for development, that is increased freight business. This calls not only for aggressive policies on the part of interurban railroads, but in such large cities as Indianapolis, Evansville, Fort Wayne, etc., it calls also for certain reconstructions which will permit the hauling of longer and heavier freight trains into and out of cities. It remains to be seen whether the large terminal cities and the smaller ones through which interurbans pass will permit the development of such interurban traffic along freight lines as might be successfully carried out over a period of years. For example, there is before this commission the insistent demand on the part of buyers of live stock that the interurbans transport their hogs and cattle to stock yards. This, however, would necessitate the operation of live stock cars through some of the best residential districts of the terminal city and also through the residential and business streets of numerous towns and cities lying between the point of shipment and the stock yards. The same problem attaches itself, in lesser degree perhaps, to the operation of trains made up of box cars.

"The problem in this State is whether the time has not been reached when cities must decide, largely for themselves, whether they want low fares or not. The question is to be answered finally by the determination whether the street railway shall be subjected to the heavy costs of maintaining paved streets or whether this burden shall be placed on the taxpayers as a whole."

The unfavorable financial condition that confronts the

whole electric railway industry is such that the companies themselves have not been able to feel certain of competent expenditures to meet the conditions herein set forth. If the interurban railroads are to engage also in extensive freight business there must be constructed enlarged terminal freight houses, a situation that is most acute in the city of Indianapolis, where the development of interurban freight business is now being hindered by the inadequacy of the loading and unloading facilities of the freight houses.

In dealing with the interurban problem local conditions have in general been discussed. However, Indiana problems must be typical of those in most interurban railway systems throughout the country.

"As for the future of the street railway, it is bound to go on. No matter what the fare may be, it must operate."

The street railway situation, of course, presents one of the most critical utility problems that the country faces today. It is critical not merely from the single viewpoint of revenues but also because of the absolute necessity of cities having transportation facilities that are adequate to handle the masses of people. From coast to coast, speaking generally—though there are exceptions to the rule—the street railway industry is in the hands of a receiver or immediately at the door of receivership. Still the street railway must go on; it has to operate or cities die. It comes next to the water supply in the ranks of those utilities most vital to the public, with the possible exception of the central-station electric power plants which drive the wheels of industry.

It is possible that the last two or three years have seen the breaking down of the psychological opposition to a fare higher than 5 cents. There is, nevertheless, to be considered the economic condition that prevails in the matter of higher fares. The higher the fare the more certain will larger numbers of people, whose pocketbooks are cramped by increased cost of living, deprive the street railway of its most profitable business by walking short distances.

For several good reasons we have not been as close students of local street railway problems as some other commissions have been. Supplies of steam coal have been near at hand and other conditions have been very much in our favor. The result has been that the street railway problem in Indiana has not become so critical as in some other sections. The commission and the utilities have been able, therefore, to maintain the 5-cent fare pretty generally. In districts such as those bordering on Chicago and including the city of Gary it has been necessary to go to the 6-cent fare and to adopt certain zone systems. A 6-cent fare with a 5-cent ticket has been put into effect at Evansville. Otherwise the 5-cent fare prevails. The commission and the traction officials themselves have accomplished much in the way of financial rearrangements. This has been notably the case at Fort Wayne, Indianapolis and Evansville, where considerable amounts of securities which did not represent property investment were eliminated. In addition there have been set aside for temporary purposes certain sinking funds. This, however, has not been accomp'ished without providing that the money which was apportioned to sinking fund reserves represented expenditures for plant improvements, with the result that security holders have not been placed at a disadvantage.

The problem in this State is whether the time has not been reached when cities must decide, largely for themselves, whether they want low fares or not. The question is to be answered finally by the determination of whether the street railways shall be subjected to the heavy costs of maintaining paved streets or whether this burden shall be placed on the taxpayers as a whole. In some localities the vital question is that of gross income and the determination of what taxes, if any, shall be paid out of the earnings of the company to the city treasurer to relieve the general tax burden. It is probable that these matters may have to be brought to the attention of the Legislature before cities can assume such obligations, which, in the past era of street railway transportation, have been thought to be properly assessed against the street railway. The proposal has been made that the commission might continue the straight 5-cent fare under an agreement that the city pay out of its general fund ½ cent for each passenger carried, making the gross realization of the utility 5½ cents. It was thought that inasmuch as the patrons would pay only 5 cents it might result in as much increased revenue as a 6-cent fare would produce. This proposal was, however, found to be not in compliance with the state law.

We have been especially fortunate, speaking in general terms, in improving the street railway conditions, particularly in Indianapolis, during the war and post-war periods; that is to say, the service in most cities is at least as good as it was before the war, and in some cities it has been improved and in a measure has kept up with the tremendous advance and growth in population.

The war has had one very beneficial effect that may have lasting financial results. The street railway companies have been liberalized to a very considerable degree in the matter of their attitude toward the public. With the changed attitude on the part of these public servants it is very probable that the general conditions, at least in this city, will materially improve and that the street railway managers as well as the public will have learned a great deal with regard to each other that they would not have appreciated had it not been for the ordeal of war.

As for the future of the street railway, it is bound to go on. No matter what the fare may be it must operate. It remains to be seen whether increased fares will result in municipal ownership of these street railways. The results in Seattle and other cities which have municipal street railways may be seized upon by both sides—those in favor of and those opposed to municipal ownership.

For the former there is the argument that the fare until recently was 5 cents. For the latter there is the argument that with a 5-cent fare the taxpayers of the city of Seattle last year paid approximately $500,000 for expenses that under private ownership and operation would fall to a much lower level.

The public has the choice of paying a higher fare directly or indirectly through increased taxes, but the economic condition is a fact and must be faced frankly if transportation is to be maintained.

Waiting for a Miracle to Happen?

The Problems of the Electric Railway Engineers—Need to Get Out of the Rut Well Pictured—Their Proper Attitude Toward the Industry, and Twelve Salient Suggestions for Constructive Action Set Forth

By EDWARD A. WEST
General Superintendent the Denver Tramway Company

TO THE man trained to build, improve and better things the present condition of the street railway apparently is a hopeless situation, a veritable "slough of despond."

In general, what the street railway engineer is confronted with is:

1. Inability to make necessary renewals.
2. Materials away out of sight; deliveries the same.
3. Labor high, dissatisfied, scarce, inefficient.
4. High cost of capital, and not available for additions or betterments.
5. Attacks on the ability of the profession by uninformed individuals.
6. Throttling of the industry by rigid rate structures.

That the physical condition of most street railway properties is gradually being lowered cannot be denied. Replacements, renewals and even certain items of ordinary maintenance have been deferred. Sensing this condition has had a bad psychological effect on the trained engineer.

Watching material costs soar and listening to excuses from manufacturers regarding failure to deliver demoralize work schedules and tax experience and judgment to the limit. When to buy and how much is a problem. Are costs going higher or coming down?

It has been stated that labor under normal conditions is only 66⅔ per cent efficient and that now its usefulness is only 50 per cent of normal, which means 33⅓ per cent with a cost of 100 per cent greater than normal. Add to this condition a defiant attitude, a deliberate and studied "don't care" position, continual presentation of grievances, real or imaginary, with a constant threat of a cessation of work, and you may know that the man trying to get things done is certainly handicapped.

The watchdog of the treasury trims every estimate, forces the adoption of substitutes and alternatives. Betterments a few years ago were approved upon a showing of 10 per cent saving. Today the engineer must show 25 per cent or better in order to get the wherewithal to do a job. "Build for permanency" has become a dead language and lies on the shelf with "What'll you have, gents?"

The foregoing troubles not being enough, the engineer has had to answer charges of "overvaluation," "excessive costs" and "past extravagances" brought by people trying to keep fares down to pre-war standards.

The engineer is requqired to explain to lawyers and investigating bodies, over and over again, the reasons certain things were done. He has to listen to hindsight critics tell how it could have been done differently, and on the witness stand is made to admit that certain things could have been done differently and at less cost. Before he can explain the reason for the thing as it is he is choked off by a smart-aleck lawyer.

The effect of a rigid rate structure permeates the entire organization, but in the engineering department it probably finds greatest expression, for when the economy tension spring is tightened maintenance is the first to be squeezed.

In view of the above, and the many other unsatisfactory things daily confronting him, is it any wonder that the engineer looks upon the street railway situation as utterly hopeless?

Could a general in command of an army on a battle field do a good job of commanding if he was back of a rifle down in the trenches?

Can we help the general situation any by grumbling, grunting and gaffing?

That much-advertised and well-known law "supply and demand" has taken labor and material matters into secret session to which we are not admitted. We can guess what is going to happen and find little solace in such reflection.

We can sit around and condemn rate regulating authorities to the everlasting bow-wows; we can attend nice, orderly technical engineering meetings and resolute ourselves pink-eyed; we can explain away everything that happens. But does all this avail us anything, do we feel any happier with our lot, do we like our job any better?

Men, we will have to get out of the rut. Engineers are continually faced with impossibilities, failure was left out of the engineer's handbook. *It can be done.*

General Attitude Toward All Industry

Complacent acquiescence with things as they are is much better than getting your mouth sore champing at the bit. We may be having our troubles these times, but there are mighty few industries of any kind that aren't. We see our trials and tribulations on the front page of our morning newspaper and go around the rest of the day believing every one down on us. We meet an acquaintance and he hands us a bunch about watered stock and overvaluation.

A short time ago a group of men were seated around a table discussing general subjects. There were present a retail florist, a manufacturer of white goods, a public official, a boiler works sales engineer, a realty agent and a public utility engineer. As usual the conversation covering general topics became a lively experience meeting. The whole gamut from the A. F. of L. to official Washington was disposed of. Then present day costs occupied the floor. The real estate man, a gay bachelor, started things by jumping on the florist for having increased the price of cut flowers, the florist jumped back with interest because the rent of the apartment he occupied had been raised more than 80 per cent. After much heated discussion the realtor and the florist buried the hatchet. Then the public official present said the real profiteers were the department store owners. The armistice was declared off, the hatchet exhumed. The manufacturer of white goods took the occasion to answer Mr. Public Official's charges. With the aid of a notebook full of statistics the manufacturer

proved that dry goods merchants were the most philanthropic business men extant; that the net of department stores was only one-half what it was before the war. (He was talking percentages and not dollars and cents.) Each and every man present up to this time in the controversy proved conclusively, to his own satisfaction at least, that his skirts were clear and that his kind were a much-maligned lot. The discussion in all its details was of more than passing interest to the public utility engineer, and when the opportunity presented itself he ventured the remark "that his business was affected by the same economic questions as the business discussed."

Did he get a respectful and attentive audience? He did not. The florist, real estate man, manufacturer, public official, all except the boiler man, jumped on Mr. Engineer with gusto and éclat. "The utility business was different;" "it was a public service industry;" it operated under a franchise which fixed the rates to be charged." Vainly did the engineer try to reason; his arguments were overruled; the history of his company was common knowledge to all present (they admitted it). Hadn't the utility company some twenty years back advertised its tremendous profits in order to sell bonds? Hadn't it bought its own franchise (and incidentally the City Council)? Finally, after several attempts, the engineer got his story across and had the satisfaction of hearing one after another express their ignorance of the real facts. Each man present finally agreed that the same kind of disease was attacking all business and that knocking each other would not help matters any. The boiler man, who had listened attentively to the entire discussions, got up from his chair and said he was about to retire; before actually doing so he expressed himself as having been greatly interested in the evening's discussion, and added that it had been extremely instructive. As the boiler man said "Good night" he remarked that the entire discussion brought back to him the force of the old saying, "There is so much bad in the best," etc.

The boiler man is right. What's the use whining? The other fellow is having his troubles, only we don't know so much about the details of it as he thinks he does about ours.

Waiting for the Miracle to Happen

Some of us lean back and sigh, then utter such startling and extraordinarily original statements as:

"The present conditions can't last, they've got to change."

"A panic would do the country good and it's bound to happen before long."

"Let's be patient until things return to normal."

"What's the use trying to do anything these days, with labor and material out of sight."

Etc., etc., *ad infinitum* and ditto, ditto.

Evidently we are waiting for an earthquake, thunderbolt or the bottom to suddenly drop out. Will it?

If there is one thing an engineer should know it is everything that the old saying "Rome was not built in a day" means. While our administrative officials are struggling with financial problems and our operating officials with labor troubles the engineers resignedly wait. Wait for what?

If we are waiting for a day to dawn with the tension absolutely removed we are doomed to a long, slow wait. Think it over. We can't build a bridge of any magnitude overnight; even the least experienced realize this. What will happen will occur so gradually that its start and finish will be as indistinguishable as the beginning and ending of $y = a_1 \sin x + a_2 \sin 2x + a_4 \sin 3x + \ldots\ldots$ to n terms.

The day will arrive when we will sense relief, construction and rehabilitation will be under way, long-deferred maintenance jobs will be behind us. Our operating brothers will again find fault with the snail's pace we pursue, and the administrating end will complain because work authorized tomorrow was not done yesterday, and we'll be back at the old problem of trying to determine the proper time for a renewal with at least two variables given, the investment needed and the expense of maintaining the old.

It will all transpire in so ordinary a manner and at such a uniform rate that before we are aware of it the miracle will have happened.

What Attitude Should the Street Railway Engineer Take?

It's simply out of the question to be indifferent, but why let our troubles worry us to the point of lessening our efficiency. The old pendulum must come back, and while it's playing around the end of its swing let's look around for something to do. We can't afford to lose our "pep." If we do the time is not far off when some fellow fed up on trouble will take our place. Let's change our attitude toward our troubles and call them problems. Then let's take our coats off and solve them. Let's include industrial difficulties among our engineering research work and systematically clean them up.

What do I suggest? Bless you, it's not subject to mathematical formulæ. Newton's law of action and reaction applies, but even this varies with the locality and size of company. I am later on going to cover a few suggestions, but here all I am attempting is to show the utter foolishness of a negative attitude, because such only aggravates the sore. Reach out and shake hands with what's before you and advise ways and means to make it serve a useful purpose.

We might view this situation from a self-preservation standpoint. The street railway can't be put out of business overnight, either through the process of deterioration or competition by some other method of transportation. It is here for some considerable time to come, it will have to be maintained, considerably reconstructed and renewed before it finally sees its Nemesis. This means much work ahead for the engineer. Work that will tax his capacity as much as original construction. With the foregoing in mind we are involved in this matter through strictly selfish motives and we must not let anything psychological jar our perspective.

This matter of self-interest can be spread. We can show how adequate street car transportation means business for local manufacturers, the butcher, baker and candlestick maker. We can appeal to all those with whom we come in business contact, requesting their support, not from altruistic reasons or as charity, but from the standpoint of benefit to themselves.

I find that few insurance men know that their companies hold street car securities of great magnitude, and when this fact is explained to them it becomes a matter of extreme self-interest. Of course many people not acquainted with national conditions believe the street railway trouble purely local. This class is greatly surprised when told differently, their viewpoint becomes broader and their attitude more tolerant, if not friendly.

Real estate men as a rule fight an increase in fares. Self-interest can be aroused if the menace of inadequate service is brought home to them.

I mention these matters not from an engineering standpoint, but as contact points wherein we can all aid in molding public opinion along right lines. Propaganda work falls in the province of the publicity agent. It's hard to hammer the self-interest nail into place through publicity. Our work brings us into daily contact with manufacturers, agents, contractors, real estate people, and we can talk cold facts in an unofficial way and leave impressions that will arouse self-interest.

Primarily our own individual success depends upon the success of the industry; this fact is paramount. We must strive for improved conditions generally and work industriously on the specific problems coming before us.

"UNDER NEW MANAGEMENT"

We have often seen this sign over the entrance of a restaurant that had once upon a time been popular but had for some reason or other lost favor with the eating public. In other words, it had got into a rut and new management was considered necessary to restore its lost prestige.

Let us put ourselves under new management. Somebody once said, "Do something different every day." When you go down to the office tomorrow morning look it over carefully, move the desk around, change the position of your chair; in other words, get a new slant on the old institution. If you can't do anything else, kick over the wastepaper basket, only do something that differentiates today from yesterday. Look over your own past. What was it that made for your advancement? It certainly was not letting a few obstacles bury you deep in a rut.

A short space back I mentioned the fact that there were certain specific problems confronting the street railway engineer which he could well be working on at this time. Before I list these I want you to ask yourselves whether you have experienced situations somewhat as follows:

A great mass of work is thrown on your shoulders suddenly and you have to devise ways and means to clear it up. An organization has to be recruited without having time carefully to select its members. Plans are approved for work that we have a sneaking feeling have not been given as much thought as needed and we wish we had time to study in detail. We know down deep if we had the time we could make changes that would result in better efficiency and greater economy. When such a rush period comes we always bemoan the fact that we are unable to give these matters the study we would like to.

With this example in mind, herewith are a few suggestions. If you run down the list some, hardly all, of the items will recall to your mind papers lying in the deep drawer of your desk waiting for the time when you would have an opportunity to put some thought on them.

1. Increasing the labor-hour output without increasing the payroll.
2. Bettering existing methods of estimating.
3. Improving design of tools and construction equipment.
4. Increasing foremanizing efficiency.
5. Enlarging the field of autogenous welding.
6. Salvaging recoverable scrap.
7. Working up with the auditor improved cost accounting methods.
8. Revising depreciation and renewal tables.
9. Working up valuation schedules and eliminating inherent defects in present valuation methods.
10. Revise drafting room standards.
11. Work up a maintenance program, taking into consideration the relative importance of the jobs to be done, and carefully detailing the methods to be followed in each case.
12. Study the other fellow's methods, with the idea of remedying certain defects in existing methods.

EACH SUGGESTION IS ANALYZED

1. *Increasing the labor-hour output without increasing the payroll.*—Science in management has much to offer in the way of scheduling and planning work. Insurance against idle labor can be had through a properly organized stores system. We have long waited the time when we could make a study of the supplies carried with the idea of reducing them to a minimum, taking into consideration the delivery situation. Such a study has paid for itself many times over through increased production and reduction in interest on the stock values. The manufacture of urban and interurban transportation is not much different than any manufacturing business if looked at in the right light. Certain shop efficiency methods can be applied to any industry.

2. *Better existing methods of estimating.*—Proper estimating is a gift that is fundamentally part of an engineer's mental equipment, and yet shunned by many. If we are agreed that before any job should be started somebody, at some time, must state what is to be used, where it is to be used, how it is to be used and when, we immediately appreciate the benefits that will be derived through a proper inclusion in every estimate of all detail possible. A consideration of these matters before a job is started, in conjunction with the engineering design, cannot help but make the work run smoother and relieve the engineer of considerable detail during the job's progress. It is impossible to make an estimate 100 per cent correct, but if we can increase the correctness of our present estimating 10, 15 or 20 per cent we will have put just that much grief behind us. It is a matter worth study and development. Anything gained therewith will increase the engineer's capacity.

3. *Improved Tools and Construction Equipment.*—Most construction equipment will stand a careful study. Do you remember the last job on which certain equipment was used, as you watched it working, you resolved that when the opportunity presented itself you were going to make changes that would reduce the labor required to operate it? You also planned on equipment improvements which would necessitate a certain rearrangement of work schedules, all to the end of reducing the amount of labor required. Is this not the time to study these things and get them finally behind us?

4. *Increasing Foremanizing Efficiency.*—We have all lost good foreman material the last few years and we sometimes feel that if it were not for a few old standbys we would be strictly up against it. There is good foreman material in your present working forces. A study of the personnel at this time and the introduction of schooling methods will dispense with much confusion and misunderstanding when your work program is in full swing. Now is the time to work up qualification

standards and standing orders covering the duties, responsibilities and order of work for foremen.

5. *Enlarging the Field of Autogenous Welding.*—We know that most of us have only hit the high spots in our welding practice. Every once in a while something happens that stirs up an idea wherein the welding field could be amplified and time and money savings result. On one property two men, with a Ford truck and a combined gas and electric welding outfit, are enabled to make a great variety of satisfactory repairs rapidly, economically and permanently. These men are experienced welders and receive a rate commensurate with that paid the most skilled mechanics. They are detailed to repair jobs on track, buildings or the power house. The need of a saw for cutting metals and a drill for boring has almost been eliminated. Welding men have become so expert in cutting metal that a saw is almost unnecessary, and the amount, kind and character of work that can be done is startling.

6. *Salvaging Recoverable Scrap.*—Materials are so costly today and deliveries so uncertain that we are forced to use material which a few years ago we discarded as scrap. How far we should go in the matter of recovering scrap must be left to the judgment of the individual concerned, yet it is remarkable how much old material can be reclaimed by welding. Worn-out assembled equipment and materials that are difficult to get from the manufacturer may be unscrambled and reassembled as good as new. Some companies have established, in conjunction with the stores department, a division that rejuvenates worn-out materials, turning these back to stores. The savings that can be made through reclaiming the waste products of the field and shop are worth looking into.

7. *Working Up with the Auditor Improved Cost Accounting Methods.*—The philosophy of costs has been hammered into us for many years, still there seems to be a great lack of uniformity and understanding among engineers and accountants concerning methods best suited to the conditions encountered in the various phases of our engineering activities. On some properties the engineering department handles all costs by its own organization. In others this function is carried out by the auditing department. It is often found that where conditions as cited above prevail there occurs a considerable amount of controversy and misunderstanding between auditor and the engineer. The best system of cost keeping is one where the cost records are part and parcel of the general books of the company, but detailed, arranged and kept so available that they serve all the purposes of the engineer. Mr. Engineer, take Mr. Auditor out to lunch some day and cultivate his acquaintance; tell him what you want; he has a lot of good ideas and 10 to 1 he will offer to help. We may consider him a lower form of animal life when it comes to engineering costs than ourselves, but if we can show him that bookkeeping and cost keeping are separate and distinct he is certainly in a better position than we are to maintain adequate, complete and comprehensive cost records. In passing, you are cautioned to be patient with the auditor. He is human, even though at first blush appearances do not bear this out. He can't fulfill your every wish in a day or a week; it will take months before the cost records as kept by him begin to suit you. They will come in time and you will have made a friend. Some engineers are prone to consider costs out of their bailiwick and pass the buck to the auditor or accountant, then raise h—— when cost reports don't tell the story. To such men the advice is given, go fifty-fifty on responsibility for costs, the results will tell their own story.

8. *Revising Depreciation and Renewal Tables.*—There are as many different ideas regarding depreciation rates as there are items to be depreciated. If we show depreciation on our books for renewal purposes, then who is better qualified to tabulate depreciation allowances than the engineer? Who knows better the lives of equipment and materials? We have all considered this matter and hoped for a time when we could sit down and give it some real thought. Let's try to work it out now.

9. *Working Up Valuation Schedules and Eliminating Inherent Defects in Present Valuation Methods.*—A great many properties today are being appraised. Some have engaged the services of outside engineers and others are doing the work with their own organization. Many companies intend to substitute "valuation records" for their present "property accounts." This means that valuation records will have to be perpetuated. There is a great deal to do in working up arrangements to cover the retirement and abandonment of property in order that the valuation records may at all times be correct. Several of the larger properties have gone into this matter with a great deal of pains and carefully removed from the property records each item retired. This matter is not strictly a dollars and cents proposition, but involves a complete descriptive record of the property retired in order that the inventory records will always be up to date and subject to the inspection of any rate-regulating authority. These records are of great value to an engineer, inasmuch as they will give him the life of any piece of property and he can therefore determine its economic value.

10. *Revise Drafting Room Standards.*—Drafting room standards can be revised and probably greatly reduced in number. The head draftsman has a number of ideas up his sleeve which he has been waiting for a long time to talk over with the chief. Call him into the office. The results of such a conference will be of great value for the future.

11. *Work Up a Maintenance Program, Taking Into Consideration the Relative Importance of the Jobs to Be Done and Carefully Detailing the Methods to Be Followed in Each Case.*—We all have lists of work necessary, but have we given these lists a careful consideration from the standpoint of the relative importance of the work and the kind of a job necessary? It goes without saying that a line with earnings of $6 per car-hour as compared with a line with car-hour earnings of only $2 should have first consideration on maintenance jobs, all things being equal. Have we placed a time limit on each job beyond which it will be unsafe to operate, and then taking into consideration all the jobs to be done, do we know how large a force we will have to have to complete them within the time limit set? Now is the time that we should be looking to the future and a review of each job scheduled will probably disclose good reasons for changes which will result in economy through a better assignment of foremen and gangs.

12. *Study the Other Fellow's Methods, with the Idea of Remedying Certain Defects in Existing Methods.*—In general we know that certain of our long-cherished methods could be revised in certain respects. The details of the revisions have been jotted down in our notebooks as a result of visits we made to the other fellow's property. We know of places where some of the

other fellow's ideas can be used and we have long waited for an opportunity to put some of them into effect. While things are returning to normal a golden opportunity to institute these changes presents itself.

CONCLUSION

"It is much easier to find fault and grumble than it is to do constructive work or help the other fellow who is trying with all the power within him to do such work." I don't know who wrote this, but it's worth framing.

Let's keep to fundamentals and not confuse them with unusual happenings of the long ago. Just as sure as tomorrow, will come a return to normal. In the meantime let's co-operate with the management and operating officials for an understanding that will make our work better and the outlook pleasanter. Let's co-operate with each other so that our working and playing time will be happier and filled with confidence. Criticise only when both sides of a question are thoroughly understood and we have made deductions therefrom which can be molded into constructive shape and disseminated.

Above all, let's stop waiting for a miracle to change today back to yesterday.

Get the Power Plant Into Line

A Specific Example Shows One Instance of Useful Engineering Activity

By E. H. SCOFIELD

Twin City Rapid Transit Company, Minneapolis, Minn.

WITH the demand for increased economy in the electric railway industry it is well for the one responsible for the operation of the power equipment to look to this job and to see that it can stand on its merits.

There is not a steam power plant in operation where practicable improvements in equipment and performance could not be introduced. One of the most vital features in such a plant, and the one most generally considered not easily improved because of limitations imposed by the original installation, is the boiler and furnace equipment.

As illustrating what may be done to overcome such limitations, the experience of a certain plant will be of interest.

A plant of twenty-four boilers, Babcock and Wilcox 556 hp. parallel drum, incline header, thirteen tube high, 540 sq.ft. of superheater was installed with header eight feet above floor line; a 14-ft. basement; two masonry stacks, 16-ft. x 225-ft. and to be served by an old type of underfeed stoker designed to operate the boiler, under test conditions with good fuel, at a maximum of 150 per cent of rating.

It was found necessary, however, to provide for burning any low-grade coal and inclined rocking grates were substituted. These proved inadequate for capacity and efficiency and objectionable on account of excessive smoke.

Chain grates were then installed, masonry stacks replaced by four steel stacks, 14 ft. x 265 ft., special provision made for supplying air to the furnace, four boilers added in the space formerly occupied by stack foundations; resulting in marked improvement. Various improvements were introduced, in arch construction, suspended arches, inclined arches, inclined grate with rear end dropped below floor line, receding bridge wall for increasing combustion chamber and increasing exposed tube surface, boiler raised 2 ft. in its setting, air jets and steam jets introduced to improve mixture of gases and complete combustion before entering tubes.

All these changes in turn resulted in improvement. However, with increased demand for steaming capacity it was found that the limits in capacity and efficiency were reached in this equipment at about 200 per cent rating.

Attention was then directed to the modern underfeed stoker and an equipment installed. The stoker floor line was lowered 2 ft. below the boiler room floor, the face of the stoker projected 4 ft. in front of the boiler face, a 4 ft. low arch filled this space, a vertical bridge wall in combination with the above left a comparatively small combustion chamber and a short exposure of tubes. The ashpit capacity was greatly reduced by the low stoker setting. It was found that this equipment when supplied with high grade, low ash coal would develop 300 per cent rating of the boiler, but the efficiency was low. However, when trying to burn coal with high ash and sulphur it was found impossible. Clinkers formed over the fire surface, anchoring to front, side and bridge walls and to the tuyeres and dump grates.

BURNING LOW-GRADE FUEL

To overcome these difficulties radical changes were required. The stoker mechanism was modified to provide distribution of fuel in a bed of uniform thickness. Tuyeres and air control were changed to give more uniform air distribution, boiler was raised 2 ft. in its setting and the overhanging arch eliminated, water boxes installed, lining all sides of the furnace at fuel bed line. These afterward were replaced by inclined tuyere air boxes at side walls and at front wall displaced by the use of steam jets, installed for the purpose of mixing the gases. The bridge wall was moved 7 ft. back from the dump grate, eliminating the necessity for a water box and allowing a baffle plan which exposed the lower boiler tubes to the furnace heat for 85 per cent of their length. These changes eliminated as far as possible direct reflection of heat on the fuel bed and gave a combustion chamber of 1,400 cu.ft. for 110 sq.ft. of grate surface. Power operating mechanism for dump grates made possible frequent dumping.

Following these improvements it was found possible to operate successfully on any grade of fuel, including damaged coal heated in storage of less than 9,000 B.t.u. heat value, at 300 per cent boiler rating for hours. It was possible to bring the boilers from banked fires to this capacity inside of thirty minutes and to obtain high efficiency throughout a wide range of load with carbon losses under 12 per cent and CO_2 14 per cent to 15 per cent, complete combustion of gases before entering tubes, normal stack temperatures, comparatively low temperatures at surface of fuel bed with slight forming of clinkers and no trouble from clinkers anchoring to furnace walls or stoker or in dumping to ashpit.

As a result of the experience gained with this installation a complete new plan was developed, including a redesign of the mechanical features of the stoker. In this plan the stoker floor line is lowered 3 ft. below the boiler room floor, giving the effect of an 11 ft. setting without raising the boilers, the stoker face set flush with the boiler face, a combustion chamber of

1,300 cu.ft. obtained and a tube exposure of 85 per cent. New ashpits have a capacity of 600 cu.ft. each, without requiring change in the ash conveyor. Superheater surface is increased 50 per cent by replacing with longer tubes in the same headers.

The above is given as an illustration of what may be accomplished along any number of other lines toward making the most of the equipment and conditions prevailing. For example: The difficulty of obtaining skilled operators at reasonable expense for operating may be relieved by so organizing the work that a few skilled operators supervise the work of unskilled helpers. A study of the characteristics of main generating units and their auxiliaries will indicate the loading and choice of service which will result in the greatest economy. A complete and systematic set of records of performance is of the greatest importance in determining in what direction to attempt improvements.

The Corner Has Been Turned

We Are Making Satisfactory Progress, but We Have Still a Long Way to Go Before the Ultimate Goal Is Reached

By W. H. SAWYER
Vice-President E. W. Clark Management Corporation, Columbus, Ohio

THE struggle has been titanic in its immensity and at times the apparent results staring us in the face have closely approached the seriousness of the disaster which befell the good ship *Titanic*. "The corner has been turned," the worst is well behind us.

We have been saying right along that we believed in the good sense of the American people. We did believe in them, although at times our faith was almost shattered. I say "the corner has been turned" because now we are definitely to the point where the American people are saying in a positive voice that they need service, that they must have service. This public still has the natural human desire to want this service at a lower rate than is compatible with good service, but rates today are secondary.

When the public asked to keep confiscatory rates in force it did not appreciate that its unfair attitude meant that later it must pay an even higher price; it did not appreciate how loss of confidence affected cost of money; it did not appreciate that inability on the part of the street railways to borrow money meant higher operating expenses and poorer net results, which the public must ultimately pay for. Street railways today are in no position to borrow money for improvements, and every day they are unable to borrow money to make improvements which will lower operating expenses and increase net income makes the conditions worse and brings the price higher which the public must ultimately pay. We have not as of today the confidence of the investing public, and this means that the riding public must today pay a higher rate of fare than it would have had to pay if we had that confidence. A proper rate of fare for today's condition does not today restore that confidence, but once it is understood that the public really and honestly appreciates that it must have service and is willing to pay for it, even though grudgingly willing, we will have not only "turned the corner" but will be well on the road to a return of confidence. The manufacturers want production; the manufacturers, workmen and the public need transportation so that they may get this production.

"The corner has been turned," as, go where you will today, the predominant note is "we want service." The public may still be selfish, giving voice entirely to its own personal interest, but the question of street railway service is vital if other industries are to continue to function. That part of the public which really analyzes from the public good is not only asking for service but is demanding more service, more efficient service, and it is demanding this because it knows that it is vital to its business.

However, the main issue is still before us, if the public wants the service that it says it does and as I believe it does it must be brought to a full realization that we cannot give that service except as we are given a rate of fare which will enable us to take further steps toward restoring confidence to the investing public. We must compete with other industries for the cost of money to make improvements, to operate more efficiently. Due to the havoc and destruction which has been wrought by the public, it is necessary that it pay a higher rate of fare to enable us to borrow money than would have been true had we been treated fairly during the past.

The public today wants service; electric railway men of this country want to give that service, and the legislature, the public utility commission or the city council which does not appreciate this will take a responsibility of opposing increased rates with very different results than would have been the case two years ago. It was then believed to be politically wise and expedient to neglect the question of service. The "corner has been turned," the public wants service, and the politician who believes otherwise is only fooling himself. To give that service, demands for which are becoming more and more insistent, means today just what it has always meant, just what it would mean in any other business, namely, that we must have a rate of fare which will enable us by our records to restore confidence to the investors.

Co-operation the Keynote of the Future

From our past experience we should now draw conclusions as to what we of the electric railway fraternity should do in the future. My own thought is that we should continue along the same general lines under which we have been working. We must continue to be aggressive and constructive, and must above all things *co-operate*. While one man or one organization may be able to work out the problems of a local situation, the results can certainly be accomplished more efficiently and more satisfactorily by heeding the advice and experience of others. Our detailed problems only are local; the question is a national one, differing in different localities only in local details. We must continue our publicity; we know the facts as no one else does and we must tell the story in plain, truthful language, so that the people will understand that it is their problem fully as much as it is ours, and that our province is to try to work out the mutual problems to their satisfaction.

We must give even better support to the American Electric Railway Association, to our State association and to the ELECTRIC RAILWAY JOURNAL. We must work and give that we may receive. I fear not the ultimate outcome. Electric railways are more than an essential

industry; they are an integral part of our civic communities, and the prosperity of one is absolutely dependent upon the prosperity of the other.

Maintenance and service are today below par because confiscatory rates have kept us from spending money which we could not secure. This condition still exists, but we cannot afford for the public good to be too pessimistic or unfairly pessimistic as to the future. We must tend to improve our maintenance and our service, even if past records do not justify this. In other words, let us go forward in so far as we may on the basis that we know that ultimately street railways are going to give the service required by the public and that the riding public is going to pay a rate of fare which will encourage an investing public to renew its faith in this vital necessity.

I have said in effect that the people, our customers, the public whom we serve, have changed their attitude and are beginning to appreciate the situation. A continuation of constructive, co-operative work on our part must ultimately bring them to a full realization of the mutuality of our interests. Continue as we have been doing, but let us profit by our experience; do not let our shots scatter so widely, and we will achieve success of which we may all be justly proud in that we have been a most important factor in saving from ruination and in restoring to proper functioning that civic necessity—the electric railway.

Sell What the Public Wants

If We Would Be Like Other Business in Theory, Let's Be So in Practice—Know the Public Intimately and on Good Terms—More Important Than Any Economies

By an ENGINEER

YOU have very kindly offered me the opportunity to take part in a symposium on the obligations and responsibilities of the rank and file of the electric railway industry in the present critical times. I appreciate and am grateful to you for the privilege and the compliment, but I feel that I cannot do justice to your plan because, frankly, I do not think it touches the real trouble. There is no question that in many cases practical things may be done to help the individual situation, but when we consider, on the one hand, the extent to which, in the past years, we have reduced the costs of operation—when measured on a common basis—and on the other hand the fact that with very few exceptions our electric railways range in condition from that of barely paying expenses down through varying degrees of financial distress to receiverships, cessation of operation, and in some cases sale as junk, it must be clear that there is something fundamentally wrong.

Certainly it is not because transportation has ceased to be essential, for business without regard to humanity and personal welfare without consideration of industry alike demand more and better carriage of men and materials. Neither is it because the electric railway is an out-of-date instrument, for while the jitney in the summer time may give a more rapid and convenient service, averaged through the year it falls decidedly short of the service of any fair trolley system. Why then does not the public buy the transportation offered by the electric railway to an extent which would at least carry the lines, if not yield a proper return?

It seems to me we must look for light in the lines of industry which have proved profitable. At once you say, "but conditions are different; these industries can adjust their selling prices to the cost of production, while we are tied to a shrinking rather than even a fixed rate." Very true. But the public is not obliged to buy many of these products, yet it pays the price as it is increased, so long as it gets the article it wants. And in those last nine words is the whole story. Just now the public as a whole doesn't want what we are offering them as trolley service, and if we are really honest with ourselves they have at least some reasons for their position. Considered as a whole, our equipment is old and dirty, our roadbed rough as to both line and level, and our schedules fixed by the clock rather than by the convenience of the riders. Again you say, "If we cannot earn enough to make our securities attractive we cannot borrow money, and without money we cannot buy new or repair old equipment, nor can we maintain our tracks." True again. Yet how many great businesses have been built up by men who started with neither capital nor credit, how many of our own lines trace back to nothing but enthusiasm of the starters of the project? What have we done that we cannot today make good in spite of the discouraging conditions facing us? Let us look back for a moment to other industries. Success in an industry depends, outside of indomitable courage and unflagging energy, upon the production at a reasonable cost of an article which the public wants, either through a natural or a created desire, and upon merchandising that article so that it is kept sufficiently attractive to the public to insure that it is demanded in such amounts and ways as make its sale profitable. And, incidentally, the wise merchant brings out the shortcomings of his competitor, not by direct attack, which always breeds a sort of sympathy for the object of that attack, but by setting up the virtues of his product in such a way that the comparison is sure to be made by the desired customer. On the manufacturing side we have done fairly well; there is room for improvement, but we have steadily raised the efficiency of our processes until any really

The engineer who wrote this cryptic practical message is in touch with most of the problems of a large system. He believes his message is more telling if presented anonymously and states that it might be "undiplomatic, to say the least," to announce his identity.—Editors.

great gain can come only through some new development. On the merchandising end, however, we have not so much to our credit. In other lines the alert merchant advertises freely the desirability of his wares, the convenience of his store, the courtesy and attention of his selling force, and is untiring in his efforts to maintain and even exceed his promises; by co-operation with other merchants through national or divisional organizations he endeavors to keep in close touch with the desires of the public and the best general methods of meeting them; through active membership in local boards of trade and business men's associations he gets the "local color," and at the same time identifies himself with his city's affairs and establishes for his business a personal relationship, while by frequent staff meetings with his heads of departments he keeps them and himself in close touch and harmony, while frequent departmental conferences carry the spirit of "the old man" down the line.

Where does the electric railway industry stand on this internal work of merchandising? The American Electric Railway Association contains a very considerable part of the trolley mileage of this country; very valuable papers are presented at its semi-annual meetings, and its committees do splendid work. But how extensively are its recommendations and standards followed? How much of the committee work is availed of by the member companies? Locally how actively is the trolley represented in the Rotary and Kiwanis Clubs, the local Board of Trade, Men's Clubs and the like, not merely as being on the list of members, but as taking a real part in the work? And finally in the family circle, so to say, how closely is the organization kept in touch with the situation? How effectively is the company's loyalty maintained and supported—for loyalty demands a measure of confidence, both as its reward and its guide.

When we measure up the industry as a whole, are we not compelled in all honesty to admit we have at least fallen short of our duty here?

It is in the direct relation with the public, however, that the trolley fails to meet the modern idea of merchandising. In other lines of salesmanship times of stress are times for the most careful attention to quality of product and method of displaying it; advantage is taken of every opportunity to put a possible customer where the real product is shown; the latter is made as attractive as possible, and if there is competition, the weaknesses of the competitor's goods are brought out, not by attack on him, but by exhibiting the contrary in the seller's own stock. Last of all is there threat or sulking.

Yet with the example of years of selling are we not doing exactly that which in other lines of business would be certain suicide? Consider our attitude toward the jitney. Granted that it is an outrageous—indeed a criminal—competition. What do we do? We damn the jitney and demand its immediate suppression, thereby creating a feeling that we are picking on a little fellow, when a plea that it be called upon to share the paving and similar trolley burdens would get at least as much attention and if granted would be just as effective a stop as an ordinance to that effect. And when the public does not suppress the "jit," instead of making our service so attractive that we starve the other fellow out, we instead endeavor to bulldoze the public into riding with us by cutting down the service and making it less desirable!

And haven't we paved the way for the jitney competition and the serious losses we suffer through the one-time trolley riders who are now picked up by their auto-owning friends, or who ride in their own autos, by a pretty thorough disregard of their riding habits at a time when we could say "Ride, damn you, or stay at home" and get away with it?

I believe we have got to start fresh, shutting down a very considerable mileage, not with loud words of defiance, but in considerable humility and a frank admission—and one that will stand investigation without blowing up—that we haven't the money with which to run in competition, and that, too, without mud slinging at a competitor which, however much we may damn it, and—on paper—prove its unprofitableness, still remains a mighty unpleasant absorber of revenues we need the worst way.

Moreover, we have got to forget many of the "principles" of operation we have been following; we have got to make schedules to meet the convenience and wishes of the public, and we have got to make our service so attractive that the public will come to us for the same reason it goes to certain of our merchants in preference to others. That our competitors are not playing fair, that the public is not playing fair, is all beside the question. These are actual conditions we are up against. We must meet them and overcome them, or bust.

And because I sincerely believe this I do not feel justified in urging the men in my field of the industry to get busier in economies until these more fundamental matters, as I conceive them, receive their share of attention.

Coal Production Decreasing

THE weekly report on bituminous coal compiled by the Geological Survey shows a 3 per cent decrease in the coal production for the week ended June 19 as compared with the previous week. The total production for the year to that date was 201,170,000 net tons, an increase of 40,100,000 tons over the production of 1919, but a decrease of 24,250,000 tons as compared with the production in 1918.

The production up to March of this year almost equaled that of 1918, but the railroad and mine strikes during March and April lowered production to below normal.

The production of coal has been increasing very rapidly during May and June, but the recent walkout of switchmen is again causing a car shortage at the mines.

Optimistic reports are given out by the railroad executives as regards car shortages. They state that grain cars are now in the harvest district and coal cars in the mining district and the result should be a marked improvement in transportation conditions, providing no strike occurs to prevent car movement.

The Geological Survey report shows that the electric utilities in New England have more than five weeks' supply of coal on hand and the coal gas plants more than four weeks' supply, but that the total tonnage of bituminous coal has decreased from 567,831 on February 29 to 481,652 on May 31, or about 86,000 tons decrease for the month. This does not indicate an encouraging fuel situation in that stocks should be increasing.

Protection Against Shock in Indoor Substations*

Some Simple Principles and Precautions for the Mitigation of Accident Hazard on High-Tension and Low-Tension Circuits

BY E. F. BRACKEN
General Inspector of Substations Commonwealth Edison Company, Chicago, Ill.

IN ALL substations the presence of electrical energy at high voltage introduces physical injury hazards, which must be reduced to a minimum by the use of suitable apparatus and safety devices and by the application of proper rules governing procedure in its operation and control. In the case of rotary converter and motor-generator units and other machinery having moving parts there are hazards which must be guarded against by means of suitable shields and rules of procedure.

Electrical energy is generally delivered to substations at from 4,500 up to 110,000 volts. High-voltage circuits in buildings should be so placed as to render physical contact with them difficult and to reduce the possibility of accidental contact with them practically to zero. This may be done by placing open and uncovered conductors up out of ordinary reach of substation attendants and workmen, or, if they must be placed at lower levels, by completely inclosing them in suitable structures.

High-tension manually operated air-break switches intended for opening circuits under load should be situated several feet higher than a man's head, remote from grounded iron work, and should always be operated by means of a long wooden pole. The pole should not be allowed to accumulate moisture, dirt or acid and, therefore, should never be put or kept near an open window or in a storage battery room or other place where it may be touched by acid vapors. As a further precaution, the operator of such switches should, while operating them, stand on an insulated stool and wear rubber or dry leather gloves.

Air-break disconnects in series with oil switches are not generally suitable for opening a circuit load, and any attempt to use them for this purpose is likely to produce a heavy arc sufficient to burn the operator. Such disconnectives should never be removed unless the oil switch in series with them is open. If the switch in series is open the removal of such disconnects while they are alive is not especially dangerous, provided proper precautions are taken to insulate the operator from earth. The operator should be thoroughly insulated from ground by an insulated platform or rubber mat and from the disconnectives themselves by means of a wooden stick or high-resistance device by which he manipulates the disconnectives.

In general no one should be allowed to attempt to work upon or in close proximity to live high-tension conductors or conductors which may become alive during the continuance of the work. For this reason all such conductors should be disconnected from all sources of high potential and measures should be taken to see that no person can restore any of the connections until the work is completed. The nature of the precaution against making conductors alive during the progress of the work will depend largely upon the number of persons who might be in a position to perform such an act. If no one but the workman himself could make them alive the precautions may be very simple. If several persons are in position to do so, it is desirable to use signs, warning signals or even locks to prevent such an act.

All structures which might be made alive as a result of a breakdown of the insulation of high-tension conductors should be carefully grounded. This applies to cores and cases of transformers, frames of high-tension generators and motors, starting compensators and frames of switchboards carrying high-tension conductors. The substation attendant must carefully bear in mind that high-tension current may cause injury both by burn and by shock. In general a person is not subject to electric shock unless some part of his body becomes a part of an electric circuit, and the danger of becoming a part of a possible circuit always must be considered and guarded against.

It is for this reason that rubber gloves, insulating stools, insulated sticks, wooden handles, insulated pliers, insulated screw drivers, wrenches, etc., are used in work on or near live conductors. Electric shock by high-tension current through a vital part of the body is liable to produce severe physical injury or even death. A nearby electric arc may burn the flesh even if an individual is so carefully insulated that he cannot become a part of an electric circuit. Therefore it is not sufficient merely to guard against becoming a part of an electric circuit, but no act should be performed which can possibly cause a heavy arc in close proximity to the body.

Moving machinery offers a type of physical injury hazard which is already quite well recognized. The precautions, safeguards and procedure are in general similar to those pertaining to other rotating machinery, such as is found in machine shops, factories, etc. Guards are used to prevent accidental contact with rotating parts and suitable rules of procedure are designed to prevent undue exposure where guards are impracticable.

Some types of rotary converters in railway work are subject to flashovers under conditions of severe short circuit. Such flashovers are liable to throw an arc quite a distance from the end of the machine, and to throw particles of burning metal still further. Fortunately such flashovers are rare, but they indicate that one end of a 600-volt railway rotary converter is not a good neighborhood for the operating attendant's desk or resting place. Proper installations and protective devices will do much to reduce the severity of such disturbances, but they have not yet made the zone at the commutator end of a railway rotary converter thoroughly desirable as a place in which to spend one's spare time. An operator should never undertake to make adjustments or even close inspections of direct-current brushes of railway rotary converters which have a tendency to flash over except when the unit is entirely disconnected from all sources of possible load.

"Low tension" is a term which has been very exactly

*This article is adapted from a longer one appearing originally in the "Safety Bulletin" of the Commonwealth Edison Company.

defined, but in this discussion will be used to refer to electric pressures below 750 volts. Too many men have a feeling of immunity against injury by shock from circuits with potentials of 110 to 250 volts, and some have far too little respect for railway current at 600 volts. It should be remembered that while 110 volts will not ordinarily produce an unpleasant sensation of shock and to some persons 250 volts is only mildly unpleasant, yet it is a matter of record that men have been killed by 110 volts alternating current and others by 250 volts direct current. If men can be killed on 250 volts direct current substation attendants in railway substations should remember that the output is decidedly dangerous and is capable under some conditions of producing death by shock.

Injury by burn as a result of an arc is to be guarded against and it is to be remembered that while a low-tension arc will not hold through such large distances as a high-tension arc, yet on account of the larger currents they are as a rule heavier and more destructive.

Inasmuch as practically all electric circuits show a potential difference between at least one conductor and ground and some between all conductors and ground, it is apparent that any one touching such a conductor will become a part of the electric circuit to ground if he is not properly insulated from the earth. Proper insulation varies with the voltage of the circuit. For 250-volt light and power and 600-volt railway work dry wooden platforms, wooden mats, rubber mats and dry battleship linoleum are satisfactory. If wood or linoleum is subjected to the ordinary floor scrubbing operations the use of strongly alkaline soaps is likely to reduce its insulating properties to some extent, especially while it is wet. It is possible also to use a commercial insulating compound which can be applied to a floor by means of a trowel, becomes hard in a few hours and which is not affected by moisture.

For high potential it is necessary to use much better insulation. The most common device is a dry wooden platform, either portable or stationary, mounted on high-tension insulators of a grade considerably better than is used for line work on the same voltage. In the use of such a platform there is practically no danger that the operator may become a part of a circuit to earth through the platform itself, but it may give him a false sense of security, especially in congested places, where high-tension, bus-carrying structures are placed close together.

Group Insurance for Employees

THE Lackawanna & Wyoming Valley Railroad (Laurel line), Scranton, Pa., has taken out accident liability group insurance for all of its employees. Each policy provides that in case of sickness or of accident incurred other than due to company work the employee shall receive weekly 50 per cent of his or her wages for a maximum of twenty-six weeks and effective after the first week. The company had already provided group life insurance for its employees, a policy in the amount of $500 being presented to each employee after six months of service. This is increased annually to a maximum of $1,000 at the end of five years of service.

Plans for a local council of the National Safety Council for Chicago have been approved by the Association of Commerce and the heads of forty industries. Samuel Insull is one of the leading spirits of this movement.

Shanghai Tramways Are Prosperous

Short Trackless Trolley Line in Successful Use—Tramways Are Supported Largely by Chinese of Modest Means

THE recent visit to this country of David McColl, general manager of the Shanghai Electric Construction Company, Ltd., which operates the tramways in the International Settlement in Shanghai, China, renders timely a brief summary of the present status of rail transportation in that city. A man of extensive tramway experience in England, Mr. McColl took up the development of this property some ten years ago. It is today one of the more progressive companies of China, as is shown in the development of its shop and roadway equipment, track construction and car equipment, organization and system of "inspectors" designed to meet the peculiar local conditions in Shanghai. Mr. McColl is enthusiastic with respect to the property and is trying out a number of plans for extending its usefulness, including the use of rail-less trolley vehicles.

The rail-less trolley buses are of particular interest, with their special form of drive (a motor driving, through a worm and wheel with 7.25 to 1 reduction, a shaft, which in turn is connected through the differential to the rear wheels, as in standard automobile construction). The bodies, built in Shanghai, are special, with side entrances in order to provide for first and third class compartments. A special trolley pole, with two wheels making contact with the two overhead trolley wires, has been designed and made up by the tramway company and a special shoe, which is lowered and drags on the street rails to complete the electric circuit

RAIL-LESS TROLLEY BUS IN SHANGHAI

when the bus passes over the rail tramway (equipped with single trolley) from the carhouse to the trackless zone.

A novel method has been used for saving power on this system. On the front end of each car is a small semaphore interlocked with the controller handle, so that the inspectors on the streets or in the shop windows can tell at any time by the position of the semaphore the position of the controller and whether the motorman has his controller in the proper position.

A great deal of attention is paid to personnel on the Shanghai property. The superintendents and inspectors are foreigners generally, the car crews are Chinese, the

conductors having to speak English as well as Chinese. The men are treated well and are remarkably loyal to the company.

The situation in Shanghai was covered briefly in the recent report made by Frank Rhea, trade commissioner, to the Bureau of Foreign and Domestic Commerce of the Department of Commerce of the United States.*

Mr. Rhea points out that Shanghai contains three of the eight tramway lines in China (including two in Manchuria). These three tramways are, respectively, in the International Settlement of Shanghai, the French

ONLY ONE TROLLEY POLE USED ON SHANGHAI RAIL-LESS BUS

Concession of Shanghai and the native city of Shanghai. The lines of the Shanghai Electric Construction Company are located in the foreign settlement (except the French), or in what is otherwise known as the International Settlement of Shanghai. The total length of route is about 16.25 miles of rail line and one mile of rail-less trolley.

The riding on tramways in the city is largely confined to the ordinary class of Chinese, as wealthy Chinese and foreigners as a rule travel in jinrikishas or other conveyances. There seems to be a growing tendency on the part of the less well-to-do class of foreigners to ride on the cars, but the proportion of foreign passengers on all lines is very small. Mr. Rhea states that the company's tracks are well constructed and maintained and that the rolling stock comprises ninety motor trolley cars, seventy trailers and seven rail-less trolley cars. Part of the power is generated in the company's own power house and part is purchased from outside.

First and third class fares are charged, but Chinese women ride first class on payment of third class fares. Practically all foreigners ride first class. The zone system of fare collection is used, the first class fare for each zone being three copper cents and the third class fare one-half of this. On payment of fare passengers are given numbered and colored identification slips, and "surprise" checkings by special inspectors are conducted at frequent intervals.

Practically all fares are collected in the form of Chinese copper cents or "small silver money" (both of which are at a substantial discount) and converted into Mexican dollars, at an average of about 125 copper cents to the dollar.

*Special Agent Series No. 180, entitled "Far Eastern Market for Railway Material, Equipment and Supplies."

The rail-less trolley runs through a very congested district of the city. Service was first established in 1915 over a 0.7-mile route, and this was extended in 1916 to the present length of one mile. The Municipal Council has been considering a proposal for a 9-mile extension of this service. In a statement presented to the Council the claim was made that these cars occupy an area of 158 sq.ft., while twenty-eight jinrikishas carrying the same number of passengers would occupy 2,500 sq.ft. to permit of proper movement.

The average cost of the seven rail-less cars now in service was $12,850 Mexican for each complete equipment, and the actual cost of the present installation, including the double trolley, was $137,575 Mexican, including a contribution of $26,022 Mexican for street paving. Results for the latter half of 1916 showed a profit of about 15 per cent on the investment.

The head office of the Shanghai Electric Construction Company is located at 2 North Soochow Road. The following are the officers located in Shanghai: General manager, David McColl; deputy manager, J. G. Smeaton; traffic manager, E. Carroll; rolling-stock superintendent, J. L. Gordon; assistant rolling-stock superintendent, H. G. Sadler; line engineer, H. J. Blatchford; assistant line engineer, T. H. Brownlie; storekeeper, J. L. Stuart. The secretary of the company, L. W. Hawkins, is located in London.

Accident Situation Improves

ACCORDING to the 1917 census figures, relative to the number of accidents in the electric railway industry, which were recently issued, there is disclosed a decided improvement in the trend of the accident account. In 1902 1,218 persons were killed and 47,429 were injured in electric railway accidents. In 1907 2,411 persons were killed and 118,269 injured. In 1917 the number killed was 2,517 and those injured 141,854. In other words, while street car fatalities increased 100 per cent during the five years between 1902 and 1907, the increase during the ten years between 1907 and 1917 was only 8 per cent. Likewise, the non-fatal injuries increased approximately 150 per cent during the five-year period between 1902 and 1907, while the increase during the next ten years was 20 per cent.

The trend of accidents is perhaps shown in better light by noting that during 1919 3,086,319 passengers were carried on street cars per one person killed, while during 1917 the number of passengers carried per person killed was 4,393,572. Expressed in percentage, the electric railway accident hazard decreased approximately 33 per cent during 1917 as compared to 1907.

The good showing which appears to have been made in the accident account is largely attributable, no doubt, to the perfection and more extensive use of mechanical safety devices, to improved methods of operation, and to the safety-first work that has been done to train both employees and the general public in the exercise of precaution. If figures were available up to date, there is some misgiving on the part of men closely associated with the claims departments of street railways companies that they might show an increasing trend, owing to the enormous increase in the number of automobiles in use. This is now the principal source of accident in the electric railway field, as it is also in other activities.

Lehigh Valley's No-Accident Week

District in Pennsylvania Sets New Standard in Safety Drives and Reduces Accidents 90 per Cent

BY LOUIS RESNICK
Editor *National Safety News*

AT 1 O'CLOCK Monday afternoon, May 10, a shrill siren blast resounded throughout the Lehigh Valley of Pennsylvania and at that moment there was started the most comprehensive and most successful No-Accident Week thus far conducted by any community in America.

More than half a million people in twenty cities and towns answered the call of that siren. During the next seven days 170 safety talks were made, more than a million pieces of safety literature were distributed, thousands of safety essays, slogans and posters were prepared by the school children of those twenty cities, hundreds of plant safety meetings were held, safety sermons were preached in the churches, 100,000 letters on safety were written by the children of the district and as many safety pledges were signed by their parents, resuscitation demonstrations, fire drills and other first-aid contests were carried on in practically every community in the district, and at every turn throughout the week the half million people were confronted with safety signs, safety exhibits, safety movies, safety parades.

What were the results? Here are a few:

A reduction of 92 per cent in mining accidents.

A reduction of 80 per cent in electric railway accidents.

A reduction of 36 per cent in all public accidents.

A reduction of more than 90 per cent in accidents at the largest industrial plants in the district.

The Lehigh Valley produces 90 per cent of the world's output of slate and 60 per cent of the world's output of cement. In addition to its quota of these products, the district during the week of the drive produced thousands upon thousands of tons of steel, tens of thousands of tons of coal, thousands of tons of zinc and great quantities of silks and other products. And not a single fatality due to an industrial accident was recorded within that week.

Of far greater importance than the actual reduction of accidents during this particular week was the influence of the drive on the conglomerate population of the Lehigh Valley. This district employs as heterogeneous a lot of workmen as can be found anywhere in the world. Slavs, Hungarians, Poles, Italians, Spaniards, English, Scotch, Welsh and the rather famous native "Pennsylvania Dutch" predominate, but forty-nine other nationalities are well represented in the Lehigh Valley.

Think of 125,000 immigrants working in the steel mills, coal mines, slate quarries, cement, zinc and chemical plants of America an entire week without a single fatal accident. Better still, think of an eighth of a million men of this type working hand in hand with their employers, with the city, state and county authorities in a great community betterment movement. Practical Americanization, improved industrial relations and accident prevention, all in one.

Of greater importance than the saving of lives, limbs and dollars through the reduction of accidents during the week of the drive were:

First, the creation of a public sentiment among both the big business men and the workers for a permanent safety campaign; this will be carried on through the co-operation of the Lehigh Valley Division of the National Safety Council and the various chambers of commerce of the valley.

Second, the establishment of safety education as part of the curriculum of every public school in the district; pledges to this effect were given by school superintendents throughout the district even before the close of No-Accident Week.

Third, the real conversion to safety of many men, both plant managers and workmen, who before had looked upon it merely as a fad.

HOW THE DRIVE WAS CONDUCTED

Approximately a million pieces of safety literature were distributed during the drive. Through the school children 75,000 window cards reading "We have signed the safety pledge—be a booster" were placed in the homes. On the reverse side of each card facing the interior of the home was this message: "Is your home safe? Fathers and mothers are morally obligated to make their homes safe and to teach their children safety."

Then followed eight rules to make the home safe, covering such hazards as scalding, matches, nails, poisons, gasoline fume explosions, falls, dangerous stairways and a suggestion for the use of iodine to prevent infection.

On Monday, the week of the drive, the teacher in every schoolroom in the valley wrote a form safety letter on the blackboard and every child was instructed to make a copy of this letter in his or her own handwriting, addressed to the parents. These letters, together with pledge cards, were taken home by the children to be signed by the father, the mother and the pupil. Upon the return of the signed pledge a window card was given the child. Possibly the best indication of the seriousness with which the entire drive was taken is had in the fact that in every school more than 90 per cent of the pledge cards issued were returned signed, and in many of the schools the returns were 100 per cent.

Attached to the pledge card was a leaflet, to be detached by the parent after signing the pledge, containing on one side seventeen "fire don'ts" and on the reverse "safety don'ts" for the home and the street. An expert acrobat was hired to illustrate by hairbreadth escapes traffic hazards.

The Boy Scouts and the Campfire Girls of every city in the valley were enlisted in the drive, with very gratifying results. Through the co-operation of the Boy Scouts 10,000 windshield stickers, carrying on one side a safety message that could be read by the pedestrian and on the reverse side precautions for the driver of the automobile, were posted on the windshield of practically every automobile in the district. Ten thousand additional safety cards were hung on the radiators of automobiles and motor trucks.

Through the department stores, wholesale houses, public utilities and other places of business 150,000 safety circulars carrying nine specific messages on street and home safety were distributed.

Fifty thousand bulletins reading "We are helping to make this community safe" were posted, in addition to thousands of National Safety Council bulletins which were placed at strategic points in and about every industrial plant in the valley.

Street banners were supplied to every city and town

and every available billboard and fence was decorated with a safety message during the week.

The business interests of the valley came into the drive with all the facilities at their disposal. Every letter that was mailed and every package that was delivered from a mercantile establishment in the Lehigh Valley during this week carried with it a message on safety. Community safety posters were displayed in the windows of every business house and many of the department stores set aside their best show windows for safety displays. To bring the people from the rural districts into the cities, where they could observe the drive in all its intensity, department stores throughout the valley put on special No-Accident sales and made genuine price reductions.

Mass meetings of school children were held in every city every day of the drive and each meeting was preceded by a parade of the children from the school to the Auditorium, where motion pictures were shown and short safety talks were made.

Garages and gasoline stations posted public safety bulletins throughout the week so that every time a motorist stopped for gas or grease he was reminded of the hazards involved in driving an automobile. The first day of the week of the drive was designated as "Safety Sunday" and from the pulpit of every church in the valley a safety sermon was delivered.

In the larger cities the pedestrian was literally confronted with safety slogans at every step, for on block after block of city pavement the Boy Scouts had stenciled on the walks outlines of the human foot in which were painted such messages as "Watch your step" and "Safety first."

Advertising Changes in Routing

How the Los Angeles Railway Placed the Facts in a Commission Report Before the Public

BY J. G. JEFFERY
Director of Public Relations Los Angeles Railway

A SAVING of 4,000,000 car-miles per year, reduction of power consumption by 13 per cent, with a general speeding up of all lines through an extensive rearrangement of traffic, is the program established by the Los Angeles Railway on May 9. The plan was developed with the basic idea of retaining the 5-cent carfare and still delivering adequate service.

Confronted by steadily increasing operating costs, the Los Angeles Railway put its case before the State Railroad Commission of California and the Public Utilities Board of Los Angeles with the request that a thorough survey of the system be made. As a result thirty of the leading engineers and traffic experts of the West co-operated with the state and city officials and executives of the railway company in a five months' investigation. In a general way, the report recommended shortening the running distance of several lines, a reduction of the number of cars passing through the congested business district and installation of a number of one-man safety cars, especially in the outlying districts, where shuttle lines were found practicable.

The rerouting was established so as to clear two through-town streets for automobile and pedestrian traffic exclusively. This was done on all of Eighth Street and on Third Street west of Main. As soon as autoists realized the advantages offered for faster movement a marked improvement resulted. Twenty-five per cent of the curves were eliminated, with consequent speeding up of traffic over the more direct routes. The most notable change in this respect was the ending of turns at Seventh Street and Broadway, which was the busiest intersection of the business district and formed a popular outlet for automobiles to the beach resort cities and other suburban points. Abandonment of a few short lines practically duplicating through-town routes was made on recommendation of the traffic experts, who decided no great inconvenience would result from such action.

Forty-five of the one-man cars have been ordered for some time, and it is expected they will be delivered and placed in service shortly. No attempt will be made to operate them through the business zone until patrons have become well acquainted with their mode of operation on the shuttle lines. It has further been demonstrated that there is a vital need for the larger capacity cars through the downtown section. All cars are being equipped with recording fare box. With the extensive changes in routing during the day, the owl cars were continued on the former runs, since they did not have the traffic problem to meet and served a wide territory. On most lines the rerouting permitted a faster schedule, especially through the downtown streets.

It was by no means an easy task to acquaint the public with the changes made in the rerouting. Advertisements of the new routes were published in all the Los Angeles newspapers with the suggestion that the information be clipped out for further reference. Added to this, sixteen-page folders giving the routes and explaining why the state and city officials had recommended the changes were placed on the cars. Many news stories were carried in the local papers.

The report leading up to the establishment of the rerouting system contained some pertinent facts about a street railway's share of street paving. In Los Angeles the company pays for the paving of 19 ft. in the center of double-tracked streets and 8 ft. on single-tracked streets. The State Railroad Commission report points out that from 8 to 10 per cent of the company's gross revenue is required to pay this paving bill. "This," the report says, "is unjust and it is not to the best interests of the city that this total paving expense should be paid by the car riders."

Track Maintenance Problem in Schuylkill, Pa.

THE Schuylkill Railway, Girardville, Pa., has purchased 400 tons of 70-lb. rail, to be used in replacing old rail along its lines. The labor situation is at present holding up the work. Through boroughs where the streets are paved it is intended to use steel ties. Twelve double sets of frogs and switches with 70-lb. rail have also been ordered to replace old layouts. In the track department of this company one of the most serious problems encountered is the undermining of the track structure by the coal mining interests. The track is continually settling without warning and has to be brought back to grade. In one point the track recently settled 4 ft. for a distance of 100 ft. This settlement is sometimes of gradual occurrence and sometimes is very abrupt.

Auto Carrier Competition in California

Heavy Burdens on Railways and Lack of Regulatory Measures on Auto Carriers Make Change Necessary—Legislative Action Probable

By W. V. Hill
Manager California Electric Railway Association

COMMON carrier automobiles in both passenger and freight service have become an important factor in the transportation field in California. They are competing with electric railways to a serious extent despite the fact that railroad commission, electric railway men and even the auto operators themselves seem to agree that the auto carrier business is economically unsound and in many cases conducted at a loss. California's extensive system of good roads and a climate conducive to automobile travel throughout the entire year have an important bearing on the situation. Whether the electric railways would find it advantageous to use buses as feeders in certain cases may be an open question for some time, but if they do they would expect to give the public the same protection on buses as on cars. If the public wants the railway service continued, and it is granted that the operation of electric railways is an essential service, their investment must be safeguarded and they should be allowed to earn a reasonable return. The situation is summarized in the following:

There are not so many passenger bus companies operating now as there were a year ago, the larger companies absorbing the smaller ones when lack of capital or inefficient management has put them out of business, but the actual number of buses in interurban service is greater. Moreover, the growth of auto truck competition has been very rapid. The average life of the small bus company is short, but apparently new operators are ready to begin fast enough to balance the discontinuations. Through consolidation and extension of their territories some of the bus companies are now doing a gross business in excess of the smaller electric railways.

Operating out of San Diego there are now twenty-five freight trucks and 158 interurban passenger buses, although purely local jitneys are prohibited. In the territory served by the Pacific Electric Railway about two hundred passenger buses are now operating, carrying approximately 20,000 passengers daily. Most of these buses run from the two large bus terminals near the center of the business district. A large percentage of this business could, and in the absence of the buses would, doubtless, be handled by the railway. Of still greater importance is the fact that 1,035 auto trucks are handling freight in the Los Angeles territory, most of these in competition with the electric railway, though less than three dozen trucks have filed application for certificates with the Railroad Commission.

The auto buses have a decided advantage over the electric railways, both in taxation and operation. Aside from the State motor vehicle taxes and the local licenses imposed by some cities, the auto buses have free use of the highways and do not pay the State tax of 5¼ per cent of gross income which the electric railways bear. How serious a handicap the electric railway is under in this regard may be realized from the fact that including taxes, right-of-way, track, overhead construction and, within city limits, paving, it is not unusual for an electric railway to be paying 25 to 30 per cent of its gross income for a road on which to run its cars and the permission to run them there. Both of these the bus acquires for a small fraction of this percentage, so long as it can use gratis the highways built with the taxpayers' money.

Under these conditions and with the high current prices for construction material, it is natural that there would be consideration of whether the electric railway should, under certain conditions, go into the bus business. Particularly in the matter of new territory there is question as to whether service could not be rendered more economically by an auxiliary bus line than by an extension of the track and overhead. On the other hand, in the face of rising gasoline and rubber prices, where track and overhead are now in place, the matter should receive careful consideration before this investment is abandoned and auto buses are bought.

Of late there have been many ill-advised and short lived ventures in the auto carrier business. A goodly percentage of these are ascribed to the policy that automobile distributing houses are believed to have followed, the tendency seeming to have been to finance would-be auto carrier operators even though it was apparent at the outset that the venture involved considerable risk. Under present conditions the automobile manufacturer does not really suffer the whole burden of such losses, because they are charged off on the excess-profits tax, the government being the loser. Moreover, it is considered that there is a considerable advertising value in having a certain make of automobile used extensively in the utility business.

"Robbing Peter to Pay Paul"

Automobiles serving communities that have no other means of transportation should receive every encouragement, but in all cases they should be charged with the same responsibilities required of other transportation utilities. There is an excellent example of robbing Peter to pay Paul in the present system of taking 5¼ per cent of the gross earnings from steam and electric lines for the support of the State and then to use State funds for building highways which the buses use gratis as a right of way on which to compete (free of the 5¼ per cent tax) with the railways.

The highways are being rapidly and seriously damaged by the large buses and trucks and no doubt the Highway Commission will soon be in need of funds to meet heavy maintenance charges. The logical and equitable thing to do would be to impose a special license on auto carriers that are using the highways, the fees collected to be added to the maintenance fund.

Most of the 500,000 automobile owners of California are taxpayers and they are beginning to ask what special rights have been accorded these large auto carriers. The number of accidents is rapidly increasing and the tendency of bus and truck drivers to "hog the road" is such that many drivers of pleasure cars avoid, as much as possible, using roads where the buses run.

Uncalled for competition between interurban electric railways and auto carriers cannot continue. The impending gasoline shortage may help to settle the matter, but regardless of this a readjustment of present conditions cannot be long deferred. As matters stand now, one utility is carrying burdens from which its competitor is exempted. When a definite issue between electric railway and auto buses has been faced, as at Los Angeles,

San Diego and Bakersfield, the elections showed a preference for the electric railway. The issue has now become statewide and legislative action at the next session of the Legislature is desirable and probable. Just what legislation will be passed is problematical, but at the recent meeting of the California Electric Railway Association, as reported on page 1104 of the ELECTRIC RAILWAY JOURNAL for May 29, the railways are working together on the matter through their association and are prepared to present their side of the question and ask for a square deal. The first step probably will be to show the public how serious the present situation is and that if it wants electric railway service continued relief must be given.

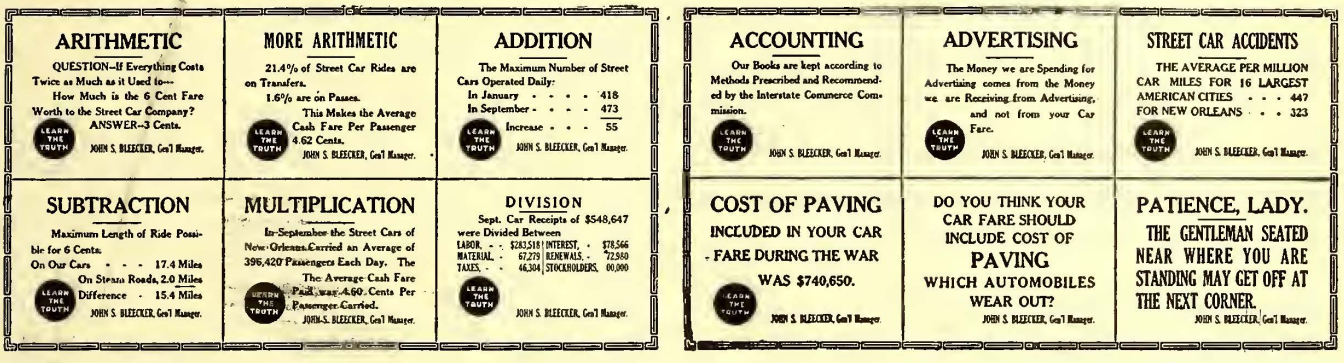
In San Francisco, where local jitneys are not prohibited, there were 438 in operation on June 1. These buses are not permitted to compete with the Municipal Railway, but the Board of Supervisors has made no effort to stop them from competing with the United Railroads. Long Beach is experimenting with a jitney company, having sold a fifteen-year franchise for $21,000, the grantee agreeing to pay the city 5 per cent of its gross receipts.

Brief-Message Car Cards Prove Effective

New Orleans Company Has Had Excellent Success with a Very Simple but Unique Character of Publicity

ONE of the first things John S. Bleecker, general manager, set about doing when he took charge of the New Orleans Railway & Light Company for the receiver was to inform the public by "learn-the-truth" publicity just what the conditions were which the company faced. He fully appreciated that he could do nothing without the co-operation of the riding public, so a newspaper and car-card campaign was undertaken. This work came under the immediate direction of William J. Baldwin, who is publicity agent for the company but has the title of assistant to the general manager.

The first work done by Mr. Baldwin was to go to the three local newspapers and frankly seek their co-operation. It was gained on the straightforward basis of "selling" the papers on the policies and plans of the new management for improving the car service, and on



A GROUP OF THE BRIEF-MESSAGE CAR CARDS USED SO EFFECTIVELY IN NEW ORLEANS. ORIGINALLY EACH OF THESE TWELVE PIECES OF COPY WAS ON A LARGE CARD BY ITSELF

The Railroad Commission, though thus far unable to cope with the auto carrier situation throughout the State because of lack of legislative provisions, has nevertheless shown a very fair spirit. In refusing a recent application for a certificate to operate buses between Santa Rosa and Petaluma, two cities that are now connected both by steam and electric railways, one commission stated that it would "not jeopardize the welfare of a rail carrier unless it is clearly shown that there exists a real public necessity for the authorization of another transportation facility."

However, without explicit laws and ordinances and with no machinery for traffic policing, inspection or control, there are many ways in which the auto carrier can escape regulation. Los Angeles County has a regulatory ordinance that is not enforced; in some counties there is none in effect, and in others licenses costing up to $30 or $40 per annum are required. In the cities there is an almost equal lack of uniformity, some cities having no local licenses and others charging as much as $200 per annum. Thus it is apparent that state, county and city licenses and taxes should and doubtless will at this session of the Legislature be put on an equitable basis. Los Angeles requires a $10,000 indemnity bond on each car, costing $54 per annum. This is another measure in public protection which the railway provides and which the public has an equal right to expect from the auto bus.

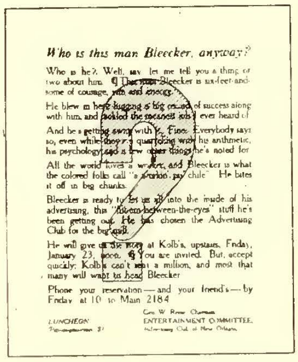
the great assistance the papers could render by co-operating constructively with the company for the good of all. The destructive criticism of the papers thereby disappeared to a large extent or at least went on vacation until they could see whether the company would live up to its expressed principles.

Soon thereafter a liberal use of car cards and a small number of full-page newspaper advertisements were put to work. The newspaper advertisements were pretty much the same as have been run in many other cities, making capital, among other things, of the Washington hearings of the Federal Electric Railways Commission. But the car-card publicity used was quite original in character, as noted above. One of these full-page newspaper advertisements brought effectively before the people the improvements made in the service by giving data on the subject and quoting letters from ten prominent citizens who had commented upon the bettered service.

The car-card publicity got out by the New Orleans company has been built around the idea of putting forth just one thought so briefly stated as to be absorbed almost at a glance. In a good many pieces of copy this single thought was so set forth as to give rise to much further thinking. In other words, a simple pertinent statement was often made without drawing any conclusion, leaving it to the reader to make his own deduction. In some cases the answer was perfectly obvious and in

others it puzzled the lay people and perhaps thereby added to the interest taken. Sometimes a bit of irony was used to good effect. An example of this is included among the cards reproduced herewith—the one having the heading "Patience, Lady."

The twelve samples of the New Orleans car-card advertisements reproduced with this article give a good idea of the character of the copy used. A natural criticism of it is that it seems to be without object, or that it gives rise to the questions in the mind of the car riders, "What is the company after? What is all this leading up to?" This is what occurred to the writer, and Mr. Bleecker answered the criticism by saying that it *was* without object so far as any propaganda to the public was concerned. But he explained that there was a real object involved, and that was to demonstrate to the receiver and board of directors and to reaffirm his own belief that the public would read publicity concerning the street railway, that it would take an interest in the transportation problem and that it wanted to learn the facts. Having made this demonstration, the way would be paved for a constant publicity program with a definite object in view, if occasion demanded an object.



Who is this man Bleecker, anyway?

Who is he? Well, say let me tell you a thing or two about him. ¶ That man Bleecker is six-feet-and-some of courage, vim and energy.

He blew in here lugging a big record of success along with him, and tackled the meanest job I ever heard of.

And he's getting away with it. Fine. Everybody says so, even while they're quarreling with his arithmetic, his psychology and a few other things he's noted for.

All the world loves a worker, and Bleecker is what the colored folks call "a workin' pay chile." He bites it off in big chunks.

Bleecker is ready to let us all into the inside of his advertising, this "hit-em-between-the-eyes" stuff he's been getting out. He has chosen the Advertising Club for the big spill.

He will give us the story at Kolb's, upstairs, Friday, January 23, noon. ¶ You are invited. But, accept quickly: Kolb's can't seat a million, and most that many will want to hear Bleecker.

Phone your reservation—and your friend's—by Friday at 10 to Main 2184

LUNCHEON [illegible]

Geo. W. [illegible], Chairman
ENTERTAINMENT COMMITTEE
Advertising Club of New Orleans

THE ADVERTISING CLUB'S ANNOUNCEMENT CONCERNING MR. BLEECKER

At the time of this writing Mr. Bleecker's belief in good publicity had been amply satisfied, for there was evidence on every hand of an unusual interest in railway affairs, and further, a disposition to concede the difficulties of the situation and to give the company a fair chance to work out its problems. Perhaps the announcement of the local advertising club, sent out when Mr. Bleecker had an invitation to address the club, gives as good an idea of the impression made by the company's publicity as can be had. This is reproduced herewith.

OTHER PUBLICITY ACTIVITIES

There are several other interesting phases of the publicity work being done by the New Orleans company. Considerable copy has been devoted to courtesy and accident prevention. In promoting courtesy among the trainmen, a book of "Supplemental Rules" was got out for employees and later printed in pamphlet form and distributed to the car riders. This had a fine effect on both public and men, each thereby taking a share in the responsibility for courtesy, although all of the supplemental rules were addressed to the trainmen.

The publicity work was also carried to the movie theaters. The company had several films made up to bring out in an interesting manner many thoughts about the street-car system. These were written along much the same lines as the copy used on the car cards. Eight such films were arranged for and they were shown at practically all theaters during a thirteen-week period.

The daily printed bulletins covering the Federal Electric Railways Commission hearings were sent by the company to a selected mailing list of 840 citizens from all walks of life. After this had been going on for some time some one sent back the bulletin and asked that his name be taken off the mailing list. This gave rise to the idea to write to all persons on the mailing list and ask if they were interested in the news of the hearings and whether they would like to continue to receive the bulletin. About 300 replies came back and 95 per cent of them were favorable and showed a very encouraging interest in the traction problems.

In connection with the many calls upon a street railway company for donations to an endless number of charity endeavors, the New Orleans company has held to the fixed policy that the receiver cannot make any gifts of money, but the company is doing everything possible to co-operate through special car cards, etc., in making all such movements a success.

All of these publicity activities combined have created a very envious interest and understanding in the street railway problems in New Orleans. Mr. Bleecker summed up the results by saying, with knowing exaggeration and yet well illustrating the tendency, that it had given him 420,000 inspectors—that being the population of the city.

Canada Contemplates Increased Electrification

THE Hydro-Electric Power Commission of Canada contemplates the construction of several high-speed electric lines in the Toronto district.* One line would connect Toronto, Hamilton and Niagara Falls, using single track between Toronto and St. Catherines with the exception of two double-track sections, each of 6 miles, in the vicinity of Toronto and Hamilton.

In a report to the commission W. S. Murray, consulting engineer of New York, estimates the cost of the 73-mile line from Toronto to St. Catherines at $17,498,635, with an additional $4,800,000 to cover rolling stock and substations, or a total of $22,298,635. This line would parallel the Grand Trunk Railroad, but, according to Mr. Murray, will not cause duplication because the facilities and location of the present road are inadequate to handle the traffic. Mr. Murray points to the fact that eight American roads are in contact with Canada at this frontier and only one road is available on the Canadian side. He also compares the Washington and Baltimore line, which has about the same distance with parallel roads, six tracks of steam and two tracks of electric, and shows that the present Canadian roads carry a density of traffic three times as heavy as the American installation.

Another radial line from Toronto to Bowmanville is proposed, as well as one connecting Hamilton, Galt, Guelph and Elmira.

The recommended scheme is for high-speed traffic on these radial roads out of Toronto with a terminal in Toronto connected with the city lines. The commission has the power to modify lines in existence and purchase others so as to operate at high speed in city streets. The district touched by these radials has had a very heavy industrial and residential expansion and the lines are expected to furnish more adequate transportation facilities. The City of Toronto will take over and operate the existing city lines in December, 1921, and Mr. Murray recommends the purchase by the commission of other radial interurban lines out of Toronto in order that all development may follow a co-ordinated plan.

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*See ELECTRIC RAILWAY JOURNAL, April 24, page 864.

Merchandising Transportation

Attitude and Appearance of Employees an Important Item—Telephone a Direct Competitor of Electric Railway—Publicity an Essential Factor

BY W. H. BOYCE
General Manager Beaver Valley Traction Company,
New Brighton, Pa.

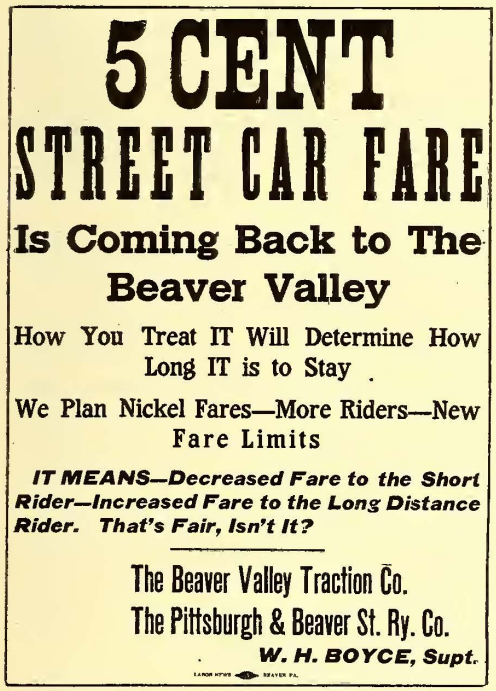
TRANSPORTATION is a commodity and to merchandise transportation properly we must have satisfied customers. To this end we must have clean, courteous, obliging trainmen, operating clean, well-painted and well-maintained rolling stock over a comparatively smooth roadbed at intervals as frequently as experience proves the available traffic will warrant and at a speed as great as operating conditions will permit, "safety first" being considered.

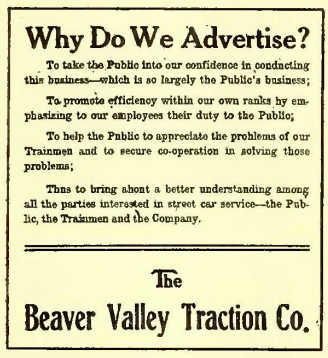
At times, owing to conditions, our service has been so unsatisfactory that certain individuals were led to adopt other means of transportation, sometimes on account of the unreliability of the service, sometimes on account of the crowded condition of the cars, sometimes on account of improper maintenance of rolling stock or roadbed, discourtesy of trainmen or officials or increases in fare, which the short-distance rider was unwilling to pay but made necessary by changing conditions.

We have in the past overlooked many opportunities for keeping the patronage that we had and for increasing our patronage. We must merchandise our transportation after the manner of the merchandising of other commodities. This may be done by correcting as nearly as possible the existing evils already mentioned, by the use of newspaper and car-card advertising, by offering special rates for off-peak riding, which probably can be done in some localities in conjunction with motion-picture houses or mercantile establishments, etc. The zone system in some cases will bring results, the zones being made as short and the single-zone fare as low as possible, due regard being given to the difficulties of administering such a system and to the frequency of the fare collection.

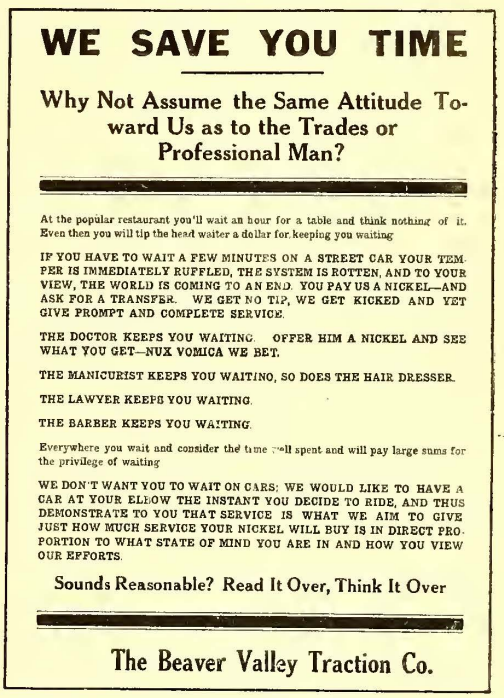
We must also get closer to our customers. In the past it has been rather generally the practice to give our customers what we felt they needed, or what we could get away with. Now we must give them not only what they need but what they want and are willing to pay for. While conditions are not exactly comparable, there is much to be learned from the successful dry goods merchant, who has at the lingerie counter the type of garment that his class of trade demands, or from the catering of the motion picture proprietors to the tastes of their patrons. We can get closer to our customers in many ways—through the advertising already mentioned, through connection with civic movements of all kinds and through association with our customers in all places and under all conditions possible. It is highly important that we take an active interest in the work of chambers of commerce, rotary clubs and other organizations, civic, social and fraternal.

We must not overlook the fact that we are competing with the privately owned automobile, as well as the jitney, and with mail-order houses, telephone companies and all kinds of delivery systems. When a person sits down at home and writes an order to a mail-order house rather than go into the local market and make a purchase a potential street railway cus-





SAMPLES OF ADVERTISING PUBLICITY USED BY BEAVER VALLEY TRACTION COMPANY



tomer is lost. This is the case when the customer calls up a local dealer and orders his supplies by telephone. The business that is thus lost is considerable.

Data Indicate That Telephone Is Direct Competitor of Electric Railway

In December, 1919, the companies which I represent put into effect a zone system with shorter zones than those previously used. Formerly some of the zones had been as long as 6 miles, the minimum fare being 7 cents. At the time the change was made the territory was divided as evenly as possible into 2-mile zones, due consideration being given to local conditions, with the minimum fare reduced to 5 cents. A check made of what was actually occurring prior to the time of splitting up the zones showed that if patrons continued to ride as before, after the changing of the zones, the new rate of fare would produce an increase in revenue of approximately 20 per cent. Our December receipts actually showed an average daily increase of 6.22 per cent as compared with the November receipts; January as compared with December showed a decrease of 4.18 per cent; February as compared with January an increase of 0.35 per cent and March as compared with February an increase of 14.13 per cent.

The following inquiry addressed to the Bell Telephone Company under date of January 23 is of interest in this connection:

> From records that you keep would you be able to give me any information on the following:
>
> Does a change in the street car fare make any apparent difference in the number of telephone calls generally, or those to or from any particular firms?
>
> Aside from purchasing from grocery stores, meat markets, bakeries, etc., the daily necessities of life, is there any considerable quantity of telephone purchasing done, or do you have any means of determining that, either as a local specific case or from national data?
>
> I realize that you may not have any information directly along this line, but you can see what I am driving at, and if you have any information that will shed light on the relative positions of transportation and telephone companies when it comes to serving the shoppers, I would much appreciate having same.

This inquiry brought the following response from the Bell company:

> Replying to your letter of the 23d inst., I regret to advise that I am unable to furnish information requested.
>
> I might say, however, that the traffic load has increased very much during the past two months. We are unable to give any particular reason for this increase in telephone calls, as it does not apparently apply to any particular locality, but seems evenly distributed over the entire valley.

Inquiry under date of April 8 developed the fact that the telephone company experienced an increase of 35 per cent in traffic load, about evenly distributed among its local exchanges, for the months of December, January and February, while for the month of March the traffic load showed a decrease of 10 per cent. It will be recalled that in December, January and February we suffered a decrease in traffic, while in March our traffic increased materially. This would indicate direct competition between the railway and the telephone. This illustrates the fact that it would pay all of us to learn more of what is going on on the sidewalks and through the telephone exchanges and delivery systems, rather than to confine our inquiries solely to what is occurring on the car.

Our companies have for the past eight years done more or less advertising in the way of car cards and in the daily newspapers. This has, without a doubt, had an effect upon the merchandising of our transportation by reason of acquainting the public with the operating problems and difficulties which we must overcome. To these patrons would give little thought without having the facts called to their attention by the operating company. We have, through meetings with the trainmen, through letters sent to the trainmen and through our service code attempted and have accomplished some things in the way of making our trainmen realize that we are dependent wholly upon the good will and patronage of the public. A few extracts from our service code may serve to illustrate this:

> Increasing business on the street cars may sound funny to you, but it can be done. Every time you run past an intending passenger you create a feeling that results in his walking.
>
> Every time you are late, people walk.
>
> Every time you miss being at the depot stop when the train comes in people walk.
>
> Every fare we lose counts against you, as the fares pay your wages, and I get mine from the same source.

Amalgamated Association Believes in Merchandising Methods

We believe that the international officers of the Amalgamated Association of Street and Electric Railway Employees of America, too, now realize that there is something to the side of merchandising of transportation. In the November, 1919, issue of the *Motorman and Conductor* the following four paragraphs appeared on the editorial page:

> A merchant employs clerks to sell the line of goods in which the merchant is dealing. Not a very unlike employment to that of street car conductor.
>
> As a general proposition the salesmen on a street car whose business is to sell transportation gets better pay than the average store salesman. His craft is more effectively organized.
>
> What would be a street car conductor's opinion of a store clerk who refused to let him enter the store to make a purchase? Then can it occur to the conductor that this same opinion is formed of him in the minds of prospective passengers in whose face he shuts the door of his car?
>
> Let the street car conductor assume the role of a merchant whose clerks are inattentive to prospective patrons. What type of clerk would he presume he had? How long would he retain them in service? Assuredly, he employs them to sell his goods and not to drive prospective customers from his store. Yet the conductor holds a position identical with the store clerk. As a merchant, he would keep in his employ the live, efficient clerk.

Publicity stands alone in the question of merchandising. The type of publicity to be employed is the only thing necessary for consideration. Publicity itself is a necessity. Why not consider the advisability of a national campaign, setting forth the necessity for the street cars, their part in the community life and the benefits resulting to the community from their existence? Would this not be one way to help break down the present prejudice against public utilities? Would that not be a way to merchandise transportation? Why not a central bureau for the preparation of publicity material tending to set forth the advantages to the community of having an adequate street car service? The good to be accomplished by such a plan is unlimited.

A report from Japan states that a trackless electric car company has recently been organized at Osaka, for the purpose of providing trackless car service in various parts of the country. This is the first project of the kind in Japan.

Supplying Repair Parts to Shops

Canadian Railway Replaces Wornout Supply Car with Auto Truck—Sends Salvage Car Monthly Over Interurban Division

By W. G. Murrin
Assistant General Manager British Columbia Electric Railway, Vancouver

THE British Columbia Electric Railway operates 302 miles of city and interurban lines with a maximum distance between terminals of 80 miles. This includes three city systems, three connecting interurban lines and one long interurban line extending 64 miles eastward from New Westminster. The mileages of the various divisions are: Vancouver city division, 104; North Vancouver division, 10; New Westminster city, 18; first district intercity, 17; second district, 32; third district (Fraser Valley), 64; fourth district, 12; spurs, sidings and carhouse tracks, 45.

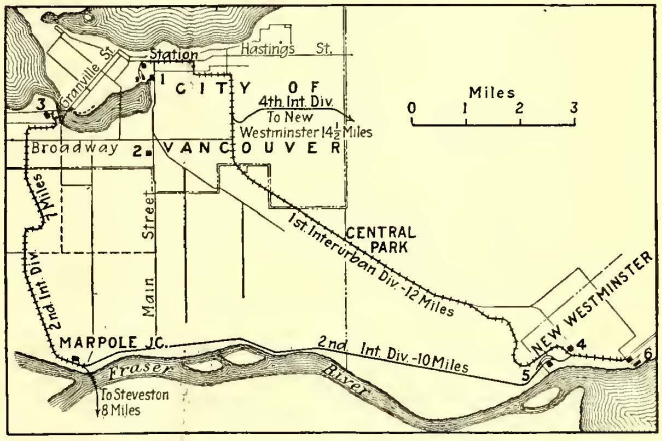
The accompanying map shows the Vancouver and New Westminster city divisions and two of the most important intercity lines of the interurban division. Some 11 miles of city line are in North Vancouver, across the harbor from Vancouver, and the 64-mile Fraser Valley division, with five interchange connections with transcontinental steam lines, begins at New Westminster. The bulk of the freight business is done in this section, called the third district, and in the section made up of the double-track line from Vancouver to Marpole, together with two single lines from that point. which constitute the second district.

The motive-power equipment for these lines consists of 880 cars of city and interurban passenger, express, locomotive and freight types. These, together with such freight cars from foreign lines as require attention, are maintained by the mechanical department. Motor equipment is distributed to seven carhouses. The Vancouver city division, with 220 cars, occupies the Prior Street and 13th Avenue shops; Kitsilano (also in Vancouver), takes care of fifteen cars operating on the second interurban district, and fifteen cars are at North Vancouver. The remainder of the equipment, with the exception of such trains as spend the night at Chilliwack, the eastern terminus of the third district, are looked after at New Westminster. At present there are in service 237 city passenger cars, sixty-one interurban passenger cars, eleven express cars, four locomotives and nineteen service motor cars. The freight equipment comprises 410 standard cars and a number of maintenance-of-way and construction units, all of which, together with a considerable and varying number of foreign cars, are scattered over the interurban lines.

Facilities for Making Repairs

Light repairs are made at the different change points and the overhauling and heavy repairs are done at the repair shops in New Westminster, where there is a large sorting yard. All freight equipment is handled under the American Railroad Association rules. The general repair shop and stores are at the Prior Street yard in Vancouver, which is centrally located. Daily and other periodical inspections, and light repairs, such as the replacing of armatures, bearings, trolley wheels, brake-shoes, control equipment, etc., are carried out at the other carhouses. Truck and wheel overhauling, body repairs, painting and general overhauling are all done at Vancouver, where suitable machinery is available. Many of the repair parts which can be made up in lots more economically at one time are made at Vancouver and supplied to the other shops as required, a subsidiary store being maintained at each carhouse. This system is made practicable by a regular weekly transfer of supplies between the general shop and the different carhouses, which was done until recently by a supply car. This car was of an old type with flat body which had ample room for shipments, but it reached a condition where repairs would have cost more than the car was worth. It was therefore retired and replaced by a 2-ton motor truck, good paved roads to all points being available. This supply truck leaves the Prior Street general shop every Thursday, calling in turn at 13th Avenue, Kitsilano and New Westminster, returning after a final call at the New Westminster freight shed, where materials for points along the Fraser Valley line are left to be taken by the regular express trains. Supplies for North Vancouver are taken by trucks by way of a ferry at intervals as necessary.

At each carhouse all defective or damaged material is collected and replacement parts are left, together with



MAP OF BRITISH COLUMBIA ELECTRIC RAILWAY SYSTEM

1. General repair shop, Prior Street. 2. Vancouver carhouse, Thirteenth Avenue. 3. Interurban carhouse, Kitsilano. 4. Carhouse and shop at New Westminster. 5. Freight repair tracks.

such other supplies as have been requisitioned by the foremen and are shipped from the general stores. Armatures are shipped in special boxes equipped for easy handling by slings and cranes. Each armature has a tag attached to it on which are indicated the defect found and the reason for sending it to the repair shop. After arrival at Vancouver the equipment is tested and repaired and it is then returned to the carhouse or another piece in good repair is substituted. The repair tag, with details of all repairs made, is forwarded to the car-record office at the head office. Other defective apparatus is accompanied by a "repair or replace" work order. The material to be repaired or replaced is distributed to the Vancouver shop and the original of the order, signed by the foreman originating it, is returned to the issuing foreman with the necessary material. No material is taken by the supply car unless accompanied by such work order or shipping bill. Thus, every piece of apparatus sent in by outside foremen is accounted for and either returned, repaired or turned in to the stores.

Some of the Advantages of the System

One advantage of this plan is that it enables the foreman in each repair shop to accumulate pieces for repair until a man or machine can do the work in quantities and so reduce the unit cost. The saving as com-

pared with doing this work at the outside shops in many cases is as much as 50 per cent. For example, at the freight repair track a large number of handhole covers, sill plates, steps, etc., are used. The manufacture of these formerly took most of the time of the blacksmith employed at the repair track, and when made they cost much more than when forged in quantities under a power-hammer with suitable dies at the general repair shop.

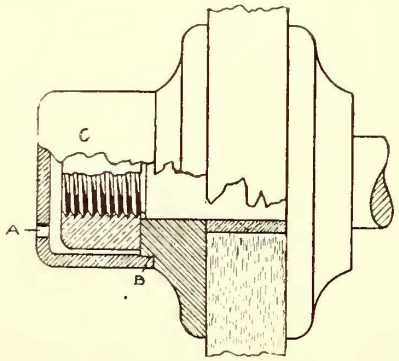
The foreman at each shop now knows that he can depend on getting his supplies regularly by the supply car and assembles the material which is to be returned, makes out his work orders and ships all equipment. At the same time he replenishes weekly his subsidiary stores, which are kept in sufficient quantities to insure efficiency without excessive stock. All material necessary for such emergency repairs as can be economically made at the outside shops is kept on hand. In case of serious breakdowns, when it would be necessary to return the car complete to Vancouver, the damaged material would of course be loaded on the car and forwarded with it.

Generally speaking, it has been found that this regular weekly distribution of supplies, with its simple but efficient system of ordering and receiving them without the work of making out way bills, as would be necessary if shipped by regular freight or express, has relieved the foreman of much unnecessary work and worry and has resulted in improved efficiency and economy.

A similar scheme is in effect on the interurban division, which has produced surprising results. For transporting the material, a car is attached to the way freight which makes trips once a month over each of the interurban lines. This gathers up all material lost or dropped along the right of way, such as brakeshoes, bolts, nuts, trolley poles, etc. Frequently, on inspection, something is found missing from a car, with no reports as to what became of it from the train crews. Later, the missing parts will come in on this "pick up" car. The aggregate value of material thus salvaged in a year more than repays the cost of operating this car.

Safety Cap for Grinder Nut

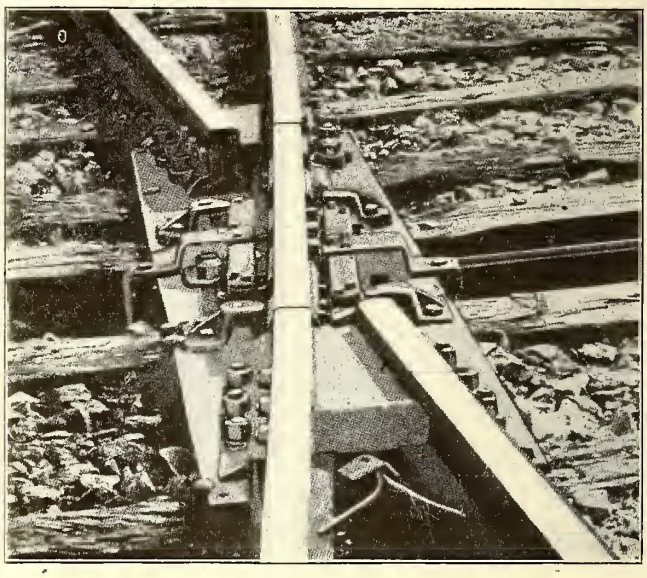
THE weekly news letter of the National Safety Council for May 10, 1920, gives a description of a cap for covering the nut on grinder spindles, as devised by C. R. Underhill of the Peerless Wire Fence Company, Adrian, Mich. In the accompanying illustration the cap *C* is fastened by a thread at *B*, which is cut in the washer on the spindle. This must be left hand or right hand, the same as on the spindle. A pair of holes are provided at *A* for the use of a spanner wrench in screwing the cap on or off. This should be valuable where the work must be done on the side of the wheel where the nut is located and where it is impossible to provide a hood with a side piece to cover the nut.



SAFETY CAP FOR GRINDER SPINDLE NUT

Frogless Switch Improved in Design

THE frogless switch made by the Walls Frogless Switch & Manufacturing Company, Kansas City, Mo., was pictured and described briefly in the issue of the ELECTRIC RAILWAY JOURNAL for Jan. 6, 1917, page 44. Since that time the design has been greatly improved to assure absolute certainty of setting. The operating mechanism has also been redesigned as seen in the accompanying illustration. As now constructed, the section of rail at the frog is either mechanically or electrically interlocked with the switch signal so that the clear signal cannot be given until the frog has been locked in one position or the other.



INSTALLATION OF FROGLESS SWITCH ON THE KANSAS CITY, CLAY COUNTY & ST. JOSEPH ELECTRIC RAILWAY AT NORTH KANSAS CITY, MO.

The operating mechanism now comprises a four-arm bell crank mounted underneath a ¾-in. x 20-in steel plate on which the frog is mounted. Two arms of this crank are connected to two rods from the switch stand or signal tower and the other two arms are connected to two slide bars, one on either side of the rail. These bars engage with two steel rollers in such a manner that as the bars slide along the rail, a cam or wedge action between bars and rollers causes the rail section to shift from one position to the other. It is claimed that the wear resulting from the shifting of the frog from one position to the other is exceedingly small, and that it can be taken up by the use of slightly larger rollers after long service if a certain amount of play develops.

Drum-Contactor Controllers

THE Westinghouse Electric & Manufacturing Company has perfected a design of manually operated drum-contactor controller which embodies practically the same principles of operation as its magnetic-contactor type controllers. They are used for starting and adjusting the speed of shunt, series compound-wound motor by cutting in or out resistance in series or parallel with the motor armature. The contactors are operated by cams mounted on the controller shaft and line contactors which open and close the main line circuit and are protected by magnetic blowouts.

Each contact element is complete in itself and can be removed as a unit. The stationary and moving contacts are identical and are interchangeable with those of the company's auto starters and magnetic-contactor controllers.

All controllers are drilled and tapped for both a horizontal and vertical handle and can be supplied with either. The controllers will operate when mounted in any position, as the contactors are spring-actuated and their operation is not affected by gravity. Controllers for use with crane hoists regulate the speed of the motor while lowering by dynamic or regenerative braking. They are also designed so that if there is not sufficient weight on the hook to rotate the motor and drum the motor will assist in lowering.

Machine for Filling Snow Sweeper Brushes

Machine Built in the Shops of Cleveland Railway Has Effected Marked Economy in the Filling of Rotary Brooms

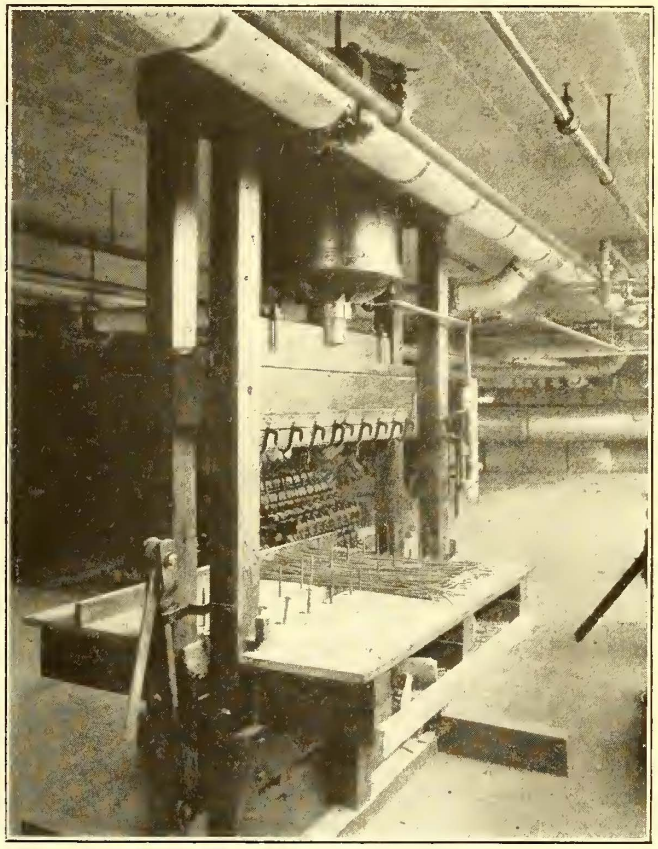
IT USED to take one man an hour and a half to put the rattan in a segment of the rotary brushes used on snow sweepers. Now the Cleveland Railway Company has designed and built a machine at the Harvard shops which makes it possible for one man to fill ten brush segments or more in an hour. The work which has made this economy and the ability of the shop to keep ahead of replacements during long snowstorms possible involved not only the design of the brush machine itself but also a redesign and rebuilding of the brush holders on the sweepers.

The brush machine consists of an air-operated press having a bed and beam designed especially for making these brush segments. A 20-in. x 20-in. cylinder, which was available, though its 7-ton capacity at 95-lb. air pressure probably is greater than needed, is bolted through the concrete floor above the basement where the machine is installed. A special wooden beam is attached to the piston and this may be raised and lowered by means of the shop air pressure controlled by an ordinary trainman's valve, two 4-in. x 4-in. oak timbers forming the vertical guides for the beam.

In the bed of the press is a groove of the proper size and shape to receive a galvanized pressed steel shell which forms the back of the completed brush segment. A layer of rattan of 30-in. lengths is then laid evenly across the bed of the press and, by means of a guide board at the back of the bed, centered over the shell.

Then a maple bar 2 in. wide at the top side, 1¼ in. wide at the bottom side and 2 in. deep, which has been fitted with ten cast brass hooks, is fastened to the bottom of the beam of the press and held in position by means of a short length of chain at either end. Air is then admitted to the cylinder, and as the beam comes down it forces the rattan down into the shell and turns the ends upward on either side of the maple bar. When the piston has traveled its full length downward the brass hooks on the bar spring over the rounded or rolled edges of the shell, engaging it and holding fast. Possibility of these hooks becoming disengaged from the shell is overcome by putting four large cotter pins behind the shell in holes in four of the hooks cast with a projection to extend through slots in the shell. This completes the making of one brush segment. If it sticks in the groove in the bed of the press the lever seen at the left of the accompanying photograph provides a cam action, one at either end of the groove, which very quickly pries the brush up and out.

Steel pins placed opposite each other along the groove in the bed of the press serve to separate the rattan so that there will be space for the hooks on the maple bar to move down through the rattan and engage the shell. It is claimed that there is less leakage of the rattan and that the brushes have a longer life when made with this machine than when made by hand, probably due to the elimination of malleting the rattan into place and to the fact that the bend in the rattan is not quite so sharp. The rattan is of course softened before it is made up into the segments by steaming it in a 30 in. diameter by 36-in. high cylinder connected to a steam hose. Another advantage of the machine is that it is possible to use up short pieces of rattan by mixing them in with the pieces of regular length.



PRESS FOR MAKING SWEEPER BRUSH SEGMENTS, SHOWING SHELL, BAR WITH BRASS HOOKS AND RATTAN IN PLACE READY FOR PRESSURE TO COMBINE INTO A BRUSH SEGMENT

The shell which forms the back of the brush segment is made out of one piece of sheet steel, except for the two ends, and bent into a U-shape with the edges rolled. The ends of the shell are filled in with brass castings on which there are three ears for riveting the end piece to the steel shell.

The brass hooks on the maple bar which forms the inner backbone of the brush are shaped in the form of a loop with the hooks extending out from the top side. These are put in place by slipping them over the end of the bar. Four of the ten hooks per bar also have a projection at the bottom which, as previously mentioned, extends through the shell and permits of the cotter pin or key being inserted to keep the shell and maple bar from separating.

In order to make use of this new type of brush segment it was necessary to provide a new means of fastening the segments onto the rotary brush holders. This was accomplished by substituting for the old holders three castings of similar but different design for holding the two ends and centers of the four brush segments making up a brush. The casting at the outer end of the brush provides four pockets into which the backs of the four segments fit. This casting has a flange which prevents the segments from shifting sideways and a rim which prevents them from flying out centrifugally as the brush revolves. The center casting provides simply four pockets in which the four segments rest, bracing them as the brush rotates against the snow, but this casting has no flange or rim. The casting at the inner end of the brush also provides four pockets for the brush segments and has a flange for preventing any lateral movement of the segments but no rim. At the center and inner-end casting a split band hinged at one side and bolted together at the other is used to clamp the four segments in place.

To remove a segment it is only necessary to remove the two bolts holding these two clamps, open the clamps and, with a radial pull at the inner end of a segment and a slight lateral movement toward this end, lift the segment out of the holder. A new segment is then inserted by first putting the outer end in place against the rim of the outer casting and by moving the other end toward the axis to its position in the center and inner-end casting.

Association News

I. C. C. Brief on Rates

AS CHAIRMAN of the committee on national relations of the American Electric Railway Association, Charles L. Henry on June 28 presented a statement to the Interstate Commerce Commission on the position of the electric interurban railway companies in connection with the proposed increase in rates, both passenger and freight, by all carriers coming within the provisions of section 15a of the interstate commerce act.

In the opening part of his statement, Mr. Henry pointed out that the commission has not yet determined whether electric railroads or any of them come within the provisions of this act, so he confined his arguments to the effect of rate increases of railroads in general on the electric railways. The apparent policy of the steam railroads at the present time, he said, is to increase their freight rates only, leaving their passenger rates without increase and absorbing by their freight increases a necessary and certain loss in passenger operation, but the establishment of this practice and the necessary inclusion of electric railways within it would be unfortunate for the latter. More than 60 per cent of the electric railways derive from 60 to 85 per cent of their revenue from passenger business, so that they cannot absorb in 15 per cent of their gross business substantial losses incurred in 85 per cent of it.

Mr. Henry called particular attention to the loss in the so-called suburban passenger business of many steam railroads, citing as an illustration the low rates at which the passenger business on the steam railroads in the Chicago territory was carried. On five of the principal steam railroads in this territory an investigation made in 1919 showed in 1918 a loss of $1,685,000, exclusive of operating expenses for the use of terminals and equipment, for taxes and for depreciation. With all legitimate items charged in, except depreciation and traffic expenses, the loss in 1918, according to Mr. Henry, was $5,800,000.

Electric railways, Mr. Henry said, are facing the problem of increased expenses, more particularly for labor and material, and, in his opinion, unless passenger as well as freight rates are increased the declared purpose of the transportation act will fail and one substantial branch of transportation in the United States will be forced into inefficiency and finally into insolvency.

Information Recently Compiled

THE following reports and compilations have been prepared by the bureau of information and service of the association:

Report on possibilities of increased fares and effect of other forms of competition.

Summary of power station costs per kilowatt-hour, segregated on the basis of fuel, labor and maintenance for a number of railway properties.

Life of railway motor wearing parts, a summary of replies to data sheet No. 199.

Experience of railway companies and equipment failures due to recent severe winter, a summary of replies to data sheet No. 202.

In addition, the standard compilations on wage rates of trainmen and cities having increased rates of fare have been brought up to date.

The report on cost of living studies will also be maintained up to date hereafter and will include the latest reports and index numbers of the various national agencies, showing the changes in cost of living and wholesale and retail prices of commodities.

Letter to the Editors

Infringement of Contactor Patents

NACHOD SIGNAL COMPANY, INC.
LOUISVILLE, KY., June 24, 1920.

To the Editors:

In a recent issue of your paper you published an article describing an overhead trolley contactor made by an electric railway for its own use in connection with the operation of a highway crossing signal. The contactor described is substantially like the contactor made by the Nachod Signal Company and covered by United States patents, dated May 18, 1909, and May 9, 1911.

Electric railway managers should know that the manufacture of a patented article by the railway itself, even for its own use, is illegal and constitutes infringement. In some cases manufacturers hesitate to institute suits on account of the good will of the customer and because the amounts involved are not large, but the duplication of patented articles is manifestly unfair to those who put their time, energy and resources into the development of such devices and it will retard their design and manufacture.

CARL P. NACHOD, President.

News of the Electric Railways

FINANCIAL AND CORPORATE • TRAFFIC AND TRANSPORTATION

PERSONAL MENTION

New Orleans Men Strike

Went Out Just Before Holiday in Effort to Enforce Compliance with Their Demands

The trainmen of the New Orleans Railway & Light Company, New Orleans, La., went on strike on July 1. The men lost a great deal of public sympathy by their arbitrary action in voting to strike after the heads of the commercial bodies, financial institutions and labor organizations had appealed to them to remain at work until the pending difficulties could be looked into and measures of relief reached by the intervening business men.

Receiver Through with Union

The men even neglected to make answer to the communication of the business men appealing to them to defer taking drastic action until time had been given the public to look into the merits of the controversy, namely, a wage of at least $150 a month for platform men, an eight-hour day and six days' service a week. Subsequently, the men approached the citizens' committee with a proposition for a hearing, but the request was denied them unless the men voluntarily returned to their work and awaited the investigation that had been promised them by the committee. Receiver O'Keefe at this juncture announced that the men would be restored to their positions, quite cheerfully, if they had not given offense to the company and were competent, but they would have to make application as individuals. He was through with the union.

Then followed an order from Rufus E. Foster, Judge of the New Orleans District Court, in which he commanded the receiver to resume operation, laying down certain rules which would make for an adjustment of the trouble after resumption of traffic. In this order the union was not specifically mentioned.

Judge Foster on July 5 again advised the men to go back to work. He said they would be restored to duty by the receiver, no discrimination being made against the union. He added that he would recommend the receiver to apply to the Commission Council for an 8-cent fare. The Commission Council planned to meet on July 6, and it was expected that body would take the matter up for consideration provided the men had resumed work.

Judge Foster's efforts to settle the differences amicably have been disregarded by the union and the strike was still in progress on July 9. The men now are willing to drop the matter of a wage increase if given a contract at the old rate pending an investigation by a committee of citizens. The receivers, on the other hand, demand the men return to work by July 12 on threat of forfeiture of deposits and positions. It is alleged that the Central Trades and Labor Council will take up the matter of ignoring the union. Conditions are improving daily.

In 1915 the maximum wage paid the trainmen was 24½ cents an hour. Since then wages have been increased 73 per cent. The receiver offered an increase of 22 per cent, making a total of 108 per cent increase since 1915 with which to meet an increase of 93 per cent in living costs in the South, according to United States Government reports. The additional increase offered by the receiver was based on an increase in fare from 6 cents to 7 cents or 8 cents. A fare of 10 cents would be necessary to comply with the demands of the men.

$5,000 for a Car Design

Engineers and others possessing the requisite technical knowledge are invited by the County Council of London, England, to submit designs for a new type of electric car for its tramways. The competition is open to persons of any nationality. Whether or not you are a resident in Great Britain you may enter the competition. No person in the service of the Council will be eligible to compete.

The designs will be judged by A. L. C. Fell, general manager of the council's tramways, and an engineer nominated by the President of the Institution of Civil Engineers. The conditions of the competition provide for the award of a prize of £1,000 to the winner.

The designs accompanied by the necessary reports, specifications, etc., must be delivered at the competitor's own expense not earlier than Nov. 1 and not later than Nov. 30, 1920. Applications for conditions, plans, etc., relating to the competition should be addressed to the General Manager, London County Council Tramways, No. 23 Belvedere Road, London, S.E.I.

On the payment of a sum of two guineas competitors will be furnished with a general drawing of the type of car at present in use on the London tramways system and the more important particulars relating thereto. This amount will be returned to each competitor who submits a bona-fide design and does not subsequently withdraw the same and also to any person who, on the receipt of the conditions, etc., decides not to compete and returns the copy of the drawing, etc., within two weeks.

Ten-Cent Wage Increase

Men in Davenport Awarded Advance By Majority of Arbitration Board

Increased fares over the present 7-cent charge will be necessary to meet the increased labor cost saddled on the Tri-City Railway, Davenport, Ia., by a board of arbitration which returned a finding for a 16⅔ per cent increase in the wages of trainmen last week, President B. J. Denman of the traction lines states.

Report Not Unanimous

The arbiters were not able to return a unanimous report. A majority report signed by Charles Reagan, editor of the *Tri-City Labor Review*, and Franz Swanson, city sexton of Moline, Ill., held the men were entitled to a 16⅔ per cent, or 10-cent an hour, wage increase. The old maximum scale was 60 cents an hour. The new maximum is 70 cents an hour and retroactive to June 1.

The full scale calls for 60 cents the first six months, 65 cents the second six months and 70 cents for twelve months and over. The old scale was 54, 57 and 60 cents an hour. Three of the shop trades are also increased, curve and switch tenders from 44 to 50 cents, armature helpers from 48 to 50 cents, car placers from 49 to 50 cents an hour. Sixteen other shop and track crafts are left at the old scale.

The shop crafts that did not come in for the increase are asking a readjustment and it is possible that the total increase will be spread pro rata throughout the entire union membership. This is a matter for the union and not for the company to settle.

The 70-cent scale applies to both the city and interurban lines of the company. The men's original demands were for $1 an hour on the city lines and $1.05 an hour on the interurban lines.

Third Member Against Increase

The third member of the board of arbitration brought in a minority report which holds the trainmen not entitled to an increase unless one-man cars are installed, in which contingency he gives them a flat 5-cent an hour increase.

This minority report was submitted by C. E. White of Deere & Company, Moline, Ill., an experienced executive in manufacturing. He stated in his finding that there is no justice in "a course that will compel the people to pay this advance (in fares) whose yearly income is less than that of the men in question" (the trainmen).

Preparing for Toledo Vote

Brief Review of Traction History Leading Up to Vote Which Is to Be Held on Aug. 10

Citizens of Toledo, Ohio, are facing a municipal ownership plan of acquiring and building a new transportation system when they go to the polls on Aug. 10. This is the only solution that has been laid before the people since the famous "ouster" proceedings nearly a year ago brought the battle of a quarter century to the front as most important of Toledo's civic problems. A commission, appointed by Federal Judge John M. Killits, drew up the present municipal ownership plan, which was passed by Council in twin ordinances, one providing $3,000,000 with which to acquire and $4,000,000 with which to construct a transportation system.

THE plan of the commission, not written into the ordinances but freely circulated, is to use the proceeds from these bond issues to obtain an auxiliary motor bus system at first, then condemn the choice lines of the present railway system, tell the company to remove the others, and proceed to add extensions and build a new system.

General Credit Bonds Planned

The bonds are thirty-year 6 per cent general credit bonds having the entire taxing power of the city behind them. Council is authorized to spend the money, having more or less *carte blanche* authority granted by the ordinances.

A cost-of-service plan was also drawn to be submitted at the same time as municipal ownership, but the railway officials were unable to agree on valuation with the members of the commission. The completed ordinance was filed with Judge Killits. He may submit it to Council with a valuation agreeable to all parties this coming week. It cannot be voted upon at the same time as the municipal ownership measure if that action is taken.

The coming election will mark one of the possible terminations of a long struggle between the city and the Toledo Railways & Light Company. The Doherty interests took over the properties at Toledo in 1913 after a few of the franchises had expired. There had been other franchise negotiations on for some time in an attempt to get renewals of contracts. When all the grants had expired, the Toledo Council passed a 3-cent fare ordinance which the company failed to recognize. This later furnished the grounds by which the case was taken into Federal court and the company was authorized to collect adequate fare and the car riders were assured of service through a fund administered under the direction of the court. The court still maintains some of the jurisdiction held by the old case.

Railway Problems an Old Story

Several city administrations have promised to settle the railway controversy and provide extensions for the growing parts of the city. It was the ambition of Mayor Cornell Schrieber which brought on the famous "ouster" ordinance last November. At that time the people ratified an ordinance ordering the railway from the street. When the company obeyed the city asked to have the cars brought back.

Leading up to the vote on Aug. 10, at which time the municipal ownership ordinance will be submitted, the significant steps in the process of settlement may be summarized as follows:

During the operation of the ouster ordinance the company circulated petitions to initiate a Tayler-plan grant. They were freely signed, but the measure was never submitted.

Judge Killits appointed two commissions to submit to the people two plans—one a cost-of-service measure and the other providing for municipal ownership.

The railway lent to the city a fund of $25,000 with which a valuation might be made. Service Director Goodwillie with Messrs. Riggs and Ballard turned in a valuation of $7,111,336 based on 1914 prices and recommended the city to stand for this price on the property. The valuation they offered at present prices was in excess of $12,000,000.

In February the city attempted to have passed in the State Legislature a bill known as the Brach Bill granting to cities the specific right to use general credit bonds to purchase utilities. This was passed by the House sixty-seven to six, but was lost in the State Senate.

In March of the present year a test case was brought before the Supreme Court to determine if cities under their own charters had the privilege of issuing general credit bonds to buy transportation systems. The court decided that cities had the right, and the Toledo commission prepared to write an ordinance providing for municipal ownership of the street railway system.

Meanwhile the members of the cost-of-service commission had been hard at work and were jockeying with the price of power, valuation, maximum fare and other provisions. A tentative draft was objected to in writing by Mr. Doherty.

Road Offered by Owners for $11,000,000

Mr. Doherty offered to sell his lines to the city for $11,000,000 on a time payment plan, in answer to a request of the municipal ownership commissioners. He wanted 20 per cent in cash.

April 3 was the date of the second suspension of car service when a strike of employees tied up the system. The company had been collecting 6-cent fares with 2-cent transfers previous to this time. When the platform employees and electrical workers asked increases from 42, 44 and 46 cents an hour to 54, 56, and 60 cents an hour, the company replied that a fare increase was necessary. The cars were operating under the joint auspices of the federal court and the ordinance suspending the ouster. Council refused to grant fare increase. At the end of four days, Judge Killits ordered the cars to resume with 7-cent fare, 2-cent transfer, free tickets for 20 cents and the increase for the employees. He provided the alternative of appointing a receiver and operating the lines himself. David Friday, of the University of Michigan, had audited the company's books and told the city that the increase was necessary.

An inquiry into the affairs of the Rail-Light was planned by the court, but neither the city nor the company made any application for a hearing.

On April 30, the last day for the cars to run under the agreement of Council and federal court, the company filed a cross-bill in the court asking for 10-cent fare, 2-cent transfer, and statement of the company's rights on the streets. This case has never been heard by the court. It may come up on thirty days' notice by the company. The petition says the property of the company is worth $15,000,000; it declares the Miller public utilities abandonment law of Ohio unconstitutional, and asks that the company be allowed to remove its equipment from the city if the 10-cent fare is not granted as asked.

Council immediately passed a $20,000 fund to hire legal and engineering advice in a fight against the 10-cent fares. Socialists in Council opposed the expenditure of any money in fighting the company.

The municipal ownership commission announced that it would recommend the purchase by the city of $2,000,000 of motor buses so that a system of transportation would be available in case the railway did cease to operate at any time.

Valuation was agreed to be the final issue in the cost-of-service plan. It never was agreed upon. Mr. Doherty offered to agree upon $8,400,000 if all other points were yielded and full support was given by all people. Otherwise he asked $9,000,000. The Milner commission would not go beyond $8,000,000. The disagreement was final and the ordinance was delivered over to Judge Killits, who appointed the commission.

The ordinances offered by the municipal ownership commission were submitted to Council and passed twice to conform with charter regulations and state statutes. They will go on the ballot Aug. 10.

The issue seems not to be for or against buying the present railway system. It appears to be the aim of the commissioners to put the Doherty interests out of business. They intend to buy only a small portion of present lines by condemnation and throw out the rest. The bus feature also tends to provide competition. The voters will be asked to hand over to the Council $7,000,000 to provide a transportation system.

Litigation Predicted

The generality of the ordinances and the piecemeal plan of condemnation of lines have led to predictions on the part of many of the leaders in both sides of the fight that the question will finally end in a multiplicity of litigations. There is not much doubt about the passage of the ordinances. The abstract question of municipal ownership of the railway passed before by a large majority and political sentiment has been increasing toward the public ownership view.

Duluth Abandons Wage Raise

Defeat of the 6-cent fare ordinance at the recent city election has obliged the Duluth (Minn.) Street Railway to abandon its plans to grant employees an increase of 10 per cent in their wages. Herbert Warren, vice-president and general manager of the company, has so informed the committee representing the Employees' Athletic & Protective Association, which demanded a 20 per cent increase.

The committee called attention to the fact that the wages of employees of the company were lower than those of men in other occupations in the city and in some instances lower than men in electric railway work were paid in other cities. Since the defeat of the 5-cent fare, many of the men have said they will have to seek other and more remunerative employment.

Mr. Warren stated that the company had fully expected to share with its employees any increase in revenue received as a result of the increase in fare. He stated that the officers of the company had gone so far as to agree, some days prior to the election, upon a definite plan of increase in wages to be announced in a bulletin and to become effective on July 1, in the event of the passage of the ordinance.

Twenty Per Cent Advance

Arbitrators at Scranton Award Trainmen Sixty-Cent Maximum Wage Scale

Under the award of the majority of the arbitrators chosen to pass on the wages and other working conditions of the employees of the Scranton (Pa.) Railway the maximum scale of pay for trainmen is fixed at 60 cents an hour. This is an increase of 20 per cent. Since the majority of the motormen and conductors have been in the company's service sufficiently long to come within the provisions of the maximum hourly scale, most of these men will get 60 cents an hour. The mechanical workers have been awarded a 12 per cent advance.

POINTS AT ISSUE STATED

The questions at issue before the board as explained in the award were:

1. What rate of wages should be awarded to motormen and conductors.
2. Whether or not time and one-half should be paid for all time worked on the following days: Decoration Day, Independence Day, Labor Day, Christmas Day and Sundays.
3. Whether or not eight hours should constitute a day's work for all motormen and conductors.
4. Whether or not any change should be made in the classification of employees in the shops of the company.
5. What rate of wages should be awarded to barnmen, shopmen, power house men, trackmen, and any other miscellaneous employees who are members of the association.
6. Whether or not the employees should be paid once a week, instead of semi-monthly as at present.
7. Whether or not eight hours should constitute a day's work on all work done in the track department.
8. What overtime rate should be paid to barnmen, shopmen, power house men, trackmen, and any other miscellaneous employees who are members of the association.

The wage award of the board follows:

To motormen and conductors for the first three months of service, 50 cents an hour; for the next nine months of service, 55 cents an hour; after one year, 60 cents an hour.

To all other employees, who are members of Division 168, Amalgamated Association, 12 per cent increase over their present wages, whether paid by the hour, day, week or month.

Back pay of each class of employees shall be allowed on the basis of the wages awarded above from April 1, 1920, and on the basis of the actual earnings of the employees.

The company shall be allowed ninety days from the date hereof for the payment of the back pay.

In case of any disagreement as to the construction or application of this award the same shall be submitted to William J. Tracey, chairman of this board, and both parties shall be bound to carry out his decision.

Relative to the demands other than that for increased wages the majority of the board states in part:

We have not awarded the eight-hour day here, although we believe in it in principle, because it does not seem, under the peculiar conditions existing here, that an eight-hour day could be awarded at the present time.

In awarding the employees a substantial increase in wages we have not seen fit to place any other additional burdens upon the company.

CLASSIFICATIONS UNCHANGED

We have not changed the classification of the barnmen, shopmen, power house men and trackmen, because there was not enough evidence before this board to enable us intelligently to do that. But, in view of the conflicting claims of the employees and the company with respect to these classifications, we earnestly recommend that they should themselves attempt to solve this question.

We are not attempting in this award to pass upon the merits of any controversy between the company and anybody else except its employees, who are parties to the agreement for arbitration. But there has been a general tendency throughout the country in the last two years to recognize the fact that these companies must be helped and not hindered in their work, and we have before us evidence in many cities of the help of municipalities and states to street railway companies.

In its award the arbitrators deal at length with the claim of the men for increased wages so that they may be able better to make a winning fight against the high cost of living.

Akron Men Quit

The employees of the city lines of the Northern Ohio Traction & Light Company at Akron, Ohio, walked out on the morning of July 6. Interurban cars continued to operate, but they passed through the streets of the city with doors closed.

A board of arbitration recently granted the men an increase in wages on condition that the city make the rate of fare sufficiently large to cover the additional expense. The men at once urged that steps be taken to make it possible for them to receive the increased wage.

A compromise offer was made by the city and considered at a conference between officials of the company and the public utilities committee of the Council on July 3, but nothing was accomplished at that time.

Akron has had plenty of time to consider an increased rate of fare. The company asked and was granted a rate of 6 cents two years ago by the City Council, but the legislation was defeated in a referendum vote. Since then the company has been endeavoring to secure a rate that will enable it to pay its men higher wages.

Two months ago the men asked for an increase in wages. The company refused on the ground that its income was not sufficient to pay higher wages. Finally the company and the men agreed to submit the matter to arbitration. The three men selected to render a decision fixed a material increase in wages, but said that their award could not go into effect until the city had granted a higher rate of fare.

The Council of Akron adopted a resolution on the evening of July 7 giving the company thirty-six hours to put cars into operation. Court action was threatened in case of failure to resume service. Manager Blinn said the company was trying to induce the men to resume work at the present scale pending the granting of a new rate of fare by the city. The city offered a sliding rate of fare beginning with 5 cents for the first six months and increasing 1 cent each six months until the revenue was sufficient to pay expenses. The company said a ticket fare of 7 cents or a cash fare of 8 cents was necessary at once.

At Massillon forty men struck when the City Council on July 3 informed the company that it would not grant a 10-cent fare. The fare situation at Canton is referred to elsewhere in this issue.

Long Fight in Rochester

Service-at-Cost Arrangement Likely to End Controversy in Which Public Has Suffered

The service-at-cost franchise presented to the Council of Rochester, N. Y., on June 30 is the culmination of a long controversy between the city and the New York State Railways over the existing 5-cent fare. For several years the railway sought to have the rate of fare raised, so as to meet a proportionate increase in the cost of maintenance. The city opposed the move.

PUBLIC OPINION AROUSED

The railway claimed that it could not provide good service at a 5-cent fare. The city's demands for better service continued. Meanwhile public opinion became aroused and the newspapers launched into a fight for better service. One newspaper intimated that the city was seeking better service regardless of whether it would entail expense by the railway which could not be met. A demand was made that the Mayor act at once.

The case was taken before the Public Service Commission and the city presented a plea to compel the company to improve service. In its decision handed down in April, 1920, the Public Service Commission rejected the demands of the city and declared that the railway could not provide better service with a 5-cent fare. It was suggested that a temporary agreement be drawn up, pending the determination of a fair rate for the railway.

On April 27 Mayor Edgerton recommended that the Common Council enter into a new agreement with the New York State Railways for a service-at-cost plan. The Council was requested to make an investigation at once, and if it deemed such an agreement advisable, to direct the preparation and execution of a service-at-cost contract. This it subsequently did.

FARE CASE COMPLICATES MATTERS

Meanwhile another controversy between the city and the railway was being waged in the Supreme Court. For years the rate of fare from Rochester to Charlotte, which up to 1918 was a town about 3 miles from Rochester, was 10 cents. When Charlotte was annexed to the city, officials declared that the original franchise provided that the fare should be reduced to 5 cents, as Charlotte had become a part of Rochester. This the railway refused to do, however, and the case was taken to the Supreme Court. Thousands of rebate slips were issued to patrons over the Charlotte line, in the event of a decision against the company.

Now that the service-at-cost plan has been drawn up, however, the fight has been dropped, as a decision that the rate of fare should be 5 cents, would mean that the city would have to take the money out of its own treasury to pay the railway patrons. The new franchise will provide for an initial fare of 7 cents in Rochester and to Charlotte.

Philadelphia Hearing Begun

Public Service Commission, Sitting in Philadelphia, Hears Transfer-Charge Plea

Six of the seven members of the Public Service Commission of Pennsylvania sat in judgment on July 6 on the tariff filed by the Philadelphia Rapid Transit Company calling for a universal 3-cent transfer charge. The principal witness was W. C. Dunbar, financial vice-president of the company. He told the commissioners that the change was merely an experiment. He estimated the company was faced with a deficit of $1,904,058 in the event that the fare was not raised. The officers felt it advisable to ask for a higher fare at this time. R. H. Horton, traffic engineer, believed the schedule which the company had filed was the best means of getting increased fares. The transfer passengers cost more to carry than any others and it was a matter of justice that they should pay the increased fare.

PRESIDENT MITTEN TESTIFIES

President Mitten was the witness on July 7. He said that if Philadelphia expected to have high-speed lines the city would have to pay a rate of fare considerably higher than the present figure. He said that a high-fare policy would have to be instituted in Philadelphia if the deficit that has accumulated continued to pile up while the commission made an extended study of the local situation. The company had resorted to every known method of increasing revenue and decreasing costs. There had always been complaint because of the discrimination of the transfer system. The Stotesbury-Mitten management, if it meant anything, functioned first for the interest of the public it served, then for the men it employed, and lastly for the stockholders of the company.

The free transfer system was uneconomical and wrong in that it was a part of human nature to be wasteful of that which was free. One of the greatest troubles in Philadelphia has been the lack of continuity in carrying negotiations between the company and the city to a proper conclusion. Every time a new city administration comes into power, the company is required to start over.

Fail to Agree on Umpire

Employees of the International Railway, Buffalo, N. Y., are greatly disappointed as the result of the failure of the arbitrator named by the Buffalo local of the Amalgamated and the company's representative to agree on an umpire for the board which proposed to settle the wage question and other grievances between the International and its employees.

The company's arbitrator is C. J. Joyce, Philadelphia, representing the Mitten interests. The employees' representative is James H. Vahey, counsel for the Amalgamated. Charles B. Hill, chairman of the Public Service Commission for the Second District proposed by the railway as the umpire, has refused to serve. No other names have been suggested.

When the arbitration was agreed upon three months ago the platform men and other employees were given to understand that whatever wage award should be made would be retroactive to May 1. Platform men now are receiving 60 cents an hour. They ask 88 cents an hour. The company also insists upon an open shop. While not demanding a closed shop contract, the men ask a renewal of their agreement as in the past.

Mediation in Twin Cities

Trainmen There Prepare for Arbitration of Wage Demands—Had Threatened Strike

Through the mediation of business men the threatened strike of trainmen of the Twin City Rapid Transit Company in Minneapolis, St. Paul and suburbs set for July 1 was obviated. The men in both cities voted agreement to the plan and have appointed their representatives on the boards of the two cities. These boards will consist of four members for the company, four for the trainmen, four for the citizens and the Mayor.

The men demanded 70 cents an hour maximum, and eight-hour day and time and a half for sundays, overtime and holidays. The company announced it could not grant these demands without a 7-cent fare in both cities. A strike vote had been taken when a plan of arbitration was formed and presented to the men. The matter is now up to the arbitration board. This body has begun hearings as to the justification of the demands. Each city will name experts to go over the company's books to determine whether the fare advance is justified in each city.

The citizens' arbitration plan adopted by the trainmen reads:

1. That the committee is unanimous in its opinion that the employees of the railway are entitled to an increase in wages; that the railway is entitled to an increase in fare, and that this desirable result can best be obtained by means of an agreement between the three parties interested—namely, the people of Minneapolis, as represented by the City Council, the owners of the railway and the employees of that company.

2. As a means to that end, it is concluded that this may best be done by the creation of a board of investigation and arbitration to consider as fully as may be necessary the claims made by the railway for an increase in fare and by its employees for increased wages and better working conditions, and the extent to which those claims are consistent with the public interest.

3. It is the belief of the Mayor's committee that this board may properly be selected in the following manner:

The railway employees to select four men. The railway to select four men and five citizens not financially interested in the railway, of whom Mayor J. E. Meyers shall be one to be selected by the Mayor's committee and that this board as selected shall act as speedily and as efficiently as possible to determine all matters in controversy.

The management of the railway has agreed in case such board is constituted to accept and abide by its decision and the acceptance of this plan by the employees must of necessity commit them also to the acceptance of its conclusions.

The management of the railway has further agreed that the rate of wages which is determined by this board shall be made retroactive for a period not exceeding thirty days prior to the date when an ordinance or resolution of the City Council granting the necessary increased fare becomes effective; in any event not prior to July 1, 1920.

Provided, this plan is accepted by the employees of the railway, the Mayor's committee of citizens pledges its best efforts to obtain a speedy settlement of this matter by the City Council.

Under instruction of the arbitration board an analysis is under way of the financial statement which has been submitted by the Minneapolis Street Railway. The work is being done by H. B. Warren, head of the bookkeeping department of the Cream of Wheat Company, released temporarily for the purpose. Milo Roy Maltbie, New York, consulting engineer, is expected to arrive on July 15 to go over Mr. Warren's findings. Mr. Maltbie has represented the city before. In St. Paul the arbitration board has been appointed. It is a representative body drawn from all walks of business life.

Tacoma Fare Negotiations Fail

Negotiations between the city of Tacoma and the Tacoma Railway & Power Company have been broken off, following a failure to reach an agreement. In a report to the Council City Attorney Harmon declares the company desires a fare that will return from 4 to 8 per cent on its valuation of $6,000,000. He declares the valuation is excessive, and that it would avail nothing to continue the negotiations for a new franchise.

The City Council has gone on record, in line with suggestions of Mr. Harmon, that an increase in the present 7-cent fare should not be permitted, and that profits for the company should not be guaranteed. Some members of the City Commission believe that a 10-cent fare is inevitable. Mayor C. M. Riddell and other members of the Council believe a 10-cent fare will result in a loss to the company and will encourage jitneys in the city.

Aldermen Defeat City Ownership

The Board of Aldermen of New York voted no on President F. H. La Guardia's proposal to appropriate $300,000 in special revenue bonds for the purchase of trolley cars by the city to be operated by the city over tracks of the Midland Railway on Staten Island. The resolution was lost by a vote of fifty-one for and fourteen against, fifty-five votes being required for approval of the bonds. The fourteen adverse votes were registered solely on the ground of opposition to the principle of municipal ownership of railways.

Mr. La Guardia in support of his resolution said:

The plea that the city does not want to go into municipal ownership is about fifteen years behind time. The city already owns millions of dollars worth of subways. The present question is not one of municipal ownership of the traction lines, but of the traction companies owning the municipality. Of course the traction interests are fighting it. Their plan is first to get the buses off the streets and then shut down certain of the larger feeder lines in order to force an increased fare.

Dayton Strike Settled

The strike of the trainmen on the railways at Dayton, Ohio, has been settled. The men will receive 58, 60 and 62 cents for three, six and twelve months' service respectively. The companies have been granted a 7-cent fare with eight tickets for 50 cents. The strike has been long drawn out. At one stage the City Commissioners authorized a rate of fare of 7 cents, but afterward this was withdrawn.

Along about July 1 the situation assumed a serious aspect. The city commissioners ordered operation to be resumed at once. The companies on July 1 demanded police protection for the cars. Later the companies tried to swear in a sufficient number of special policemen to protect their property.

The companies conceded that the demands of the men were in a large measure just and expressed their willingness to treat with the men on condition that the city fix a new rate of fare that would cover the additional expense involved in any wage advance.

News Notes

Wages Being Negotiated at Albany.—A new wage contract retroactive to July 1 is being negotiated between the United Traction Company, Albany, N. Y., and the local division of the Amalgamated Association.

Scholarships for Sons of Employees.—Henry L. Doherty and Frank Frueauff of the Cities Service Company, New York, N. Y., have offered to assist the sons of Doherty employees to secure technical training by creating scholarships in some of the leading technical schools and universities in the country. Employees receiving $200 a month or less who desire to give their sons such a training may avail themselves of this most generous opportunity.

Eastern Massachusetts Wage Hearing Begun.—The wage hearing in the case of the Eastern Massachusetts Street Railway was begun at the State House, Boston, Mass., on June 29. The present maximum rate is 51 cents an hour and the schedule of wage demands presented calls for a maximum of 75 cents an hour, one day off in fifteen with pay and overtime pay at the rate of time and one-half for all work performed on Sundays and holidays, effective May 1, 1920.

Wage Advance for West Penn Men.—The West Penn Railways has announced to its employees at McKeesport that it will increase wages of carmen in keeping with the schedule adopted recently for the trainmen of the Pittsburgh Railways, the maximum being 70 cents an hour. Several thousand employees of the company in McKeesport, Irwin, Greensburg, Connellsville and Uniontown are affected by the wage increase, which becomes effective at once.

Plan to Rent Elevated from City.—T. E. Mitten, president of the Philadelphia (Pa.) Rapid Transit Company, has replied to Mayor Moore, saying he will recommend to the board of directors, and through them to the stockholders, that the Philadelphia Rapid Transit enter into a lease with the city, for a term of years to be agreed upon, to operate the Frankford "L" as a part of its street railway system, paying annually to the city of Philadelphia as rental a sum equivalent to 5 per cent of the entire investment of the city therein.

Presentation to Chairman Walker.—In recognition of the work done by A. F. Walker as chairman of the committee of the New England Street Railway Club in charge of the outing to Montreal the members of the club presented to him while in that city a gold watch chain and pendant. The presentation was made at a luncheon on June 30 given to Col. J. E. Hutcheson at the Ritz-Carlton Hotel by the members of the club, in recognition of the many courtesies extended by Colonel Hutcheson and his staff to the members of the club while on their trip.

Charter Change Provides for Municipal Ownership.—Wider control over public utilities with the power to purchase, hire, construct, own, maintain and operate or lease them, as well as to prescribe the form of and audit the accounts and records of such utilities, is given the city of Atlanta in the proposed new charter which will be considered by the State Legislature now in session. The charter will make many changes in the present form of Atlanta's city government. If passed by the State Legislature, the measure will be voted upon at the polls some time in July.

Advisory Members for Power Survey.—The American Electric Railway Association and the National Electric Light Association have been requested by the Secretary of the Interior to designate representatives on the advisory board which is being formed in connection with a governmental survey of the power resources of the north Atlantic seaboard. This advisory board will work in close co-operation with the engineering staff which is headed by William S. Murray. The survey was authorized at the last session of Congress. It is being conducted under the direction of the U. S. Geological Survey.

Seek Release from Wage Contract.—C. G. Bookman and the executive committee of the union waited on Thomas S. Wheelwright, president of the Virginia Railway & Power Company, Richmond, Va., recently to ask release from the yearly wage contract with the company. Mr. Wheelwright refused to grant the request of the men. It was learned after the conference that members of the union held a meeting not long ago and voted to abrogate their contract and give the company sixty days' notice to increase their wages, or strike. Through the action of President Bookman, the executive committee and the older men in the union, another meeting was called and the vote reconsidered.

Court Overrules Track Relocation Decree.—The Supreme Court of Errors of Connecticut has found an error in an opinion of Judge Webb of the Superior Court of Fairfield County, which affirmed an order of the Public Utilities Commission directing the Connecticut Company to relocate its tracks in Hope Street, Stamford. The Supreme Court directs the Superior Court to reverse its judgment, thereby sustaining the appeal of the Connecticut Company. The court says that from the standpoint of public interest and expense involved the Connecticut Company should not be required to relocate its tracks, the cost of which would be $28,000. The Public Utilities Commission order was made upon appeal of the Selectmen of Stamford.

Pittsburgh Men Sign Wage Agreement.—Representatives of the motormen and conductors of the Pittsburgh (Pa.) Railways have formally ratified the agreement recently reached by which the men are to receive a maximum rate of 70 cents an hour for a year. The trainmen demanded a maximum hourly wage of 91 cents an hour. This the receivers explained they were unable to pay on account of the financial status of the company. A strike was narrowly averted by the arrival in Pittsburgh of W. J. Fitzgerald, international vice-president of the Amalgamated Association, who ordered the trainmen to do one of three things: Consider a just compromise, submit to arbitration or forfeit their charter in the international organization. An agreement on a 70-cent-an-hour basis followed.

Six Dollars a Day for Line Car Men.—The utilities committee of the City Council of Seattle, Wash., has recommended that a daily wage of $6 be approved for line car operators of the municipal railway. D. W. Henderson, general superintendent, states that this wage has been paid to line car men up to this time, but the Civil Service Commission recently informed him it was in violation of the city ordinance fixing the rate of pay for motormen at $5 a day. Agreement had been made, according to Mr. Henderson, by former Superintendent Thomas F. Murphine to pay these men the $6 wage, and after looking into the matter, the civil service commission declared this to be a proper remuneration considering the type of work these employees perform. They operate service cars in the repair of tracks and of cars when the latter are out of commission.

Financial and Corporate

Foreclosure Suit Started

Hearing of Bill to Dispose of Some of Underlying Properties of Pittsburgh Railways

The hearing on the bill to foreclose the mortgage of the Southern Traction Company, a unit of the Pittsburgh (Pa.) Railways, and on the answer thereto of Receivers Charles A. Fagan, S. L. Tone and W. D. George was begun recently in the federal court of the district of Western Pennsylvania, at Pittsburgh, before Judge Charles P. Orr.

Just what portion of the holdings of the Southern Traction Company is covered by the mortgage will be determined by the court when all the evidence is in, so that the property affected by the decree of sale, which is expected to be handed down later, can be enumerated.

About one year ago, after the bondholders of the mortgage of the Southern Traction Company began proceedings to foreclose because of the failure of the parent concern to pay the interest as it fell due, the receivers opposed the suit. Their opposition was based upon the legality of one unit of the railway system foreclosing on a mortgage in face of the danger of disrupting the unified system.

Arguments and claims of the receivers were set forth in an answer to the bill. Judge Orr, before whom the proceedings were held at that time, handed down an opinion declaring it proper for the bondholders to bring such action as a unit of the system. This opinion was subsequently upheld by the federal Circuit Court of Appeals for the Third District.

The court is expected to determine what will be embodied in the decree of sale, and also will probably determine the lowest, or "upset," price which will be accepted.

Interurban Would Abandon City Lines

The Toledo, Bowling Green & Southern Traction Company, has asked the City Council of Findlay, Ohio, for permission to abandon its lines operated in that city. The Council has referred the request to its committee on railways. Charles F. Smith, general manager of the company, said:

> Our loss was $2,830 in 1917 from the city railway, $9,182 in 1918, and $14,068 in 1919. This does not include bond interest or taxes, which items in 1919 amounted to $19,166, making a total loss of $33,235 for 1919. Future losses will be greater.

Mr. Smith explained that the city was now enjoying the lowest fares of any city he knows. The company averages 4¼ cents from each passenger carried due to the sale of tickets at six for 25 cents and twenty-five for $1. He explained that a higher fare would have reduced the business to such an extent that there would have been no economy in it. He said the directors of the company wished to take similar action a year ago, but declared he had persuaded them to forestall such action.

Dallas Carries More Passengers

Approximately 150,000 more persons were transported by the Dallas (Tex.) Railway during May than were carried during April. A total of 5,681,000 passengers was carried during May, of which number 13 per cent were transfer passengers.

The gross income of the company for May amounted to $261,300 and total expenditures $225,502, leaving net revenue for the month of $35,798. This is at the rate of 4.85 per cent on the valuation of the company's properties.

Of the total amount of expenditures, $60,354.38 went for maintenance.

Cars in Dallas traveled a total of 626,812 car miles during the month, maintaining an average speed of 9.1 m.p.h. An average of nine persons per car mile was transported.

Operating Ratio 84.8 Per Cent

Only One Operating Company in Connecticut Paid a Dividend — 225,000,000 Passengers Carried

The eighth annual report of the Conneticut Public Utilities Commission for the fiscal year ended Sept. 30, 1919, has recently been issued. This report also contains financial reports of all public service companies for the calendar year 1918 as well as statistical tables relating thereto.

Abstracts are herewith given covering such information as pertains to electric railway operations within the State.

There are nineteen electric railway companies reporting to the commission, fifteen of which are in operation. In reality there are only twelve operating companies as three of those in operation are leased.

The results of electric railway operations, excluding all figures relating to the Rhode Island company, which runs the great bulk of its lines in Rhode Island, show a net revenue from operations of $724,138 less than such revenue the year previous. Operating revenues decreased $94 308, while operating expense increased $629,830. The decrease in operating revenue was practically all in passenger revenue,

SUMMARY OF CONNECTICUT OPERATIONS

	1918	1917	Percentage Change
Number of companies reporting	21	19	10.52
Number of operating companies	12	9	25.00
Assets:			
Investment in road and equipment	$98,099,999	$97,473,668	6.43
Other investments	3,035,456	2,785,034	8.97
Current assets	3,399,994	2,290,759	48.50
Deferred assets	59,638	77,441	—23.00
Unadjusted debits	1,620,825	1,581,366	2.49
Total assets	$106,215,912	$104,208,268	1.93
Liabilities:			
Capital stock	$61,774'440	$61,774,400	.....
Long term debt	27,158,032	27,193,408	—0.13
Current liabilities	6,500,014	4,019,914	61.80
Deferred liabilities	21,894	20,283	7.95
Unadjusted credits	7,398,334	7,339,539	0.80
Appropriated surplus	1,218,754	1,092,695	11.52
Profit and loss	2,144,484	2,768,029	—22.50
Total liabilities	$106,215,912	$104,208,268	1.92
Operating revenues:			
Revenue from transportation	$12,259,622	$12,341,064	— 0.7
Other railway operations	174,448	187,314	— 6.9
Total operating revenue	$12,434,070	$12,528,378	— 0.8
Operating expenses:			
Way and structures	$1,442,847	$1,677,925	—14.0
Equipment	1,306,353	983,875	32.8
Power	2,514,660	2,529,114	— 0.6
Conducting transportation	3,988,526	3,458,965	15.3
Traffic (Credit)	2,189	3,960	44.8
General and miscellaneous	1,296,121	1,270,569	2.0
Total operating expenses	$10,546,318	$9,916,488	6.4
Net revenue railway operations	1,887,752	2,611,890	—27.8
Net revenue auxiliary operations	107,790	98,294	9.7
Net operating revenue	$1,995,542	2,710,184	—26.4
Taxes assignable to railway operations	660,952	682,995	— 3.2
Operating income	$1,334,590	$2,027,189	—33.8
Non-operating income	1,722,609	1,684,025	2.3
Gross income	$3,057,199	3,711,214	—17.7
Deductions from gross income:			
Rent for leased roads	$1,340,359	$1,339,208	0.09
Miscellaneous rents	7,847	7,978	— 1.6
Miscellaneous taxes	100	289	—65.5
Interest on funded debt	1,055,172	1,054,423	0.07
Interest on unfunded debt	154,577	57,638	168.2
Amortization of discount on funded debt	1,905	1,920	— 0.8
Income transferred to other companies	6,645	10,939	—39.4
Maintenance of organization—lessor companies	4,746	5,368	—11.6
Miscellaneous deductions	4,981	24,726	—80.0
Total deductions from gross income	$2,576,332	$2,502,489	3.0
Net income transferred to profit and loss	$480,867	$1,208,725	—60.3

other decreases amounting to a little more than $2,000.

The greatest increase in cost in operations was for conducting transportation. The amount charged for salaries and wages was $616,384 more than in 1917, and this amount is practically the net increased cost of operating expenses, although there was an increase in cost of maintenance of equipment of $322,478. This increase in the cost of maintenance of equipment was offset by the decreased amount expended in maintenance of way and structures.

The total operating revenue was $12,434,070, while the operating expenses were $10,546,318, leaving a net revenue from railway operations of $1,887,752.

The net revenue from auxiliary operations of $107,790 is the result of the general electric operations carried on by the Shore Line Electric Railway, the Bristol & Plainville Tramway and such operations in addition to conducting miscellaneous park and amusement places by the Danbury & Bethel Street Railway.

PROFIT AND LOSS ACCOUNT—CONNECTICUT COMPANIES

	1918	1917	Percentage Change
Credits:			
Balance at beginning of year	$2,768,029	$2,769,374	— 0.05
Balance transferred from income account	480,867	1,208,725	—60.3
Miscellaneous credits	29,140	27,701	5.2
Total credits	$3,278,036	$4,005,800	—18.2
Debits:			
Dividend appropriations	833,909	805,373	3.5
Miscellaneous debits	299,643	432,398	—30.8
Total debits	$1,133,552	$1,237,771	— 8.3
Balance at close of year	$2,144,484	$2,768,029	—22.6

STATISTICAL INFORMATION—CONNECTICUT COMPANIES

	1918	1917	Percentage Change
Passenger car-mileage	34,049,713	37,167,625	— 8.3
Freight, mail and express car-mileage	854,844	977,450	—12.6
Total revenue car-miles	34,904,557	38,145,075	— 8.5
Passenger car-hours	3,642,845	4,017,360	— 9.2
Freight, mail and express car-hours	128,806	90,753	41.8
Total revenue car-hours	3,771,651	4,108,113	— 8.2
Ratio CM to CH (passenger cars)	9.34	9.26	0.06
Passenger traffic:			
Regular fare passengers	188,162,078	215,822,889	—12.7
Free transfer passengers	35,263,246	40,724,467	—13.5
Other free passengers	1,952,560	3,033,998	—35.6
Total passengers carried	225,377,884	259,581,354	—13.2
Passenger revenue	$11,501,927	$11,593,981	— 0.8
Average fare per revenue passenger (cents)	6.12	5.47	11.8
Operating ratio (per cent)	84.8	79.1	8.5
Car-mile statistics:			
Operating revenue (cents)	35.68	32.90	8.2
Operating expenses (cents)	30.2	25.98	16.2
Net income (cents)	1.37	3.16	—56.6
Passenger traffic (total)	6.62	6.99	— 4.2
Car-miles per revenue passenger	0.181	0.126	43.6
Car-hour statistics:			
Operating revenue	$3.30	$3.06	7.9
Operating expenses	$2.80	$2.41	16.2
Net income	$0.127	$0.294	—56.8
Passenger traffic (total)	62.0	53.7	15.2
Taxes—per cent of gross revenue	5.31	5.46	— 2.7
Per cent of net operating revenue	33.08	25.20	31.3
Return earned on stock outstanding	0.78	1.96	—60.2
Mileage statistics:			
Miles of road	861.477	861.345	(*d*)
Miles of second main tracks	218.283	217.038	(*d*)
Miles of sidings and turnouts	42.305	42.538	(*d*)
Miles of tracks in car houses, shops, etc.	3.753	3.753	.....
Total track mileage	1,125.818	1,124.674	(*d*)
Rolling stock owned:			
Closed passenger cars	998	1040	— 4.0
Open passenger cars	782	865	— 9.5
Combination closed and open passenger cars	42	42	.....
Total passenger cars	(*a*) 1822	(*c*) 1947	— 6.3
Freight cars	52	79	—34.2
Express cars	34	32	6.2
Combination cars	9	5	80.0
Work cars	132	110	20.0
Snow plows	91	96	— 5.2
Snow sweepers	26	26	.....
Miscellaneous	74	97	—23.7
Electric locomotives	2	2	.....
Total equipment—all classes	(*b*) 2242	(*c*) 2393	— 6.1
Employment statistics:			
Aggregate salaries and wages paid	$6,065,031	$5,448,647	11.4
Number of general officers	41	48	—10.4
Number of general office clerks	373	304	22.8
Number of employees maintenance of way and structures	783	823	— 4.8
Number of employees maintenance of equipment	466	434	7.4
Number of employees power departments	345	434	—20.5
Number of employees transportation department	3549	3782	— 6.3
Total—all employees	5557	5825	— 4.6
Average yearly wage paid per employee	$1092	$935	16.9

(*a*) Includes 7 cars without electrical equipment. (*c*) Includes 125 cars without electrical equipment.
(*b*) Includes 85 cars without electrical equipment. (*d*) Less than one-tenth per cent change.

The amount paid in dividends for all companies was $833,909, an increase of $28,536 over the previous year. Only one operating company, the Bristol & Plainville Tramway, paid dividends during the year. All other dividends paid were by lessor companies.

Power Companies Absorbed

Bird and Chisholm Holdings Taken Over By Central Maine Power Company —Planning for Future

Acquisition of a majority of the stock issues of the public utilities controlled by Maynard S. Bird, Portland, Me., and Hugh J. Chisholm, New York, by the Central Maine Power Company has recently been announced by the Public Utilities Commission of Maine.

THREE COMPANIES INCLUDED

The companies involved include the Oxford Electric Company, furnishing light and power in Norway and South Paris, and Androscoggin Electric Company operating the electric railway between Augusta and Lewiston and the light and power company serving Rockland, Thomaston and nearby towns. They have deposited their certificates of stock, for which they have received in exchange share for share in the Central Maine Power Company.

There was no opposition when the plan was presented to the Public Utilities Commission. A petition for authority to increase the stock of the Central Maine Power Company was included in the petition to the commission and was granted.

The only change that will be made in the Androscoggin Electric Company is that it will be called the Androscoggin Corporation and the management and treasureship will be handled at Augusta. The Central Maine Power Company has recently harnessed the Kennebec River at Skowhegan. By this latest crusade, the company will more than double its water developed horsepower and reduce its operating expenses of steam power plants by some $92,000 a year in addition to furnishing more power to Maine industries ready to buy it and new industries to come.

REALIZING A VISION

The Central Maine's Skowhegan development will ultimately produce more than 20,000 h.p., one of the biggest power developments in the State. The work now being done is costing about $800,000 and will be financed by the sale of the company's 7 per cent preferred stock. This is being offered at the present time at $107.50 a share.

The coal shortage has assumed serious proportions and has driven many industries to look forward to the day when they must either move their plants to points where they can get hydro-electric power or go out of business. The vision of those pioneers in Maine history who could see the rushing of the water transformed into heat, light and power is coming true. The first big steps are being made by the Central Maine Power Company.

$1,907,766 Shore Line Value

The appraisal of the property of the Shore Line Electric Railway, Norwich, Conn., was filed in the office of the Superior Court in Norwich recently. It shows a total valuation of $1,907,766. Most of the company's lines are appraised on the scrap basis, but the Westerly-Groton line and Old Mystic line are figured on a reproduction basis.

The appraisers were William R. Dunham, Jr. and Shepherd B. Palmer. The appraisal was filed by Receiver Robert W. Perkins.

A summary of the appraisal of the various lines, cars and other properties follows:

New Haven to Guilford (scrap)..	$73,444
Guilford to Stony Creek (scrap)..	48,930
Guilford to Saybrook (scrap)....	81,368
Saybrook to Chester (scrap)....	152,705
Ferry Road Junction to Flanders (scrap)	65,248
Saybrook Power House (scrap)...	47,787
Flanders Corner to Crescent Beach (scrap)	24,484
Flanders Corner to New London (scrap) $301,779	71,991
Norwich to Hallville (scrap) $214,854	41,700
Fort Point Branch (scrap) $20.-463	3,807
Hallville to State Line (scrap)...	104,662
Westerly to Groton (reproduction basis)	784,056
Old Mystic Line (reproduction basis)	78,867
Groton-Stonington cars	61,400
Other cars, not included above...	147,600
Material and supplies, real estate etc.	119,717
Total.....	$1,907,766

Where properties were not being operated and where petitions for abandonment of service were before the court the appraisal was made at scrap value. Where these properties were still being operated, with reasonable expectation of operations being continued the properties were also appraised on the basis of reproduction cost less depreciation. It is the belief of the appraisers that where the two values are given the property may be made to realize a value somewhere between these two extremes.

Preferred Stock Offered Direct to Investors

Seven per cent cumulative preferred stock of the Alabama Power Company, Sheffield, Ala., is being offered direct to the public by the company. The proceeds are to be used for development and extensions. A statement by the company follows in part:

Terms of payment are as follows:

On cash basis: As many shares as are desired or the company may have to offer at $93 per share plus the accrued dividend to date of payment.

On partial payment: Any number of shares, up to twenty-five, paying $10 per share down and $5 per share each month until the purchase price is paid; to the final payment $3 is to be added to the accrued dividend from the last preceding dividend date.

This privilege is extended subscribers on the partial payment plan:

Should partial payment purchasers at any time or for any reason desire to withdraw before completing their purchase, money paid in can be withdrawn in full with interest at 6 per cent per annum upon ten days' notice to the company at any time prior to the date of final payment. On the other hand, purchasers may pay for their stock in full at any time and secure stock certificate.

Dividends are payable four times a year, Jan. 1, April 1, July 1 and Oct. 1.

The Alabama Power Company has been in successful operation for seven years. It serves directly an indirectly a population conservatively estimated at over 550,000, located in central and northern Alabama. The company is now extending its lines to Selma, and is furnishing power for one of the Montgomery utilities. Directly or indirectly the company does the electric light and power business in forty cities, and the railway business in three cities. It furnishes the power distributed throughout Greater Birmingham and Bessemer by the Birmingham Railway, Light & Power Company, and that distributed by the Montgomery Light & Water Power Company.

Security Values Shrink

Traction Bonds Have Declined More Than Any Other Class on New York Exchange

More traction securities are in default of interest now than at any other time in history. As a whole they show the largest decline of any class listed on the New York Stock Exchange. The *Wall Street Journal* says that default in nearly every case was due to the fact that the companies were unable to meet fixed charges because of the restricted 5-cent fare. Quite a number of these bonds are selling at prices that not only discount defaulted interest, but also a drastic reorganization. A compilation of traction bonds listed on the New York Stock Exchange showing high prices reached in 1917, high and low levels during 1920, and closing or last prices on June 21, 1920, with income return, is presented in the accompanying table.

Issue	1917 High	1920 High	1920 Low	1920 June 21	1920 Yield
Brooklyn Rapid Transit 5s, '45	101⅝	33¾	21	21	†...
Convertible 4s, 2002	77¼	28	21¼	23½	†...
3-yr. 7% notes, '21	*97	50	38	41	†...
Brooklyn City Railroad cons 5s, '41	101⅞	66	66	66	8.50
Brooklyn Union Elevated 5s, '50	101¼	64	60	62	8.44
Broadway & Seventh Ave. 5s, '43	100	67¼	40	40	12.13
Chicago Railways 1st 5s, '27	*97⅜	70	57½	62	13.31
Columbus & Ninth Avenue 5s, '93	100	40	21	21	†...
Connecticut Railway & Lighting Co. 4½s, '51	101⅜	60	60	60	8.03
Detroit United 4½s, '32	86¼	69	60	60	10.22
Hudson & Manhattan ref. 5s, '57	69¼	60	54	57	8.95
Adj. income 5s, '57	25½	23	13	19⅛	‡...
Interborough-Metropolitan 4½s, '56	73½	19¾	13½	15	†...
Interborough Rapid Transit 5s, '66	99⅝	58	48	51½	9.63
Kings Co. Elev. 4s, '49	86¾	60	50	53	8.19
Lexington Avenue & Pavonia 5s, '93	99¼	42	40	40	†...
Manhattan Ry 4s, '90	94	60	51	53	7.36
Milwaukee Electric Railway & Light 5s, '26	103	94½	92	92	6.64
Ref. and ext. 4½s, '31	93	77	77	77	7.63
Nassau Electric Railroad 4s, '51	74½	28	23	23	†...
New York & Jersey 5s, '32	100½	78	73	78	7.87
New York Railways ref. 4s, '42	71¾	32	20	22½	†...
Adj. income 5s, '42	47⅝	7¾	5	5	‡...
New York State Railway 4½s, '62	87¼	55	50	51½	8.76
Portland Railway 5s, '30	88½	64⅞	64⅞	64⅞	10.69
St. Paul City Railway 5s, '37	102⅔	80	80	80	7.04
Third Ave. ref. 4s, '60	80⅜	51¾	40	41	9.35
Adj. income 5s, '60	73½	31	21½	23½	‡...
Third Ave. Railway 5s, '37	108	84	75	75	7.66
Tri-City Railway & Light 5s, '23	101	92	87⅞	87⅞	9.76
United Railways Investment 5s, '26	70	75¼	66	66½	13.09
United Railways St. Louis 4s, '34	61½	47½	47½	47½	10.55
United Railroad San Francisco 4s, '27	42	30	20¾	23¾	†...
Virginia Railway & P ref. 5s, '34	93½	70	63	69	8.93

*Exchanged for 5% notes due July 1, 1918, at about 97.
†Interest in default.
‡Interest on these income bonds not earned or paid.

While no interest has been paid on United Railroads of San Francisco general first 4s, 1927, since Oct. 1, 1916, the company is not in the hands of a receiver. Interest has been earned on these bonds with the exception of one year, when a small deficit was reported. A protective committee for these bonds has agreed upon a plan of reorganization, which provides for taking care of all maturing obligations; paying off notes, and scaling down capitalization.

Direct Public Offering Successful

An extension of the tracks of the Springfield (Mass.) Street Railway in the eastern section of Springfield is assured by the successful campaign of citizens of that municipality to raise $300,000 for the purchase of street railway bonds. Clark V. Wood, president of the railway, announced on June 27 that more than two-thirds of the amount had been pledged. The work which the bond drive guarantees is to be started early in July. The proposed extension will provide two direct routes from East Springfield, which in the past six years has had a tremendous industrial expansion, to the center of the city.

The campaign for the sale of the bonds marks a new phase in the financing of electric railway extensions in the Connecticut Valley. The company very frankly stated earrly in the year that it could not provide the desired extension of the lines before 1921 unless the public furnished the money. The Springfield Chamber of Commerce co-operated in the campaign. The company has received permision from the Public Service Commission to issue $5,000,000 of bonds for rehabilitation of its property and payment of indebtedness.

Formal Notice of Foreclosure

The Farmers' Loan & Trust Company, New York, N. Y., has filed a formal notice of foreclosure in the United States District Court on the New York Railways 1912 issue of mortgage bonds, of which $30,616,000 is outstanding. It is explained that the notice is a legal formality to preserve the trust company's rights in the reseivership.

Financial News Notes

Suspension of Service Approved.—A petition of the Savannah (Ga.) Electric Company to abandon service on the Whitaker Street line in Savannah has been granted by the Railroad Commission.

City Selects Appraisers. — Harry Barker and George W. Fuller, New York, N. Y., have been named by the City Commission of Grand Rapids, Mich., to appraise the property of the Grand Rapids Railway for the city.

Operating Allowances Increased.— An increase of 5 cents per car mile in the operating allowance and 1 cent per car mile in the maintenance allowance of the Cleveland (Ohio) Railway has been approved by the City Council.

Replacement Issue Authorized.—The Arkansas Corporation Commission has authorized the Fort Smith Light & Traction Company, Fort Smith, Ark., to issue $200,000 of first mortgage bonds to replace a previous issue of second mortgage bonds.

Car Trust Certificates Sold.—A block of $875,000 car trust certificates of the United Railways & Electric Company, Baltimore, Md., was disposed of on June 30 by a syndicate which was headed by Alexander Brown & Sons and participated in by several other Baltimore bankers.

Towns Contribute to Support Road. —The towns of Norwood, Westwood and Walpole have jointly appropriated $6,500 to continue the operation of cars of Eastern Massachusetts Street Railway in those towns. The sum of $4,000 has been appropriated by the town of Braintree, on condition that a like amount be appropriated by the town of Randolph.

Plans To Resume Lockport Service.— The city of Lockport, N. Y., has accepted the tentative franchise offered by the International Railway for the resumption of traffic on the Grand and Gooding Street lines. The company abandoned the lines last summer rather than pay expenses of paving. The city dropped the paving plan and now will work with the railway to improve the street. The franchise is for ten years.

Interurban Reduces Dividends.—The directors of the Washington, Baltimore & Annapolis Electric Railway, Washington, D. C., announced on June 23 that at a meeting on June 21 the preferred dividend was placed on a basis of 6 per cent and the common reduced from 13½ per cent, as of 1918, and the 7½ per cent, as of 1919, to 1 per cent quarterly. Since the war there has been a great loss in traffic on the line.

Surface Lines Protective Committee. —A protective committee composed of C. Robert Adams, Frank Coenan, G. E. Warren, vice-president of Columbia Trust Company; Frank D. Pavey, as counsel, Arthur N. Hazeltine as secretary and the Columbia Trust Company as depositary has been formed to represent the holders of first mortgage 5 per cent bonds of the Columbus & Ninth Avenue Railroad Company, New York, N. Y.

Discontinuance of Shuttle Authorized. —Job E. Hedges, receiver of the New York (N. Y.) Railways, has been authorized by Federal Judge Mayer to discontinue the shuttle car service from West 106th Street and Amsterdam Avenue to West 110th Street and Columbus Avenue and the operation of cars through West 145th Street to the Hudson River. The court also authorized Mr. Hedges to sell for scrap value 188 old electric cars not worth the expense of storing.

Court Authorizes Payment for Improvements.—The Toledo Railways & Light Company, Toledo, Ohio, was permitted to withdraw $35,770 from the Craig fund by Federal Judge John M. Killits to provide for the payment of a balance due on a large amount of repairs to tracks, lines and special work at carhouses this summer. The fund was started by the court to provide for improvements to service when fare increases were granted three years ago. Six per cent of the net receipts are placed in the fund by the company in weekly installments.

Boston Elevated Would Use Subway Fund.—The Department of Public Utilities of Massachusetts has approved the petition of the Boston Elevated Railway for permission to use a portion of the funds received from the Commonwealth through the purchase of the Cambridge subway. The elevated petitioned the commission for the use of $1,000,000 for the improvement of the Forest Hills station; $267,754 for the payment of floating debt incurred for improvements to the property, and $1,581,000 for the payment of bonds of the West End Street Railway.

Court Directs Loan Be Extended.— Judge Julius M. Mayer of the Federal District Court, on the petition of the Interborough Rapid Transit Company, New York, N. Y., has directed James I. Sheffield, receiver in bankruptcy for the Interborough Consolidated Corporation, to extend until Dec. 31 next the time for the payment of a loan made to the Interborough Rapid Transit Company. Several months ago when a receivership threatened the Interborough Rapid Transit Company the Interborough Consolidated loaned the company $1,000,000 until July 1. The loan was secured by notes.

$800,000 of Notes Offered.—Stone & Webster, Boston, Mass., and the Guaranty Trust Company, New York, N. Y., are offering for subscription at 96 and interest, to yield about 8 per cent, $800,000 of five-year 7 per cent gold notes of the El Paso (Tex.) Electric Company. The notes are to be direct obligations of the company and are to be secured by pledge of all the bonds, notes and stocks of the subsidiary operating companies now owned or hereafter acquired, which have an aggregate value in excess of $6,000,000, subject only to the lien of a closed $1,000,000 collateral trust bond issue maturing Jan. 1, 1932. Junior to the notes there are outstanding in the hands of the public $783,700 of 6 per cent preferred stock and $2,914,100 of common stock. Dividends on the common stock have been paid since 1910, and since Dec. 15, 1915, at the rate of 10 per cent per annum.

Notice of Failure to Pay Interest.— Homer Loring, chairman of the public trustees of the Eastern Massachusetts Street Railway, Boston, Mass., announced on June 30 to the holders of series A and series B refunding mortgage bonds of the company issued under indenture of mortgage dated Jan. 1, 1919, that the coupons due July 1, 1920, appertaining to the Eastern Massachusetts Street Railway refunding mortgage bonds of series A and of series B would not be paid at maturity. He promised that further announcement would be made as to the payment of the coupons or as to the issue of negotiable receipts in exchange therefor if the interest represented thereby is extended in accordance with the provisions of the indenture of mortgage. Lee, Higginson & Company, reorganization managers, explain that the above notice does not refer to the refunding mortgages one-ten year serial 6 per cent bonds, series SA, which are, in effect, guaranteed by the Commonwealth of Massachusetts, under the provisions of Chapter 188, special acts of 1918.

Preferred Stock Issue Contemplated. —A special meeting of the shareholders of the Winnipeg (Man.) Electric Railway has been called for July 27 for the purpose of ratifying and approving a by-law, amending the by-law authorizing the issue of $3,000,000 of 7 per cent cumulative preferred stock of the company, by providing for the payment of the dividend of 7 per cent per annum quarterly, instead of half-yearly, and for the purpose of sanctioning and confirming a by-law repealing the by-law authorizing the issue of paid-up common stock as a bonus in connection with the purpose of passing a resolution, authorizing the directors to sell and dispose of the preferred issue for such price and on such terms and conditions as they may think advisable. The president, Sir Augustus Nanton, in a letter to shareholders, regarding the new issue, states that the company's position has improved materially during the past eighteen months as a result of increased fares, other increased revenue and improved business conditions. The removal of the floating debt, he anticipates, will make surpluses available for extensions or dividends.

Traffic and Transportation

Commission Upheld

Pennsylvania Supreme Court Rules Commission's Rate-Making Power Is Absolute in Scranton Case

The Supreme Court of Pennsylvania on June 26, in deciding the case of Scranton vs. the Public Service Commission went on record as upholding the absolute authority of the commission to fix street railway fares regardless of contracts, franchises or ordinances.

The commission allowed the Scranton Railway a 7-cent fare or four tickets for 25 cents. The city of Scranton brought action against both the commission and the railway, claiming that the franchise of the company provided for a 5-cent fare and this provision could not be changed during the life of the franchise. The cases were appealed to the State Supreme Court. Chief Justice Brown rendered a decision in favor of the commission in the one case and dismissed the action against the railway.

DECISION FAR-REACHING IN EFFECT

The court decided that the rate-making power of the Public Service Commission was absolute; that it was part of the police power of the State and that no contract made between a municipality and a public utility fixing a rate was valid as the municipality has no jurisdiction and no legal right to assume a power delegated by the State to the Public Service Commission.

The effect of the decision will be far reaching. The ruling is said to have immediate bearing on the case of the city of Philadelphia and the Philadelphia Rapid Transit. Apparently the decision renders inoperative the clause in the 1907 contract between the city and the Rapid Transit Company fixing a 5-cent fare.

In rendering his decision Justice C. J. Brown states:

> The ninth section of the ordinance of the city of Scranton, giving its consent to the construction within its limits of the street passenger railway now owned and operated by the Scranton Railway, provides that a passenger "may ride from one part of the city to any other part of the city for a fare, which shall not exceed five cents." In pursuance of an order of the Public Service Commission, made April 22, 1919, the Scranton Railway filed a new schedule of rates, increasing its unit fare to 5 cents. An appeal from this order to the Superior Court was dismissed: City of Scranton vs. Public Service Commission 73 Sup. Ct. 192. On petition of the city of Scranton this appeal was allowed, limited however, to a consideration of the constitutional question of the power of the legislature to authorize the Scranton Railway to charge a fare in excess of that fixed in the consulting ordinance.
>
> The Legislature could not have authorized the construction of a street railway within the limits of the city of Scranton without its consent—for the consitution says—no street passenger railway shall be constructed within the limits of any city, borough or township without the consent of its local authorities.

Justice Brown then interprets this provision in terms of the decision in the case Allegheny City vs. Etna & Sharpsburg Street Railway, 159 Pa. 411, and states that this provision of the constitution must be read in connection with the third secion which says "the exercise of the police power of the State shall never be abridged or so construed as to permit corporations to conduct their business in such manner as to infringe the equal rights of individuals or the general well being of the state."

Justice Brown then continues:

> Street railways have become necessities. They exist everywhere and contribute in a very large measure to "the general well being of the State," as means of transportation and communication—though this is so, they cannot be operated in any municipality without its consent. With such consent they may be, and, as between the local authorities and the railway companies, there may be attached to it terms and conditions which must be performed by the companies, but a municipality may not annex such terms to its consent as will deprive the commonwealth of its inherent police power to see that a street passenger railway company is not prevented from serving the public by the municipality's enforcement of conditions in a consenting ordinance that have become impossible of performance. What may have been a reasonable rate of fare at the time of the passage of a consenting ordinance may, under changed economic conditions, become confiscatory, and a street passenger railway may not be able to serve the public on account of insufficient revenues, based upon the fare fixed in the ordinance. When such a situation arises, as it has arisen and will arise again, there must be relief somewhere to the public, and it lies in the police power of the state, which is never to be abridged or bartered away.

Tri-City Company Will Ask Increase

The Tri-City Railway, Davenport, Ia., already losing money on a 7-cent fare and a 60-cent scale, is arranging to take steps to increase its revenue to offset an increased labor charge of from $120,000 to $150,000 annually imposed under the arbitration award noted elsewhere in this issue.

A petition for an increased fare will be presented to the Public Utility Commission of Illinois at once. The petition will ask for either 8 or 9 cents, probably the latter.

In Iowa, where the cost of operation is higher than in Illinois, 9 or 10 cents will probably be necessary.

The situation in Iowa is complicated by an injunction secured by the retail merchants some time ago restraining the city from enforcing a 5-cent fare and providing for the collection of a 7-cent fare, the fare that has been in force for a year.

The situation there is also complicated by valuation and appraisal of the traction lines, a move instituted by the city at a probable cost of $25,000. This appraisal work is being done by Burns & McDonnell, engineers, of Kansas City. It will not be finished for 120 working days from June 28.

New York Cases Decided

Court of Appeals Has Defined Car Fare Increase Limitations—Rochester Case Cited

The Court of Appeals of New York in a decision handed down on July 7 declares that under certain franchise agreements the Public Service Commission for the First District may hear applications for increased fares separated as to lines of the Brooklyn Rapid Transit System, but has no jurisdiction to hear petitions for increased fares relating to the system as a whole.

The court also handed down a decision in the application of the city of Niagara Falls for a writ of prohibition against the up-State Public Service Commission and the International Railway, in which it held that where a street railway was operating under franchise granted prior to 1907, when the Public Service Commission was created, it could not charge a higher rate of fare than that specified in the franchise granted by the municipality.

The court holds, in the Brooklyn cases, that the following classes of franchises fall outside of the scope of the decision in the Niagara Falls case and the famed Quimby, or Rochester Railway case:

1. All franchises granted by the Legislature.
2. All franchises granted by municipal authorities prior to Jan. 1, 1875.
3. All franchises granted by municipal authorities subsequent to the passage of Public Service Commission law, July 1, 1907.
4. The following franchises were granted between Jan. 1, 1875, and July 1, 1907, the time when the Public Service Commission was created: (a) The franchise granted by the Brooklyn Common Council to Atlantic Avenue Railroad, March 13, 1882; (b) franchise granted by Common Council at Brooklyn to Prospect Park & Coney Island Railroad, Sept. 21, 1885; (c) franchise granted by Common Council, Brooklyn, to Nassau Electric Railroad, June 19, 1893, covering a number of lines.

The court says the affirmance is without prejudice to the right of the Brooklyn receiver to make separate application as to the franchises which thus come within the jurisdiction of the Public Service Commission.

In the three cases involving branches of the Brooklyn Rapid Transit System the Court of Appeals has affirmed the order of the Appellate Division which dismissed the writ obtained by Receiver Lindley M. Garrison to review the action of the Public Service Commission in refusing to permit an increase in fares to 8 cents on three subsidiaries, but without prejudice to the right of the receiver to make separate application as to franchises that come within the jurisdiction of the commission as indicated in the opinion of the court.

Corporation Counsel O'Brien of New York City has expressed the opinion that the franchises which fall outside the scope of the Rochester ruling are so few and so interwoven with franchises which are plainly controlled by the Rochester decision as to make it practically impossible to work out any increase in fares upon any of the systems of street railways within the city.

Five-Cent Fare Fast Disappearing

Association Figures Show That Only Sixty-six Out of 273 Cities Having 25,000 Population or More Retain Five-Cent Fare

Since the compilation made public by the information bureau of the American Electric Railway Association last February and up to June 1, 1920, fares in thirty-two additional cities of more than 25,000 population have been increased. Of these twelve were original increases, while the remainder were second and in a few instances third increases. Of the thirty-two new base cash rates thus established, two were 10 cents, four were 8 cents, seventeen were 7 cents, eight were 6 cents, and one was a 5-cent rate with an additional charge of 1 cent for a transfer.

THESE additional increases leave but sixty-six out of the 273 cities in the United States which according to the 1917 estimate of population had 25,000 or more inhabitants with a 5-cent car fare, and in forty-five of these an increase in fare is under consideration.

ONLY SIXTY-SIX FIVE-CENT CITIES

At this date car riders in 207 out of the 273 cities are paying more than a 5-cent base rate.

Car riders in 139 out of the 273 are paying more than a 6-cent base rate.

Car riders in 69 out of the 273 are paying more than a 7-cent base rate.

Car riders in thirty-six out of the 273 are paying more than an 8-cent base rate.

The following table summarizes the situation:

Cities having a 10-cent base rate	25
Cities having a 9-cent base rate	1
Cities having an 8-cent base rate	14
Cities having an 8-cent rate on elevated lines and 6-cent rate on surface lines	1
Cities having two 7-cent zones	3
Cities having 7-cent central and three-cent outer zones	1
Cities having a 7-cent base rate with 2-cent transfer charge	1
Cities having a 7-cent base rate with 1-cent transfer charge	15
Cities having a 7-cent base rate	55
Cities having a minimum base rate of 6-cents for 2 mile zones and 3-cents per mile zone thereafter	8
Cities having two or more 6-cent zones	6
Cities having a 6-cent base rate with 2-cent transfer charge	2
Cities having a 6-cent base rate	65
Cities having two 5-cent zones	1
Cities having 5-cent base rate with 3-cent transfer charge on certain lines	1
Cities having 5-cent base rate with 2-cent transfer charge	2
Cities having 5-cent base rate with 1-cent transfer charge	1
Cities having a 5-cent base rate with additional charge outside city limits	4
Cities having 5-cent base rate on most important lines with varying fares on others	1
Cities having a 5-cent base rate	66
Total	273

In St. Louis the fare has, by order of the Missouri Public Service Comission, been decreased from 8 cents, two tickets for 15 cents, seven tickets for 50 cents, fifty tickets for $3.50, to a straight fare of 7 cents, with no tickets. In Fall River, Mass., although the base rate of 10 cents cash has been retained tickets are being sold, good to the traffic center, at sixteen for $1. There have been no other decreases.

ONLY TWO FIVE-CENT CITIES IN NEW YORK

Of the principal cities of New York State only New York and Rochester are left with their original car fares. A 7-cent fare to take effect July 1 was agreed upon and a service-at-cost agreement is looked for in the latter city in the immediate future.

In forty-seven of the seventy cities control of the rate of fare is in the hands of city authorities and in the remaining twenty-three cases it is under the control of state commissions. In fifteen of the instances where the commissions are in control there is no application for increase pending, and in five more cases application has only

(Continued on page 100)

Base Fare Rate in Cities of More Than 25,000 Population, Census Estimate of 1917.

TEN CENTS—25 CITIES

Boston, Mass.	Newton, Mass.
Pittsburgh, Pa.	Wheeling, W. Va.
Fall River, Mass.	Fitchburg, Mass.
Lowell, Mass.	Everett, Mass.
Cambridge, Mass.	Quincy, Mass.
Lynn, Mass.	Joliet, Ill.
Lawrence, Mass.	Taunton, Mass.
Somerville, Mas.	Brookline, Mass.
Brockton, Mass.	Waltham, Mass.
Malden, Mass.	Nashua, N. H.
Salem, Mass.	Medford, Mass.
Haverhill, Mass.	Walla Walla, Wash.
Chelsea, Mass.	

NINE CENTS—ONE CITY

Portland, Me.

EIGHT CENTS—15 CITIES

Chicago, Ill., (elevated lines).	Wilkes-Barre, Pa.
Cincinnati, Ohio	Johnstown, Pa.
Washington, D. C.	Dubuque, Ia.
Kansas City, Mo.	Aurora, Ill.
Youngstown, Ohio	Norristown, Pa.
Kansas City, Kan.	Easton, Pa.
Manchester	Shenandoah, Pa.
	Elgin, Ill.

SEVEN-CENT ZONES, TWO—THREE CITIES

Worcester, Mass.	Springfield, Mass.
Chicopee, Mass.	

SEVEN CENTS CENTRAL ZONE, OUTER ZONES THREE CENTS—ONE CITY

Milwaukee, Wis.

SEVEN CENTS, TWO CENTS TRANSFER—ONE CITY

Toledo, Ohio

SEVEN CENTS, ONE CENT TRANSFER—15 CITIES

Newark, N. J.	Bayonne, N. J.
Jersey City, N. J.	West Hoboken, N. J.
Paterson, N. J.	East Orange, N. J.
Trenton, N. J.	Perth Amboy, N. J.
Camden, N. J.	Orange, N. J.
Elizabeth, N. J.	Montclair, N. J.
Hoboken, N. J.	New Brunswick, N. J.
Passaic, N. J.	

SEVEN CENTS—55 CITIES

St. Louis, Mo.	St. Joseph, Mo.
Baltimore, Md.	Troy, N. Y.
Buffalo, N. Y.	Erie, Pa.
Omaha, Neb.	Allentown, Pa.
Scranton, Pa.	Chattanooga, Tenn.
San Antonio, Tex.	Charleston, S. C.
Nashville, Tenn.	Atlantic City, N. J.
Tacoma, Wash.	Mobile, Ala.
Houston, Tex.	Rockford, Ill.
Reading, Pa.	Gary, Ind.
Albany, N. Y.	York, Pa.
Wilmington, Del.	Augusta, Ga.
Davenport, Ia.	Wilmington, N. C.
Racine, Wis.	East Chicago, Ill.
Lincoln, Neb.	Newburgh, N. Y.
Macon, Ga.	Rock Island, Ill.
Butte, Mont.	Butler, Pa.
Montgomery, Ala.	Lewiston, Me.
New Castle, Pa.	Moline, Ill.
Chester, Pa.	Oak Park, Ill.
Charlotte, N. C.	Bloomington, Ill.
Auburn, N. Y.	Muskegon, Mich.
Jamestown, N. Y.	Hammond, Ind.
Quincy, Ill.	Durham, N. C.
Oshkosh, Wis.	Hagerstown, Md.
Columbia, S. C.	Cohoes, N. Y.
Winston-Salem, N. C.	Burlington, Ia.
Jackson, Miss.	

SIX CENTS, TWO ZONES (THREE MILES), THREE CENTS A MILE THEREAFTER—EIGHT CITIES

New Haven, Conn.	New Britain, Conn.
Brdgeport, Conn.	Stamford, Conn.
Hartford, Conn.	Meriden, Conn.
Waterbury, Conn.	Norwalk, Conn.

SIX-CENT ZONES—SIX CITIES

Providence, R. I.	Woonsocket, R. I.
Holyoke, Mass.	Cranston, R. I.
Pawtucket, R. I.	Central Falls, R. I.

SIX CENTS, TWO CENTS TRANSFER—TWO CITIES

Norfolk, Va.	Portsmouth, Va.

SIX CENTS—66 CITIES

Chicago, Ill. (surface lines).	Springfield, Mo.
Detroit, Mich.	San Jose, Cal.
New Orleans, La.	Colorado Springs, Col.
Portland, Ore.	Amsterdam, N. Y.
Denver, Col.	Cedar Rapids, Ia.
Oakland, Cal.	Shreveport, La.
Columbus, Ohio	Fresno, Cal.
Atlanta, Ga.	Stockton, Cal.
Birmingham, Ala.	Jackson, Mich.
Syracuse, N. Y.	Bellingham, Wash.
Spokane, Wash.	Joplin, Mo.
Memphis, Tenn.	Kenosha, Wis.
Grand Rapids, Mich.	La Crosse, Wis.
Salt Lake City, Utah	Zanesville, Ohio
Ft. Worth, Tex.	Madison, Wis.
Schenectady, N. Y.	Charleston, W. Va.
Utica, N. Y.	Poughkeepsie, N. Y.
East St. Louis, Ill.	Newport, R. I.
Harrisburg, Pa.	Battle Creek, Mich.
Peoria, Ill.	Green Bay, Wis.
Springfield, Ill.	Fort Smith, Ark.
Berkeley, Cal.	Evanston, Ill.
Altoona, Pa.	Hazelton, Pa.
Little Rock, Ark.	Beaumont, Tex.
Saginaw, Mich.	Sheboygan, Wis.
Pueblo, Colo.	Alameda, Cal.
Binghamton, N. Y.	Steubenville, Ohio
Springfield, Ohio	Bangor, Me.
Lancaster, Pa.	Kingston, N. Y.
Topeka, Kan.	Cumberland, Md.
Bay City, Mich.	Asheville, N. C.
Lansing, Mich.	Union, N. J.
Lexington, Ky.	Paducah, Ky.

TWO FIVE-CENT ZONES—ONE CITY

San Diego, Cal.

FIVE CENTS, THREE CENTS TRANSFER CERTAIN LINES—ONE CITY

Philadelphia, Pa.

FIVE CENTS, TWO CENTS TRANSFER—TWO CITIES

New Bedford, Mass. Pittsfield, Mass.

FIVE CENTS, ONE-CENT TRANSFER—ONE CITY

Cleveland, Ohio

FIVE CENTS, ADDITIONAL CHARGE IN SUBURBS—FOUR CITIES

Yonkers, N. Y.	Elmira, N. Y.
New Rochelle, N. Y.	Mt. Vernon, N. Y.

FIVE CENTS ON MOST IMPORTANT LINES, VARYING FARES ON OTHERS—ONE CITY

New York, N. Y.

FIVE CENTS—66 CITIES

Los Angeles, Cal.	Roanoke, Va.
San Francisco, Cal.	Galveston, Tex.
Minneapolis, Minn.	Decatur, Ill.
Seattle, Wash.	Hamilton, Ohio
Indianapolis, Ind.	Niagara Falls, N. Y.
Rochester, N. Y.	Lorain, Ohio
Oklahoma City, Okla.	Everett, Wash.
Duluth, Minn.	Lima, Ohio
Akron, Ohio	Waterloo, Ia.
Jacksonville, Fla.	Boise, Idaho
Ft. Wayne, Ind.	Austin, Tex.
Evansville, Ind.	Williamsport, Pa.
Wichita, Kan.	Waco, Tex.
South Bend, Ind.	Highland Park, Mich.
Savannah, Ga.	Lynchburg, Va.
El Paso, Tex.	Danville, Ill.
Sacramento, Cal.	Tulsa, Okla.
Terre Haute, Ind.	Ogden, Utah
Canton, Ohio	Newport, Ky.
Covington, Ky.	Council Bluffs, Ia.
Knoxville, Tenn.	Watertown, N. Y.
Sioux City, Ia.	Newark, Ohio
Flint, Mich.	Portsmouth, Ohio
Tampa, Fla.	Long Beach, Cal.
Kalamazoo, Mich.	Clinton, Ia.
Pasadena, Cal.	Pensacola, Fla.
McKeesport, Pa.	Columbus, Ga.
Huntington, W. Va.	Petersburg, Va.
Muskogee, Okla.	Muncie, Ind.
Superior, Wis.	Richmond, Ind.

recently been made, so that it may be said that no tendency on the part of the commissions to refuse relief is revealed. This is plainly evidenced by the geographical location of the cities in which the base rate is still 5 cents. Forty-nine of such cities are located in states where the commissions are without jurisdiction over fares stipulated in franchises.

Upward Tendency Plainly Indicated

The trend toward fares higher than 6 cents is indicated by an examination of the fifty-nine applications for increases now pending. Of these, seventeen are second applications. Of the entire number, one is for a 10-cent fare with a 2-cent charge for a transfer; nine are for 10-cent fares; six for 8-cent fares; one for a 7-cent fare with a 3-cent transfer charge; sixteen for a 7-cent fare; one for a 6-cent fare with a 1-cent transfer charge; thirteen for a 6-cent fare and in eleven cases the relief asked is not specified.

The table on page 99 shows the various base rates of fare and the cities in which they are being charged, as compiled by the American Electric Railway Association. The ticket fare is not given and in consequence the actual revenue received per passenger cannot be definitely stated.

Rainier Line Asks Another Increase

The Seattle & Rainier Valley Railway, Seattle, Wash., has applied to the State Public Service Corporation for permission to increase its fares. The new schedule is intended to supersede the 7-cent fare put into effect on the company's lines on June 6, the company declaring that the further increase is necessary in order to operate the privately-owned system without loss. If approved, the new tariff will be put into effect on July 19, the day set for increasing fares on the municipal lines. The proposed schedule follows:

Ten-cent cash fare for adults and for children more than six years of age, and for children less than six years of age, when occupying seats required by other passengers, or when traveling alone.

Fare at the rate of 6⅔ cents each for metal tokens, purchased in lots of fifteen for $1.

School fare metal tokens good only for children going to and from school, 3⅓ cents each if purchased in lots of ten.

Lap dogs carried free of charge; other dogs, except between the hours of 7 and 8:30 a.m. and 4:30 and 6:30 p.m. 10 cents. During the hours designated, they may not be taken on the cars at all.

Fares for Zone 2 (between the city limits and the town of Bryn Mawr) 15 cents, and 5 cents between two points in that zone. For Zone 3 (from Bryn Mawr to Renton) 20 cents. Fares between points in Zones 2 and 3, 10 cents.

The schedule provides for interchange of transfers between the Rainier Valley cars and municipal lines at a cost to the passenger of 2 cents if his original fare was paid with a token. Transfers will be issued without charge, however, on the 10-cent cash fare.

The company put the present 7-cent fare in effect on June 6, with the approval of the commission. This tariff was passed without protest.

Service at Cost Suggested

Louisville Railway Committee Sees Ohio as Most Promising Avenue of Relief

The executive committee of the Louisville (Ky.) Railway, composed of W. S. Speed, John W. Barr, Jr., and William H. Kaye, has submitted to Mayor Smith an exhaustive report in which it asks for an increase in fares from 5 cents to 7 cents and announces that it will offer an ordinance to the City Council which, if passed, will enable the company to operate on what is termed a "service-at-cost" plan. The report says a 7-cent fare is required if the company is to get sufficient revenue to render adequate service, make necessary charges for maintenance, remain a going concern and provide a reasonable return on the investment. The request has as its basis operation under a 5-cent fare for a considerable trial period. The report declares that a continuation of the 5-cent fare would mean a deficit this year of $571,896 if dividends were paid. An initial 7-cent fare is suggested.

THE report to the Mayor was signed by W. S. Speed, chairman; John W. Barr, Jr., and W. H. Kaye, the executive committee, and is supplemental to the report made in March, 1919, by the Arnold Company, Chicago, engineers, which reached much the same conclusions as to the need for an increase in fares in Louisville. Its technical portion was prepared by the Arnold Company from facts gathered from the company's books.

$500,000 Loss Likely

Unless there is a raise in fare, the report shows, the company will fall short by more than $500,000 both this year and in 1921 of the amount needed to pay interest on the investment. Even with the use of one-man cars in 1921 the deficit would still be about $469,000, and these cars would cost the company about $400,000, a sum which it would find difficult to borrow on the financial showing it can make with the present rate of fare. The report says changes suggested in the March, 1919, report have been carried out and have effected some savings, suggests others in addition to the introduction of one-man cars which might be resorted to, but says that none will meet the situation nor bring the Louisville company the revenue it needs so that it can give the city adequate service and provide a reasonable return on the investment.

The report discusses some of the solutions other than a fare raise to meet the problem of the company's increasing expense list and its fixed revenue. The zone system which has been tried but not found successful in other cities and the payment of a charge for transfers, now issued free, are each discussed in detail and dismissed as impractical or clearly insufficient to raise the revenue needed, put the company firmly on its feet and keep it a going concern which can renew worn-out parts of its plant from year to year, keep its employees satisfied, give good, safe, comfortable service and provide some return for security holders.

$1,800,000 Needed for New Work

The report points out also that in addition to taking care of maintenance charges, ordinary expense and providing revenue for interest and dividends, the company will absolutely need about $1,891,000 in the five years from 1920 to 1924 for the purchase of double truck cars, one-man cars, air brakes and motor equipment, for track extensions, carhouse construction, etc., to keep the system going. Renewal charges in connection with these items for the same period would amount to $1,025,000 additional.

Money for the purchase of these cars and the equipment must be raised on security issues and unless the credit of the company is improved through a higher rate of fare it will have great difficulty in getting the necessary financial assistance, the report asserts.

In discussing a zone fare system for the city, the report says:

Probably the only line on which a second fare could be collected is the Fourth Street line. Traffic counts at the city limits are not available, but it seems probable that, at a maximum, not over 4,000 to 5,000 additional fares per day would be collected. If an additional fare of 5 cents were charged for a ride beyond the city limits, the revenue obtained would probably not exceed $90,000 a year, which is obviously inadequate to meet the probable deficit.

After declaring it is difficult to estimate with any degree of accuracy the amount of revenue that might be obtained by a charge for transfers, the report says during 1920 probably 40 per cent of the passengers carried will transfer. The report continues in part:

It is probable that a 1-cent charge for transfers would result in the immediate reduction in the number of transfer passengers by possibly 50 per cent and in some reduction in cash fares. In our opinion, the additional revenue from a 1-cent transfer would not exceed $120,000 a year. A higher charge for transfers will result in a further reduction in the number of transfer passengers so that the increase in revenue will not be proportional to the increased charge. And it is believed that the required increase in revenue would not be obtained by any transfer charge.

Even assuming that the revenue required could be raised by a charge for transfers, the justice of such a charge on a system such as operated in Louisville is open to serious question. The operation of through routes makes it possible for passengers to take a very long ride for a single fare if they so desire and this character of long haul cannot be reduced except by the installation of a zone system of fares, which is deemed impractical under Louisville conditions.

Transfer passengers on the average probably do not ride much, if any further, than cash passengers, although their points of origin and destination require them to use two car lines. The effect of a transfer charge would be to penalize a passenger whose home and place of business do not happen to be on the same car line. The long ride now possible for a single fare would not be reduced materially, but many passengers taking a relatively short ride would have their fare unduly increased.

As a matter of fact, the number of passengers taking an excessively long ride, either for a single fare or with a transfer, is probably not a serious matter. Several very long hauls are possible, but the vast bulk of the riding is between the business and residence districts.

In view of all the conditions, it appears that the most practical and equitable means of raising the required revenue is by an increase in the rate of fare. The alternative, a zone fare system, has not been very successful on street railways in the United States, and further, it is not believed that Louisville conditions warrant such fare system.

ECONOMY IN RESCHEDULING

A study of traffic and service indicates that by rerouting and rescheduling there can be effected a saving in expense of $40,000 a year, of which only $20,000 could be saved in 1920.

By the use of a number of one-man safety cars for appropriate routes it is estimated that a further saving of $84,700 a year can be effected. This saving cannot be effected in 1920, and can only be made after the cars are purchased at a cost of about $400,000.

Including these savings the amount available for dividends is estimated to be: 1920, $102,520; 1921, $151,000 (without one-man cars); 1921, $204,700 (with one-man cars).

On the basis of dividends of 5 per cent on the preferred stock and 6 per cent on the common stock, $674,416 per year, the company would face a deficit as follows: 1920, $571,896; 1921, $522,916 (without one-man cars); 1921, $469,718 (with one-man cars).

Under Louisville conditions it is believed that a transfer charge would be inequitable and an undue burden on passengers whose points of origin and destination require the use of two car lines.

It is recommended that by an increase in fare, sufficient revenue be provided to furnish adequate service to the community and to provide a reasonable return to the company on its invested capital.

With the view of affording the greatest convenience to the greatest number of people the movement of street cars should be favored over that of automobiles since a delay to a car carrying sixty-five passengers is as serious as a similar delay to sixteen automobiles carrying four passengers each. Further, it should be recognized that the primary function of the public street is the movement of traffic and not the storage of vehicles.

PARKING PROHIBITION ASKED

The report says where there is available street space every effort should be made, with police department cooperation, to keep vehicles off the car tracks but says that on some streets, notably Fourth, conditions are particularly bad and result in many delays. In this connection the report says in part:

The most obvious remedy for this situation is the prohibition of automobiles parking on Fourth Street during rush hours. By this means the space now used by standing vehicles would be available for moving vehicles and the car tracks usually kept clear for street cars. Some measure of relief could be obtained by prohibiting parking, for perhaps 150 ft. adjacent to a car-loading berth, thus enabling automobiles to get off the car track for that distance and permitting a less obstructed approach to the corner for cars.

In making its conclusions and recommendations the committee shows the company's estimated revenue for 1920 to be $4,102,000 and for 1921 to be $4,220,000. Operating expenses, taxes, maintenance and other charges with interest on bonds would leave for dividends on the present fare basis in 1920, $82,500, and 1921, $80,000. This is about one-seventh of the amount required to take care of dividend requirements.

Ask Higher Freight Rates

A general increase in freight rates is asked by twenty-one electric railways operating interurban lines in Indiana in petitions recently filed with the State Public Service Commission. Among the petitioners are the Chicago, South Bend & Northern Indiana Railway, South Bend; the Union Traction Company of Indiana, Anderson, and the Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis. The companies seek an advance in rates sufficient to place them on an equality with steam roads operating within the State.

Recent activities on the part of freight departments of the various interurban lines leads to the general belief that these lines are taking steps to build up their long-neglected freight business. In spite of the fact that Indiana is crisscrossed in every section by traction lines, they never have made an active bid for extensive freight business. During the recent car shortage on the part of the steam roads more and more demands have been made upon traction lines for short-haul freight, with the result that officials are being favorably impressed with the possibilities of the freight end of the business.

Shippers in the smaller industrial cities surrounding Indianapolis, such as Terre Haute, Richmond, Kokomo, Anderson, Muncie and Frankfort, found it impossible to ship goods during the car shortage. Indianapolis was very fortunate in being able to ship, even though the car movement was curtailed, the most of the time when the shortage was at its worst. The result was that shippers in these smaller industrial centers shipped their goods by trolley freight to Indianapolis and from there to the destination over steam roads.

Hearing July 15 on Application of Pacific Electric for Rate Increase

The California State Railroad Commission has set July 15, 1920, as the date for a public hearing in the matter of the Pacific Electric Railway's application for an increase in both interurban and local fares. The interurban company's petition applies for an increase in freight rates at the same time. Hearing will be held in Los Angeles before three commissioners of the State.

An increase in freight rates equivalent to that which may be granted by the Interstate Commerce Commission to steam roads in their application for a 24 per cent increase in the California territory has been petitioned for by the Pacific Electric. It has been brought out that the same increases in operation costs of steam roads are obtaining in the cost of handling freight over electric lines, necessitating that an increase in conformity to that applied for by the steam roads be granted.

Of the Pacific Electric Railway's gross traffic, only 22 per cent is taken up in the handling of freight. Forty-five per cent of the freight handled by Pacific Electric Railway is interstate in character and the rates for this, it is cited, should be maintained at a parity with steam lines competing for this business. Without an increase in the rates for handling freight, additional increases over those already submitted in passenger rates would have to be petitioned for, it is asserted.

Jitneys or Trolleys?

Auto-Ridden Bridgeport Must Decide by July 15 Which It Will Retain

Trolleys may cease to run in Bridgeport, Conn., on July 15. The Connecticut Company has been forced to indicate that it may be necessary to suspend service owing to the inroads made by jitneys operated under conditions of competition distinctly unfair to the railway. The company had indicated previously that this was its decision. In a formal statement made on July 3 the company said:

As is well known, jitneys have been operated in the city of Bridgeport for the several years last past in direct competition with the cars of the Connecticut company and to a greater extent than in any other city of the State. This competition has materially affected the revenues of the company, the amount received having been for a long time insufficient to meet ordinary operating costs and recently having so fallen off as to but barely meet the payrolls, leaving not enough to pay for materials and supplies. In other words, at the present time the company is actually losing money by the operation of its cars in Bridgeport.

The company has sought to meet this competition and to improve the character of its service, having purchased a large number of safety cars, but unfortunately the financial results have not only failed to improve but have grown steadily worse. Manifestly, this cannot continue. The company has no profits at other places which it can draw upon to make up its losses in Bridgeport. The continuance of its operations must depend upon the revenues received.

DIRECT COMPETITION UNFAIR

The great cause of the competition which has proven so ruinous to the company is that the routes assigned to the jitneys by the public authorities are all on streets upon which the railway tracks are located, so that all the revenues which they receive comes from those who would otherwise pay car fares and thus directly takes away the the revenues of this company. The extent of this competition is shown by the fact that the jitneys are carrying over one-half the total number of passengers.

Under such severe and unregulated competition it is impossible for this company to operate. It is obliged to pay a percentage of its gross receipts in the form of a tax and in addition must maintain the greater portion of the pavements on the streets in which its tracks are located and contribute towards the cost of all bridge renewals. It performs a full measure of service for more than eighteen hours of each day and during snow storms keeps the streets open for the passage, not only of its own cars, but for jitneys, delivery wagons and other vehicles. Its service must be continuous and dependable. No means of conveyance not confined to definite track areas can supply the amount of service required, especially in a city with narrow central streets.

The jitney operates wherever and whenever the individual owner pleases without regard to the necessity or convenience of the community, and the jitneys alone cannot give an entire city such service as is necessary for its continued growth and prosperity.

There are areas in the city of Bridgeport without means of public transportation through which motor bus routes would be of great service and would meet a real necessity, and we are advised that it is within the power of the city to establish such routes and to confine jitney operation thereto. By so doing a material improvement in public transportation would be afforded and by eliminating ruinous competition the continued operation of street cars would be made possible. Without some action of this kind continued operation is not possible.

In making this statement the trustees desire only to point out the real situation. They have no wish to take an unreasonable attitude. The point is simply that the railway service cannot be carried on in the face of existing jitney competition. And if such service be discontinued it will be because under existing conditions this company cannot make enough money to pay its expenses.

The trustees desire to call attention in this connection to the fact that the Con-

necticut Company has no legal process available to it for restriction or control of jitney competition or service either by appeal to the courts or to the Public Utilities Commission while the city government, as they are advised, has adequate power in the premises.

As the jitney competition is more intensive in Bridgeport than in any other portion of the State, the exact plan has been determined for that locality only, no details having as yet been worked out relative to action in any other city. It will, however, be essential to give careful attention to this matter in all parts of the State, and as the solution lies within the power of the local authorities in each instance, it is probable that proper steps will be taken in each locality.

Six Cents in Canton

The City Council of Canton, Ohio, on July 2, by a unanimous vote, passed an ordinance giving the Northern Ohio Traction & Light Company a 6-cent cash fare with seventeen tickets for $1, but the Mayor vetoed the measure. The newspapers declared that the settlement was satisfactory to all concerned and the Council will undoubtedly proceed to pass the bill over the Mayor's veto.

On July 3, the City Council of Massillon informed the company that it will not grant a 10-cent fare and that the offer of 8 cents, with four tickets for a quarter, is the best that can be made. The local men have since gone on strike.

Pittsburgh Petition Presented

Holding the objections of the Pennsylvania State Public Service Commission to an increase in fare in Pittsburgh from 7½ to 8½ cents, or three tickets for a quarter, "merely a question of procedure," the receivers of the Pittsburgh Railways formally announced last week that they had filed a petition with the commission, asking approval of the contemplated increased fares.

Filing of the new petition, however, after the previous petition met with a setback at the hands of the commission, means a delay of at least a month in putting the 8½-cent fare into effect. The receivers fixed the date at July 14.

The commission has fixed Aug. 10 as the time for a hearing on the petition. As the increased fare cannot now go into effect, under the commission's ruling, until the commission approves it, this approval, if given, must not come later than Aug 10, the day of the hearing.

The Mayor and the Council urged that the trainmen be given a substantial increase in wages. Whether they will oppose the fare increase when the commission takes up the matter will not be determined until next week when the city officials will advise on what attitude should be taken by them.

On two different occasions the Mayor and the merchants have promised that, if the company granted an increase to the men, they would join the company in an appeal to the State authorities for permission to increase the fare in order to meet the added expenses due to a bigger payroll. When the time came, however, both the merchants and the Mayor opposed an increased fare.

Transportation News Notes

Interstate Line Wants More.—The Chicago, North Shore & Milwaukee Railroad, Highwood, Ill., has applied to the Interstate Commerce Commission for an increase in fare from 2.5 cents to 2.7 cents a mile.

Higher Rate Denied.—The Illinois Public Utilities Commission has issued an order pending until Dec. 29, 1920, the proposed increase in fare from 6 cents to 7 cents on the lines of the Jacksonville Railway & Light Company, Jacksonville.

Increase Asked in Gary.—The Gary (Ind.) Street Railway has petitioned the Public Service Commission for a 10-cent fare in Gary, Hammond and East Chicago. The petition asks authority to sell ten tickets for 70 cents, with a 5-cent fare in interurban zones.

L. A. Carmen Read "Two Bells."—Carmen and other employees in the service of the Los Angeles (Cal.) Railway are now looking forward each week to the appearance of *Two Bells*, the company's new magazine. The paper is edited by J. G. Jeffery, director of public relations of the railway.

Ten Cents Asked in Greenfield.—The Connecticut Valley Street Railway, Greenfield, Mass., has petitioned the State Department of Public Utilities for an increase in fare from 6 cents to 10 cents. The company proposes to sell labor tickets at 7½ cents each. The road has paid no dividends on its common stock since 1916, and no dividends on preferred stock since 1918.

Ten-Cent Fare Stands.—The Chicago & Joliet Electric Railway, Joliet, Ill., has been authorized by the State Public Utilities Commission to continue until further notice the 10-cent fare now being charged on its Joliet lines. The commission has authorized the Central Illinois Public Service Company, Mattoon, to continue charging a 6-cent fare on its lines in Mattoon.

Seven Cents in Lexington.—Car riders in Lexington, Ky., are now paying a local fare of 7 cents, and a minimum fare of 7 cents on the interurban lines of the Kentucky Traction & Terminal Company. The new rates became effective on June 14. The fare was formerly 6 cents. There was little opposition to the increase on the part of the public.

Zone Fares Six Cents.—The Public Service Commission for the Second District of New York has authorized Leverett S. Miller, receiver of the Westchester Street Railroad, to increase the rate of fare from 5 cents to 6 cents in zones where franchise restrictions have been waived by local authorities. These waivers terminate on Aug. 1, 1920. The commission's permission to charge the 6-cent fare is effective only to and including July 31.

Seven Cents in Springfield.—An increase in cash fare from 6 cents to 7 cents on the lines of the Springfield (Ill.) Consolidated Railway was authorized by the State Public Utilities Commission on June 16. The commission announced that the new rate would be effective ten days after the company's acceptance of the order. The company was directed to sell four tickets for 25 cents and thirty-five school tickets for $1.

Safety-First Placards. — A safety-first campaign has been started by the Monongahela Valley Traction Company, Fairmont, W. Va., on its Fairmont division for the purpose of instructing passengers in the proper methods of getting on and off and riding on its cars. A series of placards is being displayed in the cars, illustrating the mistakes most frequently made and their evil results. These placards will be changed from time to time.

Fares Decreased, But Zones Increased.—The Interstate Consolidated Street Railway and Attleboro Branch Railroad, have been granted a fare increase through re-arrangement of fare zones. The actual cash fare has been reduced from 7 cents to 5 cents, but the zones have been shortened and the number increased. On April 18, the companies were permitted to increase their fares from 6 cents to 7 cents pending an investigation by the Public Utilities Commission.

Jersey City Interested in Newark Case.—Counsel for Jersey City has requested recognition by the court as co-defendant in the case of the Public Service Railway of New Jersey to enjoin the jitneys from operating in Newark, N. J. This is asked upon the ground that the jitneys pay 5 per cent of their gross revenue to the city. This fact seems to offer little support, however, to the defendant jitneys, as the railway also pays a similar percentage. The city of Newark takes a less prominent position, being interested only in the question of authority of the municipality to regulate both utilities. This right the Public Service Railway does not dispute, the question of regulation not being raised. It is expected that the case will come up for trial July 10.

New Publication

Essentials of Alternating Currents

By W. H. Timbie and H. H. Higbie. John Wiley & Sons, Inc., New York, N. Y.

The authors of this book are well known for their ability to explain in clear, simple language the essentials of electrical circuits and machinery. The book should be useful to practical men who wish to study for the first time or to review the principles underlying their everyday duties. It is non-mathematical in character and is replete with problems and diagrams.

Personal Mention

New Board Member

Colonel Stayton Will Assume New Post at Kansas City on Aug. 15—Succeeds R. P. Woods

Col. Edward M. Stayton has recently been made the city representative on the Board of Control of the Kansas City (Mo.) Railways of which Philip J. Kealy is the other member. Colonel Stayton takes the place of R. P. Woods, who recently resigned to devote his time to the Kansas City, Clay County & St. Joseph Railway, of which he is vice-president and general manager.

Kansas City is indeed fortunate in securing the services of a man of Colonel Stayton's caliber and engineering experience. Born on Sept. 4, 1874, near Independence, Mo., he attended the Independence schools and later Missouri University. From 1894 up to the present time he has been actively engaged in engineering work, a large part of his time being spent in and about Kansas City. Mr. Stayton probably knows Jackson and Clay Counties from the highway and railway standpoint better than any other man. In 1903-04 he was chief engineer for the proposed Kansas City, Parkville & St. Joseph Railway, making surveys, estimates, etc., also superintendent of construction for the State of Kansas in the building of a brick street costing $20,000. In Spanish Honduras during the following two years he located and built 8 miles of narrow-gage road for the Las Palmas Plantation Company.

From April, 1905, to September, 1906, Mr. Stayton was chief engineer for Kansas City, Parkville & St. Joseph Railway and the Kansas City, St. Joseph & Excelsior Springs Railway. From September, 1906, to July, 1907, he was locating engineer for Div. No. 1 of the Missouri River & Gulf Railway (proposed) between Kansas City and the Gulf of Mexico. From January, 1905, to June, 1905, he was employed as chief engineer of surveys of the Kansas City & St. Louis Electric Railway. During the five years from 1911 to 1916 he was connected with the Kansas City, Clay County & St. Joseph Railway and engaged in general consultation practice on highways and railways.

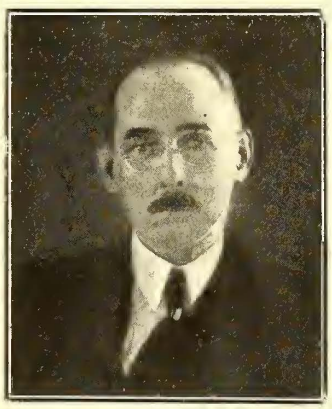
Before leaving for the Mexican border in June, 1916, Colonel Stayton, then Major of Artillery, U. S. was Highway Engineer of Jackson County, Missouri. Only a few months after returning from the border he again entered the service and as Major 110th Engineers, U. S. A., later Lieutenant-Colonel, and left with his regiment for France. Since his return Colonel Stayton has been consulting engineer for the location and construction of highways for Clay and other counties in Missouri.

On May 28, Mr. Stayton was elected Colonel of the Seventh Regiment of the Missouri National Guards. Colonel Stayton is a member of the American Society of Civil Engineers. He will not assume his duties on the Board of Control until Aug. 15.

Mr. Kidder Advanced

Electrical Superintendent of Interborough Will Succeed Mr. Finlay as Superintendent of Power

Announcement has been made of the appointment of H. A. Kidder, electrical superintendent in the motive power department of the Interborough Rapid Transit Company and the New York



H. A. KIDDER

Railways, New York, N. Y., to be assistant superintendent of motive power of these companies. The appointment is made pending final severance of the relations of W. S. Finlay, Jr., with these organizations in the near future, at which time Mr. Kidder will become superintendent of motive power.

Mr. Kidder's appointment follows the election of Mr. Finlay to be vice-president of the American Water Works & Electric Company, New York, which operates a number of water works and other public utilities. A biography and a portrait of Mr. Finlay were published in the ELECTRIC RAILWAY JOURNAL for May 29, page 1122. Mr. Finlay was recently tendered a dinner by his associates in the Interborough. On this occasion President Frank Hedley referred to Mr. Kidder as Mr. Finlay's successor.

In his new position Mr. Kidder will have direct supervision of the manifold activities connected with the furnishing of power for the Manhattan rapid transit and surface lines. His headquarters will be at the Fifty-ninth Street power station of the Interborough, the chief generating plant of the system. This great installation, one of the largest of its class in the country, was constructed under the direction of the late Henry G. Stott, who, until his death in 1917, occupied the position of superintendent of motive power.

Like Mr. Finlay, Mr. Kidder has been connected with the Interborough since the early days of the system. Joining the company in 1906 as assistant electrical superintendent, he had a part in the development of the Fifty-ninth Street station and in the other power installations of the company. He therefore has a thorough working knowledge of the system's motive power problem and is well equipped to perform his new duties, which, in addition to those that directly involve power generation, include the direction of the engineering and construction work coming within the scope of the motive power department.

Mr. Jones, General Manager

On July 1 T. Norman Jones became general manager of the Norfolk and Portsmouth division of the Virginia Railway & Power Company. He has been assistant general manager of the division for three years. Mr. Jones in his fourteen years' service with the Virginia Railway & Power Company has been in practically every division. Born in Richmond in 1882 he was educated in the schools of Wilson, N. C., and the University of Virginia. As a young man he became associated with the engineering corps in charge of the construction of the Potomac yards, and with the McKay Engineering Company, and the United Electric Light & Power Company. In 1906 at the age of twenty-four he took the position of mechanical and electrical engineer with the Virginia Railway & Power Company. The next year he devoted his time to the operation of the Richmond & Chesapeake Bay Railway. In 1911 he returned to the Virginia Railway & Power Company as chief engineer and he continued in that position until 1916, when he was appointed assistant general manager. Up to the present time C. B. Buchanan, vice-president of the company, held the title of general manager.

Edwin D. Smith, who has given fifteen years' service to the United Railways of St. Louis, will resign as chief engineer on Sept. 1. Born in Galion, Ohio, in 1877, he was educated in the grade schools of Missouri and was graduated from the Missouri University. In 1901 he entered the employ of the St. Louis Transit Company, the predecessor of the United Railways. He held various positions in the power stations of the company until in 1904 he was appointed superintendent of power stations. Mr. Smith is a member of the City Plan Commission, the St. Louis Electrical Board of Trade and the State Public Utilities Association. He resigns to become superintendent of power and maintenance National Cash Register Company, Dayton, Ohio.

Manufactures and the Markets

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

ROLLING STOCK PURCHASES BUSINESS ANNOUNCEMENTS

Market for Fare Boxes and Registers Expanding

Growing Favor of Metal Ticket and Increasing Tendency to Count Fares Aiding Sales of Equipments

Growing use of the metal ticket, which is rapidly coming into favor with electric railways, is largely responsible for the greatly increased sales of registering fare boxes, according to one of the large manufacturers. A good demand is also felt for fare registers, but the increase of business there has not kept pace with the growth of the fare box industry apparently. Orders for fare registers are being received in normal volume or about the same as last year, the first six months of which represented an increase of approximately 30 per cent over the same period in 1918. On the other hand, sales of registering fare boxes have presented a steady increase thus far over the corresponding period a year ago, amounting to about 50 per cent. The turning of the half-year mark in 1919 was again 75 per cent ahead of the figures for 1918.

Manufacturers of registers are in a better position to make shipments, orders for standard material being usually filled promptly from stocks kept at a level of three months' surplus.

The fare boxes cannot be supplied from stock, however, as back orders have piled up for ninety days. Deliveries were made in from forty to seventy days last fall. In neither case are labor troubles affecting the situation.

The raw material supply is another matter, as in that respect makers of both products are meeting considerable difficulty in obtaining such material as steel and malleable iron castings from the mills, which are tied up with transportation and labor troubles. This condition has its reflection in the production of fare boxes and registers, which in the case of some manufacturers is sub-normal. Other producers, however, report operation at full capacity.

A slight increase in the price of fare boxes was reported on June 1 by one representative company, amounting to from 4 to 5 per cent. Rising costs of labor and material are given as the cause.

In this instance the prices of 1919 presented no increase over those of 1918. Another large manufacturer representing the fare register industry has made no recent price changes, but quotations were increased materially during 1919. Opinions agree that present prices have about reached their top figure. A favorable factor is the entire absence of order cancellations in this line.

The policy of electric railways is tending more and more toward counting the fare rather than the passenger. Recent large orders placed by important traction companies are evidence of this. One large manufacturer has recently filled orders to the extent of 1,650 registering fare boxes and about 2,200,000 metal tickets, distributed among five companies in amounts of approximately 700, 600, 200, 100 and 50 equipments, and providing a complete installation on three of the five lines. Another producer who specializes in fare registers has recently filled orders for approximately 600 equipments divided among three traction companies.

Coal a Little Freer

Acute Situation Eased Somewhat, but Still Causing a Great Deal of Uneasiness

Although the edge has been taken off the very acute coal situation facing the traction companies, they are not out of the woods, by any means. Even at this early date, with the thirty-day priority on open-top cars for delivery of coal only half up, certain leeway is being afforded metal interests for the use of such cars for shipments of metals. On the face of it, this is not assisting much in the laying in of coal reserve stocks.

In discussing the fuel situation, F. H. Miller, vice-president of the Louisville (Ky.) Railway, said: "At this time last year we had about 17,000 tons of coal on hand, but right now we have only about 2,500 tons. While we have a contract with a reliable coal concern, contracts don't mean much where the operator is unable to secure cars for shipment. The coal situation has been giving us a little uneasiness, and it may increase operating expenses materially."

It is a well established fact that eastern Kentucky and West Virginia gas coal has advanced to a point where it is selling at $9 to $9.50 and even $10 a ton for mine run at mine, while non-gas coal of the better grades is quoted at $8.00 to $8.50 at the East Kentucky and West Virginia mines. Western Kentucky mine run is quoted at $5 to $5.50 at mine. These prices were secured from operators recently. It is reported that public utility companies, steel companies, by-product concerns, etc., are entering the fields with cash and certified checks and bidding up prices, offering higher than the last offer in order to secure shipments.

Good Demand for Motor-Driven Chain Blocks

Stocks Are in Good Shape in Distributers' Hands, with Factory Shipments in About Five Months

Generally speaking, shipments of electrically driven chain blocks can be made from stocks which are in dealers' and distributers' hands throughout the country. Manufacturers are ordered up above their present production capacity, but are able to make factory shipments in about five weeks. Stocks of raw materials are in fair shape, but stocks of motors are not so good. Considerable difficulty is still being experienced in getting enough motors, and this is the main feature lengthening shipments. At the same time, the motors are so standardized that few different styles have to be kept, and therefore greater ease of stocking is experienced.

Demand for chain blocks is good among electric railways and is tending constantly to the use of motor-driven blocks. Prices have been holding rather steady during the last six weeks, but it would not be surprising to see an advance, because that is the direction any change would take, it is understood from the manufacturers.

Switzerland Floats $25,000,000 Loan to Electrify Federal Railroads

Development of hydro-electric power, estimated to total 2,700,000 horsepower, is aimed at in the recent loan of $25,000,000 negotiated in this country by the government of Switzerland for the purpose of electrifying the Swiss Federal Railways. The utilization of her vast amount of unused water power will greatly simplify Switzerland's fuel question and relieve her from the present necessity of importing coal from outside sources at extremely high prices. It is estimated that if the old hydro-electric plants were replaced by new ones, the total water-power resources of the country could even be raised to 8,000,000 hp. It is expected that the development of this power will effect large economies in the operation of all Swiss railways and industries.

In 1913 the government of Switzerland owned 1,800 miles of the 3,671 total mileage of the country. Of the remaining sum owned by private companies, 622 miles are already electrified, but only a small portion of the government-owned railroads have made the change from steam to electric power. Of the government's total debt, amounting to about seven and a half

millions, slightly more than half is attributable to the federal railways, although in normal years these have shown a substantial profit.

The loan has been negotiated in the form of twenty-year bonds yielding 8 per cent, callable after ten years and with a sinking fund of $1,000,000 per annum for the purchase of the bonds. One of the provisions of the transaction is that the equipment involved in the electrification of the railways be purchased in the United States.

Stranded-Steel-Wire Market Steady Under Short Supply

Railways Buying Less, but Labor, Transportation and Shortage of Raw Materials Are Cutting Production

Although demand for stranded steel wire is not extra heavy, manufacturers are having considerable difficulty in meeting orders. The volume of buying has increased slightly over a year ago, but is still subnormal if anything. Little new construction work is being undertaken, repairs and replacements accounting for most of the orders. Where formerly the electric railways would stock ahead on suspension and guy wires, money tightness is now causing them to cut expenditures to the bone; consequently stranded wire is ordered only as absolutely needed.

In spite of this circumstance production is generally inadequate to meet demands, one of the largest wire producers reporting operation at only about 65 per cent of capacity owing to raw material and transportation difficulties. Another manufacturer has been hindered by labor troubles, the mills of this company operating only seven months last year because of strikes. Zinc is reported hard to obtain; hence the process of galvanizing stranded wire is one more factor delaying some producers, although other mills which own their own zinc and coal mines are free from this trouble.

As a result of these conditions orders are running further and further behind, with deliveries ranging from ten weeks to five months. Stocks in this field seem to have gone out of existence. Transportation difficulties continue to tie up shipments at the mills; in fact, with the recent coal priorities order in force, manufacturers report no relief in that quarter.

The encouraging features of the situation seem to be the entire absence of order cancellations and the continued steadiness of the market, prices having remained firm during the past year, although the tendency would seem to be up at the present time.

Agreement Reached in Sheet Wage Controversy

Independent manufacturers in the sheet and tinplate industry and the Amalgamated Association of workers in the steel, iron and tin mills came to an agreement on the scale controversy last Friday. The suspension and curtailment of numerous mills throughout the producing centers of the middle west has been averted and the workers will go on under virtually the same agreement as existed up to June 30.

The 20 per cent wage increase and the six-hour shift for an eight-hour shift have been abandoned, but some minor concessions were made by the producers. A spell hand is introduced here and there and a few adjustments of little importance are made in both sheet and tin mill scales.

Rolling Stock

Cape Girardeau-Jackson Interurban Railway, Cape Girardeau, Mo., announces the expectation to purchase four or five used single-truck cars.

Sacramento Northern Railroad, Sacramento, Cal., has purchased two sixty-ton electric locomotives at a cost of approximately $72,000. The locomotives, which are of the same size and type of two others bought last year, will be used in handling crops along the Sacramento Valley this summer and fall. Delivery is expected this month.

Shamokin Mt. Carmel Transit Company, Mt. Carmel, Pa., recently had its machine shop and carhouses destroyed in a fire originating from lightning. Two cars were also lost, raising the damage estimate to $30,000.

Concord Electric Railway, Concord, N. H., expects to place contracts during the next two weeks for brakes, fenders, registers and other rolling stock equipment to be used for safety cars the company is rebuilding.

Recent Incorporations

Blue Ridge Development Company, Hickory, N. C.—The Blue Ridge Development has recently been incorporated with a capital stock of $500,000. A survey of the road is being made which will connect Charlotte, Hickory and Blowing Rock. The company expects to lay 100 miles of single track. The incorporators include N. T. Shipp, Newton; G. N. Hutton, J. D. Elliott, J. L. Cilley and others of Hickory.

Franchises

Houston, Bay Shore & Texas City Traction Company, Houston, Tex.—The Houston, Bay Shore & Texas City Traction Company has received a franchise to run its new interurban line from Houston to Texas City through Harrisburg. The City Council of Harrisburg passed the franchise.

Babylon Railroad, Babylon, N. Y.—Joseph G. Robin has made application to the Babylon Village Board for a franchise to construct and operate a street railway between Babylon and Amityville. The aim is to rehabilitate the Babylon Railroad, the franchise for which has been suspended. A report on the new franchise will be made on July 12.

Track and Roadway

Connecticut Company, New Haven, Conn. — The Connecticut Company, operating the Putnam trolley line, will begin improving its right of way on Grove Street at once.

Chicago & Joliet Electric Railway, Joliet, Ill.—The Chicago & Joliet Electric Railway expects to build 3 miles of double track some time this season, being a detour around the city of Lockport on its interurban line.

Municipal Street Railway, Alexandria, La.—The Municipal Street Railway of Alexandria is rebuilding four blocks with girder rail on Second Street and has purchased material to rebuild six blocks on Monroe Street with the same kind of rail.

Worcester (Mass.) Consolidated Street Railway.—The Worcester Consolidated Street Railway will replace worn rails and ties in Main Street.

Springfield (Mass.) Street Railway.—Extension of the tracks of the Springfield Street Railway in the eastern section of Springfield is now assured by the successful efforts of the citizens and the Chamber of Commerce to raise $300,000.

Winston-Salem, N. C.—While conditions which exist at present with respect to the borrowing of money for construction purposes would seem to preclude the possibility of carrying out a program for building an electric line, yet the construction of an interurban railway connecting High Point with Greensboro and Winston-Salem is being discussed with a view to the realization of this project when conditions return more nearly to normal. Among those interested in the undertaking is F. Hahn, a contractor of Winston-Salem.

Evansville & Ohio Valley Railway, Evansville, Ind. — The Evansville & Ohio Valley Railway is completing the construction of a high tension line 10 miles from Newburgh, Ind., to Evansville in order to connect the present high tension line with the power station of the Public Utility Company, Evansville.

Northern Ohio Traction & Light Company, Akron, Ohio.—The Northern Ohio Traction & Light Company will make improvements on its Canton system. In the list is included a new terminal for Canton, double tracks on certain lines, building one new line and relaying tracks in different parts of the city. The expense will be approximately $500,000 and the work will cover a period of three years.

Scranton (Pa.) & Binghamton Railroad, Scranton, Pa.—This company is constructing a 66,000-volt transmission line from Tiffany (Pa.) to Binghamton (N. Y.), a distance of 22 miles. This will complete the line from the Brookside (Pa.) power plant, 11 miles out of Scranton to Binghamton, the line

from Brookside to Tiffany, a distance of 25 miles, having been in operation since 1916. The construction will consist of 35-ft. wooden poles, spaced 150 ft. maximum and 125 ft. minimum, with Keystone triangle and No. 360 70,000-volt lock insulators and will be three-wire, three-phase. Eventually the Binghamton plant, which now supplies the energy for the local street railway, will be shut down and held as an auxiliary, current being received over the transmission line from Brookside. There is now sufficient generating equipment at Brookside to carry the additional load, and two additional 500-hp. Heine water tube, 200-lb. pressure boilers are being installed. The extension of the transmission line does not indicate that there will be anything done in the immediate future on extending the Scranton & Binghamton interurban line to Binghamton, although it is still intended that eventually this will be accomplished. The local street railway at Binghamton, N. Y., is owned by the interurban line.

The Beaver Valley Traction Co., New Brighton, Pa.—The Beaver Valley Traction Company has placed a contract with Littefield, Fry & McGough to weld approximately 2,500 rail joints. It has also placed a contract with the Republic Engineers, Inc., to weld approximately 130 joints. It is expected that the work will start within the next few weeks.

Montreal (Que.) Tramways.—The extension of the line on Kelly Street from Millen to Lamothe Street will soon be commenced. This extension is in accordance with the contract signed between the city and the company in January, 1918, construction being dependent upon the city's securing the necessary right of way.

Montreal (Que.) Tramways Company.—The Montreal Tramways Company will start work right away on the construction of a tram line from Mount Royal Avenue to within 60 ft. of the summit of the mountain. The work will cost about $250,000. The line will be part of the service of the city and passengers on other cars wishing to go to the top of the mountain will only have to obtain transfers.

Power Houses, Shops and Buildings

Butte Electric Railway, Butte, Mont.—The Butte Electric Railway within the next few months expects to fit out its carhouse with new general offices.

Cairo & St. Louis Railway, Cairo, Ill.—The Cairo & St. Louis Railway expects to equip all its boilers with super heaters, "Sealflex" arches and chain grates.

Worcester (Mass.) Consolidated Street Railway.—The Fremont Street power house of the Worcester Consolidated Street Railway has been leased for three years to the Curtis & Marble Machine Company. It will be remodeled for occupancy as a foundry.

Professional Notes

Frederic W. Erickson and Henry M. Taylor, consulting engineers, announce the opening of offices at 383 Madison Avenue, New York City, for the practice of electrical, civil and mechanical engineering.

E. S. Lincoln, Inc., 534 Congress Street, Portland, Me., consulting electrical engineer, is successor to Lincoln, Hanson & Abbott, Inc. Mr. Hanson and Mr. Abbott are no longer connected with the firm.

Trade Notes

The Under-Feed Stoker Company of America, Chicago, has filed notice of an increase in capital stock from $1,000,000 to $1,250,000.

The Kuhlman Electric Company, Bay City, Mich., has filed notice of an increase in capital stock from $75,000 to $150,000 to provide for extensions and its increasing business.

The Morganite Brush Company, Inc., 519-523 West Thirty-eighth Street, New York City, has been organized to take over the business and property of the Morgan Crucible Company.

The Allentown Cable & Machine Company, Allentown, Pa., is asking for bids for the construction of a one-story building, 50 ft. x 100 ft., at Hamilton, to cost about $35,000.

The Fafnir Bearing Company, New Britain, Conn., has recently appointed Rufus N. Hemenway manager of the industrial bearings division, which includes the sale of double bearing transmission boxes.

The Roller-Smith Company, 233 Broadway, New York City, held a sales conference at its works at Bethlehem, Pa., on June 14, 15 and 16. In addition to regular business conferences and inspection trips through the works, there were several social functions.

The Consolidated Car-Heating Company, Albany, N. Y., at its recent annual meeting elected Cornell S. Hawley president and treasurer. William S. Hammond was re-elected vice-president. Lee P. Hynes was made chief engineer and John H. McElroy secretary.

A. Dwight Smith, district sales manager of the Northern Electric Company, Montreal, Que., Can., has been transferred to the general sales department at the head office. In his new position he will have charge of sales to railways in the Dominion of Canada. N. S. Richards, who has been sales manager at Calgary for the last three years, succeeds Mr. Smith as Montreal district sales manager.

Samuel H. Taylor, general manager of the Electrical Railway & Manufacturers' Supply Company, San Francisco, Cal., was chairman of the business program committee at the convention of the Electric Supply Jobbers' Association held recently at Del Monte. Mr. Taylor has the distinction of being the oldest jobber, in years of service, on the Pacific Coast, as he has directed the destinies of the Electric Railway & Manufacturers' Supply Company since its organization in 1898.

The Edison Storage Battery Company, West Orange, N. J., announces the appointment of Don C. Wilson as assistant sales manager in charge of its railroad department. Mr. Wilson has been active in railroad operating and mechanical departments for many years, serving in various capacities with the Stone & Webster Construction Company, Seattle; the Pacific Gas & Electric Company, Los Angeles, and also as electrical engineer for the Union Pacific Railroad at Omaha, Neb., and in a similar capacity for the Central of Georgia Railway at Savannah.

J. G. Brill Company, Philadelphia, has rebegun the publication of Brill's Magazine, discontinued in May, 1918. The present number is dated June, 1920, but no definite date is set for the next issue. It will be the policy of the company to issue these magazines from time to time as suitable material is available. The company declares that the standardization of the Birney safety car, by introducing uniformity in cars, created a scarcity of suitable material for the magazine, as hitherto different types of cars were manufactured.

The Watson-Stillman Company, New York City, announces several changes in the board of directors of the company due to the retirement of A. F. Stillman from active interest in the management. Mr. Stillman remains as president of the company and also has full supervision of the sales. Carl Wigtel, chief engineer, was elected vice-president; A. Parker Nevin, secretary; W. H. Martin, purchasing agent. Mr. Wigtel has started on a ten weeks' trip to the Scandinavian countries, England, France, Belgium and Holland. While he is going mainly for a vacation, he will also investigate new developments in the line of hydraulic machinery in all of the above countries. Mr. Wigtel has been connected with the company for thirty-three years.

Lester C. Hart, previously sales manager of the Railway & Industrial Engineering Company, has become president and general manager of the Hi-Voltage Equipment Company, Cleveland, Ohio, manufacturers of air break switching and protective equipment.

New Advertising Literature

Transmission Lines.—The British Aluminum Company, Ltd., 109 Queen Victoria Street, London, England, is circulating a booklet entitled "From the Falls to the Factory," in which it gives special attention to American practice in transmission-line engineering.